

retrograde	11600 Feb 28 05:04	6°♂47'08		max. Earth dist.	11606 Nov 24 05:04	14°♂08'29	40.52508 AU
opposition	11600 May 19 15:57	5°♂41'10	0°42'22				
min. Earth dist.	11600 May 21 10:13	5°♂38'55	40.09031 AU	conjunction	11606 Nov 26 08:39	14°♂12'03	3°03'52
direct	11600 Aug 08 14:57	4°♂35'10		minimum elong	11606 Nov 26 08:34	14°♂12'03	3°04'34
evening set	11600 Nov 01 19:20	5°♂53'08		morning rise	11606 Dec 12 01:07	14°♂37'56	
max. Earth dist.	11600 Nov 15 17:22	6°♂15'07	41.97436 AU	retrograde	11607 Mar 09 15:24	16°♂02'09	
				opposition	11607 May 29 12:25	14°♂54'04	3°25'30
conjunction	11600 Nov 17 17:27	6°♂18'18	0°51'00	min. Earth dist.	11607 May 31 11:21	14°♂51'29	38.40421 AU
minimum elong	11600 Nov 17 17:26	6°♂18'18	0°51'39	direct	11607 Aug 18 06:25	13°♂45'45	
morning rise	11600 Dec 03 16:47	6°♂43'36		evening set	11607 Nov 12 10:43	15°♂08'50	
retrograde	11601 Feb 28 19:43	8°♂03'44		max. Earth dist.	11607 Nov 25 19:52	15°♂31'01	40.27992 AU
opposition	11601 May 21 04:06	6°♂57'28	1°05'00				
min. Earth dist.	11601 May 22 23:52	6°♂55'08	39.85459 AU	conjunction	11607 Nov 28 00:42	15°♂34'42	3°26'40
direct	11601 Aug 10 02:53	5°♂51'08		minimum elong	11607 Nov 28 00:35	15°♂34'42	3°27'23
evening set	11601 Nov 03 09:14	7°♂09'42		morning rise	11607 Dec 13 15:18	16°♂00'39	
max. Earth dist.	11601 Nov 17 06:43	7°♂31'47	41.73696 AU	retrograde	11608 Mar 10 08:12	17°♂25'41	
				opposition	11608 May 30 03:07	16°♂17'21	3°49'38
conjunction	11601 Nov 19 07:03	7°♂35'01	1°12'38	min. Earth dist.	11608 Jun 01 02:43	16°♂14'42	38.15927 AU
minimum elong	11601 Nov 19 07:00	7°♂35'01	1°13'19	direct	11608 Aug 18 20:56	15°♂08'41	
morning rise	11601 Dec 05 05:41	8°♂00'26		evening set	11608 Nov 13 05:34	16°♂32'43	
retrograde	11602 Mar 02 07:39	9°♂21'08		max. Earth dist.	11608 Nov 26 11:47	16°♂54'51	40.03322 AU
opposition	11602 May 22 16:35	8°♂14'34	1°27'51				
min. Earth dist.	11602 May 24 13:07	8°♂12'10	39.61618 AU	conjunction	11608 Nov 28 17:24	16°♂58'38	3°49'38
direct	11602 Aug 11 16:55	7°♂07'55		minimum elong	11608 Nov 28 17:17	16°♂58'37	3°50'20
evening set	11602 Nov 04 23:53	8°♂27'06		morning rise	11608 Dec 14 05:34	17°♂24'37	
max. Earth dist.	11602 Nov 18 19:35	8°♂49'13	41.49732 AU	retrograde	11609 Mar 12 00:35	18°♂50'33	
				opposition	11609 May 31 18:31	17°♂41'55	4°13'57
conjunction	11602 Nov 20 20:57	8°♂52'33	1°34'30	min. Earth dist.	11609 Jun 02 19:31	17°♂39'10	37.91259 AU
minimum elong	11602 Nov 20 20:54	8°♂52'32	1°35'10	direct	11609 Aug 20 10:41	16°♂32'56	
morning rise	11602 Dec 06 18:58	9°♂18'04		evening set	11609 Nov 15 01:11	17°♂57'54	
retrograde	11603 Mar 03 22:10	10°♂39'24		max. Earth dist.	11609 Nov 28 04:19	18°♂20'01	39.78457 AU
opposition	11603 May 24 05:17	9°♂32'31	1°50'57				
min. Earth dist.	11603 May 26 02:00	9°♂30'06	39.37597 AU	conjunction	11609 Nov 30 10:27	18°♂23'51	4°12'44
direct	11603 Aug 13 04:35	8°♂25'30		minimum elong	11609 Nov 30 10:19	18°♂23'50	4°13'28
evening set	11603 Nov 06 15:05	9°♂45'23		morning rise	11609 Dec 15 20:00	18°♂49'51	
max. Earth dist.	11603 Nov 20 08:44	10°♂07'30	41.25581 AU	retrograde	11610 Mar 13 18:56	20°♂16'43	
				opposition	11610 Jun 02 10:17	19°♂07'46	4°38'27
conjunction	11603 Nov 22 11:15	10°♂10'56	1°56'33	min. Earth dist.	11610 Jun 04 11:17	19°♂05'01	37.66377 AU
minimum elong	11603 Nov 22 11:12	10°♂10'56	1°57'15	direct	11610 Aug 22 00:28	17°♂58'26	
morning rise	11603 Dec 08 08:17	10°♂36'34		evening set	11610 Nov 16 21:45	19°♂24'25	
retrograde	11604 Mar 04 13:13	11°♂58'33		max. Earth dist.	11610 Nov 29 19:59	19°♂46'21	39.53338 AU
opposition	11604 May 24 18:32	10°♂51'22	2°14'16				
min. Earth dist.	11604 May 26 16:39	10°♂48'51	39.13424 AU	conjunction	11610 Dec 02 04:07	19°♂50'22	4°35'59
direct	11604 Aug 13 15:39	9°♂44'01		minimum elong	11610 Dec 02 03:59	19°♂50'21	4°36'43
evening set	11604 Nov 07 06:58	11°♂04'37		morning rise	11610 Dec 17 10:49	20°♂16'22	
max. Earth dist.	11604 Nov 20 23:47	11°♂26'50	41.01307 AU	retrograde	11611 Mar 15 15:27	21°♂44'11	
				opposition	11611 Jun 04 02:39	20°♂34'54	5°03'06
conjunction	11604 Nov 23 02:04	11°♂30'15	2°18'48	min. Earth dist.	11611 Jun 06 05:30	20°♂32'02	37.41249 AU
minimum elong	11604 Nov 23 02:00	11°♂30'15	2°19'29	direct	11611 Aug 23 13:40	19°♂25'11	
morning rise	11604 Dec 08 21:47	11°♂55'59		evening set	11611 Nov 18 19:01	20°♂52'12	
retrograde	11605 Mar 06 06:18	13°♂18'39		max. Earth dist.	11611 Dec 01 14:19	21°♂14'06	39.27972 AU
opposition	11605 May 26 07:56	12°♂11'10	2°37'49				
min. Earth dist.	11605 May 28 05:36	12°♂08'40	38.89156 AU	conjunction	11611 Dec 03 22:24	21°♂18'08	4°59'23
direct	11605 Aug 15 03:26	11°♂03'29		minimum elong	11611 Dec 03 22:15	21°♂18'07	5°00'07
evening set	11605 Nov 08 23:35	12°♂24'53		morning rise	11611 Dec 19 01:46	21°♂44'07	
max. Earth dist.	11605 Nov 22 13:07	12°♂47'02	40.76942 AU	retrograde	11612 Mar 16 11:54	23°♂12'54	
				opposition	11612 Jun 04 19:27	22°♂03'16	5°27'55
conjunction	11605 Nov 24 17:08	12°♂50'36	2°41'15	min. Earth dist.	11612 Jun 06 22:19	22°♂00'22	37.15882 AU
minimum elong	11605 Nov 24 17:03	12°♂50'36	2°41'57	direct	11612 Aug 24 06:17	20°♂53'08	
morning rise	11605 Dec 10 11:29	13°♂16'25		evening set	11612 Nov 19 17:20	22°♂21'14	
retrograde	11606 Mar 08 00:17	14°♂39'50		max. Earth dist.	11612 Dec 02 06:59	22°♂42'55	39.02379 AU
opposition	11606 May 27 21:59	13°♂32'03	3°01'33				
min. Earth dist.	11606 May 29 20:57	13°♂29'28	38.64826 AU	conjunction	11612 Dec 04 17:04	22°♂47'08	5°22'53
direct	11606 Aug 16 14:59	12°♂24'02		minimum elong	11612 Dec 04 16:55	22°♂47'07	5°23'38
evening set	11606 Nov 10 16:36	13°♂46'15		morning rise	11612 Dec 19 17:01	23°♂13'04	

retrograde	11613 Mar 18 08:23	24° $\nearrow$ 42'52		evening set	11619 Dec 03 05:57	3° $\searrow$ 21'13	
opposition	11613 Jun 06 12:39	23° $\nearrow$ 32'51	5°52'52	max. Earth dist.	11619 Dec 14 06:01	3° $\searrow$ 41'24	37.22149 AU
min. Earth dist.	11613 Jun 08 16:50	23° $\nearrow$ 29'52	36.90337 AU				
direct	11613 Aug 25 22:04	22° $\nearrow$ 22'17		conjunction	11619 Dec 16 19:00	3° $\searrow$ 46'06	8°09'01
evening set	11613 Nov 21 16:16	23° $\nearrow$ 51'30		minimum elong	11619 Dec 16 18:45	3° $\searrow$ 46'05	8°09'46
max. Earth dist.	11613 Dec 04 02:02	24° $\nearrow$ 13'04	38.76615 AU	morning rise	11619 Dec 30 07:43	4° $\searrow$ 10'59	
				retrograde	11620 Mar 29 16:45	5° $\searrow$ 49'22	
conjunction	11613 Dec 06 12:20	24° $\nearrow$ 17'21	5°46'30	opposition	11620 Jun 17 04:30	4° $\searrow$ 36'36	8°49'18
minimum elong	11613 Dec 06 12:09	24° $\nearrow$ 17'20	5°47'15	min. Earth dist.	11620 Jun 19 10:43	4° $\searrow$ 33'21	35.11536 AU
morning rise	11613 Dec 21 08:14	24° $\nearrow$ 43'13		direct	11620 Sep 05 07:22	3° $\searrow$ 22'57	
retrograde	11614 Mar 20 02:31	26° $\nearrow$ 14'04		evening set	11620 Dec 04 11:55	5° $\searrow$ 01'38	
opposition	11614 Jun 08 06:28	25° $\nearrow$ 03'39	6°17'56	max. Earth dist.	11620 Dec 15 05:33	5° $\searrow$ 21'30	36.96772 AU
min. Earth dist.	11614 Jun 10 11:13	25° $\nearrow$ 00'37	36.64662 AU				
direct	11614 Aug 27 17:45	23° $\nearrow$ 52'39		conjunction	11620 Dec 17 18:30	5° $\searrow$ 26'15	8°32'39
evening set	11614 Nov 23 16:04	25° $\nearrow$ 23'01		minimum elong	11620 Dec 17 18:15	5° $\searrow$ 26'13	8°33'25
max. Earth dist.	11614 Dec 05 20:52	25° $\nearrow$ 44'25	38.50764 AU	morning rise	11620 Dec 31 00:24	5° $\searrow$ 50'50	
				retrograde	11621 Mar 31 16:30	7° $\searrow$ 30'44	
conjunction	11614 Dec 08 07:52	25° $\nearrow$ 48'46	6°10'12	opposition	11621 Jun 19 02:23	6° $\searrow$ 17'36	9°14'25
minimum elong	11614 Dec 08 07:41	25° $\nearrow$ 48'46	6°10'57	min. Earth dist.	11621 Jun 21 09:17	6° $\searrow$ 14'16	34.86417 AU
morning rise	11614 Dec 22 23:37	26° $\nearrow$ 14'33		direct	11621 Sep 07 05:12	5° $\searrow$ 03'32	
retrograde	11615 Mar 21 23:05	27° $\nearrow$ 46'30		evening set	11621 Dec 06 19:15	6° $\searrow$ 43'52	
opposition	11615 Jun 10 00:41	26° $\nearrow$ 35'41	6°43'05	max. Earth dist.	11621 Dec 17 05:16	7° $\searrow$ 03'20	36.71470 AU
min. Earth dist.	11615 Jun 12 05:25	26° $\nearrow$ 32'38	36.38943 AU				
direct	11615 Aug 29 11:36	25° $\nearrow$ 24'14		conjunction	11621 Dec 19 18:38	7° $\searrow$ 08'09	8°56'10
evening set	11615 Nov 25 16:52	26° $\nearrow$ 55'49		minimum elong	11621 Dec 19 18:22	7° $\searrow$ 08'08	8°56'56
max. Earth dist.	11615 Dec 07 16:15	27° $\nearrow$ 17'00	38.24867 AU	morning rise	11622 Jan 01 17:27	7° $\searrow$ 32'25	
				retrograde	11622 Apr 02 18:45	9° $\searrow$ 13'53	
conjunction	11615 Dec 10 04:09	27° $\nearrow$ 21'27	6°33'57	opposition	11622 Jun 21 00:54	8° $\searrow$ 00'23	9°39'27
minimum elong	11615 Dec 10 03:57	27° $\nearrow$ 21'26	6°34'42	min. Earth dist.	11622 Jun 23 07:31	7° $\searrow$ 57'03	34.61362 AU
morning rise	11615 Dec 24 15:16	27° $\nearrow$ 47'07		direct	11622 Sep 09 02:15	6° $\searrow$ 45'53	
retrograde	11616 Mar 22 18:32	29° $\nearrow$ 20'14		evening set	11622 Dec 09 03:33	8° $\searrow$ 27'55	
opposition	11616 Jun 10 19:27	28° $\nearrow$ 09'01	7°08'19	max. Earth dist.	11622 Dec 19 05:02	8° $\searrow$ 46'54	36.46184 AU
min. Earth dist.	11616 Jun 13 01:27	28° $\nearrow$ 05'51	36.13230 AU				
direct	11616 Aug 30 04:02	26° $\nearrow$ 57'06		conjunction	11622 Dec 21 19:28	8° $\searrow$ 51'51	9°19'35
evening set	11616 Nov 26 18:37	28° $\nearrow$ 29'57		minimum elong	11622 Dec 21 19:12	8° $\searrow$ 51'50	9°20'20
max. Earth dist.	11616 Dec 08 13:32	28° $\nearrow$ 50'59	37.99014 AU	morning rise	11623 Jan 03 10:43	9° $\searrow$ 15'45	
				retrograde	11623 Apr 04 19:11	10° $\searrow$ 58'51	
conjunction	11616 Dec 11 01:01	28° $\nearrow$ 55'26	6°57'45	opposition	11623 Jun 23 00:19	9° $\searrow$ 44'57	10°04'20
minimum elong	11616 Dec 11 00:49	28° $\nearrow$ 55'25	6°58'30	min. Earth dist.	11623 Jun 25 08:20	9° $\searrow$ 41'31	34.36321 AU
morning rise	11616 Dec 25 07:03	29° $\nearrow$ 20'57		direct	11623 Sep 10 22:49	8° $\searrow$ 30'00	
	11617 Jan 17 18:50	0° $\searrow$		evening set	11623 Dec 11 13:20	10° $\searrow$ 13'49	
retrograde	11617 Mar 24 15:53	0° $\searrow$ 55'17		max. Earth dist.	11623 Dec 21 07:07	10° $\searrow$ 32'22	36.20920 AU
	11617 May 31 22:53	30° $\nearrow$					
opposition	11617 Jun 12 14:45	29° $\nearrow$ 43'40	7°33'35	conjunction	11623 Dec 23 21:13	10° $\searrow$ 37'20	9°42'49
min. Earth dist.	11617 Jun 14 20:00	29° $\nearrow$ 40'31	35.87596 AU	minimum elong	11623 Dec 23 20:56	10° $\searrow$ 37'19	9°43'34
direct	11617 Aug 31 22:26	28° $\nearrow$ 31'18		morning rise	11624 Jan 05 04:16	11° $\searrow$ 00'50	
	11617 Nov 25 18:38	0° $\searrow$		retrograde	11624 Apr 01 21:39	12° $\searrow$ 45'36	
evening set	11617 Nov 28 21:18	0° $\searrow$ 05'29		opposition	11624 Jun 24 00:09	11° $\searrow$ 31'19	10°29'04
max. Earth dist.	11617 Dec 10 09:24	0° $\searrow$ 26'12	37.73249 AU	min. Earth dist.	11624 Jun 26 07:40	11° $\searrow$ 27'53	34.11314 AU
				direct	11624 Sep 11 21:28	10° $\searrow$ 15'54	
conjunction	11617 Dec 12 22:14	0° $\searrow$ 30'48	7°21'32	evening set	11624 Dec 13 00:20	12° $\searrow$ 01'32	
minimum elong	11617 Dec 12 22:00	0° $\searrow$ 30'47	7°22'17	max. Earth dist.	11624 Dec 22 07:50	12° $\searrow$ 19'28	35.95696 AU
morning rise	11617 Dec 26 22:57	0° $\searrow$ 56'08					
retrograde	11618 Mar 26 16:10	2° $\searrow$ 31'46		conjunction	11624 Dec 24 23:34	12° $\searrow$ 24'37	10°05'52
opposition	11618 Jun 14 10:48	1° $\searrow$ 19'44	7°58'51	minimum elong	11624 Dec 24 23:18	12° $\searrow$ 24'35	10°06'38
min. Earth dist.	11618 Jun 16 17:01	1° $\searrow$ 16'31	35.62093 AU	morning rise	11625 Jan 05 22:09	12° $\searrow$ 47'39	
direct	11618 Sep 02 15:11	0° $\searrow$ 06'56		retrograde	11625 Apr 08 02:08	14° $\searrow$ 34'10	
evening set	11618 Dec 01 00:58	1° $\searrow$ 42'32		opposition	11625 Jun 26 00:54	13° $\searrow$ 19'27	10°53'35
max. Earth dist.	11618 Dec 12 08:26	2° $\searrow$ 03'05	37.47624 AU	min. Earth dist.	11625 Jun 28 09:39	13° $\searrow$ 15'55	33.86387 AU
				direct	11625 Sep 13 19:06	12° $\searrow$ 03'33	
conjunction	11618 Dec 14 20:20	2° $\searrow$ 07'39	7°45'18	evening set	11625 Dec 15 12:22	13° $\searrow$ 51'06	
minimum elong	11618 Dec 14 20:07	2° $\searrow$ 07'38	7°46'04	max. Earth dist.	11625 Dec 24 11:40	14° $\searrow$ 08'32	35.70568 AU
morning rise	11618 Dec 28 15:06	2° $\searrow$ 32'46					
retrograde	11619 Mar 28 14:59	4° $\searrow$ 09'45		conjunction	11625 Dec 27 02:35	14° $\searrow$ 13'40	10°28'40
opposition	11619 Jun 16 07:18	2° $\searrow$ 57'21	8°24'06	minimum elong	11625 Dec 27 02:17	14° $\searrow$ 13'38	10°29'25
min. Earth dist.	11619 Jun 18 13:01	2° $\searrow$ 54'08	35.36740 AU	morning rise	11626 Jan 07 15:50	14° $\searrow$ 36'11	
direct	11619 Sep 04 11:22	1° $\searrow$ 44'07		retrograde	11626 Apr 10 06:03	16° $\searrow$ 24'31	

opposition	11626 Jun 28 02:18	15°309'22	11°17'50	minimum elong	11633 Jan 09 20:44	27°349'01	12°57'35
min. Earth dist.	11626 Jun 30 10:34	15°305'51	33.61589 AU	morning rise	11633 Jan 18 00:53	28°306'05	
direct	11626 Sep 15 20:26	13°352'59			11633 Mar 31 02:06	0°	
evening set	11626 Dec 18 01:53	15°342'31		retrograde	11633 Apr 24 07:45	0°09'21	
max. Earth dist.	11626 Dec 26 14:25	15°359'15	35.45612 AU		11633 May 18 23:09	30°R3	
				opposition	11633 Jul 11 09:02	28°351'21	13°55'06
conjunction	11626 Dec 29 06:17	16°304'30	10°51'11	min. Earth dist.	11633 Jul 13 15:08	28°347'48	31.97541 AU
minimum elong	11626 Dec 29 06:00	16°304'29	10°51'57	direct	11633 Sep 28 17:52	27°331'43	
morning rise	11627 Jan 09 09:59	16°326'27		evening set	11634 Jan 04 16:05	29°337'39	
retrograde	11627 Apr 12 13:23	18°316'39		max. Earth dist.	11634 Jan 09 16:51	29°348'14	33.81074 AU
opposition	11627 Jun 30 04:17	17°301'04	11°41'46				
min. Earth dist.	11627 Jul 02 12:48	16°357'30	33.37012 AU	conjunction	11634 Jan 12 06:10	29°353'38	13°15'41
direct	11627 Sep 17 22:26	15°344'11		minimum elong	11634 Jan 12 05:52	29°353'36	13°16'22
evening set	11627 Dec 20 16:38	17°335'47			11634 Jan 15 06:39	0°	
max. Earth dist.	11627 Dec 28 19:34	17°351'53	35.20884 AU	morning rise	11634 Jan 19 19:31	0°09'33	
				retrograde	11634 Apr 26 19:37	2°15'21	
conjunction	11627 Dec 31 10:55	17°357'09	11°13'22	opposition	11634 Jul 13 16:45	0°56'59	14°15'01
minimum elong	11627 Dec 31 10:37	17°357'07	11°14'06	min. Earth dist.	11634 Jul 15 22:54	0°53'24	31.75880 AU
morning rise	11628 Jan 11 04:13	18°318'27			11634 Aug 22 16:32	30°R3	
retrograde	11628 Apr 13 18:33	20°310'37		direct	11634 Sep 30 23:33	29°336'54	
opposition	11628 Jul 01 07:10	18°354'35	12°05'20		11634 Nov 08 16:15	0°	
min. Earth dist.	11628 Jul 03 15:53	18°350'59	33.12702 AU	evening set	11635 Jan 07 18:05	1°45'37	
direct	11628 Sep 19 01:15	17°337'13		max. Earth dist.	11635 Jan 12 04:29	1°55'01	33.59336 AU
evening set	11628 Dec 22 08:51	19°330'58					
max. Earth dist.	11628 Dec 30 00:53	19°346'19	34.96477 AU	conjunction	11635 Jan 14 16:34	2°00'21	13°33'45
				minimum elong	11635 Jan 14 16:17	2°00'19	13°34'27
conjunction	11629 Jan 01 16:04	19°351'37	11°35'07	morning rise	11635 Jan 21 14:13	2°15'02	
minimum elong	11629 Jan 01 15:46	19°351'35	11°35'52	retrograde	11635 Apr 29 06:29	4°23'27	
morning rise	11629 Jan 11 22:28	20°312'13		opposition	11635 Jul 16 01:17	3°04'42	14°34'06
retrograde	11629 Apr 16 00:58	22°306'25		min. Earth dist.	11635 Jul 18 07:09	3°01'08	31.54607 AU
opposition	11629 Jul 03 10:39	20°349'58	12°28'27	direct	11635 Oct 03 07:11	1°44'13	
min. Earth dist.	11629 Jul 05 18:26	20°346'24	32.88757 AU	evening set	11636 Jan 10 22:13	3°55'47	
direct	11629 Sep 21 04:05	19°332'06		max. Earth dist.	11636 Jan 14 15:23	4°03'45	33.38009 AU
evening set	11629 Dec 25 02:19	21°328'05					
max. Earth dist.	11630 Jan 01 06:52	21°342'37	34.72453 AU	conjunction	11636 Jan 17 03:42	4°09'09	13°51'00
				minimum elong	11636 Jan 17 03:25	4°09'08	13°51'40
conjunction	11630 Jan 03 22:05	21°347'58	11°56'25	morning rise	11636 Jan 23 08:31	4°22'28	
minimum elong	11630 Jan 03 21:46	21°347'57	11°57'09	retrograde	11636 Apr 30 20:56	6°33'36	
morning rise	11630 Jan 13 16:57	22°307'47		opposition	11636 Jul 17 10:41	5°14'29	14°52'19
retrograde	11630 Apr 18 06:32	24°304'07		min. Earth dist.	11636 Jul 19 15:51	5°10'56	31.33746 AU
opposition	11630 Jul 05 15:07	22°347'15	12°51'03	direct	11636 Oct 04 16:50	3°53'33	
min. Earth dist.	11630 Jul 07 23:16	22°343'38	32.65239 AU	evening set	11637 Jan 13 04:35	6°08'09	
direct	11630 Sep 23 05:52	21°328'55		max. Earth dist.	11637 Jan 16 04:04	6°14'35	33.17093 AU
evening set	11630 Dec 27 21:19	23°327'14					
max. Earth dist.	11631 Jan 03 14:55	23°340'58	34.48896 AU	conjunction	11637 Jan 18 15:41	6°19'58	14°07'23
				minimum elong	11637 Jan 18 15:26	6°19'57	14°08'03
conjunction	11631 Jan 06 04:48	23°346'16	12°17'11	morning rise	11637 Jan 24 02:05	6°31'44	
minimum elong	11631 Jan 06 04:30	23°346'15	12°17'55	retrograde	11637 May 03 09:06	8°45'45	
morning rise	11631 Jan 15 11:23	24°305'14		opposition	11637 Jul 19 21:01	7°26'15	15°09'34
retrograde	11631 Apr 20 14:31	26°303'47		min. Earth dist.	11637 Jul 22 02:28	7°22'39	31.13307 AU
opposition	11631 Jul 07 20:14	24°346'32	13°13'04	direct	11637 Oct 07 02:20	6°04'52	
min. Earth dist.	11631 Jul 10 02:52	24°342'59	32.42195 AU	evening set	11638 Jan 16 14:00	8°22'41	
direct	11631 Sep 25 08:50	23°327'45		max. Earth dist.	11638 Jan 18 17:31	8°27'22	32.96659 AU
evening set	11631 Dec 30 17:54	25°328'30					
max. Earth dist.	11632 Jan 05 22:06	25°341'13	34.25817 AU	conjunction	11638 Jan 21 04:23	8°32'44	14°22'49
				minimum elong	11638 Jan 21 04:08	8°32'43	14°23'27
conjunction	11632 Jan 08 12:26	25°346'36	12°37'21	morning rise	11638 Jan 25 18:11	8°42'44	
minimum elong	11632 Jan 08 12:08	25°346'34	12°38'03	retrograde	11638 May 05 23:16	10°59'48	
morning rise	11632 Jan 17 06:11	26°304'39		opposition	11638 Jul 22 07:57	9°39'56	15°25'47
retrograde	11632 Apr 21 22:36	28°305'31		min. Earth dist.	11638 Jul 24 11:53	9°36'25	30.93368 AU
opposition	11632 Jul 09 02:12	26°347'53	13°34'26	direct	11638 Oct 09 13:13	8°18'07	
min. Earth dist.	11632 Jul 11 09:22	26°344'17	32.19639 AU	evening set	11639 Jan 20 03:29	10°39'28	
direct	11632 Sep 26 11:32	25°328'39		max. Earth dist.	11639 Jan 21 07:13	10°42'01	32.76747 AU
evening set	11633 Jan 01 16:14	27°331'57					
max. Earth dist.	11633 Jan 07 08:19	27°343'45	34.03221 AU	conjunction	11639 Jan 23 17:51	10°47'24	14°37'14
				minimum elong	11639 Jan 23 17:38	10°47'23	14°37'52
conjunction	11633 Jan 09 21:01	27°349'02	12°56'52	morning rise	11639 Jan 27 07:44	10°55'17	

retrograde	11639 May 08 12:44	13° $\approx$ 15'44		conjunction	11647 Feb 12 06:33	29° $\approx$ 48'42	15°46'07
opposition	11639 Jul 24 19:51	11° $\approx$ 55'28	15°40'53	minimum elong	11647 Feb 12 06:33	29° $\approx$ 48'42	15°46'34
min. Earth dist.	11639 Jul 27 00:04	11° $\approx$ 51'55	30.73973 AU		11647 Feb 17 02:45	0° $\approx$	
direct	11639 Oct 11 22:55	10° $\approx$ 33'14		retrograde	11647 May 28 05:21	2° $\approx$ 25'50	
evening set	11640 Jan 24 01:16	12° $\approx$ 58'48		opposition	11647 Aug 12 21:00	1° $\approx$ 03'23	16°50'44
max. Earth dist.	11640 Jan 23 23:19	12° $\approx$ 58'38	32.57440 AU	min. Earth dist.	11647 Aug 14 13:28	1° $\approx$ 00'32	29.46709 AU
					11647 Sep 24 07:25	30° $\approx$	
conjunction	11640 Jan 26 08:08	13° $\approx$ 03'54	14°50'33	direct	11647 Oct 30 18:38	29° $\approx$ 38'39	
minimum elong	11640 Jan 26 07:56	13° $\approx$ 03'52	14°51'08		11647 Dec 05 10:23	0° $\approx$	
morning rise	11640 Jan 28 14:35	13° $\approx$ 08'56		max. Earth dist.	11648 Feb 13 05:55	2° $\approx$ 14'35	31.32484 AU
	11640 Mar 25 19:43	15° $\approx$					
retrograde	11640 May 10 03:40	15° $\approx$ 33'27		conjunction	11648 Feb 15 02:03	2° $\approx$ 18'54	15°47'57
	11640 Jun 25 14:45	15° $\approx$		minimum elong	11648 Feb 15 02:04	2° $\approx$ 18'54	15°48'21
opposition	11640 Jul 26 08:18	14° $\approx$ 12'50	15°54'47	retrograde	11648 May 30 00:58	4° $\approx$ 56'51	
min. Earth dist.	11640 Jul 28 10:38	14° $\approx$ 09'23	30.55202 AU	opposition	11648 Aug 14 15:16	3° $\approx$ 34'12	16°52'04
direct	11640 Oct 13 10:46	12° $\approx$ 50'10		min. Earth dist.	11648 Aug 16 07:12	3° $\approx$ 31'23	29.34630 AU
	11641 Jan 18 00:33	15° $\approx$		direct	11648 Nov 01 12:07	2° $\approx$ 09'17	
max. Earth dist.	11641 Jan 25 14:30	15° $\approx$ 16'54	32.38808 AU	max. Earth dist.	11649 Feb 15 03:49	4° $\approx$ 46'15	31.20822 AU
conjunction	11641 Jan 27 23:02	15° $\approx$ 22'11	15°02'40	conjunction	11649 Feb 16 21:56	4° $\approx$ 50'23	15°48'07
minimum elong	11641 Jan 27 22:51	15° $\approx$ 22'10	15°03'16	minimum elong	11649 Feb 16 22:01	4° $\approx$ 50'23	15°48'30
retrograde	11641 May 12 18:01	17° $\approx$ 52'57		retrograde	11649 Jun 01 21:35	7° $\approx$ 29'03	
opposition	11641 Jul 28 21:44	16° $\approx$ 31'58	16°07'21	opposition	11649 Aug 17 10:00	6° $\approx$ 06'15	16°51'36
min. Earth dist.	11641 Jul 30 23:48	16° $\approx$ 28'32	30.37146 AU	min. Earth dist.	11649 Aug 18 23:18	6° $\approx$ 03'36	29.23393 AU
direct	11641 Oct 15 21:44	15° $\approx$ 08'54		direct	11649 Nov 04 07:48	4° $\approx$ 41'08	
max. Earth dist.	11642 Jan 28 08:40	17° $\approx$ 37'10	32.20951 AU	max. Earth dist.	11650 Feb 18 01:24	7° $\approx$ 18'58	31.10032 AU
conjunction	11642 Jan 30 14:33	17° $\approx$ 42'14	15°13'31	conjunction	11650 Feb 19 18:09	7° $\approx$ 22'59	15°46'35
minimum elong	11642 Jan 30 14:23	17° $\approx$ 42'13	15°14'05	minimum elong	11650 Feb 19 18:14	7° $\approx$ 22'59	15°46'56
retrograde	11642 May 15 08:55	20° $\approx$ 14'11		retrograde	11650 Jun 04 16:52	10° $\approx$ 02'16	
opposition	11642 Jul 31 11:52	18° $\approx$ 52'52	16°18'32	opposition	11650 Aug 20 05:18	8° $\approx$ 39'18	16°49'18
min. Earth dist.	11642 Aug 02 11:57	18° $\approx$ 49'32	30.19876 AU	min. Earth dist.	11650 Aug 21 17:55	8° $\approx$ 36'42	29.13025 AU
direct	11642 Oct 18 11:55	17° $\approx$ 29'26		direct	11650 Nov 07 01:56	7° $\approx$ 14'00	
max. Earth dist.	11643 Jan 31 01:24	19° $\approx$ 58'59	32.03942 AU	max. Earth dist.	11651 Feb 21 00:53	9° $\approx$ 52'44	31.00164 AU
conjunction	11643 Feb 02 06:48	20° $\approx$ 04'02	15°23'01	conjunction	11651 Feb 22 14:53	9° $\approx$ 56'29	15°43'20
minimum elong	11643 Feb 02 06:41	20° $\approx$ 04'02	15°23'34	minimum elong	11651 Feb 22 15:02	9° $\approx$ 56'30	15°43'40
retrograde	11643 May 18 02:19	22° $\approx$ 37'07		retrograde	11651 Jun 07 13:52	12° $\approx$ 36'17	
opposition	11643 Aug 03 02:36	21° $\approx$ 15'31	16°28'13	opposition	11651 Aug 23 00:46	11° $\approx$ 13'09	16°45'07
min. Earth dist.	11643 Aug 05 01:32	21° $\approx$ 12'15	30.03476 AU	min. Earth dist.	11651 Aug 24 10:53	11° $\approx$ 10'44	29.03557 AU
direct	11643 Oct 21 00:56	19° $\approx$ 51'44		direct	11651 Nov 09 22:26	9° $\approx$ 47'41	
max. Earth dist.	11644 Feb 02 21:15	22° $\approx$ 22'46	31.87839 AU	max. Earth dist.	11652 Feb 23 22:59	12° $\approx$ 27'03	30.91251 AU
conjunction	11644 Feb 04 23:56	22° $\approx$ 27'36	15°31'05	conjunction	11652 Feb 25 11:47	12° $\approx$ 30'43	15°38'20
minimum elong	11644 Feb 04 23:49	22° $\approx$ 27'36	15°31'36	minimum elong	11652 Feb 25 11:57	12° $\approx$ 30'44	15°38'38
retrograde	11644 May 19 18:56	25° $\approx$ 01'47		retrograde	11652 Jun 09 09:17	15° $\approx$ 10'55	
opposition	11644 Aug 04 18:16	23° $\approx$ 39'56	16°36'20	opposition	11652 Aug 24 20:45	13° $\approx$ 47'38	16°39'02
min. Earth dist.	11644 Aug 06 15:37	23° $\approx$ 36'46	29.87961 AU	min. Earth dist.	11652 Aug 26 05:32	13° $\approx$ 45'18	28.95058 AU
direct	11644 Oct 22 15:39	22° $\approx$ 15'53		direct	11652 Nov 11 17:01	12° $\approx$ 22'00	
max. Earth dist.	11645 Feb 04 15:44	24° $\approx$ 48'10	31.72667 AU	max. Earth dist.	11653 Feb 25 23:27	15° $\approx$ 02'07	30.83365 AU
conjunction	11645 Feb 06 17:23	24° $\approx$ 52'56	15°37'39	conjunction	11653 Feb 27 08:47	15° $\approx$ 05'26	15°31'32
minimum elong	11645 Feb 06 17:20	24° $\approx$ 52'56	15°38'10	minimum elong	11653 Feb 27 09:00	15° $\approx$ 05'28	15°31'49
retrograde	11645 May 22 14:45	27° $\approx$ 28'11		retrograde	11653 Jun 12 04:01	17° $\approx$ 45'57	
opposition	11645 Aug 07 10:29	26° $\approx$ 06'06	16°42'50	opposition	11653 Aug 27 16:58	16° $\approx$ 22'33	16°31'01
min. Earth dist.	11645 Aug 09 05:59	26° $\approx$ 03'04	29.73353 AU	min. Earth dist.	11653 Aug 28 23:13	16° $\approx$ 20'24	28.87578 AU
direct	11645 Oct 25 08:18	24° $\approx$ 41'48		direct	11653 Nov 14 14:54	14° $\approx$ 56'48	
max. Earth dist.	11646 Feb 07 12:31	27° $\approx$ 15'27	31.58398 AU	max. Earth dist.	11654 Feb 28 21:55	17° $\approx$ 37'20	30.76572 AU
conjunction	11646 Feb 09 11:43	27° $\approx$ 20'01	15°42'41	conjunction	11654 Mar 02 05:49	17° $\approx$ 40'31	15°22'57
minimum elong	11646 Feb 09 11:41	27° $\approx$ 20'00	15°43'09	minimum elong	11654 Mar 02 06:02	17° $\approx$ 40'33	15°23'11
retrograde	11646 May 25 08:19	29° $\approx$ 56'14		retrograde	11654 Jun 15 00:30	20° $\approx$ 21'14	
opposition	11646 Aug 10 03:27	28° $\approx$ 33'57	16°47'38	opposition	11654 Aug 30 13:15	18° $\approx$ 57'44	16°21'01
min. Earth dist.	11646 Aug 11 22:11	28° $\approx$ 30'58	29.59609 AU	min. Earth dist.	11654 Aug 31 17:11	18° $\approx$ 55'45	28.81213 AU
direct	11646 Oct 28 00:43	27° $\approx$ 09'27		direct	11654 Nov 17 10:42	17° $\approx$ 31'52	
max. Earth dist.	11647 Feb 10 08:43	29° $\approx$ 44'15	31.45020 AU	max. Earth dist.	11655 Mar 03 23:03	20° $\approx$ 13'00	30.70946 AU

conjunction	11655 Mar 05 03:05	20° $\mathbf{\text{H}}$ 15'49	15°12'32	evening set	11662 Mar 15 14:18	8° $\mathbf{\text{Y}}$ 03'00	
minimum elong	11655 Mar 05 03:23	20° $\mathbf{\text{H}}$ 15'50	15°12'44				
retrograde	11655 Jun 17 19:16	22° $\mathbf{\text{H}}$ 56'38		conjunction	11662 Mar 23 04:47	8° $\mathbf{\text{Y}}$ 21'07	13°10'55
opposition	11655 Sep 02 09:53	21° $\mathbf{\text{H}}$ 33'05	16°09'04	minimum elong	11662 Mar 23 05:12	8° $\mathbf{\text{Y}}$ 21'09	13°10'53
min. Earth dist.	11655 Sep 03 11:36	21° $\mathbf{\text{H}}$ 31'15	28.76005 AU	max. Earth dist.	11662 Mar 22 19:28	8° $\mathbf{\text{Y}}$ 20'11	30.65042 AU
direct	11655 Nov 20 07:28	20° $\mathbf{\text{H}}$ 07'10		morning rise	11662 Mar 30 19:32	8° $\mathbf{\text{Y}}$ 39'16	
max. Earth dist.	11656 Mar 05 21:56	22° $\mathbf{\text{H}}$ 48'35	30.66545 AU	retrograde	11662 Jul 05 14:45	11° $\mathbf{\text{Y}}$ 00'22	
				opposition	11662 Sep 20 10:04	9° $\mathbf{\text{Y}}$ 37'25	13°53'15
conjunction	11656 Mar 07 00:10	22° $\mathbf{\text{H}}$ 51'12	15°00'18	min. Earth dist.	11662 Sep 20 18:12	9° $\mathbf{\text{Y}}$ 36'50	28.72142 AU
minimum elong	11656 Mar 07 00:27	22° $\mathbf{\text{H}}$ 51'14	15°00'28	direct	11662 Dec 08 17:00	8° $\mathbf{\text{Y}}$ 12'17	
retrograde	11656 Jun 19 15:40	25° $\mathbf{\text{H}}$ 32'04		evening set	11663 Mar 17 16:59	10° $\mathbf{\text{Y}}$ 34'37	
opposition	11656 Sep 04 06:31	24° $\mathbf{\text{H}}$ 08'30	15°55'08				
min. Earth dist.	11656 Sep 05 05:03	24° $\mathbf{\text{H}}$ 06'54	28.72017 AU	conjunction	11663 Mar 26 00:38	10° $\mathbf{\text{Y}}$ 54'23	12°47'17
direct	11656 Nov 22 05:16	22° $\mathbf{\text{H}}$ 42'36		minimum elong	11663 Mar 26 01:04	10° $\mathbf{\text{Y}}$ 54'25	12°47'12
evening set	11657 Mar 07 02:52	25° $\mathbf{\text{H}}$ 20'00		max. Earth dist.	11663 Mar 25 17:15	10° $\mathbf{\text{Y}}$ 53'39	30.68563 AU
				morning rise	11663 Apr 03 08:33	11° $\mathbf{\text{Y}}$ 14'09	
conjunction	11657 Mar 09 21:23	25° $\mathbf{\text{H}}$ 26'40	14°46'16	retrograde	11663 Jul 08 09:33	13° $\mathbf{\text{Y}}$ 33'03	
minimum elong	11657 Mar 09 21:44	25° $\mathbf{\text{H}}$ 26'42	14°46'24	opposition	11663 Sep 23 06:05	12° $\mathbf{\text{Y}}$ 10'14	13°27'13
max. Earth dist.	11657 Mar 08 23:03	25° $\mathbf{\text{H}}$ 24'26	30.63389 AU	min. Earth dist.	11663 Sep 23 12:20	12° $\mathbf{\text{Y}}$ 09'48	28.75839 AU
morning rise	11657 Mar 12 16:31	25° $\mathbf{\text{H}}$ 33'23		direct	11663 Dec 11 13:18	10° $\mathbf{\text{Y}}$ 45'18	
retrograde	11657 Jun 22 10:36	28° $\mathbf{\text{H}}$ 07'29		evening set	11664 Mar 18 20:18	13° $\mathbf{\text{Y}}$ 05'26	
opposition	11657 Sep 07 03:21	26° $\mathbf{\text{H}}$ 43'56	15°39'17				
min. Earth dist.	11657 Sep 08 00:03	26° $\mathbf{\text{H}}$ 42'28	28.69242 AU	conjunction	11664 Mar 27 20:01	13° $\mathbf{\text{Y}}$ 26'42	12°22'18
direct	11657 Nov 25 02:42	25° $\mathbf{\text{H}}$ 18'06		minimum elong	11664 Mar 27 20:27	13° $\mathbf{\text{Y}}$ 26'45	12°22'12
evening set	11658 Mar 08 16:53	27° $\mathbf{\text{H}}$ 52'21		max. Earth dist.	11664 Mar 27 15:51	13° $\mathbf{\text{Y}}$ 26'17	30.73109 AU
				morning rise	11664 Apr 05 19:44	13° $\mathbf{\text{Y}}$ 47'58	
conjunction	11658 Mar 12 18:17	28° $\mathbf{\text{H}}$ 02'05	14°30'28	retrograde	11664 Jul 10 01:59	16° $\mathbf{\text{Y}}$ 04'41	
minimum elong	11658 Mar 12 18:37	28° $\mathbf{\text{H}}$ 02'07	14°30'34	opposition	11664 Sep 25 01:43	14° $\mathbf{\text{Y}}$ 42'03	12°59'47
max. Earth dist.	11658 Mar 11 22:02	28° $\mathbf{\text{H}}$ 00'03	30.61471 AU	min. Earth dist.	11664 Sep 25 05:22	14° $\mathbf{\text{Y}}$ 41'47	28.80538 AU
morning rise	11658 Mar 16 20:15	28° $\mathbf{\text{H}}$ 11'53		direct	11664 Dec 13 11:48	13° $\mathbf{\text{Y}}$ 17'18	
	11658 May 06 16:56	0° $\mathbf{\text{Y}}$		evening set	11665 Mar 21 00:04	15° $\mathbf{\text{Y}}$ 35'15	
retrograde	11658 Jun 25 07:51	0° $\mathbf{\text{Y}}$ 42'47					
	11658 Aug 16 01:26	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		conjunction	11665 Mar 30 14:47	15° $\mathbf{\text{Y}}$ 57'55	11°56'03
opposition	11658 Sep 10 00:01	29° $\mathbf{\text{H}}$ 19'19	15°21'33	minimum elong	11665 Mar 30 15:14	15° $\mathbf{\text{Y}}$ 57'57	11°55'55
min. Earth dist.	11658 Sep 10 17:16	29° $\mathbf{\text{H}}$ 18'06	28.67650 AU	max. Earth dist.	11665 Mar 30 12:15	15° $\mathbf{\text{Y}}$ 57'40	30.78679 AU
direct	11658 Nov 28 00:38	27° $\mathbf{\text{H}}$ 53'34		morning rise	11665 Apr 09 05:37	16° $\mathbf{\text{Y}}$ 20'34	
	11659 Feb 27 21:43	0° $\mathbf{\text{Y}}$		retrograde	11665 Jul 12 19:23	18° $\mathbf{\text{Y}}$ 35'08	
evening set	11659 Mar 10 12:55	0° $\mathbf{\text{Y}}$ 25'11		opposition	11665 Sep 27 20:50	17° $\mathbf{\text{Y}}$ 12'39	12°31'01
				min. Earth dist.	11665 Sep 27 21:55	17° $\mathbf{\text{Y}}$ 12'35	28.86288 AU
conjunction	11659 Mar 15 15:19	0° $\mathbf{\text{Y}}$ 37'24	14°12'58	direct	11665 Dec 16 07:15	15° $\mathbf{\text{Y}}$ 48'06	
minimum elong	11659 Mar 15 15:42	0° $\mathbf{\text{Y}}$ 37'26	14°13'01	evening set	11666 Mar 23 04:03	18° $\mathbf{\text{Y}}$ 03'55	
max. Earth dist.	11659 Mar 14 22:18	0° $\mathbf{\text{Y}}$ 35'42	30.60715 AU				
morning rise	11659 Mar 20 18:14	0° $\mathbf{\text{Y}}$ 49'41		conjunction	11666 Apr 02 09:04	18° $\mathbf{\text{Y}}$ 27'51	11°28'37
retrograde	11659 Jun 28 03:14	3° $\mathbf{\text{Y}}$ 17'53		minimum elong	11666 Apr 02 09:30	18° $\mathbf{\text{Y}}$ 27'54	11°28'27
opposition	11659 Sep 12 20:44	1° $\mathbf{\text{Y}}$ 54'31	15°02'00	max. Earth dist.	11666 Apr 02 10:16	18° $\mathbf{\text{Y}}$ 27'58	30.85310 AU
min. Earth dist.	11659 Sep 13 12:38	1° $\mathbf{\text{Y}}$ 53'23	28.67182 AU	morning rise	11666 Apr 12 13:50	18° $\mathbf{\text{Y}}$ 51'46	
direct	11659 Nov 30 22:05	0° $\mathbf{\text{Y}}$ 28'54		retrograde	11666 Jul 15 10:38	21° $\mathbf{\text{Y}}$ 04'15	
evening set	11660 Mar 11 11:54	2° $\mathbf{\text{Y}}$ 58'04		opposition	11666 Sep 30 15:35	19° $\mathbf{\text{Y}}$ 41'57	12°01'00
				min. Earth dist.	11666 Sep 30 14:36	19° $\mathbf{\text{Y}}$ 42'01	28.93096 AU
conjunction	11660 Mar 17 12:06	3° $\mathbf{\text{Y}}$ 12'27	13°53'49	direct	11666 Dec 19 03:24	18° $\mathbf{\text{Y}}$ 17'37	
minimum elong	11660 Mar 17 12:29	3° $\mathbf{\text{Y}}$ 12'29	13°53'52	evening set	11667 Mar 25 08:30	20° $\mathbf{\text{Y}}$ 31'19	
max. Earth dist.	11660 Mar 16 21:22	3° $\mathbf{\text{Y}}$ 10'59	30.61092 AU				
morning rise	11660 Mar 23 12:47	3° $\mathbf{\text{Y}}$ 26'53		conjunction	11667 Apr 05 02:38	20° $\mathbf{\text{Y}}$ 56'25	11°00'04
retrograde	11660 Jun 30 00:04	5° $\mathbf{\text{Y}}$ 52'37		minimum elong	11667 Apr 05 03:04	20° $\mathbf{\text{Y}}$ 56'27	10°59'51
opposition	11660 Sep 14 17:22	4° $\mathbf{\text{Y}}$ 29'22	14°40'43	max. Earth dist.	11667 Apr 05 05:33	20° $\mathbf{\text{Y}}$ 56'42	30.93027 AU
min. Earth dist.	11660 Sep 15 05:54	4° $\mathbf{\text{Y}}$ 28'29	28.67796 AU	morning rise	11667 Apr 15 20:41	21° $\mathbf{\text{Y}}$ 21'30	
direct	11660 Dec 02 21:25	3° $\mathbf{\text{Y}}$ 03'55		retrograde	11667 Jul 18 02:10	23° $\mathbf{\text{Y}}$ 31'56	
evening set	11661 Mar 13 12:21	5° $\mathbf{\text{Y}}$ 30'45		opposition	11667 Oct 03 09:42	22° $\mathbf{\text{Y}}$ 09'49	11°29'49
				min. Earth dist.	11667 Oct 03 05:17	22° $\mathbf{\text{Y}}$ 10'07	29.01027 AU
conjunction	11661 Mar 20 08:31	5° $\mathbf{\text{Y}}$ 47'04	13°33'07	direct	11667 Dec 21 22:52	20° $\mathbf{\text{Y}}$ 45'44	
minimum elong	11661 Mar 20 08:56	5° $\mathbf{\text{Y}}$ 47'07	13°33'06	evening set	11668 Mar 26 13:01	22° $\mathbf{\text{Y}}$ 57'23	
max. Earth dist.	11661 Mar 19 20:27	5° $\mathbf{\text{Y}}$ 45'52	30.62537 AU				
morning rise	11661 Mar 27 05:05	6° $\mathbf{\text{Y}}$ 03'27		conjunction	11668 Apr 06 19:44	23° $\mathbf{\text{Y}}$ 23'33	10°30'28
retrograde	11661 Jul 02 18:54	8° $\mathbf{\text{Y}}$ 26'51		minimum elong	11668 Apr 06 20:10	23° $\mathbf{\text{Y}}$ 23'35	10°30'15
opposition	11661 Sep 17 13:59	7° $\mathbf{\text{Y}}$ 03'44	14°17'46	max. Earth dist.	11668 Apr 07 02:38	23° $\mathbf{\text{Y}}$ 24'13	31.01877 AU
min. Earth dist.	11661 Sep 18 01:06	7° $\mathbf{\text{Y}}$ 02'57	28.69461 AU	morning rise	11668 Apr 18 02:00	23° $\mathbf{\text{Y}}$ 49'41	
direct	11661 Dec 05 18:05	5° $\mathbf{\text{Y}}$ 38'26		retrograde	11668 Jul 19 15:25	25° $\mathbf{\text{Y}}$ 58'08	

opposition	11668 Oct 05 03:33	24° $\Upsilon$ 36'15	10°57'35	conjunction	11675 Apr 24 00:47	9° $\mathcal{S}$ 51'48	6°42'43
min. Earth dist.	11668 Oct 04 21:10	24° $\Upsilon$ 36'41	29.10101 AU	minimum elong	11675 Apr 24 01:05	9° $\mathcal{S}$ 51'49	6°42'17
direct	11668 Dec 23 18:02	23° $\Upsilon$ 12'26		max. Earth dist.	11675 Apr 25 00:16	9° $\mathcal{S}$ 53'59	31.92614 AU
evening set	11669 Mar 28 17:44	25° $\Upsilon$ 22'05		morning rise	11675 May 07 23:31	10° $\mathcal{S}$ 22'45	
				retrograde	11675 Aug 05 11:06	12° $\mathcal{S}$ 19'00	
conjunction	11669 Apr 09 11:56	25° $\Upsilon$ 49'13	9°59'57	opposition	11675 Oct 22 15:18	10° $\mathcal{S}$ 59'15	6°51'26
minimum elong	11669 Apr 09 12:20	25° $\Upsilon$ 49'15	9°59'40	min. Earth dist.	11675 Oct 21 16:42	11° $\mathcal{S}$ 00'45	30.01877 AU
max. Earth dist.	11669 Apr 09 20:43	25° $\Upsilon$ 50'04	31.11879 AU	direct	11676 Jan 10 19:58	9° $\mathcal{S}$ 37'57	
morning rise	11669 Apr 21 05:49	26° $\Upsilon$ 16'19		evening set	11676 Apr 11 06:28	11° $\mathcal{S}$ 35'07	
retrograde	11669 Jul 22 07:06	28° $\Upsilon$ 22'51					
opposition	11669 Oct 07 20:38	27° $\Upsilon$ 01'13	10°24'23	conjunction	11676 Apr 25 12:30	12° $\mathcal{S}$ 06'31	6°08'26
min. Earth dist.	11669 Oct 07 10:28	27° $\Upsilon$ 01'55	29.20319 AU	minimum elong	11676 Apr 25 12:46	12° $\mathcal{S}$ 06'32	6°07'59
direct	11669 Dec 26 11:56	25° $\Upsilon$ 37'44		max. Earth dist.	11676 Apr 26 12:53	12° $\mathcal{S}$ 08'46	32.08845 AU
evening set	11670 Mar 30 22:33	27° $\Upsilon$ 45'26		morning rise	11676 May 09 17:40	12° $\mathcal{S}$ 37'50	
				retrograde	11676 Aug 06 21:17	14° $\mathcal{S}$ 32'33	
conjunction	11670 Apr 12 03:45	28° $\Upsilon$ 13'26	9°28'34	min. Earth dist.	11676 Oct 23 03:08	13° $\mathcal{S}$ 14'47	30.18214 AU
minimum elong	11670 Apr 12 04:09	28° $\Upsilon$ 13'29	9°28'17	opposition	11676 Oct 24 04:16	13° $\mathcal{S}$ 13'08	6°14'38
max. Earth dist.	11670 Apr 12 16:00	28° $\Upsilon$ 14'37	31.22988 AU	direct	11677 Jan 12 09:58	11° $\mathcal{S}$ 52'10	
morning rise	11670 Apr 24 08:20	28° $\Upsilon$ 41'25		evening set	11677 Apr 13 11:38	13° $\mathcal{S}$ 47'46	
	11670 Jun 02 04:20	0° $\mathcal{S}$					
retrograde	11670 Jul 24 20:09	0° $\mathcal{S}$ 46'05		conjunction	11677 Apr 27 23:31	14° $\mathcal{S}$ 19'27	5°33'59
	11670 Sep 18 06:17	30° $\mathcal{R}\Upsilon$		minimum elong	11677 Apr 27 23:46	14° $\mathcal{S}$ 19'28	5°33'30
opposition	11670 Oct 10 13:10	29° $\Upsilon$ 24'45	9°50'20	max. Earth dist.	11677 Apr 29 02:50	14° $\mathcal{S}$ 21'57	32.25740 AU
min. Earth dist.	11670 Oct 10 01:32	29° $\Upsilon$ 25'33	29.31629 AU	morning rise	11677 May 12 10:08	14° $\mathcal{S}$ 51'03	
direct	11670 Dec 29 05:42	28° $\Upsilon$ 01'36			11677 May 16 14:47	15° $\mathcal{S}$	
	11671 Mar 29 20:16	0° $\mathcal{S}$		retrograde	11677 Aug 09 04:31	16° $\mathcal{S}$ 44'18	
evening set	11671 Apr 02 03:44	0° $\mathcal{S}$ 07'25		opposition	11677 Oct 26 16:32	15° $\mathcal{S}$ 25'11	5°37'43
				min. Earth dist.	11677 Oct 25 14:24	15° $\mathcal{S}$ 26'54	30.35212 AU
conjunction	11671 Apr 14 18:53	0° $\mathcal{S}$ 36'12	8°56'27		11677 Nov 11 22:54	15° $\mathcal{R}\mathcal{S}$	
minimum elong	11671 Apr 14 19:16	0° $\mathcal{S}$ 36'15	8°56'08	direct	11678 Jan 15 00:08	14° $\mathcal{S}$ 04'34	
max. Earth dist.	11671 Apr 15 09:08	0° $\mathcal{S}$ 37'34	31.35151 AU		11678 Mar 16 17:09	15° $\mathcal{S}$	
morning rise	11671 Apr 27 09:25	1° $\mathcal{S}$ 04'57		evening set	11678 Apr 15 16:58	15° $\mathcal{S}$ 58'38	
retrograde	11671 Jul 27 10:53	3° $\mathcal{S}$ 07'49					
opposition	11671 Oct 13 05:08	1° $\mathcal{S}$ 46'48	9°15'34	conjunction	11678 Apr 30 09:41	16° $\mathcal{S}$ 30'32	4°59'26
min. Earth dist.	11671 Oct 12 14:11	1° $\mathcal{S}$ 47'49	29.43951 AU	minimum elong	11678 Apr 30 09:55	16° $\mathcal{S}$ 30'34	4°58'56
direct	11672 Jan 01 00:58	0° $\mathcal{S}$ 24'01		max. Earth dist.	11678 May 01 13:46	16° $\mathcal{S}$ 33'06	32.43283 AU
evening set	11672 Apr 03 08:49	2° $\mathcal{S}$ 28'00		morning rise	11678 May 15 01:25	17° $\mathcal{S}$ 02'21	
				retrograde	11678 Aug 11 13:32	18° $\mathcal{S}$ 54'12	
conjunction	11672 Apr 16 09:16	2° $\mathcal{S}$ 57'29	8°23'43	min. Earth dist.	11678 Oct 27 22:48	17° $\mathcal{S}$ 37'16	30.52890 AU
minimum elong	11672 Apr 16 09:38	2° $\mathcal{S}$ 57'31	8°23'22	opposition	11678 Oct 29 03:48	17° $\mathcal{S}$ 35'22	5°00'45
max. Earth dist.	11672 Apr 17 02:14	2° $\mathcal{S}$ 59'05	31.48262 AU	direct	11679 Jan 17 12:31	16° $\mathcal{S}$ 15'06	
morning rise	11672 Apr 29 09:01	3° $\mathcal{S}$ 26'54		evening set	11679 Apr 17 22:02	18° $\mathcal{S}$ 07'43	
retrograde	11672 Jul 28 23:51	5° $\mathcal{S}$ 28'03					
opposition	11672 Oct 14 20:42	4° $\mathcal{S}$ 07'20	8°40'10	conjunction	11679 May 02 19:13	18° $\mathcal{S}$ 39'46	4°24'51
min. Earth dist.	11672 Oct 14 04:10	4° $\mathcal{S}$ 08'27	29.57216 AU	minimum elong	11679 May 02 19:24	18° $\mathcal{S}$ 39'47	4°24'19
direct	11673 Jan 02 17:16	2° $\mathcal{S}$ 44'56		max. Earth dist.	11679 May 04 02:08	18° $\mathcal{S}$ 42'34	32.61491 AU
evening set	11673 Apr 05 14:08	4° $\mathcal{S}$ 47'08		morning rise	11679 May 17 15:08	19° $\mathcal{S}$ 11'44	
				retrograde	11679 Aug 13 19:50	21° $\mathcal{S}$ 02'15	
conjunction	11673 Apr 18 23:07	5° $\mathcal{S}$ 17'13	7°50'27	min. Earth dist.	11679 Oct 30 08:45	19° $\mathcal{S}$ 45'40	30.71280 AU
minimum elong	11673 Apr 18 23:27	5° $\mathcal{S}$ 17'15	7°50'04	opposition	11679 Oct 31 14:43	19° $\mathcal{S}$ 43'43	4°23'49
max. Earth dist.	11673 Apr 19 18:26	5° $\mathcal{S}$ 19'02	31.62267 AU	direct	11680 Jan 20 00:46	18° $\mathcal{S}$ 23'48	
morning rise	11673 May 02 07:13	5° $\mathcal{S}$ 47'14		evening set	11680 Apr 19 02:54	20° $\mathcal{S}$ 15'01	
retrograde	11673 Jul 31 12:30	7° $\mathcal{S}$ 46'41					
opposition	11673 Oct 17 11:27	6° $\mathcal{S}$ 26'18	8°04'17	conjunction	11680 May 04 03:42	20° $\mathcal{S}$ 47'09	3°50'17
min. Earth dist.	11673 Oct 16 16:21	6° $\mathcal{S}$ 27'35	29.71333 AU	minimum elong	11680 May 04 03:52	20° $\mathcal{S}$ 47'10	3°49'45
direct	11674 Jan 05 11:16	5° $\mathcal{S}$ 04'16		max. Earth dist.	11680 May 05 12:00	20° $\mathcal{S}$ 50'03	32.80411 AU
evening set	11674 Apr 07 19:31	7° $\mathcal{S}$ 04'44		morning rise	11680 May 19 03:21	21° $\mathcal{S}$ 19'12	
				retrograde	11680 Aug 15 03:42	23° $\mathcal{S}$ 08'27	
conjunction	11674 Apr 21 12:14	7° $\mathcal{S}$ 35'20	7°16'45	min. Earth dist.	11680 Oct 31 15:48	21° $\mathcal{S}$ 52'22	30.90407 AU
minimum elong	11674 Apr 21 12:33	7° $\mathcal{S}$ 35'22	7°16'21	opposition	11680 Nov 02 00:45	21° $\mathcal{S}$ 50'14	3°46'58
max. Earth dist.	11674 Apr 22 09:07	7° $\mathcal{S}$ 37'18	31.77068 AU	direct	11681 Jan 21 12:46	20° $\mathcal{S}$ 30'42	
morning rise	11674 May 05 04:09	8° $\mathcal{S}$ 05'52		evening set	11681 Apr 21 07:43	22° $\mathcal{S}$ 20'36	
retrograde	11674 Aug 03 01:34	10° $\mathcal{S}$ 03'41					
min. Earth dist.	11674 Oct 19 04:42	8° $\mathcal{S}$ 45'02	29.86247 AU	conjunction	11681 May 06 11:37	22° $\mathcal{S}$ 52'46	3°15'50
opposition	11674 Oct 20 01:43	8° $\mathcal{S}$ 43'38	7°28'00	minimum elong	11681 May 06 11:45	22° $\mathcal{S}$ 52'47	3°15'16
direct	11675 Jan 08 03:13	7° $\mathcal{S}$ 21'57		max. Earth dist.	11681 May 07 22:20	22° $\mathcal{S}$ 55'52	33.00049 AU
evening set	11675 Apr 10 00:56	9° $\mathcal{S}$ 20'45		morning rise	11681 May 21 14:21	23° $\mathcal{S}$ 24'51	

retrograde	11681 Aug 17 10:34	25° <b>8</b> 12'55		min. Earth dist.	11687 Nov 15 08:16	5° <b>II</b> 53'35	32.41753 AU
min. Earth dist.	11681 Nov 02 23:41	23° <b>8</b> 57'15	31.10290 AU	opposition	11687 Nov 17 04:39	5° <b>II</b> 50'50	-0°23'07
opposition	11681 Nov 04 10:07	23° <b>8</b> 55'02	3°10'16	direct	11688 Feb 06 03:26	4° <b>II</b> 34'09	
direct	11682 Jan 23 22:04	22° <b>8</b> 35'53		evening set	11688 May 04 13:54	6° <b>II</b> 16'37	
evening set	11682 Apr 23 12:22	24° <b>8</b> 24'34					
conjunction	11682 May 08 18:53	24° <b>8</b> 56'42	2°41'32	conjunction	11688 May 20 00:15	6° <b>II</b> 47'41	-0°37'56
minimum elong	11682 May 08 19:00	24° <b>8</b> 56'43	2°40'57	minimum elong	11688 May 20 00:13	6° <b>II</b> 47'41	0°38'36
max. Earth dist.	11682 May 10 07:33	24° <b>8</b> 59'57	33.20412 AU	max. Earth dist.	11688 May 21 21:26	6° <b>II</b> 51'30	34.53501 AU
morning rise	11682 May 24 00:05	25° <b>8</b> 28'46		morning rise	11688 Jun 04 09:28	7° <b>II</b> 18'40	
retrograde	11682 Aug 19 16:45	27° <b>8</b> 15'42		retrograde	11688 Aug 30 13:31	9° <b>II</b> 00'05	
min. Earth dist.	11682 Nov 05 06:07	26° <b>8</b> 00'32	31.30867 AU	min. Earth dist.	11688 Nov 16 13:06	7° <b>II</b> 47'28	32.65004 AU
opposition	11682 Nov 06 18:46	25° <b>8</b> 58'12	2°33'48	opposition	11688 Nov 18 09:42	7° <b>II</b> 44'43	-0°57'07
direct	11683 Jan 26 10:06	24° <b>8</b> 39'28		direct	11689 Feb 07 08:57	6° <b>II</b> 28'25	
evening set	11683 Apr 25 16:59	26° <b>8</b> 26'58		evening set	11689 May 06 17:39	8° <b>II</b> 09'59	
conjunction	11683 May 11 01:18	26° <b>8</b> 59'03	2°07'27	conjunction	11689 May 22 03:02	8° <b>II</b> 40'44	-1°09'43
minimum elong	11683 May 11 01:23	26° <b>8</b> 59'03	2°06'50	minimum elong	11689 May 22 02:59	8° <b>II</b> 40'44	1°10'24
max. Earth dist.	11683 May 12 15:20	27° <b>8</b> 02'23	33.41412 AU	max. Earth dist.	11689 May 24 00:46	8° <b>II</b> 44'35	34.76846 AU
morning rise	11683 May 26 08:33	27° <b>8</b> 31'02		morning rise	11689 Jun 06 11:17	9° <b>II</b> 11'24	
retrograde	11683 Aug 21 24:00	29° <b>8</b> 16'55		retrograde	11689 Sep 01 15:55	10° <b>II</b> 52'02	
min. Earth dist.	11683 Nov 07 12:12	28° <b>8</b> 02'13	31.52092 AU	min. Earth dist.	11689 Nov 18 15:43	9° <b>II</b> 39'48	32.88484 AU
opposition	11683 Nov 09 02:50	27° <b>8</b> 59'47	1°57'37	opposition	11689 Nov 20 13:46	9° <b>II</b> 36'59	-1°30'33
direct	11684 Jan 28 19:46	26° <b>8</b> 41'28		direct	11690 Feb 09 14:36	8° <b>II</b> 21'01	
evening set	11684 Apr 26 21:21	28° <b>8</b> 27'52		evening set	11690 May 08 21:14	10° <b>II</b> 01'45	
conjunction	11684 May 12 07:14	28° <b>8</b> 59'50	1°33'38	conjunction	11690 May 24 05:07	10° <b>II</b> 32'09	-1°41'00
minimum elong	11684 May 12 07:18	28° <b>8</b> 59'50	1°33'02	minimum elong	11690 May 24 05:03	10° <b>II</b> 32'09	1°41'41
max. Earth dist.	11684 May 13 23:40	29° <b>8</b> 03'21	33.63002 AU	max. Earth dist.	11690 May 26 03:42	10° <b>II</b> 36'02	35.00395 AU
morning rise	11684 May 27 15:45	29° <b>8</b> 31'42		morning rise	11690 Jun 08 12:04	11° <b>II</b> 02'29	
retrograde	11684 Jun 11 01:01	0° <b>II</b>		retrograde	11690 Sep 03 18:07	12° <b>II</b> 42'22	
min. Earth dist.	11684 Aug 23 03:38	1° <b>II</b> 16'36		min. Earth dist.	11690 Nov 20 18:23	11° <b>II</b> 30'27	33.12210 AU
opposition	11684 Nov 08 18:39	0° <b>II</b> 02'20	31.73870 AU	opposition	11690 Nov 22 17:26	11° <b>II</b> 27'36	-2°03'25
direct	11684 Nov 10 10:17	29° <b>8</b> 59'50	1°21'48	direct	11691 Feb 11 18:08	10° <b>II</b> 11'58	
evening set	11684 Nov 10 07:36	30° <b>8</b> 8		evening set	11691 May 11 00:21	11° <b>II</b> 51'54	
conjunction	11685 Jan 30 05:55	28° <b>8</b> 41'57		conjunction	11691 May 26 06:31	12° <b>II</b> 21'55	-2°11'45
minimum elong	11685 Apr 15 02:15	0° <b>II</b>		minimum elong	11691 May 26 06:26	12° <b>II</b> 21'54	2°12'28
max. Earth dist.	11685 Apr 29 01:41	0° <b>II</b> 27'18		max. Earth dist.	11691 May 28 06:43	12° <b>II</b> 25'54	35.24186 AU
morning rise	11685 May 14 12:17	0° <b>II</b> 59'05	1°00'10	morning rise	11691 Jun 10 11:32	12° <b>II</b> 51'52	
retrograde	11685 May 14 12:19	0° <b>II</b> 59'06	0°59'31	retrograde	11691 Sep 05 17:14	14° <b>II</b> 31'03	
min. Earth dist.	11685 May 16 05:14	1° <b>II</b> 02'38	33.85080 AU	min. Earth dist.	11691 Nov 22 20:35	13° <b>II</b> 19'27	33.36194 AU
opposition	11685 May 29 21:52	1° <b>II</b> 30'48		opposition	11691 Nov 24 20:26	13° <b>II</b> 16'34	-2°35'41
direct	11685 Aug 25 07:28	3° <b>II</b> 14'45		direct	11692 Feb 14 00:45	12° <b>II</b> 01'15	
evening set	11685 Nov 10 23:04	2° <b>II</b> 00'59	31.96130 AU	evening set	11692 May 12 03:24	13° <b>II</b> 40'25	
conjunction	11685 Nov 12 17:01	1° <b>II</b> 58'22	0°46'22	conjunction	11692 May 27 07:11	14° <b>II</b> 10'02	-2°41'57
minimum elong	11686 Feb 01 13:38	0° <b>II</b> 40'54		minimum elong	11692 May 27 07:05	14° <b>II</b> 10'01	2°42'40
max. Earth dist.	11686 May 01 05:52	2° <b>II</b> 25'14		max. Earth dist.	11692 May 29 07:40	14° <b>II</b> 14'00	35.48249 AU
morning rise	11686 May 16 16:59	2° <b>II</b> 56'50	0°27'03	morning rise	11692 Jun 11 10:10	14° <b>II</b> 39'35	
retrograde	11686 May 16 17:00	2° <b>II</b> 56'50	0°26'25	retrograde	11692 Sep 06 17:34	16° <b>II</b> 18'06	
min. Earth dist.	11686 May 18 12:18	3° <b>II</b> 00'33	34.07570 AU	min. Earth dist.	11692 Nov 23 20:55	15° <b>II</b> 06'54	33.60512 AU
opposition	11686 Jun 01 02:48	3° <b>II</b> 28'20		opposition	11692 Nov 25 22:46	15° <b>II</b> 03'54	-3°07'20
direct	11686 Aug 27 08:39	5° <b>II</b> 11'24		direct	11693 Feb 15 05:02	13° <b>II</b> 48'55	
evening set	11686 Nov 13 04:57	3° <b>II</b> 58'00	32.18778 AU	evening set	11693 May 14 05:58	15° <b>II</b> 27'22	
conjunction	11686 Nov 14 23:08	3° <b>II</b> 55'22	0°11'23	conjunction	11693 May 29 07:19	15° <b>II</b> 56'34	-3°11'36
minimum elong	11687 Feb 03 21:24	2° <b>II</b> 38'19		minimum elong	11693 May 29 07:12	15° <b>II</b> 56'34	3°12'20
max. Earth dist.	11687 Mar 15 16:32	3° <b>II</b> 01'40		max. Earth dist.	11693 May 31 10:06	16° <b>II</b> 00'42	35.72641 AU
morning rise	11687 May 03 10:04	4° <b>II</b> 21'41		morning rise	11693 Jun 13 07:37	16° <b>II</b> 25'42	
retrograde	11687 May 18 20:56	4° <b>II</b> 53'02	-0°05'44	retrograde	11693 Sep 08 15:13	18° <b>II</b> 03'37	
min. Earth dist.	11687 May 18 20:57	4° <b>II</b> 53'02	0°06'24	min. Earth dist.	11693 Nov 25 22:26	16° <b>II</b> 52'43	33.85165 AU
opposition	11687 May 18 14:54	4° <b>II</b> 52'33		opposition	11693 Nov 28 00:34	16° <b>II</b> 49'43	-3°38'21
direct	11687 May 19 02:59	4° <b>II</b> 53'32		direct	11694 Feb 17 09:21	15° <b>II</b> 35'05	
evening set	11687 May 20 16:23	4° <b>II</b> 56'44	34.30400 AU	evening set	11694 May 16 08:33	17° <b>II</b> 12'53	
conjunction	11687 Jun 03 06:47	5° <b>II</b> 24'18		conjunction	11694 May 31 06:50	17° <b>II</b> 41'38	-3°40'38
minimum elong	11687 Aug 29 11:49	7° <b>II</b> 06'31		minimum elong	11694 May 31 06:43	17° <b>II</b> 41'37	3°41'22

max. Earth dist.	11694 Jun 02 09:46	17°II45'45	35.97360 AU	conjunction	11701 Jun 12 13:33	29°II22'35	-6°46'35
morning rise	11694 Jun 15 04:21	18°II10'20		minimum elong	11701 Jun 12 13:22	29°II22'35	6°47'21
retrograde	11694 Sep 10 13:05	19°II47'41		max. Earth dist.	11701 Jun 14 21:08	29°II26'53	37.75276 AU
min. Earth dist.	11694 Nov 27 21:07	18°II37'15	34.10149 AU	morning rise	11701 Jun 26 06:18	29°II47'46	
opposition	11694 Nov 30 01:33	18°II34'07	-4°08'41		11701 Jul 03 02:41	0°☾	
direct	11695 Feb 19 11:27	17°II19'51		retrograde	11701 Sep 22 15:07	1°☾22'25	
evening set	11695 May 18 10:48	18°II57'03		min. Earth dist.	11701 Dec 10 10:35	0°☾14'24	35.89374 AU
				opposition	11701 Dec 12 19:32	0°☾11'08	-7°21'59
conjunction	11695 Jun 02 05:51	19°II25'20	-4°09'05		11701 Dec 20 23:03	30°☾II	
minimum elong	11695 Jun 02 05:43	19°II25'19	4°09'50	direct	11702 Mar 04 11:26	28°II59'24	
max. Earth dist.	11695 Jun 04 10:43	19°II29'35	36.22376 AU		11702 May 12 08:04	0°☾	
morning rise	11695 Jun 17 00:05	19°II53'34		evening set	11702 May 31 21:16	0°☾33'29	
retrograde	11695 Sep 12 10:50	21°II30'27					
min. Earth dist.	11695 Nov 29 21:35	20°II20'19	34.35428 AU	conjunction	11702 Jun 14 09:17	0°☾58'08	-7°10'37
opposition	11695 Dec 02 02:19	20°II17'12	-4°38'22	minimum elong	11702 Jun 14 09:06	0°☾58'07	7°11'23
direct	11696 Feb 21 12:05	19°II03'19		max. Earth dist.	11702 Jun 16 17:49	1°☾02'28	38.00646 AU
evening set	11696 May 19 12:43	20°II39'57		morning rise	11702 Jun 27 20:51	1°☾22'45	
				retrograde	11702 Sep 24 10:15	2°☾57'07	
conjunction	11696 Jun 03 04:13	21°II07'46	-4°36'54	min. Earth dist.	11702 Dec 12 08:15	1°☾49'20	36.14885 AU
minimum elong	11696 Jun 03 04:04	21°II07'45	4°37'38	opposition	11702 Dec 14 16:44	1°☾46'07	-7°46'51
max. Earth dist.	11696 Jun 05 09:38	21°II12'02	36.47652 AU	direct	11703 Mar 06 08:25	0°☾34'41	
morning rise	11696 Jun 17 18:53	21°II35'31		evening set	11703 Jun 02 21:53	2°☾08'24	
retrograde	11696 Sep 13 09:16	23°II11'57					
min. Earth dist.	11696 Nov 30 20:13	22°II02'14	34.60927 AU	conjunction	11703 Jun 16 04:31	2°☾32'29	-7°34'03
opposition	11696 Dec 03 02:23	21°II59'03	-5°07'21	minimum elong	11703 Jun 16 04:19	2°☾32'28	7°34'49
direct	11697 Feb 22 12:02	20°II45'32		max. Earth dist.	11703 Jun 18 13:08	2°☾36'48	38.25939 AU
evening set	11697 May 21 14:39	22°II21'40		morning rise	11703 Jun 29 10:37	2°☾56'32	
				retrograde	11703 Sep 26 04:47	4°☾30'38	
conjunction	11697 Jun 05 02:09	22°II48'59	-5°04'06	min. Earth dist.	11703 Dec 14 04:08	3°☾23'08	36.40330 AU
minimum elong	11697 Jun 05 02:00	22°II48'59	5°04'51	opposition	11703 Dec 16 13:25	3°☾19'53	-8°11'03
max. Earth dist.	11697 Jun 07 08:20	22°II53'17	36.73093 AU	direct	11704 Mar 07 05:43	2°☾08'45	
morning rise	11697 Jun 19 13:06	23°II16'16		evening set	11704 Jun 03 22:09	3°☾42'07	
retrograde	11697 Sep 15 07:57	24°II52'17					
min. Earth dist.	11697 Dec 02 19:04	23°II42'55	34.86589 AU	conjunction	11704 Jun 16 23:02	4°☾05'37	-7°56'50
opposition	11697 Dec 05 01:53	23°II39'43	-5°35'39	minimum elong	11704 Jun 16 22:50	4°☾05'37	7°57'36
direct	11698 Feb 24 11:04	22°II26'35		max. Earth dist.	11704 Jun 19 07:52	4°☾09'55	38.51183 AU
evening set	11698 May 23 16:19	24°II02'16		morning rise	11704 Jun 29 23:40	4°☾29'06	
				retrograde	11704 Sep 27 00:59	6°☾02'57	
conjunction	11698 Jun 06 23:47	24°II29'04	-5°30'40	min. Earth dist.	11704 Dec 14 23:47	4°☾55'43	36.65781 AU
minimum elong	11698 Jun 06 23:37	24°II29'04	5°31'25	opposition	11704 Dec 17 09:41	4°☾52'27	-8°34'34
max. Earth dist.	11698 Jun 09 07:09	24°II33'26	36.98651 AU	direct	11705 Mar 09 01:14	3°☾41'36	
morning rise	11698 Jun 21 06:25	24°II55'50		evening set	11705 Jun 05 22:12	5°☾14'41	
retrograde	11698 Sep 17 04:49	26°II31'28					
min. Earth dist.	11698 Dec 04 17:59	25°II22'27	35.12319 AU	conjunction	11705 Jun 18 17:22	5°☾37'36	-8°18'58
opposition	11698 Dec 07 01:01	25°II19'15	-6°03'16	minimum elong	11705 Jun 18 17:09	5°☾37'35	8°19'45
direct	11699 Feb 26 12:32	24°II06'30		max. Earth dist.	11705 Jun 21 03:30	5°☾41'58	38.76451 AU
evening set	11699 May 25 17:53	25°II41'45		morning rise	11705 Jul 01 12:01	6°☾00'30	
				retrograde	11705 Sep 28 18:27	7°☾34'06	
conjunction	11699 Jun 08 20:42	26°II08'02	-5°56'36	min. Earth dist.	11705 Dec 16 19:25	6°☾27'07	36.91258 AU
minimum elong	11699 Jun 08 20:31	26°II08'01	5°57'22	opposition	11705 Dec 19 05:17	6°☾23'52	-8°57'23
max. Earth dist.	11699 Jun 11 03:41	26°II12'20	37.24233 AU	direct	11706 Mar 10 22:30	5°☾13'18	
morning rise	11699 Jun 22 23:04	26°II34'17		evening set	11706 Jun 07 22:11	6°☾46'08	
retrograde	11699 Sep 19 02:44	28°II09'34					
min. Earth dist.	11699 Dec 06 15:21	27°II00'56	35.38068 AU	conjunction	11706 Jun 20 11:07	7°☾08'28	-8°40'29
opposition	11699 Dec 08 23:42	26°II57'41	-6°30'11	minimum elong	11706 Jun 20 10:55	7°☾08'27	8°41'15
direct	11700 Feb 28 11:56	25°II45'17		max. Earth dist.	11706 Jun 22 20:50	7°☾12'46	39.01759 AU
evening set	11700 May 27 19:11	27°II20'08		morning rise	11706 Jul 02 23:53	7°☾30'46	
				retrograde	11706 Sep 30 12:51	9°☾04'11	
conjunction	11700 Jun 10 17:26	27°II45'53	-6°21'54	min. Earth dist.	11706 Dec 18 13:07	7°☾57'32	37.16789 AU
minimum elong	11700 Jun 10 17:15	27°II45'52	6°22'40	opposition	11706 Dec 21 00:34	7°☾54'13	-9°19'30
max. Earth dist.	11700 Jun 13 01:46	27°II50'15	37.49792 AU	direct	11707 Mar 12 17:38	6°☾43'58	
morning rise	11700 Jun 24 14:59	28°II11'36		evening set	11707 Jun 09 21:39	8°☾16'33	
retrograde	11700 Sep 20 20:44	29°II46'34					
min. Earth dist.	11700 Dec 08 14:17	28°II38'11	35.63768 AU	conjunction	11707 Jun 22 04:29	8°☾38'17	-9°01'21
opposition	11700 Dec 10 21:55	28°II34'59	-6°56'25	minimum elong	11707 Jun 22 04:16	8°☾38'16	9°02'07
direct	11701 Mar 02 12:10	27°II22'56		max. Earth dist.	11707 Jun 24 15:43	8°☾42'41	39.27105 AU
evening set	11701 May 29 20:22	28°II57'23		morning rise	11707 Jul 04 10:57	9°☾00'00	



retrograde	11707 Oct 02 02:38	10°☾33'16		minimum elong	11714 Jul 01 20:26	18°☾41'47	11°11'06
min. Earth dist.	11707 Dec 20 08:39	9°☾26'51	37.42343 AU	max. Earth dist.	11714 Jul 04 07:42	18°☾46'00	41.01413 AU
opposition	11707 Dec 22 19:35	9°☾23'34	-9°40'56	morning rise	11714 Jul 12 02:56	18°☾59'15	
direct	11708 Mar 13 15:37	8°☾13'38		retrograde	11714 Oct 11 16:20	20°☾31'58	
evening set	11708 Jun 10 21:09	9°☾46'01		min. Earth dist.	11714 Dec 30 10:31	19°☾27'16	39.17349 AU
				opposition	11715 Jan 01 21:16	19°☾24'06	-11°52'57
conjunction	11708 Jun 22 21:29	10°☾07'09	-9°21'34	direct	11715 Mar 24 21:17	18°☾16'10	
minimum elong	11708 Jun 22 21:17	10°☾07'08	9°22'21	evening set	11715 Jun 23 12:24	19°☾47'39	
max. Earth dist.	11708 Jun 25 08:21	10°☾11'29	39.52464 AU				
morning rise	11708 Jul 04 21:35	10°☾28'16		conjunction	11715 Jul 03 11:13	20°☾04'29	-11°26'28
retrograde	11708 Oct 02 18:15	12°☾01'23		minimum elong	11715 Jul 03 11:02	20°☾04'28	11°27'13
min. Earth dist.	11708 Dec 21 01:48	10°☾55'19	37.67880 AU	max. Earth dist.	11715 Jul 05 21:46	20°☾08'38	41.25283 AU
opposition	11708 Dec 23 13:56	10°☾51'59	-10°01'42	morning rise	11715 Jul 13 09:53	20°☾21'19	
direct	11709 Mar 15 11:30	9°☾42'21		retrograde	11715 Oct 13 06:27	21°☾53'59	
evening set	11709 Jun 12 20:20	11°☾14'33		min. Earth dist.	11716 Jan 01 02:03	20°☾49'31	39.41270 AU
				opposition	11716 Jan 03 13:12	20°☾46'20	-12°09'24
conjunction	11709 Jun 24 14:06	11°☾35'05	-9°41'11	direct	11716 Mar 25 14:09	19°☾38'38	
minimum elong	11709 Jun 24 13:54	11°☾35'04	9°41'57	evening set	11716 Jun 24 10:24	21°☾10'03	
max. Earth dist.	11709 Jun 27 01:37	11°☾39'27	39.77765 AU				
morning rise	11709 Jul 06 07:45	11°☾55'36		conjunction	11716 Jul 04 01:28	21°☾26'15	-11°42'04
retrograde	11709 Oct 04 11:48	13°☾28'38		minimum elong	11716 Jul 04 01:17	21°☾26'14	11°42'50
min. Earth dist.	11709 Dec 22 20:13	12°☾22'48	37.93343 AU	max. Earth dist.	11716 Jul 06 11:46	21°☾30'21	41.48892 AU
opposition	11709 Dec 25 08:05	12°☾19'30	-10°21'49	morning rise	11716 Jul 13 16:34	21°☾42'27	
direct	11710 Mar 17 04:41	11°☾10'11		retrograde	11716 Oct 13 22:02	23°☾15'07	
evening set	11710 Jun 14 19:23	12°☾42'13		min. Earth dist.	11717 Jan 01 17:42	22°☾10'49	39.64984 AU
				opposition	11717 Jan 04 04:45	22°☾07'40	-12°25'16
conjunction	11710 Jun 26 06:27	13°☾02'09	-10°00'11	direct	11717 Mar 27 04:21	21°☾00'12	
minimum elong	11710 Jun 26 06:15	13°☾02'08	10°00'57	evening set	11717 Jun 26 08:11	22°☾31'33	
max. Earth dist.	11710 Jun 28 18:19	13°☾06'30	40.02961 AU				
morning rise	11710 Jul 07 17:12	13°☾22'04		conjunction	11717 Jul 05 15:28	22°☾47'07	-11°57'06
retrograde	11710 Oct 06 03:49	14°☾55'00		minimum elong	11717 Jul 05 15:18	22°☾47'07	11°57'50
min. Earth dist.	11710 Dec 24 13:49	13°☾49'26	38.18650 AU	max. Earth dist.	11717 Jul 08 02:34	22°☾51'15	41.72323 AU
opposition	11710 Dec 27 01:44	13°☾46'09	-10°41'16	morning rise	11717 Jul 14 22:35	23°☾02'41	
direct	11711 Mar 18 23:06	12°☾37'08		retrograde	11717 Oct 15 11:30	24°☾35'22	
evening set	11711 Jun 16 18:23	14°☾09'02		min. Earth dist.	11718 Jan 03 09:15	23°☾31'15	39.88521 AU
				opposition	11718 Jan 05 19:56	23°☾28'08	-12°40'32
conjunction	11711 Jun 27 22:24	14°☾28'21	-10°18'35	direct	11718 Mar 28 20:12	22°☾20'53	
minimum elong	11711 Jun 27 22:11	14°☾28'20	10°19'20	evening set	11718 Jun 28 05:51	23°☾52'14	
max. Earth dist.	11711 Jun 30 09:30	14°☾32'38	40.27975 AU				
morning rise	11711 Jul 09 02:24	14°☾47'40		conjunction	11718 Jul 07 04:57	24°☾07'10	-12°11'35
retrograde	11711 Oct 07 22:08	16°☾20'31		minimum elong	11718 Jul 07 04:47	24°☾07'10	12°12'20
min. Earth dist.	11711 Dec 26 06:51	15°☾15'14	38.43767 AU	max. Earth dist.	11718 Jul 09 15:06	24°☾11'13	41.95606 AU
opposition	11711 Dec 28 19:12	15°☾11'56	-11°00'06	morning rise	11718 Jul 16 04:06	24°☾22'06	
direct	11712 Mar 19 14:38	14°☾03'13		retrograde	11718 Oct 17 01:32	25°☾54'48	
evening set	11712 Jun 17 17:00	15°☾35'00		min. Earth dist.	11719 Jan 04 23:05	24°☾50'57	40.11933 AU
				opposition	11719 Jan 07 10:46	24°☾47'48	-12°55'14
conjunction	11712 Jun 28 14:06	15°☾53'42	-10°36'23	direct	11719 Mar 30 10:23	23°☾40'48	
minimum elong	11712 Jun 28 13:54	15°☾53'42	10°37'09	evening set	11719 Jun 30 03:16	25°☾12'11	
max. Earth dist.	11712 Jul 01 02:05	15°☾58'01	40.52758 AU				
morning rise	11712 Jul 09 10:57	16°☾12'24		conjunction	11719 Jul 08 18:18	25°☾26'28	-12°25'31
retrograde	11712 Oct 08 13:05	17°☾45'12		minimum elong	11719 Jul 08 18:09	25°☾26'28	12°26'14
min. Earth dist.	11712 Dec 27 01:06	16°☾40'05	38.68607 AU	max. Earth dist.	11719 Jul 11 05:33	25°☾30'34	42.18769 AU
opposition	11712 Dec 29 12:18	16°☾36'53	-11°18'18	morning rise	11719 Jul 17 09:16	25°☾40'45	
direct	11713 Mar 21 09:01	15°☾28'26		retrograde	11719 Oct 18 13:14	27°☾13'32	
evening set	11713 Jun 19 15:46	17°☾00'07		min. Earth dist.	11720 Jan 06 14:40	26°☾09'51	40.35216 AU
				opposition	11720 Jan 09 01:25	26°☾06'45	-13°09'20
conjunction	11713 Jun 30 05:29	17°☾18'12	-10°53'38	direct	11720 Mar 31 02:06	25°☾00'02	
minimum elong	11713 Jun 30 05:17	17°☾18'11	10°54'23	evening set	11720 Jul 01 00:35	26°☾31'26	
max. Earth dist.	11713 Jul 02 16:08	17°☾22'24	40.77247 AU				
morning rise	11713 Jul 10 19:09	17°☾36'17		conjunction	11720 Jul 09 07:13	26°☾45'04	-12°38'54
retrograde	11713 Oct 10 03:12	19°☾09'01		minimum elong	11720 Jul 09 07:03	26°☾45'04	12°39'37
min. Earth dist.	11713 Dec 28 16:50	18°☾04'11	38.93137 AU	max. Earth dist.	11720 Jul 11 17:53	26°☾49'07	42.41805 AU
opposition	11713 Dec 31 04:49	18°☾00'56	-11°35'56	morning rise	11720 Jul 17 13:47	26°☾58'43	
direct	11714 Mar 23 02:36	16°☾52'45		retrograde	11720 Oct 19 00:25	28°☾31'36	
evening set	11714 Jun 21 14:12	18°☾24'21		min. Earth dist.	11721 Jan 07 03:55	27°☾28'12	40.58340 AU
				opposition	11721 Jan 09 15:34	27°☾25'03	-13°22'52
conjunction	11714 Jul 01 20:37	18°☾41'48	-11°10'20	direct	11721 Apr 01 18:25	26°☾18'35	

evening set	11721 Jul 02 21:48	27°☾50'03		max. Earth dist.	11727 Jul 21 03:54	5°♄41'52	43.95424 AU
				morning rise	11727 Jul 24 09:34	5°♄47'02	
conjunction	11721 Jul 10 19:56	28°☾03'03 -12°51'45		retrograde	11727 Oct 28 12:00	7°♄21'01	
minimum elong	11721 Jul 10 19:48	28°☾03'02 12°52'28		min. Earth dist.	11728 Jan 17 03:24	6°♄18'48	42.11912 AU
max. Earth dist.	11721 Jul 13 06:41	28°☾07'04 42.64658 AU		opposition	11728 Jan 19 11:31	6°♄15'55	-14°43'11
morning rise	11721 Jul 18 18:08	28°☾16'03		direct	11728 Apr 10 17:04	5°♄11'01	
retrograde	11721 Oct 20 14:33	29°☾49'02		evening set	11728 Jul 14 03:03	6°♄43'24	
min. Earth dist.	11722 Jan 08 18:29	28°☾45'50 40.81272 AU					
opposition	11722 Jan 11 05:27	28°☾42'44 -13°35'51		conjunction	11728 Jul 19 06:29	6°♄51'34	-14°08'11
direct	11722 Apr 03 08:11	27°☾36'32		minimum elong	11728 Jul 19 06:22	6°♄51'34	14°08'51
evening set	11722 Jul 04 19:04	29°☾08'05		max. Earth dist.	11728 Jul 21 13:44	6°♄55'14	44.15901 AU
				morning rise	11728 Jul 24 09:55	6°♄59'44	
conjunction	11722 Jul 12 08:31	29°☾20'25 -13°04'05		retrograde	11728 Oct 29 01:48	8°♄33'57	
minimum elong	11722 Jul 12 08:22	29°☾20'24 13°04'48		min. Earth dist.	11729 Jan 17 15:38	7°♄31'52	42.32387 AU
max. Earth dist.	11722 Jul 14 19:27	29°☾24'26 42.87302 AU		opposition	11729 Jan 19 23:35	7°♄29'00	-14°52'45
morning rise	11722 Jul 19 21:52	29°☾32'46		direct	11729 Apr 12 03:04	6°♄24'17	
	11722 Aug 06 03:34	0°♄		evening set	11729 Jul 16 01:02	7°♄56'54	
retrograde	11722 Oct 22 03:57	1°♄05'54					
min. Earth dist.	11723 Jan 10 08:31	0°♄02'53 41.03946 AU		conjunction	11729 Jul 20 17:19	8°♄04'17	-14°17'18
opposition	11723 Jan 12 19:08	29°☾59'50 -13°48'19		minimum elong	11729 Jul 20 17:15	8°♄04'17	14°17'57
	11723 Jan 12 15:49	30°☾		max. Earth dist.	11729 Jul 23 01:16	8°♄07'58	44.36094 AU
direct	11723 Apr 04 21:05	28°☾53'53		morning rise	11729 Jul 25 09:34	8°♄11'40	
	11723 Jun 20 11:47	0°♄		retrograde	11729 Oct 30 12:17	9°♄46'10	
evening set	11723 Jul 06 16:09	0°♄25'32		min. Earth dist.	11730 Jan 19 04:19	8°♄44'10	42.52592 AU
				opposition	11730 Jan 21 11:13	8°♄41'22	-15°01'51
conjunction	11723 Jul 13 20:36	0°♄37'12 -13°15'56		direct	11730 Apr 13 15:13	7°♄36'49	
minimum elong	11723 Jul 13 20:29	0°♄37'12 13°16'38		evening set	11730 Jul 17 23:26	9°♄09'43	
max. Earth dist.	11723 Jul 16 06:28	0°♄41'08 43.09666 AU					
morning rise	11723 Jul 21 01:07	0°♄48'53		conjunction	11730 Jul 22 03:46	9°♄16'18	-14°25'57
retrograde	11723 Oct 23 18:18	2°♄22'10		minimum elong	11730 Jul 22 03:41	9°♄16'18	14°26'35
min. Earth dist.	11724 Jan 11 21:49	1°♄19'23 41.26327 AU		max. Earth dist.	11730 Jul 24 10:34	9°♄19'53	44.56062 AU
opposition	11724 Jan 14 08:37	1°♄16'20 -14°00'15		morning rise	11730 Jul 26 08:04	9°♄22'52	
direct	11724 Apr 05 08:39	0°♄10'38		retrograde	11730 Oct 31 21:58	10°♄57'41	
evening set	11724 Jul 07 13:21	1°♄42'24		min. Earth dist.	11731 Jan 20 14:54	9°♄55'54	42.72590 AU
				opposition	11731 Jan 22 22:43	9°♄53'04	-15°10'27
conjunction	11724 Jul 14 08:46	1°♄53'25 -13°27'17		direct	11731 Apr 15 02:04	8°♄48'41	
minimum elong	11724 Jul 14 08:38	1°♄53'24 13°27'59		evening set	11731 Jul 19 22:30	10°♄21'58	
max. Earth dist.	11724 Jul 16 19:13	1°♄57'21 43.31702 AU					
morning rise	11724 Jul 21 04:07	2°♄04'25		conjunction	11731 Jul 23 13:56	10°♄27'41	-14°34'08
retrograde	11724 Oct 24 04:59	3°♄37'51		minimum elong	11731 Jul 23 13:53	10°♄27'41	14°34'47
min. Earth dist.	11725 Jan 12 12:25	2°♄35'12 41.48339 AU		max. Earth dist.	11731 Jul 25 21:24	10°♄31'18	44.75827 AU
opposition	11725 Jan 14 21:43	2°♄32'14 -14°11'41		morning rise	11731 Jul 27 05:21	10°♄33'23	
direct	11725 Apr 06 22:33	1°♄26'46		retrograde	11731 Nov 02 06:22	12°♄08'38	
evening set	11725 Jul 09 10:45	2°♄58'40		min. Earth dist.	11732 Jan 22 03:24	11°♄06'56	42.92388 AU
				opposition	11732 Jan 24 10:07	11°♄04'10	-15°18'36
conjunction	11725 Jul 15 20:37	3°♄09'00 -13°38'11		direct	11732 Apr 15 15:05	10°♄00'00	
minimum elong	11725 Jul 15 20:31	3°♄08'59 13°38'53		evening set	11732 Jul 20 23:05	11°♄33'46	
max. Earth dist.	11725 Jul 18 05:29	3°♄12'49 43.53357 AU					
morning rise	11725 Jul 22 06:31	3°♄19'19		conjunction	11732 Jul 24 00:03	11°♄38'31	-14°41'53
retrograde	11725 Oct 25 15:35	4°♄52'55		minimum elong	11732 Jul 23 23:59	11°♄38'31	14°42'31
min. Earth dist.	11726 Jan 14 00:52	3°♄50'28 41.69941 AU		max. Earth dist.	11732 Jul 26 07:04	11°♄42'06	44.95404 AU
opposition	11726 Jan 16 10:33	3°♄47'30 -14°22'39		morning rise	11732 Jul 27 00:57	11°♄43'15	
direct	11726 Apr 08 12:01	2°♄42'14		retrograde	11732 Nov 02 15:12	13°♄19'01	
evening set	11726 Jul 11 08:01	4°♄14'17		min. Earth dist.	11733 Jan 22 13:50	12°♄17'32	43.11965 AU
				opposition	11733 Jan 24 20:57	12°♄14'45	-15°26'17
conjunction	11726 Jul 17 08:13	4°♄23'55 -13°48'38		direct	11733 Apr 17 03:31	11°♄10'47	
minimum elong	11726 Jul 17 08:06	4°♄23'54 13°49'18		evening set	11733 Jul 23 02:04	12°♄45'14	
max. Earth dist.	11726 Jul 19 16:54	4°♄27'42 43.74586 AU					
morning rise	11726 Jul 23 08:25	4°♄33'32		conjunction	11733 Jul 25 09:51	12°♄48'51	-14°49'12
retrograde	11726 Oct 27 01:48	6°♄07'20		minimum elong	11733 Jul 25 09:48	12°♄48'51	14°49'50
min. Earth dist.	11727 Jan 15 15:02	5°♄04'58 41.91122 AU		morning rise	11733 Jul 27 17:37	12°♄52'27	
opposition	11727 Jan 17 23:15	5°♄02'04 -14°33'09		max. Earth dist.	11733 Jul 27 16:11	12°♄52'22	45.14747 AU
direct	11727 Apr 10 02:42	3°♄57'01		retrograde	11733 Nov 04 03:00	14°♄28'57	
evening set	11727 Jul 13 05:35	5°♄29'13		min. Earth dist.	11734 Jan 24 01:16	13°♄27'37	43.31302 AU
				opposition	11734 Jan 26 07:49	13°♄24'53	-15°33'31
conjunction	11727 Jul 18 19:36	5°♄38'07 -13°58'38		direct	11734 Apr 18 13:29	12°♄21'08	
minimum elong	11727 Jul 18 19:31	5°♄38'06 13°59'19		evening set	11734 Jul 25 11:41	13°♄56'42	

conjunction	11734 Jul 26 19:32	13°♏58'45	-14°56'06	opposition	11742 Feb 04 15:19	22°♏31'04	-16°17'09
minimum elong	11734 Jul 26 19:30	13°♏58'45	14°56'42	direct	11742 Apr 27 19:14	21°♏28'44	
morning rise	11734 Jul 28 03:22	14°♏00'48					
max. Earth dist.	11734 Jul 29 02:26	14°♏02'18	45.33830 AU	conjunction	11742 Aug 04 19:06	23°♏03'09	-15°37'42
	11734 Sep 07 10:43	15°♏		minimum elong	11742 Aug 04 19:08	23°♏03'09	15°38'14
retrograde	11734 Nov 05 13:37	15°♏38'28		max. Earth dist.	11742 Aug 06 19:58	23°♏06'12	46.72080 AU
	11735 Jan 06 01:30	15°♏♏		retrograde	11742 Nov 14 11:32	24°♏39'51	
min. Earth dist.	11735 Jan 25 12:42	14°♏37'17	43.50333 AU	min. Earth dist.	11743 Feb 03 23:22	23°♏39'37	44.87664 AU
opposition	11735 Jan 27 18:28	14°♏34'35	-15°40'19	opposition	11743 Feb 06 00:17	23°♏37'13	-16°20'56
direct	11735 Apr 19 23:21	13°♏31'04		direct	11743 Apr 29 04:20	22°♏35'02	
	11735 Jul 22 20:03	15°♏					
conjunction	11735 Jul 28 05:00	15°♏08'17	-15°02'34	conjunction	11743 Aug 06 03:11	24°♏09'04	-15°41'17
minimum elong	11735 Jul 28 04:58	15°♏08'17	15°03'11	minimum elong	11743 Aug 06 03:13	24°♏09'04	15°41'48
max. Earth dist.	11735 Jul 30 10:20	15°♏11'42	45.52598 AU	max. Earth dist.	11743 Aug 08 03:36	24°♏12'05	46.87698 AU
retrograde	11735 Nov 07 01:14	16°♏47'36		retrograde	11743 Nov 15 19:20	25°♏45'26	
min. Earth dist.	11736 Jan 26 22:54	15°♏46'37	43.69028 AU	min. Earth dist.	11744 Feb 05 09:22	24°♏45'16	45.03221 AU
opposition	11736 Jan 29 04:52	15°♏43'56	-15°46'42	opposition	11744 Feb 07 09:11	24°♏42'56	-16°24'19
	11736 Mar 09 12:31	15°♏♏		direct	11744 Apr 29 15:14	23°♏40'54	
direct	11736 Apr 20 06:55	14°♏40'37		conjunction	11744 Aug 06 11:11	25°♏14'33	-15°44'30
	11736 May 31 04:18	15°♏		minimum elong	11744 Aug 06 11:14	25°♏14'34	15°45'01
conjunction	11736 Jul 28 14:25	16°♏17'26	-15°08'40	max. Earth dist.	11744 Aug 08 11:52	25°♏17'35	47.03065 AU
minimum elong	11736 Jul 28 14:24	16°♏17'26	15°09'15	retrograde	11744 Nov 16 03:16	26°♏50'36	
max. Earth dist.	11736 Jul 30 19:56	16°♏20'51	45.70988 AU	min. Earth dist.	11745 Feb 05 18:17	25°♏50'34	45.18491 AU
retrograde	11736 Nov 07 09:14	17°♏56'23		opposition	11745 Feb 07 17:47	25°♏48'14	-16°27'21
min. Earth dist.	11737 Jan 27 11:06	16°♏55'30	43.87306 AU	direct	11745 May 01 01:46	24°♏46'22	
opposition	11737 Jan 29 15:11	16°♏52'54	-15°52'42	conjunction	11745 Aug 07 18:54	26°♏19'41	-15°47'21
direct	11737 Apr 21 17:53	15°♏49'47		minimum elong	11745 Aug 07 18:57	26°♏19'41	15°47'50
conjunction	11737 Jul 29 23:44	17°♏26'12	-15°14'24	max. Earth dist.	11745 Aug 09 18:03	26°♏22'36	47.18146 AU
minimum elong	11737 Jul 29 23:43	17°♏26'12	15°14'58	retrograde	11745 Nov 17 14:44	27°♏55'24	
max. Earth dist.	11737 Aug 01 04:01	17°♏29'33	45.88946 AU	min. Earth dist.	11746 Feb 07 02:45	26°♏55'30	45.33473 AU
retrograde	11737 Nov 08 16:03	19°♏04'47		opposition	11746 Feb 09 02:13	26°♏53'12	-16°30'00
min. Earth dist.	11738 Jan 28 21:00	18°♏04'05	44.05112 AU	direct	11746 May 02 07:12	25°♏51'28	
opposition	11738 Jan 31 01:05	18°♏01'29	-15°58'19	conjunction	11746 Aug 09 02:39	27°♏24'28	-15°49'52
direct	11738 Apr 23 06:32	16°♏58'33		minimum elong	11746 Aug 09 02:43	27°♏24'28	15°50'22
conjunction	11738 Jul 31 08:51	18°♏34'34	-15°19'46	max. Earth dist.	11746 Aug 11 02:15	27°♏27'24	47.32921 AU
minimum elong	11738 Jul 31 08:51	18°♏34'34	15°20'20	retrograde	11746 Nov 18 23:09	28°♏59'53	
max. Earth dist.	11738 Aug 02 12:01	18°♏37'50	46.06418 AU	min. Earth dist.	11747 Feb 08 12:49	28°♏00'03	45.48116 AU
retrograde	11738 Nov 10 02:44	20°♏12'47		opposition	11747 Feb 10 10:41	27°♏57'49	-16°32'19
min. Earth dist.	11739 Jan 30 08:17	19°♏12'09	44.22439 AU	direct	11747 May 03 15:01	26°♏56'16	
opposition	11739 Feb 01 11:06	19°♏09'38	-16°03'35	conjunction	11747 Aug 10 10:07	28°♏28'56	-15°52'03
direct	11739 Apr 24 17:07	18°♏06'52		minimum elong	11747 Aug 10 10:12	28°♏28'56	15°52'31
conjunction	11739 Aug 01 17:45	19°♏42'29	-15°24'47	max. Earth dist.	11747 Aug 12 08:28	28°♏31'47	47.47350 AU
minimum elong	11739 Aug 01 17:44	19°♏42'29	15°25'21		11747 Nov 01 01:27	0°♏	
max. Earth dist.	11739 Aug 03 20:49	19°♏45'43	46.23424 AU	retrograde	11747 Nov 20 04:47	0°♏04'03	
retrograde	11739 Nov 11 11:54	21°♏20'19			11747 Dec 09 12:02	30°♏♏	
min. Earth dist.	11740 Jan 31 18:55	20°♏19'46	44.39289 AU	min. Earth dist.	11748 Feb 09 20:47	29°♏04'22	45.62377 AU
opposition	11740 Feb 02 20:47	20°♏17'18	-16°08'28	opposition	11748 Feb 11 18:54	29°♏02'08	-16°34'17
direct	11740 Apr 25 03:21	19°♏14'41		direct	11748 May 03 22:51	28°♏00'43	
conjunction	11740 Aug 02 02:23	20°♏49'53	-15°29'27	conjunction	11748 Aug 10 17:39	29°♏33'06	-15°53'55
minimum elong	11740 Aug 02 02:25	20°♏49'53	15°30'00	minimum elong	11748 Aug 10 17:43	29°♏33'06	15°54'23
max. Earth dist.	11740 Aug 04 03:50	20°♏52'59	46.39990 AU	max. Earth dist.	11748 Aug 12 15:13	29°♏35'53	47.61354 AU
retrograde	11740 Nov 11 22:33	22°♏27'20			11748 Aug 29 06:57	0°♏	
min. Earth dist.	11741 Feb 01 04:17	21°♏26'54	44.55743 AU	retrograde	11748 Nov 20 11:08	1°♏07'55	
opposition	11741 Feb 03 06:04	21°♏24'27	-16°13'00	min. Earth dist.	11749 Feb 10 06:40	0°♏08'17	45.76193 AU
direct	11741 Apr 26 10:13	20°♏21'58		opposition	11749 Feb 12 02:58	0°♏06'08	-16°35'57
conjunction	11741 Aug 03 10:56	21°♏56'46	-15°33'46		11749 Feb 17 09:58	30°♏♏	
minimum elong	11741 Aug 03 10:57	21°♏56'46	15°34'18	direct	11749 May 05 08:08	29°♏04'53	
max. Earth dist.	11741 Aug 05 12:46	21°♏59'53	46.56186 AU		11749 Jul 17 02:59	0°♏	
retrograde	11741 Nov 13 05:40	23°♏33'50		conjunction	11749 Aug 12 01:12	0°♏36'56	-15°55'29
min. Earth dist.	11742 Feb 02 14:59	22°♏33'27	44.71849 AU	minimum elong	11749 Aug 12 01:17	0°♏36'57	15°55'56
				max. Earth dist.	11749 Aug 13 22:13	0°♏39'42	47.74896 AU

retrograde	11749 Nov 21 17:41	2° $\mathring{M}$ 11'29		direct	11758 May 15 00:50	8° $\mathring{M}$ 25'59	
min. Earth dist.	11750 Feb 11 15:20	1° $\mathring{M}$ 11'56	45.89495 AU				
opposition	11750 Feb 13 10:55	1° $\mathring{M}$ 09'50	-16°37'19	conjunction	11758 Aug 21 13:25	9° $\mathring{M}$ 55'34	-15°56'34
direct	11750 May 06 18:08	0° $\mathring{M}$ 08'42		minimum elong	11758 Aug 21 13:34	9° $\mathring{M}$ 55'34	15°56'54
				max. Earth dist.	11758 Aug 23 03:35	9° $\mathring{M}$ 57'50	48.77416 AU
conjunction	11750 Aug 13 08:22	1° $\mathring{M}$ 40'27	-15°56'46	retrograde	11758 Dec 01 07:24	11° $\mathring{M}$ 27'48	
minimum elong	11750 Aug 13 08:26	1° $\mathring{M}$ 40'27	15°57'13	min. Earth dist.	11759 Feb 21 15:10	10° $\mathring{M}$ 28'48	46.90369 AU
max. Earth dist.	11750 Aug 15 03:25	1° $\mathring{M}$ 43'04	47.87911 AU	opposition	11759 Feb 23 03:54	10° $\mathring{M}$ 27'04	-16°36'10
retrograde	11750 Nov 23 03:18	3° $\mathring{M}$ 14'43		direct	11759 May 16 08:06	9° $\mathring{M}$ 26'57	
min. Earth dist.	11751 Feb 13 00:04	2° $\mathring{M}$ 15'13	46.02275 AU				
opposition	11751 Feb 14 18:52	2° $\mathring{M}$ 13'10	-16°38'24	conjunction	11759 Aug 22 19:39	10° $\mathring{M}$ 56'20	-15°55'13
direct	11751 May 08 00:56	1° $\mathring{M}$ 12'09		minimum elong	11759 Aug 22 19:48	10° $\mathring{M}$ 56'20	15°55'33
				max. Earth dist.	11759 Aug 24 09:29	10° $\mathring{M}$ 58'35	48.87173 AU
conjunction	11751 Aug 14 15:38	2° $\mathring{M}$ 43'35	-15°57'47	retrograde	11759 Dec 02 11:49	12° $\mathring{M}$ 28'23	
minimum elong	11751 Aug 14 15:45	2° $\mathring{M}$ 43'36	15°58'12	min. Earth dist.	11760 Feb 22 21:55	11° $\mathring{M}$ 29'30	46.99902 AU
max. Earth dist.	11751 Aug 16 10:43	2° $\mathring{M}$ 46'12	48.00409 AU	opposition	11760 Feb 24 10:22	11° $\mathring{M}$ 27'46	-16°34'31
retrograde	11751 Nov 24 10:52	4° $\mathring{M}$ 17'33		direct	11760 May 16 16:44	10° $\mathring{M}$ 27'46	
min. Earth dist.	11752 Feb 14 09:28	3° $\mathring{M}$ 18'04	46.14537 AU				
opposition	11752 Feb 16 02:33	3° $\mathring{M}$ 16'06	-16°39'11	conjunction	11760 Aug 23 01:43	11° $\mathring{M}$ 56'57	-15°53'35
direct	11752 May 08 07:53	2° $\mathring{M}$ 15'11		minimum elong	11760 Aug 23 01:52	11° $\mathring{M}$ 56'57	15°53'54
				max. Earth dist.	11760 Aug 24 13:49	11° $\mathring{M}$ 59'05	48.96525 AU
conjunction	11752 Aug 14 22:35	3° $\mathring{M}$ 46'19	-15°58'30	retrograde	11760 Dec 02 20:11	13° $\mathring{M}$ 28'49	
minimum elong	11752 Aug 14 22:40	3° $\mathring{M}$ 46'19	15°58'55	min. Earth dist.	11761 Feb 23 05:33	12° $\mathring{M}$ 29'59	47.09010 AU
max. Earth dist.	11752 Aug 16 15:59	3° $\mathring{M}$ 48'49	48.12432 AU	opposition	11761 Feb 24 16:54	12° $\mathring{M}$ 28'19	-16°32'37
retrograde	11752 Nov 24 17:25	5° $\mathring{M}$ 19'59		direct	11761 May 17 23:12	11° $\mathring{M}$ 28'27	
min. Earth dist.	11753 Feb 14 16:45	4° $\mathring{M}$ 20'35	46.26349 AU				
opposition	11753 Feb 16 09:58	4° $\mathring{M}$ 18'37	-16°39'41	conjunction	11761 Aug 24 07:53	12° $\mathring{M}$ 57'25	-15°51'42
direct	11753 May 09 13:44	3° $\mathring{M}$ 17'48		minimum elong	11761 Aug 24 08:02	12° $\mathring{M}$ 57'25	15°52'00
				max. Earth dist.	11761 Aug 25 19:56	12° $\mathring{M}$ 59'32	49.05412 AU
conjunction	11753 Aug 16 05:22	4° $\mathring{M}$ 48'38	-15°58'56	retrograde	11761 Dec 04 04:03	14° $\mathring{M}$ 29'06	
minimum elong	11753 Aug 16 05:30	4° $\mathring{M}$ 48'39	15°59'20	opposition	11762 Feb 25 23:19	13° $\mathring{M}$ 28'41	-16°30'28
max. Earth dist.	11753 Aug 17 22:16	4° $\mathring{M}$ 51'06	48.24027 AU	min. Earth dist.	11762 Feb 24 13:33	13° $\mathring{M}$ 30'17	47.17610 AU
retrograde	11753 Nov 25 22:38	6° $\mathring{M}$ 22'01		direct	11762 May 19 05:20	12° $\mathring{M}$ 28'55	
min. Earth dist.	11754 Feb 16 01:46	5° $\mathring{M}$ 22'38	46.37778 AU				
opposition	11754 Feb 17 17:19	5° $\mathring{M}$ 20'44	-16°39'53	conjunction	11762 Aug 25 13:55	13° $\mathring{M}$ 57'41	-15°49'35
direct	11754 May 10 22:37	4° $\mathring{M}$ 20'01		minimum elong	11762 Aug 25 14:06	13° $\mathring{M}$ 57'41	15°49'52
				max. Earth dist.	11762 Aug 26 23:59	13° $\mathring{M}$ 59'41	49.13796 AU
conjunction	11754 Aug 17 12:06	5° $\mathring{M}$ 50'34	-15°59'04	retrograde	11762 Dec 05 12:20	15° $\mathring{M}$ 29'09	
minimum elong	11754 Aug 17 12:12	5° $\mathring{M}$ 50'35	15°59'27	min. Earth dist.	11763 Feb 25 20:04	14° $\mathring{M}$ 30'25	47.25693 AU
max. Earth dist.	11754 Aug 19 04:54	5° $\mathring{M}$ 53'02	48.35289 AU	opposition	11763 Feb 27 05:41	14° $\mathring{M}$ 28'50	-16°28'03
retrograde	11754 Nov 27 03:32	7° $\mathring{M}$ 23'42		direct	11763 May 20 08:08	13° $\mathring{M}$ 29'08	
min. Earth dist.	11755 Feb 17 08:52	6° $\mathring{M}$ 24'25	46.48880 AU				
opposition	11755 Feb 19 00:28	6° $\mathring{M}$ 22'31	-16°39'45	conjunction	11763 Aug 26 19:49	14° $\mathring{M}$ 57'41	-15°47'14
direct	11755 May 12 08:35	5° $\mathring{M}$ 21'54		minimum elong	11763 Aug 26 19:59	14° $\mathring{M}$ 57'42	15°47'30
				max. Earth dist.	11763 Aug 28 05:05	14° $\mathring{M}$ 59'39	49.21650 AU
conjunction	11755 Aug 18 18:28	6° $\mathring{M}$ 52'11	-15°58'54	retrograde	11763 Dec 06 17:01	16° $\mathring{M}$ 28'57	
minimum elong	11755 Aug 18 18:36	6° $\mathring{M}$ 52'11	15°59'17	min. Earth dist.	11764 Feb 27 04:33	15° $\mathring{M}$ 30'10	47.33257 AU
max. Earth dist.	11755 Aug 20 09:51	6° $\mathring{M}$ 54'33	48.46248 AU	opposition	11764 Feb 28 12:02	15° $\mathring{M}$ 28'41	-16°25'25
retrograde	11755 Nov 28 13:20	8° $\mathring{M}$ 25'04		direct	11764 May 20 14:05	14° $\mathring{M}$ 29'03	
min. Earth dist.	11756 Feb 18 16:25	7° $\mathring{M}$ 25'51	46.59701 AU				
opposition	11756 Feb 20 07:34	7° $\mathring{M}$ 23'59	-16°39'19	conjunction	11764 Aug 27 01:45	15° $\mathring{M}$ 57'23	-15°44'38
direct	11756 May 12 14:18	6° $\mathring{M}$ 23'30		minimum elong	11764 Aug 27 01:56	15° $\mathring{M}$ 57'23	15°44'54
				max. Earth dist.	11764 Aug 28 10:25	15° $\mathring{M}$ 59'18	49.29022 AU
conjunction	11756 Aug 19 01:01	7° $\mathring{M}$ 53'31	-15°58'25	retrograde	11764 Dec 06 18:50	17° $\mathring{M}$ 28'26	
minimum elong	11756 Aug 19 01:08	7° $\mathring{M}$ 53'32	15°58'47	min. Earth dist.	11765 Feb 27 10:39	16° $\mathring{M}$ 29'40	47.40353 AU
max. Earth dist.	11756 Aug 20 16:51	7° $\mathring{M}$ 55'54	48.56927 AU	opposition	11765 Feb 28 17:55	16° $\mathring{M}$ 28'12	-16°22'32
retrograde	11756 Nov 28 21:12	9° $\mathring{M}$ 26'11		direct	11765 May 21 23:31	15° $\mathring{M}$ 28'37	
min. Earth dist.	11757 Feb 19 00:25	8° $\mathring{M}$ 27'01	46.70226 AU				
opposition	11757 Feb 20 14:20	8° $\mathring{M}$ 25'13	-16°38'34	conjunction	11765 Aug 28 07:23	16° $\mathring{M}$ 56'44	-15°41'47
direct	11757 May 13 20:34	7° $\mathring{M}$ 24'50		minimum elong	11765 Aug 28 07:33	16° $\mathring{M}$ 56'44	15°42'02
				max. Earth dist.	11765 Aug 29 14:17	16° $\mathring{M}$ 58'33	49.35960 AU
conjunction	11757 Aug 20 07:19	8° $\mathring{M}$ 54'38	-15°57'38	retrograde	11765 Dec 08 01:25	18° $\mathring{M}$ 27'35	
minimum elong	11757 Aug 20 07:27	8° $\mathring{M}$ 54'39	15°58'00	opposition	11766 Mar 01 23:58	17° $\mathring{M}$ 27'24	-16°19'23
max. Earth dist.	11757 Aug 21 21:51	8° $\mathring{M}$ 56'56	48.67328 AU	min. Earth dist.	11766 Feb 28 17:40	17° $\mathring{M}$ 28'49	47.47063 AU
retrograde	11757 Nov 30 03:00	10° $\mathring{M}$ 27'04		direct	11766 May 23 06:44	16° $\mathring{M}$ 27'52	
min. Earth dist.	11758 Feb 20 06:48	9° $\mathring{M}$ 28'02	46.80460 AU				
opposition	11758 Feb 21 21:04	9° $\mathring{M}$ 26'13	-16°37'31	conjunction	11766 Aug 29 12:55	17° $\mathring{M}$ 55'46	-15°38'41

minimum elong	11766 Aug 29 13:07	17° $\mathring{M}$ 55'47	15°38'56	min. Earth dist.	11775 Mar 10 03:19	26° $\mathring{M}$ 13'17	47.92074 AU
max. Earth dist.	11766 Aug 30 20:17	17° $\mathring{M}$ 57'36	49.42539 AU	opposition	11775 Mar 11 02:23	26° $\mathring{M}$ 12'13	-15°39'11
retrograde	11766 Dec 09 07:57	19° $\mathring{M}$ 26'26		direct	11775 Jun 01 05:39	25° $\mathring{M}$ 13'22	
min. Earth dist.	11767 Mar 02 00:40	18° $\mathring{M}$ 27'40	47.53425 AU				
opposition	11767 Mar 03 05:55	18° $\mathring{M}$ 26'17	-16°15'57	conjunction	11775 Sep 07 12:54	26° $\mathring{M}$ 40'04	-14°59'20
direct	11767 May 24 13:31	17° $\mathring{M}$ 26'49		minimum elong	11775 Sep 07 13:08	26° $\mathring{M}$ 40'05	14°59'28
				evening set	11775 Sep 07 00:10	26° $\mathring{M}$ 39'20	
conjunction	11767 Aug 30 18:23	18° $\mathring{M}$ 54'31	-15°35'19	morning rise	11775 Sep 08 02:07	26° $\mathring{M}$ 40'50	
minimum elong	11767 Aug 30 18:33	18° $\mathring{M}$ 54'32	15°35'33	max. Earth dist.	11775 Sep 08 11:17	26° $\mathring{M}$ 41'22	49.86399 AU
max. Earth dist.	11767 Sep 01 00:20	18° $\mathring{M}$ 56'16	49.48810 AU	retrograde	11775 Dec 18 08:40	28° $\mathring{M}$ 09'39	
retrograde	11767 Dec 10 14:47	20° $\mathring{M}$ 25'00		min. Earth dist.	11776 Mar 10 10:15	27° $\mathring{M}$ 11'08	47.94810 AU
min. Earth dist.	11768 Mar 02 06:05	19° $\mathring{M}$ 26'18	47.59495 AU	opposition	11776 Mar 11 07:43	27° $\mathring{M}$ 10'08	-15°33'33
opposition	11768 Mar 03 11:36	19° $\mathring{M}$ 24'55	-16°12'16	direct	11776 Jun 01 12:35	26° $\mathring{M}$ 11'19	
direct	11768 May 24 16:43	18° $\mathring{M}$ 25'30		evening set	11776 Sep 05 22:49	27° $\mathring{M}$ 35'25	
conjunction	11768 Aug 30 23:49	19° $\mathring{M}$ 53'03	-15°31'41	conjunction	11776 Sep 07 18:11	27° $\mathring{M}$ 37'55	-14°53'51
minimum elong	11768 Aug 31 00:01	19° $\mathring{M}$ 53'03	15°31'55	minimum elong	11776 Sep 07 18:24	27° $\mathring{M}$ 37'56	14°53'58
max. Earth dist.	11768 Sep 01 05:24	19° $\mathring{M}$ 54'46	49.54783 AU	morning rise	11776 Sep 09 14:01	27° $\mathring{M}$ 40'26	
retrograde	11768 Dec 10 19:22	21° $\mathring{M}$ 23'22		max. Earth dist.	11776 Sep 08 16:29	27° $\mathring{M}$ 39'12	49.88961 AU
opposition	11769 Mar 04 17:22	20° $\mathring{M}$ 23'20	-16°08'18	retrograde	11776 Dec 18 15:03	29° $\mathring{M}$ 07'23	
min. Earth dist.	11769 Mar 03 13:26	20° $\mathring{M}$ 24'39	47.65267 AU	opposition	11777 Mar 12 12:57	28° $\mathring{M}$ 07'53	-15°27'42
direct	11769 May 25 21:40	19° $\mathring{M}$ 24'00		min. Earth dist.	11777 Mar 11 16:49	28° $\mathring{M}$ 08'50	47.97035 AU
				direct	11777 Jun 02 19:02	27° $\mathring{M}$ 09'06	
conjunction	11769 Sep 01 05:10	20° $\mathring{M}$ 51'23	-15°27'47	evening set	11777 Sep 06 10:42	28° $\mathring{M}$ 32'07	
minimum elong	11769 Sep 01 05:22	20° $\mathring{M}$ 51'24	15°27'59				
max. Earth dist.	11769 Sep 02 10:28	20° $\mathring{M}$ 53'06	49.60474 AU	conjunction	11777 Sep 08 23:10	28° $\mathring{M}$ 35'35	-14°48'08
retrograde	11769 Dec 11 22:07	22° $\mathring{M}$ 21'34		minimum elong	11777 Sep 08 23:24	28° $\mathring{M}$ 35'36	14°48'14
opposition	11770 Mar 05 22:54	21° $\mathring{M}$ 21'37	-16°04'03	max. Earth dist.	11777 Sep 09 19:44	28° $\mathring{M}$ 36'46	49.91059 AU
min. Earth dist.	11770 Mar 04 18:48	21° $\mathring{M}$ 22'56	47.70732 AU	morning rise	11777 Sep 11 12:11	28° $\mathring{M}$ 39'05	
direct	11770 May 27 04:17	20° $\mathring{M}$ 22'22			11777 Nov 28 02:09	0° $\mathring{A}$	
				retrograde	11777 Dec 19 22:28	0° $\mathring{A}$ 04'56	
conjunction	11770 Sep 02 10:24	21° $\mathring{M}$ 49'37	-15°23'38		11778 Jan 10 18:07	30° $\mathring{R}$ $\mathring{M}$	
minimum elong	11770 Sep 02 10:36	21° $\mathring{M}$ 49'38	15°23'50	opposition	11778 Mar 13 18:04	29° $\mathring{M}$ 05'28	-15°21'38
max. Earth dist.	11770 Sep 03 14:14	21° $\mathring{M}$ 51'14	49.65852 AU	min. Earth dist.	11778 Mar 12 22:04	29° $\mathring{M}$ 06'24	47.98836 AU
retrograde	11770 Dec 13 04:52	23° $\mathring{M}$ 19'41		direct	11778 Jun 03 21:48	28° $\mathring{M}$ 06'43	
min. Earth dist.	11771 Mar 06 01:33	22° $\mathring{M}$ 21'05	47.75883 AU	evening set	11778 Sep 07 01:59	29° $\mathring{M}$ 28'50	
opposition	11771 Mar 07 04:35	22° $\mathring{M}$ 19'49	-15°59'33				
direct	11771 May 28 10:05	21° $\mathring{M}$ 20'39		conjunction	11778 Sep 10 04:11	29° $\mathring{M}$ 33'05	-14°42'12
				minimum elong	11778 Sep 10 04:24	29° $\mathring{M}$ 33'06	14°42'16
conjunction	11771 Sep 03 15:43	22° $\mathring{M}$ 47'46	-15°19'13	max. Earth dist.	11778 Sep 11 00:09	29° $\mathring{M}$ 34'14	49.92753 AU
minimum elong	11771 Sep 03 15:55	22° $\mathring{M}$ 47'47	15°19'23	morning rise	11778 Sep 13 06:56	29° $\mathring{M}$ 37'22	
max. Earth dist.	11771 Sep 04 19:47	22° $\mathring{M}$ 49'24	49.70890 AU		11778 Sep 29 23:58	0° $\mathring{A}$	
retrograde	11771 Dec 14 11:18	24° $\mathring{M}$ 17'44		retrograde	11778 Dec 21 02:46	1° $\mathring{A}$ 02'20	
min. Earth dist.	11772 Mar 06 08:12	23° $\mathring{M}$ 19'10	47.80647 AU	opposition	11779 Mar 14 23:17	0° $\mathring{A}$ 02'53	-15°15'19
opposition	11772 Mar 07 10:07	23° $\mathring{M}$ 17'58	-15°54'48	min. Earth dist.	11779 Mar 14 04:58	0° $\mathring{A}$ 03'44	48.00265 AU
direct	11772 May 28 16:21	22° $\mathring{M}$ 18'54			11779 Mar 17 13:26	30° $\mathring{R}$ $\mathring{M}$	
				direct	11779 Jun 05 01:23	29° $\mathring{M}$ 04'09	
conjunction	11772 Sep 03 21:01	23° $\mathring{M}$ 45'54	-15°14'35		11779 Aug 19 19:12	0° $\mathring{A}$	
minimum elong	11772 Sep 03 21:13	23° $\mathring{M}$ 45'55	15°14'44	evening set	11779 Sep 07 19:08	0° $\mathring{A}$ 25'30	
max. Earth dist.	11772 Sep 04 23:15	23° $\mathring{M}$ 47'25	49.75526 AU				
retrograde	11772 Dec 14 19:17	25° $\mathring{M}$ 15'46		conjunction	11779 Sep 11 09:09	0° $\mathring{A}$ 30'26	-14°36'01
opposition	11773 Mar 08 15:25	24° $\mathring{M}$ 16'05	-15°49'49	minimum elong	11779 Sep 11 09:23	0° $\mathring{A}$ 30'27	14°36'06
min. Earth dist.	11773 Mar 07 13:53	24° $\mathring{M}$ 17'16	47.84979 AU	max. Earth dist.	11779 Sep 12 04:49	0° $\mathring{A}$ 31'34	49.94114 AU
direct	11773 May 29 18:11	23° $\mathring{M}$ 17'06		morning rise	11779 Sep 14 23:45	0° $\mathring{A}$ 35'24	
				retrograde	11779 Dec 22 04:23	1° $\mathring{A}$ 59'35	
conjunction	11773 Sep 05 02:24	24° $\mathring{M}$ 44'02	-15°09'42	min. Earth dist.	11780 Mar 14 09:49	1° $\mathring{A}$ 01'01	48.01359 AU
minimum elong	11773 Sep 05 02:37	24° $\mathring{M}$ 44'02	15°09'51	opposition	11780 Mar 15 04:16	1° $\mathring{A}$ 00'10	-15°08'46
max. Earth dist.	11773 Sep 06 03:49	24° $\mathring{M}$ 45'30	49.79680 AU	direct	11780 Jun 05 06:49	0° $\mathring{A}$ 01'27	
retrograde	11773 Dec 16 01:00	26° $\mathring{M}$ 13'47		evening set	11780 Sep 07 13:17	1° $\mathring{A}$ 22'06	
opposition	11774 Mar 09 20:59	25° $\mathring{M}$ 14'11	-15°44'36				
min. Earth dist.	11774 Mar 08 21:38	25° $\mathring{M}$ 15'16	47.88802 AU	conjunction	11780 Sep 11 14:03	1° $\mathring{A}$ 27'39	-14°29'36
direct	11774 May 30 21:48	24° $\mathring{M}$ 15'17		minimum elong	11780 Sep 11 14:16	1° $\mathring{A}$ 27'40	14°29'39
				max. Earth dist.	11780 Sep 12 08:06	1° $\mathring{A}$ 28'41	49.95147 AU
conjunction	11774 Sep 06 07:39	25° $\mathring{M}$ 42'06	-15°04'38	morning rise	11780 Sep 15 15:29	1° $\mathring{A}$ 33'14	
minimum elong	11774 Sep 06 07:51	25° $\mathring{M}$ 42'06	15°04'46	retrograde	11780 Dec 22 09:28	2° $\mathring{A}$ 56'44	
max. Earth dist.	11774 Sep 07 08:10	25° $\mathring{M}$ 43'31	49.83317 AU	opposition	11781 Mar 16 09:13	1° $\mathring{A}$ 57'20	-15°01'57
retrograde	11774 Dec 17 03:06	27° $\mathring{M}$ 11'46		min. Earth dist.	11781 Mar 15 15:56	1° $\mathring{A}$ 58'08	48.02148 AU

direct	11781 Jun 06 12:46	0° <u>♁</u> 58'39	retrograde	11787 Dec 30 00:23	9° <u>♁</u> 35'49
evening set	11781 Sep 08 08:19	2° <u>♁</u> 18'40	opposition	11788 Mar 22 19:49	8° <u>♁</u> 36'33 -14°07'52
			min. Earth dist.	11788 Mar 22 09:01	8° <u>♁</u> 37'03 47.96789 AU
conjunction	11781 Sep 12 19:02	2° <u>♁</u> 24'46 -14°22'57	direct	11788 Jun 12 22:33	7° <u>♁</u> 38'01
minimum elong	11781 Sep 12 19:16	2° <u>♁</u> 24'47 14°23'01	evening set	11788 Sep 12 09:32	8° <u>♁</u> 54'32
max. Earth dist.	11781 Sep 13 13:22	2° <u>♁</u> 25'49 49.95878 AU			
morning rise	11781 Sep 17 06:25	2° <u>♁</u> 30'56	conjunction	11788 Sep 19 05:35	9° <u>♁</u> 03'52 -13°30'12
retrograde	11781 Dec 23 14:19	3° <u>♁</u> 53'49	minimum elong	11788 Sep 19 05:50	9° <u>♁</u> 03'53 13°30'09
opposition	11782 Mar 17 14:13	2° <u>♁</u> 54'26 -14°54'54	max. Earth dist.	11788 Sep 19 15:53	9° <u>♁</u> 04'27 49.89716 AU
min. Earth dist.	11782 Mar 16 21:41	2° <u>♁</u> 55'12 48.02616 AU	morning rise	11788 Sep 26 02:37	9° <u>♁</u> 13'16
direct	11782 Jun 07 20:03	1° <u>♁</u> 55'47	retrograde	11788 Dec 30 05:26	10° <u>♁</u> 32'39
evening set	11782 Sep 09 03:45	3° <u>♁</u> 15'13	opposition	11789 Mar 24 00:37	9° <u>♁</u> 33'22 -13°59'18
			min. Earth dist.	11789 Mar 23 15:51	9° <u>♁</u> 33'47 47.94047 AU
conjunction	11782 Sep 13 23:44	3° <u>♁</u> 21'51 -14°16'04	direct	11789 Jun 14 02:11	8° <u>♁</u> 34'49
minimum elong	11782 Sep 13 23:58	3° <u>♁</u> 21'51 14°16'05	evening set	11789 Sep 13 07:25	9° <u>♁</u> 50'54
max. Earth dist.	11782 Sep 14 16:35	3° <u>♁</u> 22'48 49.96302 AU			
morning rise	11782 Sep 18 20:28	3° <u>♁</u> 28'32	conjunction	11789 Sep 20 10:31	10° <u>♁</u> 00'39 -13°21'51
retrograde	11782 Dec 24 22:39	4° <u>♁</u> 50'50	minimum elong	11789 Sep 20 10:45	10° <u>♁</u> 00'39 13°21'47
opposition	11783 Mar 18 19:12	3° <u>♁</u> 51'29 -14°47'37	max. Earth dist.	11789 Sep 20 20:16	10° <u>♁</u> 01'12 49.86880 AU
min. Earth dist.	11783 Mar 18 02:45	3° <u>♁</u> 52'15 48.02766 AU	morning rise	11789 Sep 27 14:33	10° <u>♁</u> 10'26
direct	11783 Jun 08 22:19	2° <u>♁</u> 52'52	retrograde	11789 Dec 31 07:56	11° <u>♁</u> 29'24
evening set	11783 Sep 09 23:45	4° <u>♁</u> 11'46	opposition	11790 Mar 25 05:21	10° <u>♁</u> 30'05 -13°50'32
			min. Earth dist.	11790 Mar 24 20:35	10° <u>♁</u> 30'30 47.90878 AU
conjunction	11783 Sep 15 04:40	4° <u>♁</u> 18'54 -14°08'56	direct	11790 Jun 15 07:00	9° <u>♁</u> 31'30
minimum elong	11783 Sep 15 04:54	4° <u>♁</u> 18'54 14°08'59	evening set	11790 Sep 14 05:15	10° <u>♁</u> 47'12
max. Earth dist.	11783 Sep 15 21:00	4° <u>♁</u> 19'50 49.96372 AU			
morning rise	11783 Sep 20 10:21	4° <u>♁</u> 26'04	conjunction	11790 Sep 21 15:12	10° <u>♁</u> 57'19 -13°13'17
retrograde	11783 Dec 26 05:52	5° <u>♁</u> 47'50	minimum elong	11790 Sep 21 15:27	10° <u>♁</u> 57'20 13°13'13
min. Earth dist.	11784 Mar 18 09:39	4° <u>♁</u> 49'12 48.02540 AU	max. Earth dist.	11790 Sep 21 23:15	10° <u>♁</u> 57'47 49.83640 AU
opposition	11784 Mar 19 00:08	4° <u>♁</u> 48'32 -14°40'05	morning rise	11790 Sep 29 02:17	11° <u>♁</u> 07'30
direct	11784 Jun 09 00:21	3° <u>♁</u> 49'57	retrograde	11791 Jan 01 12:30	12° <u>♁</u> 26'04
evening set	11784 Sep 09 20:21	5° <u>♁</u> 08'20	opposition	11791 Mar 26 10:12	11° <u>♁</u> 26'44 -13°41'31
			min. Earth dist.	11791 Mar 26 02:50	11° <u>♁</u> 27'05 47.87349 AU
conjunction	11784 Sep 15 09:40	5° <u>♁</u> 15'57 -14°01'36	direct	11791 Jun 16 12:29	10° <u>♁</u> 28'08
minimum elong	11784 Sep 15 09:55	5° <u>♁</u> 15'57 14°01'36	evening set	11791 Sep 15 03:22	11° <u>♁</u> 43'27
max. Earth dist.	11784 Sep 16 01:20	5° <u>♁</u> 16'50 49.96055 AU			
morning rise	11784 Sep 20 23:45	5° <u>♁</u> 23'36	conjunction	11791 Sep 22 20:10	11° <u>♁</u> 53'57 -13°04'30
retrograde	11784 Dec 26 08:11	6° <u>♁</u> 44'51	minimum elong	11791 Sep 22 20:24	11° <u>♁</u> 53'58 13°04'24
opposition	11785 Mar 20 04:58	5° <u>♁</u> 45'34 -14°32'20	max. Earth dist.	11791 Sep 23 04:25	11° <u>♁</u> 54'25 49.80064 AU
min. Earth dist.	11785 Mar 19 14:35	5° <u>♁</u> 46'14 48.01880 AU	morning rise	11791 Sep 30 13:58	12° <u>♁</u> 04'31
direct	11785 Jun 10 05:51	4° <u>♁</u> 47'01	retrograde	11792 Jan 02 16:33	13° <u>♁</u> 22'42
evening set	11785 Sep 10 17:06	6° <u>♁</u> 04'55	opposition	11792 Mar 26 14:49	12° <u>♁</u> 23'21 -13°32'16
			min. Earth dist.	11792 Mar 26 08:05	12° <u>♁</u> 23'40 47.83492 AU
conjunction	11785 Sep 16 14:31	6° <u>♁</u> 12'59 -13°54'03	direct	11792 Jun 16 19:20	11° <u>♁</u> 24'44
minimum elong	11785 Sep 16 14:44	6° <u>♁</u> 13'00 13°54'02	evening set	11792 Sep 15 01:42	12° <u>♁</u> 39'42
max. Earth dist.	11785 Sep 17 04:07	6° <u>♁</u> 13'46 49.95261 AU			
morning rise	11785 Sep 22 12:48	6° <u>♁</u> 21'06	conjunction	11792 Sep 23 01:00	12° <u>♁</u> 50'34 -12°55'29
retrograde	11785 Dec 27 12:02	7° <u>♁</u> 41'52	minimum elong	11792 Sep 23 01:14	12° <u>♁</u> 50'35 12°55'23
opposition	11786 Mar 21 09:59	6° <u>♁</u> 42'37 -14°24'23	max. Earth dist.	11792 Sep 23 07:46	12° <u>♁</u> 50'57 49.76190 AU
min. Earth dist.	11786 Mar 20 21:20	6° <u>♁</u> 43'12 48.00727 AU	morning rise	11792 Oct 01 01:26	13° <u>♁</u> 01'31
direct	11786 Jun 11 12:08	5° <u>♁</u> 44'05	retrograde	11793 Jan 03 00:26	14° <u>♁</u> 19'21
evening set	11786 Sep 11 14:23	7° <u>♁</u> 01'31	opposition	11793 Mar 27 19:31	13° <u>♁</u> 20'00 -13°22'47
			min. Earth dist.	11793 Mar 27 12:57	13° <u>♁</u> 20'18 47.79350 AU
conjunction	11786 Sep 17 19:38	7° <u>♁</u> 10'01 -13°46'18	direct	11793 Jun 17 21:50	12° <u>♁</u> 21'22
minimum elong	11786 Sep 17 19:53	7° <u>♁</u> 10'02 13°46'16	evening set	11793 Sep 15 23:55	13° <u>♁</u> 35'59
max. Earth dist.	11786 Sep 18 09:03	7° <u>♁</u> 10'47 49.93950 AU			
morning rise	11786 Sep 24 01:42	7° <u>♁</u> 18'35	conjunction	11793 Sep 24 05:46	13° <u>♁</u> 47'14 -12°46'13
retrograde	11786 Dec 28 16:53	8° <u>♁</u> 38'53	minimum elong	11793 Sep 24 06:00	13° <u>♁</u> 47'15 12°46'06
opposition	11787 Mar 22 14:56	7° <u>♁</u> 39'37 -14°16'13	max. Earth dist.	11793 Sep 24 12:04	13° <u>♁</u> 47'36 49.72020 AU
min. Earth dist.	11787 Mar 22 03:33	7° <u>♁</u> 40'09 47.99025 AU	morning rise	11793 Oct 02 12:47	13° <u>♁</u> 58'33
direct	11787 Jun 12 19:12	6° <u>♁</u> 41'06	retrograde	11794 Jan 04 07:41	15° <u>♁</u> 16'03
evening set	11787 Sep 12 11:53	7° <u>♁</u> 58'04	opposition	11794 Mar 29 00:22	14° <u>♁</u> 16'42 -13°13'04
			min. Earth dist.	11794 Mar 28 19:19	14° <u>♁</u> 16'56 47.74915 AU
conjunction	11787 Sep 19 00:34	8° <u>♁</u> 06'59 -13°38'21	direct	11794 Jun 18 23:32	13° <u>♁</u> 18'04
minimum elong	11787 Sep 19 00:48	8° <u>♁</u> 07'00 13°38'19	evening set	11794 Sep 16 22:30	14° <u>♁</u> 32'23
max. Earth dist.	11787 Sep 19 11:51	8° <u>♁</u> 07'38 49.92101 AU			
morning rise	11787 Sep 25 14:12	8° <u>♁</u> 15'59	conjunction	11794 Sep 25 10:40	14° <u>♁</u> 44'00 -12°36'44

minimum elong	11794 Sep 25 10:55	14° <u>0</u> 44'01	12°36'37	evening set	11801 Sep 22 17:12	21° <u>0</u> 11'00	
max. Earth dist.	11794 Sep 25 16:40	14° <u>0</u> 44'20	49.67578 AU				
morning rise	11794 Oct 03 23:57	14° <u>0</u> 55'40		conjunction	11801 Oct 02 22:32	21° <u>0</u> 24'59	-11°24'21
retrograde	11795 Jan 05 10:56	16° <u>0</u> 12'51		minimum elong	11801 Oct 02 22:47	21° <u>0</u> 25'00	11°24'08
opposition	11795 Mar 30 05:03	15° <u>0</u> 13'31	-13°03'06	max. Earth dist.	11801 Oct 02 20:50	21° <u>0</u> 24'53	49.24786 AU
min. Earth dist.	11795 Mar 29 23:43	15° <u>0</u> 13'46	47.70186 AU	morning rise	11801 Oct 13 05:12	21° <u>0</u> 39'03	
direct	11795 Jun 20 03:33	14° <u>0</u> 14'54		retrograde	11802 Jan 12 21:31	22° <u>0</u> 54'20	
evening set	11795 Sep 17 21:09	15° <u>0</u> 28'55		opposition	11802 Apr 06 15:20	21° <u>0</u> 54'48	-11°47'15
				min. Earth dist.	11802 Apr 06 18:04	21° <u>0</u> 54'41	47.24849 AU
conjunction	11795 Sep 26 15:30	15° <u>0</u> 40'53	-12°27'01	direct	11802 Jun 27 16:00	20° <u>0</u> 55'57	
minimum elong	11795 Sep 26 15:45	15° <u>0</u> 40'54	12°26'52	evening set	11802 Sep 23 17:06	22° <u>0</u> 08'10	
max. Earth dist.	11795 Sep 26 19:50	15° <u>0</u> 41'08	49.62817 AU				
morning rise	11795 Oct 05 11:13	15° <u>0</u> 52'55		conjunction	11802 Oct 04 03:43	22° <u>0</u> 22'27	-11°13'11
retrograde	11796 Jan 06 14:43	17° <u>0</u> 09'49		minimum elong	11802 Oct 04 03:56	22° <u>0</u> 22'28	11°12'57
opposition	11796 Mar 30 09:55	16° <u>0</u> 10'29	-12°52'54	max. Earth dist.	11802 Oct 04 00:23	22° <u>0</u> 22'15	49.16803 AU
min. Earth dist.	11796 Mar 30 06:07	16° <u>0</u> 10'40	47.65124 AU	morning rise	11802 Oct 14 15:54	22° <u>0</u> 36'51	
direct	11796 Jun 20 09:47	15° <u>0</u> 11'53		retrograde	11803 Jan 14 04:36	23° <u>0</u> 51'53	
evening set	11796 Sep 17 20:03	16° <u>0</u> 25'38		opposition	11803 Apr 07 20:14	22° <u>0</u> 52'17	-11°35'33
				min. Earth dist.	11803 Apr 07 23:27	22° <u>0</u> 52'08	47.16553 AU
conjunction	11796 Sep 26 20:37	16° <u>0</u> 37'57	-12°17'05	direct	11803 Jun 28 20:46	21° <u>0</u> 53'21	
minimum elong	11796 Sep 26 20:51	16° <u>0</u> 37'57	12°16'56	evening set	11803 Sep 24 16:57	23° <u>0</u> 05'19	
max. Earth dist.	11796 Sep 27 01:01	16° <u>0</u> 38'12	49.57689 AU				
morning rise	11796 Oct 05 22:22	16° <u>0</u> 50'20		conjunction	11803 Oct 05 08:59	23° <u>0</u> 19'56	-11°01'48
retrograde	11797 Jan 06 19:08	18° <u>0</u> 06'58		minimum elong	11803 Oct 05 09:13	23° <u>0</u> 19'57	11°01'34
opposition	11797 Mar 31 14:38	17° <u>0</u> 07'38	-12°42'28	max. Earth dist.	11803 Oct 05 04:59	23° <u>0</u> 19'42	49.08460 AU
min. Earth dist.	11797 Mar 31 11:50	17° <u>0</u> 07'46	47.59651 AU	morning rise	11803 Oct 16 02:35	23° <u>0</u> 34'39	
direct	11797 Jun 21 17:10	16° <u>0</u> 09'01		retrograde	11804 Jan 15 12:32	24° <u>0</u> 49'27	
evening set	11797 Sep 18 19:17	17° <u>0</u> 22'31		opposition	11804 Apr 08 01:17	23° <u>0</u> 49'46	-11°23'38
				min. Earth dist.	11804 Apr 08 06:06	23° <u>0</u> 49'33	47.07916 AU
conjunction	11797 Sep 28 01:41	17° <u>0</u> 35'10	-12°06'56	direct	11804 Jun 28 23:53	22° <u>0</u> 50'46	
minimum elong	11797 Sep 28 01:56	17° <u>0</u> 35'11	12°06'45	evening set	11804 Sep 24 17:05	24° <u>0</u> 02'32	
max. Earth dist.	11797 Sep 28 04:08	17° <u>0</u> 35'19	49.52133 AU				
morning rise	11797 Oct 07 09:28	17° <u>0</u> 47'55		conjunction	11804 Oct 05 14:20	24° <u>0</u> 17'27	-10°50'11
retrograde	11798 Jan 08 03:46	19° <u>0</u> 04'16		minimum elong	11804 Oct 05 14:34	24° <u>0</u> 17'28	10°49'55
opposition	11798 Apr 01 19:31	18° <u>0</u> 04'57	-12°31'50	max. Earth dist.	11804 Oct 05 09:56	24° <u>0</u> 17'12	48.99810 AU
min. Earth dist.	11798 Apr 01 17:18	18° <u>0</u> 05'03	47.53723 AU	morning rise	11804 Oct 16 13:04	24° <u>0</u> 32'28	
direct	11798 Jun 22 20:08	17° <u>0</u> 06'19		retrograde	11805 Jan 15 17:41	25° <u>0</u> 47'04	
evening set	11798 Sep 19 18:25	18° <u>0</u> 19'33		opposition	11805 Apr 09 06:09	24° <u>0</u> 47'19	-11°11'28
				min. Earth dist.	11805 Apr 09 10:38	24° <u>0</u> 47'07	46.98977 AU
conjunction	11798 Sep 29 06:47	18° <u>0</u> 32'33	-11°56'35	direct	11805 Jun 30 02:58	23° <u>0</u> 48'15	
minimum elong	11798 Sep 29 07:01	18° <u>0</u> 32'33	11°56'25	evening set	11805 Sep 25 17:20	24° <u>0</u> 59'50	
max. Earth dist.	11798 Sep 29 08:11	18° <u>0</u> 32'37	49.46069 AU				
morning rise	11798 Oct 08 20:32	18° <u>0</u> 45'38		conjunction	11805 Oct 06 19:38	25° <u>0</u> 15'04	-10°38'21
retrograde	11799 Jan 09 10:29	20° <u>0</u> 01'43		minimum elong	11805 Oct 06 19:52	25° <u>0</u> 15'05	10°38'05
opposition	11799 Apr 03 00:35	19° <u>0</u> 02'22	-12°21'00	max. Earth dist.	11805 Oct 06 13:37	25° <u>0</u> 14'43	48.90862 AU
min. Earth dist.	11799 Apr 03 00:30	19° <u>0</u> 02'22	47.47263 AU	morning rise	11805 Oct 17 23:41	25° <u>0</u> 30'24	
direct	11799 Jun 23 23:12	18° <u>0</u> 03'43		retrograde	11806 Jan 16 22:13	26° <u>0</u> 44'48	
evening set	11799 Sep 20 18:01	19° <u>0</u> 16'40		opposition	11806 Apr 10 11:19	25° <u>0</u> 45'00	-10°59'03
				min. Earth dist.	11806 Apr 10 17:15	25° <u>0</u> 44'43	46.89758 AU
conjunction	11799 Sep 30 12:08	19° <u>0</u> 30'01	-11°46'02	direct	11806 Jul 01 08:29	24° <u>0</u> 45'52	
minimum elong	11799 Sep 30 12:23	19° <u>0</u> 30'01	11°45'51	evening set	11806 Sep 26 17:31	25° <u>0</u> 57'17	
max. Earth dist.	11799 Sep 30 12:41	19° <u>0</u> 30'02	49.39483 AU				
morning rise	11799 Oct 10 07:33	19° <u>0</u> 43'26		conjunction	11806 Oct 08 01:02	26° <u>0</u> 12'49	-10°26'16
retrograde	11800 Jan 10 14:30	20° <u>0</u> 59'14		minimum elong	11806 Oct 08 01:16	26° <u>0</u> 12'50	10°25'59
opposition	11800 Apr 04 05:22	19° <u>0</u> 59'50	-12°09'58	max. Earth dist.	11806 Oct 07 19:19	26° <u>0</u> 12'29	48.81631 AU
min. Earth dist.	11800 Apr 04 05:35	19° <u>0</u> 59'50	47.40270 AU	morning rise	11806 Oct 19 10:03	26° <u>0</u> 28'28	
direct	11800 Jun 25 03:02	19° <u>0</u> 01'08		retrograde	11807 Jan 18 01:29	27° <u>0</u> 42'42	
evening set	11800 Sep 21 17:40	20° <u>0</u> 13'50		opposition	11807 Apr 11 16:29	26° <u>0</u> 42'51	-10°46'24
				min. Earth dist.	11807 Apr 11 22:53	26° <u>0</u> 42'33	46.80233 AU
conjunction	11800 Oct 01 17:20	20° <u>0</u> 27'30	-11°35'18	direct	11807 Jul 02 16:11	25° <u>0</u> 43'41	
minimum elong	11800 Oct 01 17:34	20° <u>0</u> 27'31	11°35'06	evening set	11807 Sep 27 18:13	26° <u>0</u> 54'57	
max. Earth dist.	11800 Oct 01 15:38	20° <u>0</u> 27'24	49.32369 AU				
morning rise	11800 Oct 11 18:34	20° <u>0</u> 41'15		conjunction	11807 Oct 09 06:34	27° <u>0</u> 10'47	-10°13'58
retrograde	11801 Jan 11 18:29	21° <u>0</u> 56'47		minimum elong	11807 Oct 09 06:48	27° <u>0</u> 10'48	10°13'41
opposition	11801 Apr 05 10:22	20° <u>0</u> 57'20	-11°58'43	max. Earth dist.	11807 Oct 08 23:11	27° <u>0</u> 10'22	48.72093 AU
min. Earth dist.	11801 Apr 05 12:24	20° <u>0</u> 57'14	47.32784 AU	morning rise	11807 Oct 20 20:40	27° <u>0</u> 26'44	
direct	11801 Jun 26 08:16	19° <u>0</u> 58'33		retrograde	11808 Jan 19 09:31	28° <u>0</u> 40'50	

opposition	11808 Apr 11 21:33	27° <u>♏</u> 40'57	-10°33'31	direct	11814 Jul 09 01:43	2° <u>♍</u> 35'22	
min. Earth dist.	11808 Apr 12 04:31	27° <u>♏</u> 40'37	46.70386 AU	evening set	11814 Oct 03 04:00	3° <u>♍</u> 45'59	
direct	11808 Jul 02 19:52	26° <u>♏</u> 41'44		max. Earth dist.	11814 Oct 15 09:21	4° <u>♍</u> 02'58	47.92587 AU
evening set	11808 Sep 27 19:00	27° <u>♏</u> 52'53					
				conjunction	11814 Oct 16 00:27	4° <u>♍</u> 03'51	-8°41'50
conjunction	11808 Oct 09 12:17	28° <u>♏</u> 09'01	-10°01'26	minimum elong	11814 Oct 16 00:40	4° <u>♍</u> 03'52	8°41'28
minimum elong	11808 Oct 09 12:31	28° <u>♏</u> 09'02	10°01'07	morning rise	11814 Oct 28 22:38	4° <u>♍</u> 21'51	
max. Earth dist.	11808 Oct 09 04:07	28° <u>♏</u> 08'33	48.62185 AU	retrograde	11815 Jan 26 09:07	5° <u>♍</u> 35'13	
morning rise	11808 Oct 21 07:17	28° <u>♏</u> 25'17		opposition	11815 Apr 19 12:23	4° <u>♍</u> 34'48	-8°57'06
retrograde	11809 Jan 19 17:18	29° <u>♏</u> 39'15		min. Earth dist.	11815 Apr 20 02:55	4° <u>♍</u> 34'07	45.88301 AU
opposition	11809 Apr 13 02:55	28° <u>♏</u> 39'20	-10°20'23	direct	11815 Jul 10 04:21	3° <u>♍</u> 34'58	
min. Earth dist.	11809 Apr 13 11:45	28° <u>♏</u> 38'55	46.60138 AU	evening set	11815 Oct 04 06:12	4° <u>♍</u> 45'31	
direct	11809 Jul 03 23:31	27° <u>♏</u> 40'04					
evening set	11809 Sep 28 19:57	28° <u>♏</u> 51'07		conjunction	11815 Oct 17 06:44	5° <u>♍</u> 03'40	-8°27'49
				minimum elong	11815 Oct 17 06:55	5° <u>♍</u> 03'41	8°27'25
conjunction	11809 Oct 10 18:01	29° <u>♏</u> 07'33	-9°48'41	max. Earth dist.	11815 Oct 16 13:50	5° <u>♍</u> 02'41	47.79428 AU
minimum elong	11809 Oct 10 18:14	29° <u>♏</u> 07'34	9°48'22	morning rise	11815 Oct 30 09:15	5° <u>♍</u> 21'57	
max. Earth dist.	11809 Oct 10 09:10	29° <u>♏</u> 07'03	48.51856 AU	retrograde	11816 Jan 27 14:43	6° <u>♍</u> 35'15	
morning rise	11809 Oct 22 17:42	29° <u>♏</u> 24'07		opposition	11816 Apr 19 18:08	5° <u>♍</u> 34'42	-8°42'25
	11809 Nov 20 00:24	0° <u>♍</u>		min. Earth dist.	11816 Apr 20 10:24	5° <u>♍</u> 33'56	45.74859 AU
retrograde	11810 Jan 20 23:12	0° <u>♍</u> 37'58		direct	11816 Jul 10 10:19	4° <u>♍</u> 34'45	
	11810 Mar 25 11:18	30° <u>♏</u>		evening set	11816 Oct 04 08:26	5° <u>♍</u> 45'16	
opposition	11810 Apr 14 08:17	29° <u>♏</u> 38'00	-10°07'03				
min. Earth dist.	11810 Apr 14 17:21	29° <u>♏</u> 37'35	46.49428 AU	conjunction	11816 Oct 17 13:12	6° <u>♍</u> 03'41	-8°13'33
direct	11810 Jul 05 03:27	28° <u>♏</u> 38'41		minimum elong	11816 Oct 17 13:24	6° <u>♍</u> 03'42	8°13'10
evening set	11810 Sep 29 21:18	29° <u>♏</u> 49'39		max. Earth dist.	11816 Oct 16 20:29	6° <u>♍</u> 02'42	47.65959 AU
	11810 Oct 07 09:48	0° <u>♍</u>		morning rise	11816 Oct 30 19:40	6° <u>♍</u> 22'15	
				retrograde	11817 Jan 27 17:10	7° <u>♍</u> 35'29	
conjunction	11810 Oct 11 23:56	0° <u>♍</u> 06'23	-9°35'44	opposition	11817 Apr 21 00:01	6° <u>♍</u> 34'50	-8°27'28
minimum elong	11810 Oct 12 00:09	0° <u>♍</u> 06'24	9°35'24	min. Earth dist.	11817 Apr 21 16:31	6° <u>♍</u> 34'02	45.61116 AU
max. Earth dist.	11810 Oct 11 12:47	0° <u>♍</u> 05'44	48.41022 AU	direct	11817 Jul 11 19:31	5° <u>♍</u> 34'44	
morning rise	11810 Oct 24 04:27	0° <u>♍</u> 23'14		evening set	11817 Oct 05 10:53	6° <u>♍</u> 45'14	
retrograde	11811 Jan 22 04:49	1° <u>♍</u> 36'59					
opposition	11811 Apr 15 13:49	0° <u>♍</u> 36'57	-9°53'30	conjunction	11817 Oct 18 19:28	7° <u>♍</u> 03'56	-7°59'04
min. Earth dist.	11811 Apr 16 00:55	0° <u>♍</u> 36'26	46.38201 AU	minimum elong	11817 Oct 18 19:39	7° <u>♍</u> 03'57	7°58'38
	11811 May 20 15:24	30° <u>♏</u>		max. Earth dist.	11817 Oct 18 01:12	7° <u>♍</u> 02'51	47.52214 AU
direct	11811 Jul 06 08:32	29° <u>♏</u> 37'34		morning rise	11817 Nov 01 06:02	7° <u>♍</u> 22'45	
	11811 Aug 21 06:58	0° <u>♍</u>		retrograde	11818 Jan 29 00:35	8° <u>♍</u> 35'59	
evening set	11811 Sep 30 22:43	0° <u>♍</u> 48'26		opposition	11818 Apr 22 06:03	7° <u>♍</u> 35'12	-8°12'17
				min. Earth dist.	11818 Apr 22 22:58	7° <u>♍</u> 34'23	45.47116 AU
conjunction	11811 Oct 13 06:06	1° <u>♍</u> 05'28	-9°22'34	direct	11818 Jul 13 01:31	6° <u>♍</u> 35'00	
minimum elong	11811 Oct 13 06:18	1° <u>♍</u> 05'28	9°22'14	evening set	11818 Oct 06 13:32	7° <u>♍</u> 45'29	
max. Earth dist.	11811 Oct 12 18:33	1° <u>♍</u> 04'47	48.29656 AU	max. Earth dist.	11818 Oct 19 07:23	8° <u>♍</u> 03'21	47.38197 AU
morning rise	11811 Oct 25 15:05	1° <u>♍</u> 22'36					
retrograde	11812 Jan 23 08:56	2° <u>♍</u> 36'15		conjunction	11818 Oct 20 02:06	8° <u>♍</u> 04'27	-7°44'19
opposition	11812 Apr 15 19:24	1° <u>♍</u> 36'09	-9°39'44	minimum elong	11818 Oct 20 02:17	8° <u>♍</u> 04'28	7°43'55
min. Earth dist.	11812 Apr 16 07:23	1° <u>♍</u> 35'35	46.26421 AU	morning rise	11818 Nov 02 16:32	8° <u>♍</u> 23'33	
direct	11812 Jul 06 16:24	0° <u>♍</u> 36'39		retrograde	11819 Jan 30 09:02	9° <u>♍</u> 36'46	
evening set	11812 Oct 01 00:28	1° <u>♍</u> 47'26		opposition	11819 Apr 23 12:11	8° <u>♍</u> 35'53	-7°56'51
				min. Earth dist.	11819 Apr 24 06:31	8° <u>♍</u> 35'00	45.32842 AU
conjunction	11812 Oct 13 12:09	2° <u>♍</u> 04'45	-9°09'13	direct	11819 Jul 14 06:53	7° <u>♍</u> 35'34	
minimum elong	11812 Oct 13 12:22	2° <u>♍</u> 04'45	9°08'51	evening set	11819 Oct 07 16:29	8° <u>♍</u> 46'03	
max. Earth dist.	11812 Oct 12 22:34	2° <u>♍</u> 03'57	48.17760 AU				
morning rise	11812 Oct 26 01:43	2° <u>♍</u> 22'11		conjunction	11819 Oct 21 08:53	9° <u>♍</u> 05'17	-7°29'21
retrograde	11813 Jan 23 16:24	3° <u>♍</u> 35'44		minimum elong	11819 Oct 21 09:04	9° <u>♍</u> 05'18	7°28'54
opposition	11813 Apr 17 00:56	2° <u>♍</u> 35'32	-9°25'45	max. Earth dist.	11819 Oct 20 13:43	9° <u>♍</u> 04'09	47.23917 AU
min. Earth dist.	11813 Apr 17 13:53	2° <u>♍</u> 34'55	46.14143 AU	morning rise	11819 Nov 04 03:05	9° <u>♍</u> 24'40	
direct	11813 Jul 07 21:48	1° <u>♍</u> 35'56		retrograde	11820 Jan 31 17:34	10° <u>♍</u> 37'53	
evening set	11813 Oct 02 02:10	2° <u>♍</u> 46'37		opposition	11820 Apr 23 18:21	9° <u>♍</u> 36'54	-7°41'09
				min. Earth dist.	11820 Apr 24 12:34	9° <u>♍</u> 36'01	45.18280 AU
conjunction	11813 Oct 14 18:19	3° <u>♍</u> 04'13	-8°55'38	direct	11820 Jul 14 10:32	8° <u>♍</u> 36'28	
minimum elong	11813 Oct 14 18:31	3° <u>♍</u> 04'13	8°55'16	evening set	11820 Oct 07 19:45	9° <u>♍</u> 47'00	
max. Earth dist.	11813 Oct 14 03:43	3° <u>♍</u> 03'22	48.05376 AU				
morning rise	11813 Oct 27 12:16	3° <u>♍</u> 21'56		conjunction	11820 Oct 21 15:42	10° <u>♍</u> 06'30	-7°14'08
retrograde	11814 Jan 25 01:07	4° <u>♍</u> 35'24		minimum elong	11820 Oct 21 15:53	10° <u>♍</u> 06'30	7°13'41
opposition	11814 Apr 18 06:42	3° <u>♍</u> 35'05	-9°11'33	max. Earth dist.	11820 Oct 20 18:40	10° <u>♍</u> 05'15	47.09306 AU
min. Earth dist.	11814 Apr 18 21:22	3° <u>♍</u> 34'23	46.01413 AU	morning rise	11820 Nov 04 13:42	10° <u>♍</u> 26'08	





















































































































retrograde	11821 Feb 01 02:04	11° $\mathcal{M}$ 39'22		min. Earth dist.	11827 May 02 19:46	16° $\mathcal{M}$ 52'43	44.04497 AU
opposition	11821 Apr 25 00:42	10° $\mathcal{M}$ 38'17	-7°25'13	direct	11827 Jul 22 08:11	15° $\mathcal{M}$ 52'27	
min. Earth dist.	11821 Apr 25 20:47	10° $\mathcal{M}$ 37'19	45.03372 AU	evening set	11827 Oct 15 02:13	17° $\mathcal{M}$ 03'32	
direct	11821 Jul 15 14:39	9° $\mathcal{M}$ 37'44					
evening set	11821 Oct 08 23:13	10° $\mathcal{M}$ 48'19		conjunction	11827 Oct 29 20:53	17° $\mathcal{M}$ 24'49	-5°21'17
				minimum elong	11827 Oct 29 21:01	17° $\mathcal{M}$ 24'50	5°20'45
conjunction	11821 Oct 22 22:53	11° $\mathcal{M}$ 08'06	-6°58'41	max. Earth dist.	11827 Oct 28 15:55	17° $\mathcal{M}$ 23'04	45.94840 AU
minimum elong	11821 Oct 22 23:04	11° $\mathcal{M}$ 08'06	6°58'13	morning rise	11827 Nov 13 17:34	17° $\mathcal{M}$ 46'15	
max. Earth dist.	11821 Oct 22 01:51	11° $\mathcal{M}$ 06'51	46.94318 AU	retrograde	11828 Feb 09 06:38	18° $\mathcal{M}$ 59'56	
morning rise	11821 Nov 06 00:17	11° $\mathcal{M}$ 28'00		opposition	11828 May 02 01:09	17° $\mathcal{M}$ 57'46	-5°26'53
retrograde	11822 Feb 02 07:20	12° $\mathcal{M}$ 41'16		min. Earth dist.	11828 May 03 03:58	17° $\mathcal{M}$ 56'27	43.86683 AU
opposition	11822 Apr 26 07:13	11° $\mathcal{M}$ 40'04	-7°09'02	direct	11828 Jul 22 15:51	16° $\mathcal{M}$ 56'02	
min. Earth dist.	11822 Apr 27 03:49	11° $\mathcal{M}$ 39'04	44.88047 AU	evening set	11828 Oct 15 07:33	18° $\mathcal{M}$ 07'16	
direct	11822 Jul 16 22:50	10° $\mathcal{M}$ 39'23		max. Earth dist.	11828 Oct 28 23:47	18° $\mathcal{M}$ 27'01	45.76975 AU
evening set	11822 Oct 10 03:06	11° $\mathcal{M}$ 50'02					
max. Earth dist.	11822 Oct 23 06:57	12° $\mathcal{M}$ 08'41	46.78886 AU	conjunction	11828 Oct 30 05:04	18° $\mathcal{M}$ 28'48	-5°04'13
				minimum elong	11828 Oct 30 05:12	18° $\mathcal{M}$ 28'48	5°03'39
conjunction	11822 Oct 24 06:06	12° $\mathcal{M}$ 10'04	-6°43'01	morning rise	11828 Nov 14 04:22	18° $\mathcal{M}$ 50'27	
minimum elong	11822 Oct 24 06:15	12° $\mathcal{M}$ 10'04	6°42'33	retrograde	11829 Feb 09 14:47	20° $\mathcal{M}$ 04'18	
morning rise	11822 Nov 07 11:08	12° $\mathcal{M}$ 30'14		opposition	11829 May 03 08:39	19° $\mathcal{M}$ 01'58	-5°08'59
retrograde	11823 Feb 03 14:33	13° $\mathcal{M}$ 43'33		min. Earth dist.	11829 May 04 12:32	19° $\mathcal{M}$ 00'35	43.68602 AU
opposition	11823 Apr 27 13:56	12° $\mathcal{M}$ 42'13	-6°52'37	direct	11829 Jul 23 23:33	18° $\mathcal{M}$ 00'03	
min. Earth dist.	11823 Apr 28 11:47	12° $\mathcal{M}$ 41'09	44.72256 AU	evening set	11829 Oct 16 13:15	19° $\mathcal{M}$ 11'27	
direct	11823 Jul 18 05:41	11° $\mathcal{M}$ 41'23		max. Earth dist.	11829 Oct 30 07:35	19° $\mathcal{M}$ 31'24	45.58886 AU
evening set	11823 Oct 11 07:16	12° $\mathcal{M}$ 52'06					
				conjunction	11829 Oct 31 13:24	19° $\mathcal{M}$ 33'13	-4°46'54
conjunction	11823 Oct 25 13:43	13° $\mathcal{M}$ 12'23	-6°27'08	minimum elong	11829 Oct 31 13:32	19° $\mathcal{M}$ 33'13	4°46'21
minimum elong	11823 Oct 25 13:53	13° $\mathcal{M}$ 12'24	6°26'39	morning rise	11829 Nov 15 15:22	19° $\mathcal{M}$ 55'07	
max. Earth dist.	11823 Oct 24 13:26	13° $\mathcal{M}$ 10'56	46.62949 AU	retrograde	11830 Feb 11 01:20	21° $\mathcal{M}$ 09'07	
morning rise	11823 Nov 08 22:01	13° $\mathcal{M}$ 32'49		opposition	11830 May 04 16:16	20° $\mathcal{M}$ 06'38	-4°50'48
retrograde	11824 Feb 04 22:32	14° $\mathcal{M}$ 46'11		min. Earth dist.	11830 May 05 19:55	20° $\mathcal{M}$ 05'15	43.50312 AU
opposition	11824 Apr 27 20:42	13° $\mathcal{M}$ 44'43	-6°35'58	direct	11830 Jul 25 04:40	19° $\mathcal{M}$ 04'32	
min. Earth dist.	11824 Apr 28 20:19	13° $\mathcal{M}$ 43'33	44.55957 AU	evening set	11830 Oct 17 19:14	20° $\mathcal{M}$ 16'09	
direct	11824 Jul 18 12:50	12° $\mathcal{M}$ 43'43					
evening set	11824 Oct 11 11:41	13° $\mathcal{M}$ 54'30		conjunction	11830 Nov 01 21:51	20° $\mathcal{M}$ 38'09	-4°29'21
				minimum elong	11830 Nov 01 21:58	20° $\mathcal{M}$ 38'09	4°28'46
conjunction	11824 Oct 25 21:23	14° $\mathcal{M}$ 15'02	-6°11'01	max. Earth dist.	11830 Oct 31 14:32	20° $\mathcal{M}$ 36'14	45.40572 AU
minimum elong	11824 Oct 25 21:32	14° $\mathcal{M}$ 15'02	6°10'31	morning rise	11830 Nov 17 02:25	21° $\mathcal{M}$ 00'17	
max. Earth dist.	11824 Oct 24 20:08	14° $\mathcal{M}$ 13'31	46.46534 AU	retrograde	11831 Feb 12 12:57	22° $\mathcal{M}$ 14'28	
morning rise	11824 Nov 09 08:55	14° $\mathcal{M}$ 35'42		opposition	11831 May 06 00:15	21° $\mathcal{M}$ 11'50	-4°32'22
	11824 Nov 27 10:23	15° $\mathcal{M}$		min. Earth dist.	11831 May 07 05:27	21° $\mathcal{M}$ 10'23	43.31804 AU
retrograde	11825 Feb 05 08:38	15° $\mathcal{M}$ 49'08		direct	11831 Jul 26 09:36	20° $\mathcal{M}$ 09'34	
	11825 Apr 18 10:18	15° $\mathcal{R}$ $\mathcal{M}$		evening set	11831 Oct 19 01:36	21° $\mathcal{M}$ 21'25	
opposition	11825 Apr 29 03:35	14° $\mathcal{M}$ 47'30	-6°19'04	max. Earth dist.	11831 Nov 01 23:44	21° $\mathcal{M}$ 41'45	45.22036 AU
min. Earth dist.	11825 Apr 30 03:22	14° $\mathcal{M}$ 46'20	44.39196 AU				
direct	11825 Jul 19 17:14	13° $\mathcal{M}$ 46'19		conjunction	11831 Nov 03 06:46	21° $\mathcal{M}$ 43'39	-4°11'33
evening set	11825 Oct 12 16:13	14° $\mathcal{M}$ 57'11		minimum elong	11831 Nov 03 06:53	21° $\mathcal{M}$ 43'40	4°10'59
	11825 Oct 14 16:05	15° $\mathcal{M}$		morning rise	11831 Nov 18 13:33	22° $\mathcal{M}$ 06'01	
max. Earth dist.	11825 Oct 26 01:48	15° $\mathcal{M}$ 16'21	46.29664 AU	retrograde	11832 Feb 13 21:22	23° $\mathcal{M}$ 20'25	
				opposition	11832 May 06 08:11	22° $\mathcal{M}$ 17'38	-4°13'40
conjunction	11825 Oct 27 04:57	15° $\mathcal{M}$ 17'59	-5°54'40	min. Earth dist.	11832 May 07 13:20	22° $\mathcal{M}$ 16'11	43.13055 AU
minimum elong	11825 Oct 27 05:06	15° $\mathcal{M}$ 17'59	5°54'10	direct	11832 Jul 26 18:03	21° $\mathcal{M}$ 15'12	
morning rise	11825 Nov 10 19:43	15° $\mathcal{M}$ 38'54		evening set	11832 Oct 19 08:30	22° $\mathcal{M}$ 27'19	
retrograde	11826 Feb 06 17:20	16° $\mathcal{M}$ 52'24		max. Earth dist.	11832 Nov 02 06:52	22° $\mathcal{M}$ 47'45	45.03240 AU
opposition	11826 Apr 30 10:46	15° $\mathcal{M}$ 50'36	-6°01'56				
min. Earth dist.	11826 May 01 12:30	15° $\mathcal{M}$ 49'20	44.22023 AU	conjunction	11832 Nov 03 15:44	22° $\mathcal{M}$ 49'47	-3°53'30
	11826 Jun 19 20:13	15° $\mathcal{R}$ $\mathcal{M}$		minimum elong	11832 Nov 03 15:50	22° $\mathcal{M}$ 49'47	3°52'54
direct	11826 Jul 20 22:51	14° $\mathcal{M}$ 49'14		morning rise	11832 Nov 19 00:54	23° $\mathcal{M}$ 12'24	
	11826 Aug 20 22:01	15° $\mathcal{M}$		retrograde	11833 Feb 14 06:43	24° $\mathcal{M}$ 27'02	
evening set	11826 Oct 13 21:00	16° $\mathcal{M}$ 00'12		opposition	11833 May 07 16:30	23° $\mathcal{M}$ 24'06	-3°54'42
max. Earth dist.	11826 Oct 27 09:47	16° $\mathcal{M}$ 19'36	46.12414 AU	min. Earth dist.	11833 May 08 22:56	23° $\mathcal{M}$ 22'34	42.94030 AU
				direct	11833 Jul 28 01:49	22° $\mathcal{M}$ 21'30	
conjunction	11826 Oct 28 12:55	16° $\mathcal{M}$ 21'14	-5°38'06	evening set	11833 Oct 20 15:31	23° $\mathcal{M}$ 33'53	
minimum elong	11826 Oct 28 13:03	16° $\mathcal{M}$ 21'14	5°37'34	max. Earth dist.	11833 Nov 03 15:39	23° $\mathcal{M}$ 54'31	44.84111 AU
morning rise	11826 Nov 12 06:32	16° $\mathcal{M}$ 42'24					
retrograde	11827 Feb 07 22:45	17° $\mathcal{M}$ 55'59		conjunction	11833 Nov 05 00:59	23° $\mathcal{M}$ 56'35	-3°35'12
opposition	11827 May 01 17:50	16° $\mathcal{M}$ 54'00	-5°44'32	minimum elong	11833 Nov 05 01:04	23° $\mathcal{M}$ 56'35	3°34'37

morning rise	11833 Nov 20 12:06	24° <del>ℳ</del> 19'26	opposition	11840 May 15 08:55	1° <del>♂</del> 26'29 -1°34'49
retrograde	11834 Feb 15 14:26	25° <del>ℳ</del> 34'20	min. Earth dist.	11840 May 16 22:05	1° <del>♂</del> 24'34 41.49682 AU
opposition	11834 May 09 01:07	24° <del>ℳ</del> 31'14 -3°35'28	direct	11840 Aug 04 16:12	0° <del>♂</del> 22'12
min. Earth dist.	11834 May 10 08:47	24° <del>ℳ</del> 29'38 42.74637 AU	evening set	11840 Oct 28 05:37	1° <del>♂</del> 36'54
direct	11834 Jul 29 11:59	23° <del>ℳ</del> 28'28	max. Earth dist.	11840 Nov 11 07:46	1° <del>♂</del> 58'21 43.38856 AU
evening set	11834 Oct 21 23:14	24° <del>ℳ</del> 41'08			
max. Earth dist.	11834 Nov 05 00:06	25° <del>ℳ</del> 01'54 44.64594 AU	conjunction	11840 Nov 13 01:33	2° <del>♂</del> 01'02 -1°20'35
			minimum elong	11840 Nov 13 01:35	2° <del>♂</del> 01'02 1°19'55
conjunction	11834 Nov 06 10:37	25° <del>ℳ</del> 04'03 -3°16'41	morning rise	11840 Nov 28 22:58	2° <del>♂</del> 25'18
minimum elong	11834 Nov 06 10:43	25° <del>ℳ</del> 04'04 3°16'04	retrograde	11841 Feb 23 20:29	3° <del>♂</del> 42'22
morning rise	11834 Nov 21 23:44	25° <del>ℳ</del> 27'07	opposition	11841 May 16 19:11	2° <del>♂</del> 37'40 -1°13'48
retrograde	11835 Feb 17 02:38	26° <del>ℳ</del> 42'18	min. Earth dist.	11841 May 18 09:49	2° <del>♂</del> 35'39 41.27777 AU
opposition	11835 May 10 09:46	25° <del>ℳ</del> 39'02 -3°16'00	direct	11841 Aug 06 00:08	1° <del>♂</del> 33'06
min. Earth dist.	11835 May 11 17:52	25° <del>ℳ</del> 37'24 42.54831 AU	evening set	11841 Oct 29 15:57	2° <del>♂</del> 48'13
direct	11835 Jul 30 18:09	24° <del>ℳ</del> 36'03	max. Earth dist.	11841 Nov 12 19:17	3° <del>♂</del> 09'51 43.16889 AU
evening set	11835 Oct 23 07:24	25° <del>ℳ</del> 49'01			
max. Earth dist.	11835 Nov 06 08:02	26° <del>ℳ</del> 09'53 44.44618 AU	conjunction	11841 Nov 14 12:49	3° <del>♂</del> 12'32 -1°00'24
			minimum elong	11841 Nov 14 12:51	3° <del>♂</del> 12'32 0°59'43
conjunction	11835 Nov 07 20:34	26° <del>ℳ</del> 12'10 -2°57'55	morning rise	11841 Nov 30 10:57	3° <del>♂</del> 36'58
minimum elong	11835 Nov 07 20:39	26° <del>ℳ</del> 12'10 2°57'18	retrograde	11842 Feb 25 09:56	4° <del>♂</del> 54'26
morning rise	11835 Nov 23 11:30	26° <del>ℳ</del> 35'26	opposition	11842 May 18 05:37	3° <del>♂</del> 49'29 -0°52'32
retrograde	11836 Feb 18 15:07	27° <del>ℳ</del> 50'54	min. Earth dist.	11842 May 19 19:47	3° <del>♂</del> 47'30 41.05693 AU
opposition	11836 May 10 18:53	26° <del>ℳ</del> 47'26 -2°56'17	direct	11842 Aug 07 08:34	2° <del>♂</del> 44'39
min. Earth dist.	11836 May 12 05:10	26° <del>ℳ</del> 45'42 42.34564 AU	evening set	11842 Oct 31 03:04	4° <del>♂</del> 00'13
direct	11836 Jul 30 23:51	25° <del>ℳ</del> 44'13	max. Earth dist.	11842 Nov 14 05:09	4° <del>♂</del> 21'55 42.94743 AU
evening set	11836 Oct 23 15:45	26° <del>ℳ</del> 57'30			
max. Earth dist.	11836 Nov 06 17:51	27° <del>ℳ</del> 18'32 44.24191 AU	conjunction	11842 Nov 16 00:27	4° <del>♂</del> 24'43 -0°39'59
			minimum elong	11842 Nov 16 00:28	4° <del>♂</del> 24'43 0°39'18
conjunction	11836 Nov 08 06:43	27° <del>ℳ</del> 20'51 -2°38'55	morning rise	11842 Dec 01 23:20	4° <del>♂</del> 49'20
minimum elong	11836 Nov 08 06:47	27° <del>ℳ</del> 20'52 2°38'17	retrograde	11843 Feb 26 23:12	6° <del>♂</del> 07'14
morning rise	11836 Nov 23 23:08	27° <del>ℳ</del> 44'20	opposition	11843 May 19 16:19	5° <del>♂</del> 02'02 -0°31'00
retrograde	11837 Feb 19 01:28	29° <del>ℳ</del> 00'05	min. Earth dist.	11843 May 21 07:55	4° <del>♂</del> 59'58 40.83454 AU
opposition	11837 May 12 04:03	27° <del>ℳ</del> 56'23 -2°36'18	direct	11843 Aug 08 17:50	3° <del>♂</del> 56'55
min. Earth dist.	11837 May 13 14:30	27° <del>ℳ</del> 54'38 42.13858 AU	evening set	11843 Nov 01 14:34	5° <del>♂</del> 13'00
direct	11837 Aug 01 09:52	26° <del>ℳ</del> 52'56	max. Earth dist.	11843 Nov 15 17:25	5° <del>♂</del> 34'51 42.72429 AU
evening set	11837 Oct 25 00:41	28° <del>ℳ</del> 06'32			
max. Earth dist.	11837 Nov 08 01:54	28° <del>ℳ</del> 27'37 44.03348 AU	conjunction	11843 Nov 17 12:36	5° <del>♂</del> 37'40 -0°19'20
			minimum elong	11843 Nov 17 12:36	5° <del>♂</del> 37'40 0°18'38
conjunction	11837 Nov 09 16:59	28° <del>ℳ</del> 30'06 -2°19'42	morning rise	11843 Dec 03 11:44	6° <del>♂</del> 02'27
minimum elong	11837 Nov 09 17:03	28° <del>ℳ</del> 30'06 2°19'03	retrograde	11844 Feb 28 09:47	7° <del>♂</del> 20'49
morning rise	11837 Nov 25 11:04	28° <del>ℳ</del> 53'47	opposition	11844 May 20 03:24	6° <del>♂</del> 15'24 -0°09'13
	11838 Jan 22 06:42	0° <del>♂</del>	min. Earth dist.	11844 May 21 19:18	6° <del>♂</del> 13'18 40.61036 AU
retrograde	11838 Feb 20 12:18	0° <del>♂</del> 09'49	direct	11844 Aug 09 06:44	5° <del>♂</del> 10'02
	11838 Mar 21 21:17	30° <del>♂</del> ℳ	asc. node	11844 Oct 21 12:43	6° <del>♂</del> 09'27
opposition	11838 May 13 13:30	29° <del>ℳ</del> 05'53 -2°16'04	evening set	11844 Nov 02 02:41	6° <del>♂</del> 26'38
min. Earth dist.	11838 May 15 01:28	29° <del>ℳ</del> 04'02 41.92780 AU	max. Earth dist.	11844 Nov 16 04:23	6° <del>♂</del> 48'33 42.49929 AU
direct	11838 Aug 02 19:25	28° <del>ℳ</del> 02'09			
evening set	11838 Oct 26 09:46	29° <del>ℳ</del> 16'06	conjunction	11844 Nov 18 00:50	6° <del>♂</del> 51'29 0°01'38
max. Earth dist.	11838 Nov 09 12:16	29° <del>ℳ</del> 37'22 43.82139 AU	minimum elong	11844 Nov 18 00:49	6° <del>♂</del> 51'29 0°02'20
			behind sun begin	11844 Nov 17 18:21	6° <del>♂</del> 51'05
conjunction	11838 Nov 11 03:36	29° <del>ℳ</del> 39'52 -2°00'14	behind sun end	11844 Nov 18 07:18	6° <del>♂</del> 51'52
minimum elong	11838 Nov 11 03:39	29° <del>ℳ</del> 39'52 1°59'34	morning rise	11844 Dec 04 00:17	7° <del>♂</del> 16'25
	11838 Nov 24 10:33	0° <del>♂</del>	retrograde	11845 Feb 28 22:56	8° <del>♂</del> 35'19
morning rise	11838 Nov 26 22:51	0° <del>♂</del> 03'45	opposition	11845 May 21 14:43	7° <del>♂</del> 29'39 0°12'48
retrograde	11839 Feb 21 21:06	1° <del>♂</del> 20'06	min. Earth dist.	11845 May 23 07:09	7° <del>♂</del> 27'31 40.38420 AU
opposition	11839 May 14 23:11	0° <del>♂</del> 15'54 -1°55'34	direct	11845 Aug 10 17:15	6° <del>♂</del> 24'02
min. Earth dist.	11839 May 16 12:01	0° <del>♂</del> 14'01 41.71362 AU	evening set	11845 Nov 03 15:24	7° <del>♂</del> 41'13
	11839 May 27 23:24	30° <del>♂</del> ℳ	max. Earth dist.	11845 Nov 17 16:10	8° <del>♂</del> 03'13 42.27175 AU
direct	11839 Aug 04 06:47	29° <del>ℳ</del> 11'54			
	11839 Oct 09 06:08	0° <del>♂</del>	conjunction	11845 Nov 19 13:38	8° <del>♂</del> 06'13 0°22'42
evening set	11839 Oct 27 19:31	0° <del>♂</del> 26'13	minimum elong	11845 Nov 19 13:37	8° <del>♂</del> 06'13 0°23'25
max. Earth dist.	11839 Nov 10 21:57	0° <del>♂</del> 47'34 43.60629 AU	morning rise	11845 Dec 05 13:00	8° <del>♂</del> 31'19
			retrograde	11846 Mar 02 12:14	9° <del>♂</del> 50'46
conjunction	11839 Nov 12 14:27	0° <del>♂</del> 50'10 -1°40'31	opposition	11846 May 23 02:31	8° <del>♂</del> 44'52 0°35'05
minimum elong	11839 Nov 12 14:30	0° <del>♂</del> 50'10 1°39'52	min. Earth dist.	11846 May 24 20:37	8° <del>♂</del> 42'38 40.15528 AU
morning rise	11839 Nov 28 10:57	1° <del>♂</del> 14'15	direct	11846 Aug 12 03:12	7° <del>♂</del> 38'59
retrograde	11840 Feb 23 07:41	2° <del>♂</del> 30'56	evening set	11846 Nov 05 04:41	8° <del>♂</del> 56'46

max. Earth dist.	11846 Nov 19 04:52	9°♂18'52	42.04119 AU	min. Earth dist.	11853 Jun 02 22:45	17°♂55'02	38.46614 AU
				direct	11853 Aug 20 15:18	16°♂49'26	
conjunction	11846 Nov 21 02:51	9°♂21'55	0°44'01	evening set	11853 Nov 14 19:06	18°♂12'15	
minimum elong	11846 Nov 21 02:49	9°♂21'55	0°44'44	max. Earth dist.	11853 Nov 28 05:12	18°♂34'27	40.34031 AU
morning rise	11846 Dec 07 02:01	9°♂47'10					
retrograde	11847 Mar 04 03:32	11°♂07'11		conjunction	11853 Nov 30 09:42	18°♂38'06	3°19'06
opposition	11847 May 24 14:34	10°♂01'03	0°57'36	minimum elong	11853 Nov 30 09:36	18°♂38'05	3°19'52
min. Earth dist.	11847 May 26 08:49	9°♂58'48	39.92303 AU	morning rise	11853 Dec 16 00:42	19°♂04'01	
direct	11847 Aug 13 13:36	8°♂54'52		retrograde	11854 Mar 13 17:05	20°♂28'50	
evening set	11847 Nov 06 18:49	10°♂13'18		opposition	11854 Jun 02 13:11	19°♂20'30	3°41'37
max. Earth dist.	11847 Nov 20 16:08	10°♂35'21	41.80687 AU	min. Earth dist.	11854 Jun 04 12:51	19°♂17'51	38.21786 AU
				direct	11854 Aug 22 05:38	18°♂11'52	
conjunction	11847 Nov 22 16:28	10°♂38'35	1°05'33	evening set	11854 Nov 16 13:38	19°♂35'34	
minimum elong	11847 Nov 22 16:26	10°♂38'35	1°06'17	max. Earth dist.	11854 Nov 29 19:51	19°♂57'40	40.09105 AU
morning rise	11847 Dec 08 15:16	11°♂03'58					
retrograde	11848 Mar 04 20:46	12°♂24'35		conjunction	11854 Dec 02 01:57	20°♂01'28	3°41'59
opposition	11848 May 25 03:02	11°♂18'11	1°20'21	minimum elong	11854 Dec 02 01:51	20°♂01'28	3°42'46
min. Earth dist.	11848 May 26 23:16	11°♂15'48	39.68711 AU	morning rise	11854 Dec 17 14:55	20°♂27'26	
direct	11848 Aug 13 23:27	10°♂11'41		retrograde	11855 Mar 15 12:54	21°♂53'04	
evening set	11848 Nov 07 09:18	11°♂30'47		opposition	11855 Jun 04 04:19	20°♂44'24	4°05'52
max. Earth dist.	11848 Nov 21 06:05	11°♂52'56	41.56888 AU	min. Earth dist.	11855 Jun 06 04:57	20°♂41'42	37.96940 AU
				direct	11855 Aug 23 19:34	19°♂35'25	
conjunction	11848 Nov 23 06:32	11°♂56'11	1°27'19	evening set	11855 Nov 18 08:49	21°♂00'03	
minimum elong	11848 Nov 23 06:29	11°♂56'11	1°28'02	max. Earth dist.	11855 Dec 01 13:00	21°♂22'10	39.84147 AU
morning rise	11848 Dec 09 04:31	12°♂21'41					
retrograde	11849 Mar 06 10:51	13°♂42'56		conjunction	11855 Dec 03 18:52	21°♂25'58	4°05'02
opposition	11849 May 26 15:52	12°♂36'14	1°43'21	minimum elong	11855 Dec 03 18:45	21°♂25'58	4°05'49
min. Earth dist.	11849 May 28 12:23	12°♂33'50	39.44765 AU	morning rise	11855 Dec 19 05:09	21°♂51'58	
direct	11849 Aug 15 13:05	11°♂29'25		retrograde	11856 Mar 16 04:57	23°♂18'29	
evening set	11849 Nov 09 00:23	12°♂49'11		opposition	11856 Jun 04 19:51	22°♂09'30	4°30'17
max. Earth dist.	11849 Nov 22 18:22	13°♂11'18	41.32759 AU	min. Earth dist.	11856 Jun 06 20:45	22°♂06'45	37.72072 AU
				direct	11856 Aug 24 11:29	21°♂00'09	
conjunction	11849 Nov 24 20:39	13°♂14'42	1°49'16	evening set	11856 Nov 19 04:55	22°♂25'46	
minimum elong	11849 Nov 24 20:35	13°♂14'42	1°50'01	max. Earth dist.	11856 Dec 02 05:32	22°♂47'48	39.59175 AU
morning rise	11849 Dec 10 17:56	13°♂40'19					
retrograde	11850 Mar 08 01:22	15°♂02'12		conjunction	11856 Dec 04 12:08	22°♂51'42	4°28'13
opposition	11850 May 28 05:02	13°♂55'11	2°06'34	minimum elong	11856 Dec 04 12:00	22°♂51'42	4°29'00
min. Earth dist.	11850 May 30 02:41	13°♂52'43	39.20529 AU	morning rise	11856 Dec 19 19:44	23°♂17'42	
direct	11850 Aug 17 02:02	12°♂48'02		retrograde	11857 Mar 17 22:11	24°♂45'09	
evening set	11850 Nov 10 16:06	14°♂08'30		opposition	11857 Jun 06 11:53	23°♂35'52	4°54'51
max. Earth dist.	11850 Nov 24 08:24	14°♂30'39	41.08338 AU	min. Earth dist.	11857 Jun 08 12:54	23°♂33'05	37.47185 AU
				direct	11857 Aug 26 03:13	22°♂26'09	
conjunction	11850 Nov 26 11:25	14°♂34'08	2°11'27	evening set	11857 Nov 21 01:41	23°♂52'47	
minimum elong	11850 Nov 26 11:21	14°♂34'08	2°12'11	max. Earth dist.	11857 Dec 03 22:19	24°♂14'44	39.34126 AU
morning rise	11850 Dec 12 07:27	14°♂59'51					
retrograde	11851 Mar 09 14:00	16°♂22'24		conjunction	11857 Dec 06 05:55	24°♂18'44	4°51'32
opposition	11851 May 29 18:29	15°♂15'04	2°30'01	minimum elong	11857 Dec 06 05:46	24°♂18'43	4°52'19
min. Earth dist.	11851 May 31 17:18	15°♂12'31	38.96042 AU	morning rise	11857 Dec 21 10:22	24°♂44'43	
direct	11851 Aug 18 16:14	14°♂07'33		retrograde	11858 Mar 19 16:00	26°♂13'10	
evening set	11851 Nov 12 08:31	15°♂28'46		opposition	11858 Jun 08 04:33	25°♂03'33	5°19'35
max. Earth dist.	11851 Nov 25 22:56	15°♂50'56	40.83710 AU	min. Earth dist.	11858 Jun 10 07:04	25°♂00'41	37.22203 AU
				direct	11858 Aug 27 17:29	23°♂53'29	
conjunction	11851 Nov 28 02:30	15°♂54'29	2°33'49	evening set	11858 Nov 22 23:33	25°♂21'11	
minimum elong	11851 Nov 28 02:25	15°♂54'29	2°34'34	max. Earth dist.	11858 Dec 05 16:48	25°♂43'04	39.08955 AU
morning rise	11851 Dec 13 21:11	16°♂20'17					
retrograde	11852 Mar 10 05:52	17°♂43'33		conjunction	11858 Dec 08 00:28	25°♂47'06	5°14'57
opposition	11852 May 30 08:17	16°♂35'54	2°53'41	minimum elong	11858 Dec 08 00:19	25°♂47'06	5°15'45
min. Earth dist.	11852 Jun 01 06:56	16°♂33'20	38.71387 AU	morning rise	11858 Dec 23 01:26	26°♂13'04	
direct	11852 Aug 19 03:54	15°♂28'00		retrograde	11859 Mar 21 11:42	27°♂42'32	
evening set	11852 Nov 13 01:29	16°♂50'00		opposition	11859 Jun 09 21:30	26°♂32'36	5°44'26
max. Earth dist.	11852 Nov 26 12:50	17°♂12'08	40.58914 AU	min. Earth dist.	11859 Jun 11 23:49	26°♂29'43	36.97078 AU
				direct	11859 Aug 29 08:27	25°♂22'08	
conjunction	11852 Nov 28 17:48	17°♂15'47	2°56'22	evening set	11859 Nov 24 22:27	26°♂50'58	
minimum elong	11852 Nov 28 17:43	17°♂15'47	2°57'08	max. Earth dist.	11859 Dec 07 09:52	27°♂12'37	38.83599 AU
morning rise	11852 Dec 14 10:50	17°♂41'40					
retrograde	11853 Mar 11 23:01	19°♂05'41		conjunction	11859 Dec 09 19:33	27°♂16'49	5°38'29
opposition	11853 May 31 22:36	17°♂57'41	3°17'33	minimum elong	11859 Dec 09 19:23	27°♂16'49	5°39'16

morning rise	11859 Dec 24 16:50	27° $\mathring{A}$ 42'44	opposition	11866 Jun 20 12:34	7° $\mathring{S}$ 33'47	8°40'38
retrograde	11860 Mar 22 09:30	29° $\mathring{A}$ 13'17	min. Earth dist.	11866 Jun 22 18:29	7° $\mathring{S}$ 30'33	35.18235 AU
opposition	11860 Jun 10 15:15	28° $\mathring{A}$ 02'58 6°09'24	direct	11866 Sep 08 15:43	6° $\mathring{S}$ 20'14	
min. Earth dist.	11860 Jun 12 19:18	27° $\mathring{A}$ 59'58 36.71773 AU	evening set	11866 Dec 07 16:06	7° $\mathring{S}$ 58'22	
direct	11860 Aug 29 23:47	26° $\mathring{A}$ 52'06	max. Earth dist.	11866 Dec 18 11:11	8° $\mathring{S}$ 18'18	37.03444 AU
evening set	11860 Nov 25 21:57	28° $\mathring{A}$ 22'06				
max. Earth dist.	11860 Dec 08 05:38	28° $\mathring{A}$ 43'39 38.58053 AU	conjunction	11866 Dec 21 00:46	8° $\mathring{S}$ 23'05	8°24'29
			minimum elong	11866 Dec 21 00:31	8° $\mathring{S}$ 23'04	8°25'18
conjunction	11860 Dec 10 15:09	28° $\mathring{A}$ 47'53 6°02'06	morning rise	11867 Jan 03 09:05	8° $\mathring{S}$ 47'47	
minimum elong	11860 Dec 10 14:59	28° $\mathring{A}$ 47'52 6°02'55	retrograde	11867 Apr 03 22:58	10° $\mathring{S}$ 27'13	
morning rise	11860 Dec 25 08:08	29° $\mathring{A}$ 13'42	opposition	11867 Jun 22 10:11	9° $\mathring{S}$ 14'07	9°05'46
	11861 Jan 23 10:11	0° $\mathring{S}$	min. Earth dist.	11867 Jun 24 16:56	9° $\mathring{S}$ 10'49	34.92937 AU
retrograde	11861 Mar 24 06:49	0° $\mathring{S}$ 45'21	direct	11867 Sep 10 10:56	8° $\mathring{S}$ 00'07	
	11861 May 24 18:06	30° $\mathring{R}$ $\mathring{A}$	evening set	11867 Dec 09 22:45	9° $\mathring{S}$ 39'53	
opposition	11861 Jun 12 09:29	29° $\mathring{A}$ 34'40 6°34'29	max. Earth dist.	11867 Dec 20 12:02	9° $\mathring{S}$ 59'33	36.78021 AU
min. Earth dist.	11861 Jun 14 13:36	29° $\mathring{A}$ 31'39 36.46289 AU				
direct	11861 Aug 31 18:31	28° $\mathring{A}$ 23'22	conjunction	11867 Dec 23 00:41	10° $\mathring{S}$ 04'18	8°48'03
evening set	11861 Nov 27 22:38	29° $\mathring{A}$ 54'35	minimum elong	11867 Dec 23 00:26	10° $\mathring{S}$ 04'16	8°48'50
	11861 Dec 01 01:04	0° $\mathring{S}$	morning rise	11868 Jan 05 01:52	10° $\mathring{S}$ 28'41	
max. Earth dist.	11861 Dec 10 00:02	0° $\mathring{S}$ 15'52 38.32352 AU	retrograde	11868 Apr 05 00:17	12° $\mathring{S}$ 09'39	
			opposition	11868 Jun 23 08:32	10° $\mathring{S}$ 56'11	9°30'48
conjunction	11861 Dec 12 11:16	0° $\mathring{S}$ 20'16 6°25'48	min. Earth dist.	11868 Jun 25 14:52	10° $\mathring{S}$ 52'53	34.67841 AU
minimum elong	11861 Dec 12 11:04	0° $\mathring{S}$ 20'15 6°26'36	direct	11868 Sep 11 09:22	9° $\mathring{S}$ 41'46	
morning rise	11861 Dec 26 23:56	0° $\mathring{S}$ 45'59	evening set	11868 Dec 11 06:34	11° $\mathring{S}$ 23'12	
retrograde	11862 Mar 26 05:26	2° $\mathring{S}$ 18'47	max. Earth dist.	11868 Dec 21 11:35	11° $\mathring{S}$ 42'25	36.52814 AU
opposition	11862 Jun 14 04:07	1° $\mathring{S}$ 07'42 6°59'39				
min. Earth dist.	11862 Jun 16 09:08	1° $\mathring{S}$ 04'36 36.20693 AU	conjunction	11868 Dec 24 00:58	11° $\mathring{S}$ 47'16	9°11'27
	11862 Aug 16 06:59	30° $\mathring{R}$ $\mathring{A}$	minimum elong	11868 Dec 24 00:42	11° $\mathring{S}$ 47'15	9°12'16
direct	11862 Sep 02 12:07	29° $\mathring{A}$ 55'57	morning rise	11869 Jan 05 18:53	12° $\mathring{S}$ 11'19	
	11862 Sep 19 15:36	0° $\mathring{S}$	retrograde	11869 Apr 07 03:29	13° $\mathring{S}$ 53'54	
evening set	11862 Nov 30 00:05	1° $\mathring{S}$ 28'26	opposition	11869 Jun 25 07:33	12° $\mathring{S}$ 40'04	9°55'42
max. Earth dist.	11862 Dec 11 20:29	1° $\mathring{S}$ 49'31 38.06531 AU	min. Earth dist.	11869 Jun 27 13:58	12° $\mathring{S}$ 36'44	34.42968 AU
			direct	11869 Sep 13 06:46	11° $\mathring{S}$ 25'14	
conjunction	11862 Dec 14 08:06	1° $\mathring{S}$ 53'59 6°49'33	evening set	11869 Dec 13 15:38	13° $\mathring{S}$ 08'27	
minimum elong	11862 Dec 14 07:54	1° $\mathring{S}$ 53'58 6°50'22	max. Earth dist.	11869 Dec 23 12:59	13° $\mathring{S}$ 27'14	36.27785 AU
morning rise	11862 Dec 28 15:48	2° $\mathring{S}$ 19'34				
retrograde	11863 Mar 28 01:04	3° $\mathring{S}$ 53'33	conjunction	11869 Dec 26 02:19	13° $\mathring{S}$ 32'08	9°34'42
opposition	11863 Jun 15 23:27	2° $\mathring{S}$ 42'04 7°24'53	minimum elong	11869 Dec 26 02:03	13° $\mathring{S}$ 32'06	9°35'29
min. Earth dist.	11863 Jun 18 05:16	2° $\mathring{S}$ 38'55 35.95012 AU	morning rise	11870 Jan 07 12:15	13° $\mathring{S}$ 55'47	
direct	11863 Sep 04 07:43	1° $\mathring{S}$ 29'53	retrograde	11870 Apr 09 04:54	15° $\mathring{S}$ 40'03	
evening set	11863 Dec 02 02:38	3° $\mathring{S}$ 03'41	opposition	11870 Jun 27 07:15	14° $\mathring{S}$ 25'51	10°20'24
max. Earth dist.	11863 Dec 13 17:25	3° $\mathring{S}$ 24'32 37.80667 AU	min. Earth dist.	11870 Jun 29 14:22	14° $\mathring{S}$ 22'27	34.18259 AU
			direct	11870 Sep 15 05:59	13° $\mathring{S}$ 10'36	
conjunction	11863 Dec 16 05:23	3° $\mathring{S}$ 29'04 7°13'20	evening set	11870 Dec 16 02:10	14° $\mathring{S}$ 55'40	
minimum elong	11863 Dec 16 05:10	3° $\mathring{S}$ 29'03 7°14'08	max. Earth dist.	11870 Dec 25 15:00	15° $\mathring{S}$ 13'57	36.02906 AU
morning rise	11863 Dec 30 07:52	3° $\mathring{S}$ 54'28				
retrograde	11864 Mar 28 22:44	5° $\mathring{S}$ 29'43	conjunction	11870 Dec 28 04:25	15° $\mathring{S}$ 18'55	9°57'44
opposition	11864 Jun 16 19:07	4° $\mathring{S}$ 17'50 7°50'09	minimum elong	11870 Dec 28 04:09	15° $\mathring{S}$ 18'53	9°58'32
min. Earth dist.	11864 Jun 19 00:41	4° $\mathring{S}$ 14'40 35.69334 AU	morning rise	11871 Jan 09 05:59	15° $\mathring{S}$ 42'07	
direct	11864 Sep 05 02:31	3° $\mathring{S}$ 05'11	retrograde	11871 Apr 11 09:20	17° $\mathring{S}$ 28'08	
evening set	11864 Dec 03 06:05	4° $\mathring{S}$ 40'22	opposition	11871 Jun 29 07:40	16° $\mathring{S}$ 13'35	10°44'53
max. Earth dist.	11864 Dec 14 14:12	5° $\mathring{S}$ 00'55 37.54814 AU	min. Earth dist.	11871 Jul 01 14:19	16° $\mathring{S}$ 10'11	33.93677 AU
			direct	11871 Sep 17 04:51	14° $\mathring{S}$ 57'54	
conjunction	11864 Dec 17 03:15	5° $\mathring{S}$ 05'34 7°37'06	evening set	11871 Dec 18 13:57	16° $\mathring{S}$ 44'52	
minimum elong	11864 Dec 17 03:02	5° $\mathring{S}$ 05'33 7°37'55	max. Earth dist.	11871 Dec 27 16:49	17° $\mathring{S}$ 02'32	35.78105 AU
morning rise	11864 Dec 31 00:05	5° $\mathring{S}$ 30'46				
retrograde	11865 Mar 30 20:56	7° $\mathring{S}$ 07'21	conjunction	11871 Dec 30 07:20	17° $\mathring{S}$ 07'37	10°20'32
opposition	11865 Jun 18 15:36	5° $\mathring{S}$ 55'03 8°15'24	minimum elong	11871 Dec 30 07:03	17° $\mathring{S}$ 07'36	10°21'19
min. Earth dist.	11865 Jun 20 22:24	5° $\mathring{S}$ 51'47 35.43721 AU	morning rise	11872 Jan 10 23:59	17° $\mathring{S}$ 30'20	
direct	11865 Sep 06 19:17	4° $\mathring{S}$ 41'57	retrograde	11872 Apr 12 11:45	19° $\mathring{S}$ 18'10	
evening set	11865 Dec 05 10:26	6° $\mathring{S}$ 18'34	opposition	11872 Jun 30 08:58	18° $\mathring{S}$ 03'14	11°09'08
max. Earth dist.	11865 Dec 16 13:21	6° $\mathring{S}$ 38'54 37.29058 AU	min. Earth dist.	11872 Jul 02 16:59	17° $\mathring{S}$ 59'44	33.69178 AU
			direct	11872 Sep 18 02:39	16° $\mathring{S}$ 47'06	
conjunction	11865 Dec 19 01:39	6° $\mathring{S}$ 43'32 8°00'50	evening set	11872 Dec 20 03:05	18° $\mathring{S}$ 36'02	
minimum elong	11865 Dec 19 01:25	6° $\mathring{S}$ 43'31 8°01'37	max. Earth dist.	11872 Dec 28 21:05	18° $\mathring{S}$ 53'09	35.53396 AU
morning rise	11866 Jan 01 16:20	7° $\mathring{S}$ 08'30				
retrograde	11866 Apr 01 20:26	8° $\mathring{S}$ 46'29	conjunction	11872 Dec 31 11:03	18° $\mathring{S}$ 58'15	10°43'04

minimum elong	11872 Dec 31 10:46	18°35'13"	10°43'51"	min. Earth dist.	11879 Jul 16 22:08	1°38'57"	32.03411 AU
morning rise	11873 Jan 11 18:07	19°32'05"		direct	11879 Oct 02 01:37	0°22'59"	
retrograde	11873 Apr 14 15:44	21°31'07"		evening set	11880 Jan 07 14:22	2°27'55"	
opposition	11873 Jul 02 10:56	19°35'46"	11°33'06"	max. Earth dist.	11880 Jan 12 21:10	2°38'59"	33.86828 AU
min. Earth dist.	11873 Jul 04 18:17	19°35'17"	33.44778 AU				
direct	11873 Sep 20 03:50	18°38'10"		conjunction	11880 Jan 15 09:57	2°44'19"	13°08'47"
evening set	11873 Dec 22 17:29	20°32'08"		minimum elong	11880 Jan 15 09:40	2°44'18"	13°09'30"
max. Earth dist.	11873 Dec 30 23:56	20°34'52"	35.28792 AU	morning rise	11880 Jan 23 04:43	3°00'40"	
				retrograde	11880 Apr 28 23:55	5°05'33"	
conjunction	11874 Jan 02 15:22	20°35'04"	11°05'17"	opposition	11880 Jul 15 22:04	3°47'09"	14°07'44"
minimum elong	11874 Jan 02 15:04	20°35'04"	11°06'03"	min. Earth dist.	11880 Jul 18 03:44	3°43'37"	31.81356 AU
morning rise	11874 Jan 13 12:34	21°31'21"		direct	11880 Oct 03 07:43	2°27'07"	
retrograde	11874 Apr 16 22:14	23°30'56"		evening set	11881 Jan 09 15:23	4°34'44"	
opposition	11874 Jul 04 13:44	21°34'09"	11°56'43"	max. Earth dist.	11881 Jan 14 06:46	4°44'34"	33.64789 AU
min. Earth dist.	11874 Jul 06 22:05	21°34'35"	33.20510 AU				
direct	11874 Sep 22 03:33	20°31'03"		conjunction	11881 Jan 16 19:46	4°49'57"	13°27'06"
evening set	11874 Dec 25 09:20	22°32'40"		minimum elong	11881 Jan 16 19:29	4°49'56"	13°27'49"
max. Earth dist.	11875 Jan 02 06:05	22°33'50"	35.04335 AU	morning rise	11881 Jan 23 23:25	5°05'07"	
				retrograde	11881 May 01 10:11	7°12'34"	
conjunction	11875 Jan 04 20:43	22°34'50"	11°27'08"	opposition	11881 Jul 18 06:21	5°53'48"	14°27'05"
minimum elong	11875 Jan 04 20:25	22°34'50"	11°27'55"	min. Earth dist.	11881 Jul 20 12:19	5°50'13"	31.59881 AU
morning rise	11875 Jan 15 07:06	23°30'58"		direct	11881 Oct 05 12:19	4°33'20"	
retrograde	11875 Apr 19 03:49	24°35'36"		evening set	11882 Jan 12 18:27	6°43'47"	
opposition	11875 Jul 06 17:07	23°34'22"	12°19'57"	max. Earth dist.	11882 Jan 16 19:24	6°52'25"	33.43335 AU
min. Earth dist.	11875 Jul 09 01:08	23°33'48"	32.96419 AU				
direct	11875 Sep 24 06:24	22°32'46"		conjunction	11882 Jan 19 06:30	6°57'41"	13°44'35"
evening set	11875 Dec 28 02:39	24°32'03"		minimum elong	11882 Jan 19 06:14	6°57'40"	13°45'16"
max. Earth dist.	11876 Jan 04 11:12	24°33'53"	34.80098 AU	morning rise	11882 Jan 25 17:47	7°11'33"	
				retrograde	11882 May 03 21:09	9°21'41"	
conjunction	11876 Jan 07 02:36	24°34'14"	11°48'34"	opposition	11882 Jul 20 15:24	8°02'35"	14°45'32"
minimum elong	11876 Jan 07 02:19	24°34'13"	11°49'19"	min. Earth dist.	11882 Jul 22 20:01	7°59'04"	31.38958 AU
morning rise	11876 Jan 17 01:49	25°30'23"		direct	11882 Oct 07 20:58	6°41'43"	
retrograde	11876 Apr 20 13:05	26°35'05"		evening set	11883 Jan 15 23:42	8°55'09"	
opposition	11876 Jul 07 21:20	25°34'02"	12°42'43"	max. Earth dist.	11883 Jan 19 06:29	9°02'14"	33.22428 AU
min. Earth dist.	11876 Jul 10 05:22	25°33'49"	32.72595 AU				
direct	11876 Sep 25 10:30	24°32'18"		conjunction	11883 Jan 21 18:02	9°07'35"	14°01'12"
evening set	11876 Dec 29 21:04	26°31'50"		minimum elong	11883 Jan 21 17:47	9°07'34"	14°01'52"
max. Earth dist.	11877 Jan 05 18:29	26°33'52"	34.56142 AU	morning rise	11883 Jan 27 11:46	9°19'59"	
				retrograde	11883 May 06 10:50	11°32'58"	
conjunction	11877 Jan 08 09:13	26°33'13"	12°09'31"	opposition	11883 Jul 23 01:14	10°13'31"	15°03'02"
minimum elong	11877 Jan 08 08:55	26°33'11"	12°10'17"	min. Earth dist.	11883 Jul 25 05:47	10°10'00"	31.18571 AU
morning rise	11877 Jan 17 20:25	26°35'32"		direct	11883 Oct 10 04:48	8°52'15"	
retrograde	11877 Apr 22 20:33	28°35'23"		evening set	11884 Jan 19 07:44	11°08'51"	
opposition	11877 Jul 10 02:26	27°33'16"	13°04'58"	max. Earth dist.	11884 Jan 21 20:43	11°14'23"	33.02038 AU
min. Earth dist.	11877 Jul 12 10:36	27°33'38"	32.49093 AU				
direct	11877 Sep 27 15:45	26°32'03"		conjunction	11884 Jan 24 06:36	11°19'38"	14°16'51"
evening set	11878 Jan 01 17:19	28°32'03"		minimum elong	11884 Jan 24 06:22	11°19'37"	14°17'30"
max. Earth dist.	11878 Jan 08 02:14	28°33'39"	34.32569 AU	morning rise	11884 Jan 29 04:50	11°30'23"	
				retrograde	11884 May 07 23:36	13°46'23"	
conjunction	11878 Jan 10 16:38	28°33'02"	12°29'55"	opposition	11884 Jul 24 12:09	12°26'36"	15°19'30"
minimum elong	11878 Jan 10 16:21	28°33'00"	12°30'39"	min. Earth dist.	11884 Jul 26 16:01	12°23'06"	30.98676 AU
morning rise	11878 Jan 19 15:10	28°35'26"		direct	11884 Oct 11 14:32	11°04'56"	
	11878 Feb 21 10:43	0°		evening set	11885 Jan 21 19:04	13°24'57"	
retrograde	11878 Apr 25 05:42	0°57'32"		max. Earth dist.	11885 Jan 23 09:47	13°28'30"	32.82168 AU
	11878 Jun 29 08:45	30°R3					
opposition	11878 Jul 12 08:02	29°33'58"	13°26'36"	conjunction	11885 Jan 25 19:39	13°33'48"	14°31'31"
min. Earth dist.	11878 Jul 14 15:05	29°33'23"	32.26013 AU	minimum elong	11885 Jan 25 19:26	13°33'46"	14°32'10"
direct	11878 Sep 29 21:08	28°32'05"		morning rise	11885 Jan 29 19:45	13°42'36"	
	11878 Dec 24 05:12	0°			11885 Mar 08 12:14	15°	
evening set	11879 Jan 04 14:58	0°23'13"		retrograde	11885 May 10 15:51	16°01'52"	
max. Earth dist.	11879 Jan 10 10:38	0°35'18"	34.09434 AU		11885 Jul 15 16:10	15°R	
				opposition	11885 Jul 26 23:45	14°41'44"	15°34'52"
conjunction	11879 Jan 13 00:57	0°40'43"	12°49'42"	min. Earth dist.	11885 Jul 29 02:47	14°38'16"	30.79297 AU
minimum elong	11879 Jan 13 00:39	0°40'41"	12°50'26"	direct	11885 Oct 14 01:57	13°19'41"	
morning rise	11879 Jan 21 10:06	0°58'08"			11886 Jan 05 10:30	15°	
retrograde	11879 Apr 27 13:39	3°00'34"		evening set	11886 Jan 25 12:21	15°43'34"	
opposition	11879 Jul 14 14:44	1°42'35"	13°47'33"	max. Earth dist.	11886 Jan 26 01:07	15°44'45"	32.62817 AU

conjunction	11886 Jan 28 09:50	15°  49'59	14°45'07	opposition	11893 Aug 14 23:17	3°  46'27	16°48'48
minimum elong	11886 Jan 28 09:38	15°  49'58	14°45'44	min. Earth dist.	11893 Aug 16 16:17	3°  43'34	29.48701 AU
morning rise	11886 Jan 31 06:54	15°  56'21		direct	11893 Nov 01 18:21	2°  21'39	
retrograde	11886 May 13 06:20	18°  19'19		max. Earth dist.	11894 Feb 15 05:33	4°  57'06	31.34400 AU
opposition	11886 Jul 29 12:11	16°  58'51	15°49'05				
min. Earth dist.	11886 Jul 31 15:11	16°  55'22	30.60438 AU	conjunction	11894 Feb 17 02:10	5°  01'27	15°46'25
direct	11886 Oct 16 14:00	15°  36'24		minimum elong	11894 Feb 17 02:12	5°  01'27	15°46'50
evening set	11887 Jan 29 23:46	18°  05'46		retrograde	11894 Jun 01 23:42	7°  39'07	
max. Earth dist.	11887 Jan 28 16:43	18°  02'53	32.44044 AU	opposition	11894 Aug 17 17:01	6°  16'22	16°50'39
				min. Earth dist.	11894 Aug 19 08:03	6°  13'37	29.36439 AU
conjunction	11887 Jan 31 00:42	18°  08'06	14°57'35	direct	11894 Nov 04 12:15	4°  51'21	
minimum elong	11887 Jan 31 00:31	18°  08'05	14°58'11	max. Earth dist.	11895 Feb 18 04:22	7°  28'01	31.22608 AU
morning rise	11887 Feb 01 01:16	18°  10'23					
retrograde	11887 May 15 22:52	20°  38'40		conjunction	11895 Feb 19 21:56	7°  32'05	15°47'04
opposition	11887 Aug 01 01:20	19°  17'51	16°02'03	minimum elong	11895 Feb 19 22:01	7°  32'06	15°47'27
min. Earth dist.	11887 Aug 03 02:41	19°  14'28	30.42165 AU	retrograde	11895 Jun 04 18:21	10°  10'31	
direct	11887 Oct 19 03:25	17°  55'01		opposition	11895 Aug 20 11:34	8°  47'37	16°50'41
max. Earth dist.	11888 Jan 31 09:01	20°  22'52	32.25884 AU	min. Earth dist.	11895 Aug 22 01:23	8°  44'56	29.25147 AU
				direct	11895 Nov 07 06:30	7°  22'26	
conjunction	11888 Feb 02 16:11	20°  28'03	15°08'50	max. Earth dist.	11896 Feb 21 01:42	10°  00'01	31.11815 AU
minimum elong	11888 Feb 02 16:02	20°  28'02	15°09'24				
retrograde	11888 May 17 14:19	22°  59'49		conjunction	11896 Feb 22 17:50	10°  03'58	15°45'59
opposition	11888 Aug 02 15:22	21°  38'39	16°13'41	minimum elong	11896 Feb 22 17:56	10°  03'59	15°46'20
min. Earth dist.	11888 Aug 04 16:39	21°  35'15	30.24529 AU	retrograde	11896 Jun 06 15:40	12°  43'05	
direct	11888 Oct 20 15:40	20°  15'26		opposition	11896 Aug 22 06:31	11°  20'03	16°48'51
max. Earth dist.	11889 Feb 02 03:09	22°  44'42	32.08434 AU	min. Earth dist.	11896 Aug 23 17:48	11°  17'33	29.14813 AU
				direct	11896 Nov 09 01:41	9°  54'43	
conjunction	11889 Feb 04 08:23	22°  49'45	15°18'47	max. Earth dist.	11897 Feb 23 00:45	12°  33'15	31.01979 AU
minimum elong	11889 Feb 04 08:16	22°  49'44	15°19'21				
retrograde	11889 May 20 08:09	25°  22'37		conjunction	11897 Feb 24 14:25	12°  36'58	15°43'10
opposition	11889 Aug 05 05:53	24°  01'08	16°23'54	minimum elong	11897 Feb 24 14:34	12°  36'59	15°43'30
min. Earth dist.	11889 Aug 07 05:03	23°  57'52	30.07614 AU	retrograde	11897 Jun 09 11:27	15°  16'39	
direct	11889 Oct 23 05:56	22°  37'33		opposition	11897 Aug 25 01:59	13°  53'30	16°45'08
max. Earth dist.	11890 Feb 04 20:37	25°  08'04	31.91754 AU	min. Earth dist.	11897 Aug 26 12:27	13°  51'03	29.05402 AU
				direct	11897 Nov 11 21:22	12°  28'03	
conjunction	11890 Feb 07 01:11	25°  13'05	15°27'22	max. Earth dist.	11898 Feb 25 23:21	15°  07'20	30.93109 AU
minimum elong	11890 Feb 07 01:04	25°  13'04	15°27'53				
retrograde	11890 May 22 23:41	27°  47'02		conjunction	11898 Feb 27 11:15	15°  10'53	15°38'37
opposition	11890 Aug 07 21:16	26°  25'14	16°32'36	minimum elong	11898 Feb 27 11:25	15°  10'54	15°38'54
min. Earth dist.	11890 Aug 09 20:00	26°  21'59	29.91498 AU	retrograde	11898 Jun 12 08:56	17°  51'03	
direct	11890 Oct 25 19:01	25°  01'17		opposition	11898 Aug 27 21:47	16°  27'47	16°39'32
max. Earth dist.	11891 Feb 07 16:53	27°  33'11	31.75937 AU	min. Earth dist.	11898 Aug 29 05:25	16°  25'32	28.96915 AU
				direct	11898 Nov 14 18:59	15°  02'13	
conjunction	11891 Feb 09 18:40	27°  37'58	15°34'30	max. Earth dist.	11899 Feb 28 22:30	17°  42'11	30.85181 AU
minimum elong	11891 Feb 09 18:36	27°  37'58	15°35'00				
	11891 Apr 28 07:28	0° 		conjunction	11899 Mar 02 08:23	17°  45'33	15°32'18
retrograde	11891 May 25 16:12	0°  12'56		minimum elong	11899 Mar 02 08:36	17°  45'34	15°32'33
	11891 Jun 22 11:10	30° 		retrograde	11899 Jun 15 05:00	20°  26'04	
opposition	11891 Aug 10 13:13	28°  50'51	16°39'42	opposition	11899 Aug 30 18:04	19°  02'43	16°32'01
min. Earth dist.	11891 Aug 12 09:40	28°  47'44	29.76254 AU	min. Earth dist.	11899 Sep 01 00:51	19°  00'31	28.89362 AU
direct	11891 Oct 28 11:28	27°  26'34		direct	11899 Nov 17 14:32	17°  37'03	
max. Earth dist.	11892 Feb 10 11:38	29°  59'38	31.61066 AU	max. Earth dist.	11900 Mar 03 22:21	20°  17'37	30.78247 AU
	11892 Feb 10 15:28	0° 					
conjunction	11892 Feb 12 12:36	0°  04'22	15°40'06	conjunction	11900 Mar 05 05:39	20°  20'45	15°24'12
minimum elong	11892 Feb 12 12:33	0°  04'21	15°40'33	minimum elong	11900 Mar 05 05:52	20°  20'46	15°24'25
retrograde	11892 May 27 10:43	2°  40'17		retrograde	11900 Jun 18 02:45	23°  01'31	
opposition	11892 Aug 12 05:56	1°  17'56	16°45'08	opposition	11900 Sep 02 14:26	21°  38'05	16°22'36
min. Earth dist.	11892 Aug 14 00:57	1°  14'55	29.61982 AU	min. Earth dist.	11900 Sep 03 18:18	21°  36'06	28.82776 AU
	11892 Oct 10 02:48	30° 		direct	11900 Nov 20 12:46	20°  12'21	
direct	11892 Oct 30 01:47	29°  53'21		max. Earth dist.	11901 Mar 06 21:21	22°  53'21	30.72318 AU
	11892 Nov 18 23:22	0° 					
max. Earth dist.	11893 Feb 12 09:24	2°  27'45	31.47212 AU	conjunction	11901 Mar 08 02:52	22°  56'18	15°14'20
				minimum elong	11901 Mar 08 03:09	22°  56'19	15°14'30
conjunction	11893 Feb 14 07:07	2°  32'12	15°44'05	retrograde	11901 Jun 20 22:44	25°  37'14	
minimum elong	11893 Feb 14 07:07	2°  32'12	15°44'32	opposition	11901 Sep 05 11:07	24°  13'44	16°11'15
retrograde	11893 May 30 04:01	5°  09'02		min. Earth dist.	11901 Sep 06 13:41	24°  11'51	28.77200 AU
				direct	11901 Nov 23 08:40	22°  47'56	

max. Earth dist.	11902 Mar 09 22:00	25° $\mathbf{\text{K}}$ 29'23	30.67453 AU	retrograde	11908 Jul 08 13:18	13° $\mathbf{\text{P}}$ 42'01	
				opposition	11908 Sep 23 11:20	12° $\mathbf{\text{P}}$ 18'59	13°59'32
conjunction	11902 Mar 11 00:19	25° $\mathbf{\text{K}}$ 32'01	15°02'41	min. Earth dist.	11908 Sep 23 20:08	12° $\mathbf{\text{P}}$ 18'22	28.70359 AU
minimum elong	11902 Mar 11 00:36	25° $\mathbf{\text{K}}$ 32'03	15°02'49	direct	11908 Dec 11 13:43	10° $\mathbf{\text{P}}$ 53'49	
retrograde	11902 Jun 23 18:20	28° $\mathbf{\text{K}}$ 13'00		evening set	11909 Mar 20 21:27	13° $\mathbf{\text{P}}$ 16'44	
opposition	11902 Sep 08 07:41	26° $\mathbf{\text{K}}$ 49'28	15°58'00				
min. Earth dist.	11902 Sep 09 07:26	26° $\mathbf{\text{K}}$ 47'46	28.72671 AU	conjunction	11909 Mar 29 00:59	13° $\mathbf{\text{P}}$ 36'06	12°53'20
direct	11902 Nov 26 07:27	25° $\mathbf{\text{K}}$ 23'38		minimum elong	11909 Mar 29 01:26	13° $\mathbf{\text{P}}$ 36'09	12°53'12
evening set	11903 Mar 11 10:43	28° $\mathbf{\text{K}}$ 01'51		max. Earth dist.	11909 Mar 28 17:45	13° $\mathbf{\text{P}}$ 35'23	30.66682 AU
				morning rise	11909 Apr 06 04:50	13° $\mathbf{\text{P}}$ 55'30	
conjunction	11903 Mar 13 21:33	28° $\mathbf{\text{K}}$ 07'44	14°49'16	retrograde	11909 Jul 11 08:57	16° $\mathbf{\text{P}}$ 15'03	
minimum elong	11903 Mar 13 21:53	28° $\mathbf{\text{K}}$ 07'46	14°49'22	opposition	11909 Sep 26 07:18	14° $\mathbf{\text{P}}$ 52'12	13°33'54
max. Earth dist.	11903 Mar 12 20:57	28° $\mathbf{\text{K}}$ 05'17	30.63696 AU	min. Earth dist.	11909 Sep 26 12:44	14° $\mathbf{\text{P}}$ 51'49	28.74021 AU
morning rise	11903 Mar 16 09:02	28° $\mathbf{\text{K}}$ 13'41		direct	11909 Dec 14 12:19	13° $\mathbf{\text{P}}$ 27'14	
	11903 May 04 11:00	0° $\mathbf{\text{P}}$		evening set	11910 Mar 23 00:41	15° $\mathbf{\text{P}}$ 48'00	
retrograde	11903 Jun 26 14:52	0° $\mathbf{\text{P}}$ 48'41					
	11903 Aug 21 02:35	30° $\mathbf{\text{K}}$		conjunction	11910 Mar 31 20:39	16° $\mathbf{\text{P}}$ 08'54	12°28'42
opposition	11903 Sep 11 04:30	29° $\mathbf{\text{K}}$ 25'07	15°42'49	minimum elong	11910 Mar 31 21:05	16° $\mathbf{\text{P}}$ 08'57	12°28'33
min. Earth dist.	11903 Sep 12 02:04	29° $\mathbf{\text{K}}$ 23'35	28.69277 AU	max. Earth dist.	11910 Mar 31 16:19	16° $\mathbf{\text{P}}$ 08'29	30.71197 AU
direct	11903 Nov 29 03:32	27° $\mathbf{\text{K}}$ 59'17		morning rise	11910 Apr 09 16:42	16° $\mathbf{\text{P}}$ 29'51	
	11904 Feb 26 12:17	0° $\mathbf{\text{P}}$		retrograde	11910 Jul 14 02:22	18° $\mathbf{\text{P}}$ 47'14	
evening set	11904 Mar 11 23:12	0° $\mathbf{\text{P}}$ 34'10		opposition	11910 Sep 29 03:05	17° $\mathbf{\text{P}}$ 24'34	13°06'49
				min. Earth dist.	11910 Sep 29 07:16	17° $\mathbf{\text{P}}$ 24'16	28.78708 AU
conjunction	11904 Mar 15 18:37	0° $\mathbf{\text{P}}$ 43'19	14°34'06	direct	11910 Dec 17 08:27	15° $\mathbf{\text{P}}$ 59'50	
minimum elong	11904 Mar 15 18:58	0° $\mathbf{\text{P}}$ 43'21	14°34'10	evening set	11911 Mar 25 04:41	18° $\mathbf{\text{P}}$ 18'26	
max. Earth dist.	11904 Mar 14 21:58	0° $\mathbf{\text{P}}$ 41'15	30.61123 AU				
morning rise	11904 Mar 19 14:35	0° $\mathbf{\text{P}}$ 52'31		conjunction	11911 Apr 03 15:49	18° $\mathbf{\text{P}}$ 40'46	12°02'48
retrograde	11904 Jun 28 09:34	3° $\mathbf{\text{P}}$ 24'07		minimum elong	11911 Apr 03 16:16	18° $\mathbf{\text{P}}$ 40'49	12°02'36
opposition	11904 Sep 13 01:21	2° $\mathbf{\text{P}}$ 00'35	15°25'45	max. Earth dist.	11911 Apr 03 13:49	18° $\mathbf{\text{P}}$ 40'34	30.76738 AU
min. Earth dist.	11904 Sep 13 20:15	1° $\mathbf{\text{P}}$ 59'15	28.67059 AU	morning rise	11911 Apr 13 03:00	19° $\mathbf{\text{P}}$ 03'07	
direct	11904 Dec 01 01:00	0° $\mathbf{\text{P}}$ 34'48		retrograde	11911 Jul 16 21:18	21° $\mathbf{\text{P}}$ 18'22	
evening set	11905 Mar 13 18:34	3° $\mathbf{\text{P}}$ 06'58		opposition	11911 Oct 01 22:30	19° $\mathbf{\text{P}}$ 55'54	12°38'24
				min. Earth dist.	11911 Oct 01 23:27	19° $\mathbf{\text{P}}$ 55'50	28.84383 AU
conjunction	11905 Mar 18 15:31	3° $\mathbf{\text{P}}$ 18'39	14°17'11	direct	11911 Dec 20 07:13	18° $\mathbf{\text{P}}$ 31'24	
minimum elong	11905 Mar 18 15:54	3° $\mathbf{\text{P}}$ 18'41	14°17'14	evening set	11912 Mar 26 08:46	20° $\mathbf{\text{P}}$ 47'53	
max. Earth dist.	11905 Mar 17 20:46	3° $\mathbf{\text{P}}$ 16'46	30.59787 AU				
morning rise	11905 Mar 23 13:04	3° $\mathbf{\text{P}}$ 30'24		conjunction	11912 Apr 05 10:21	21° $\mathbf{\text{P}}$ 11'31	11°35'41
retrograde	11905 Jul 01 05:08	5° $\mathbf{\text{P}}$ 59'15		minimum elong	11912 Apr 05 10:47	21° $\mathbf{\text{P}}$ 11'34	11°35'28
opposition	11905 Sep 15 21:55	4° $\mathbf{\text{P}}$ 35'47	15°06'49	max. Earth dist.	11912 Apr 05 10:38	21° $\mathbf{\text{P}}$ 11'33	30.83246 AU
min. Earth dist.	11905 Sep 16 13:50	4° $\mathbf{\text{P}}$ 34'39	28.66084 AU	morning rise	11912 Apr 15 11:52	21° $\mathbf{\text{P}}$ 35'10	
direct	11905 Dec 03 22:02	3° $\mathbf{\text{P}}$ 10'05		retrograde	11912 Jul 18 14:44	23° $\mathbf{\text{P}}$ 48'20	
evening set	11906 Mar 15 17:06	5° $\mathbf{\text{P}}$ 39'47		opposition	11912 Oct 03 17:34	22° $\mathbf{\text{P}}$ 26'03	12°08'45
				min. Earth dist.	11912 Oct 03 16:55	22° $\mathbf{\text{P}}$ 26'06	28.91030 AU
conjunction	11906 Mar 21 12:26	5° $\mathbf{\text{P}}$ 53'41	13°58'35	direct	11912 Dec 22 03:46	21° $\mathbf{\text{P}}$ 01'47	
minimum elong	11906 Mar 21 12:49	5° $\mathbf{\text{P}}$ 53'44	13°58'36	evening set	11913 Mar 28 13:28	23° $\mathbf{\text{P}}$ 16'09	
max. Earth dist.	11906 Mar 20 21:40	5° $\mathbf{\text{P}}$ 52'13	30.59711 AU				
morning rise	11906 Mar 27 08:10	6° $\mathbf{\text{P}}$ 07'38		conjunction	11913 Apr 08 04:30	23° $\mathbf{\text{P}}$ 41'00	11°07'28
retrograde	11906 Jul 03 23:14	8° $\mathbf{\text{P}}$ 33'59		minimum elong	11913 Apr 08 04:57	23° $\mathbf{\text{P}}$ 41'02	11°07'12
opposition	11906 Sep 18 18:36	7° $\mathbf{\text{P}}$ 10'38	14°46'05	max. Earth dist.	11913 Apr 08 07:31	23° $\mathbf{\text{P}}$ 41'17	30.90725 AU
min. Earth dist.	11906 Sep 19 08:24	7° $\mathbf{\text{P}}$ 09'40	28.66328 AU	morning rise	11913 Apr 18 19:17	24° $\mathbf{\text{P}}$ 05'49	
direct	11906 Dec 06 19:32	5° $\mathbf{\text{P}}$ 45'05		retrograde	11913 Jul 21 06:27	26° $\mathbf{\text{P}}$ 16'56	
evening set	11907 Mar 17 17:23	8° $\mathbf{\text{P}}$ 12'28		opposition	11913 Oct 06 11:54	24° $\mathbf{\text{P}}$ 54'51	11°37'57
				min. Earth dist.	11913 Oct 06 08:36	24° $\mathbf{\text{P}}$ 55'05	28.98619 AU
conjunction	11907 Mar 24 08:50	8° $\mathbf{\text{P}}$ 28'20	13°38'22	direct	11913 Dec 25 01:19	23° $\mathbf{\text{P}}$ 30'48	
minimum elong	11907 Mar 24 09:16	8° $\mathbf{\text{P}}$ 28'23	13°38'19	evening set	11914 Mar 30 18:21	25° $\mathbf{\text{P}}$ 43'07	
max. Earth dist.	11907 Mar 23 20:01	8° $\mathbf{\text{P}}$ 27'04	30.60872 AU				
morning rise	11907 Mar 31 00:46	8° $\mathbf{\text{P}}$ 44'16		conjunction	11914 Apr 10 21:59	26° $\mathbf{\text{P}}$ 09'02	10°38'13
retrograde	11907 Jul 06 19:36	11° $\mathbf{\text{P}}$ 08'17		minimum elong	11914 Apr 10 22:24	26° $\mathbf{\text{P}}$ 09'05	10°37'57
opposition	11907 Sep 21 15:00	9° $\mathbf{\text{P}}$ 45'05	14°23'38	max. Earth dist.	11914 Apr 11 02:38	26° $\mathbf{\text{P}}$ 09'29	30.99144 AU
min. Earth dist.	11907 Sep 22 01:20	9° $\mathbf{\text{P}}$ 44'21	28.67775 AU	morning rise	11914 Apr 22 01:26	26° $\mathbf{\text{P}}$ 34'57	
direct	11907 Dec 09 16:06	8° $\mathbf{\text{P}}$ 19'42		retrograde	11914 Jul 23 22:52	28° $\mathbf{\text{P}}$ 44'02	
evening set	11908 Mar 18 18:55	10° $\mathbf{\text{P}}$ 44'50		opposition	11914 Oct 09 05:54	27° $\mathbf{\text{P}}$ 22'09	11°06'05
				min. Earth dist.	11914 Oct 09 00:25	27° $\mathbf{\text{P}}$ 22'32	29.07176 AU
conjunction	11908 Mar 26 05:10	11° $\mathbf{\text{P}}$ 02'31	13°16'35	direct	11914 Dec 27 20:30	25° $\mathbf{\text{P}}$ 58'20	
minimum elong	11908 Mar 26 05:35	11° $\mathbf{\text{P}}$ 02'34	13°16'30	evening set	11915 Apr 01 23:13	28° $\mathbf{\text{P}}$ 08'36	
max. Earth dist.	11908 Mar 25 19:58	11° $\mathbf{\text{P}}$ 01'37	30.63212 AU				
morning rise	11908 Apr 02 15:40	11° $\mathbf{\text{P}}$ 20'16		conjunction	11915 Apr 13 14:45	28° $\mathbf{\text{P}}$ 35'31	10°08'03

minimum elong	11915 Apr 13 15:10	28° $\Upsilon$ 35'34	10°07'43	retrograde	11921 Aug 08 14:12	15° $\mathcal{B}$ 07'21	
max. Earth dist.	11915 Apr 13 22:49	28° $\Upsilon$ 36'18	31.08534 AU		11921 Aug 29 21:56	15° $\mathcal{R}$ $\mathcal{B}$	
morning rise	11915 Apr 25 05:44	29° $\Upsilon$ 02'24		opposition	11921 Oct 25 18:48	13° $\mathcal{B}$ 47'25	7°01'41
	11915 May 22 00:46	0° $\mathcal{B}$		min. Earth dist.	11921 Oct 24 20:31	13° $\mathcal{B}$ 48'54	29.95496 AU
retrograde	11915 Jul 26 12:46	1° $\mathcal{B}$ 09'31		direct	11922 Jan 13 19:49	12° $\mathcal{B}$ 25'55	
	11915 Oct 04 13:31	30° $\mathcal{R}$ $\Upsilon$		evening set	11922 Apr 15 11:48	14° $\mathcal{B}$ 23'34	
opposition	11915 Oct 11 23:20	29° $\Upsilon$ 47'51	10°33'16				
min. Earth dist.	11915 Oct 11 15:40	29° $\Upsilon$ 48'22	29.16708 AU	conjunction	11922 Apr 29 16:27	14° $\mathcal{B}$ 54'54	6°18'03
direct	11915 Dec 30 16:44	28° $\Upsilon$ 24'17		minimum elong	11922 Apr 29 16:44	14° $\mathcal{B}$ 54'56	6°17'32
	11916 Mar 19 10:37	0° $\mathcal{B}$		max. Earth dist.	11922 Apr 30 17:22	14° $\mathcal{B}$ 57'13	32.02382 AU
evening set	11916 Apr 03 04:18	0° $\mathcal{B}$ 32'32			11922 May 01 23:27	15° $\mathcal{B}$	
				morning rise	11922 May 13 20:02	15° $\mathcal{B}$ 26'09	
conjunction	11916 Apr 15 06:42	1° $\mathcal{B}$ 00'21	9°37'01	retrograde	11922 Aug 11 01:05	17° $\mathcal{B}$ 21'21	
minimum elong	11916 Apr 15 07:06	1° $\mathcal{B}$ 00'23	9°36'41	min. Earth dist.	11922 Oct 27 07:02	16° $\mathcal{B}$ 03'25	30.11802 AU
max. Earth dist.	11916 Apr 15 16:25	1° $\mathcal{B}$ 01'17	31.18919 AU	opposition	11922 Oct 28 07:51	16° $\mathcal{B}$ 01'47	6°24'57
morning rise	11916 Apr 27 08:46	1° $\mathcal{B}$ 28'07			11922 Dec 11 14:53	15° $\mathcal{R}$ $\mathcal{B}$	
retrograde	11916 Jul 28 02:45	3° $\mathcal{B}$ 33'19		direct	11923 Jan 16 11:50	14° $\mathcal{B}$ 40'41	
opposition	11916 Oct 13 16:04	2° $\mathcal{B}$ 11'51	9°59'35		11923 Feb 20 12:05	15° $\mathcal{B}$	
min. Earth dist.	11916 Oct 13 05:17	2° $\mathcal{B}$ 12'36	29.27284 AU	evening set	11923 Apr 17 17:09	16° $\mathcal{B}$ 36'47	
direct	11917 Jan 01 10:41	0° $\mathcal{B}$ 48'33					
evening set	11917 Apr 05 09:18	2° $\mathcal{B}$ 54'53		conjunction	11923 May 02 03:33	17° $\mathcal{B}$ 08'26	5°43'38
				minimum elong	11923 May 02 03:48	17° $\mathcal{B}$ 08'27	5°43'05
conjunction	11917 Apr 17 22:06	3° $\mathcal{B}$ 23'29	9°05'14	max. Earth dist.	11923 May 03 06:07	17° $\mathcal{B}$ 10'53	32.19281 AU
minimum elong	11917 Apr 17 22:30	3° $\mathcal{B}$ 23'32	9°04'50	morning rise	11923 May 16 12:59	17° $\mathcal{B}$ 40'00	
max. Earth dist.	11917 Apr 18 11:35	3° $\mathcal{B}$ 24'47	31.30346 AU	retrograde	11923 Aug 13 12:24	19° $\mathcal{B}$ 33'45	
morning rise	11917 Apr 30 10:09	3° $\mathcal{B}$ 52'03		opposition	11923 Oct 30 20:22	18° $\mathcal{B}$ 14'32	5°48'04
retrograde	11917 Jul 30 14:02	5° $\mathcal{B}$ 55'24		min. Earth dist.	11923 Oct 29 17:49	18° $\mathcal{B}$ 16'16	30.28832 AU
opposition	11917 Oct 16 08:20	4° $\mathcal{B}$ 34'11	9°25'08	direct	11924 Jan 19 01:57	16° $\mathcal{B}$ 53'49	
min. Earth dist.	11917 Oct 15 19:40	4° $\mathcal{B}$ 35'03	29.38908 AU	evening set	11924 Apr 18 22:27	18° $\mathcal{B}$ 48'26	
direct	11918 Jan 04 04:37	3° $\mathcal{B}$ 11'12					
evening set	11918 Apr 07 14:36	5° $\mathcal{B}$ 15'38		conjunction	11924 May 03 14:09	19° $\mathcal{B}$ 20'19	5°09'07
				minimum elong	11924 May 03 14:23	19° $\mathcal{B}$ 20'21	5°08'34
conjunction	11918 Apr 20 12:41	5° $\mathcal{B}$ 44'57	8°32'46	max. Earth dist.	11924 May 04 19:04	19° $\mathcal{B}$ 22'58	32.36854 AU
minimum elong	11918 Apr 20 13:03	5° $\mathcal{B}$ 44'59	8°32'21	morning rise	11924 May 18 04:35	19° $\mathcal{B}$ 52'07	
max. Earth dist.	11918 Apr 21 03:42	5° $\mathcal{B}$ 46'23	31.42825 AU	retrograde	11924 Aug 14 20:54	21° $\mathcal{B}$ 44'29	
morning rise	11918 May 03 10:13	6° $\mathcal{B}$ 14'13		min. Earth dist.	11924 Oct 31 04:01	20° $\mathcal{B}$ 27'26	30.46507 AU
retrograde	11918 Aug 02 03:46	8° $\mathcal{B}$ 15'47		opposition	11924 Nov 01 08:02	20° $\mathcal{B}$ 25'36	5°11'07
opposition	11918 Oct 18 23:49	6° $\mathcal{B}$ 54'52	8°50'00	direct	11925 Jan 20 17:10	19° $\mathcal{B}$ 05'17	
min. Earth dist.	11918 Oct 18 07:34	6° $\mathcal{B}$ 55'58	29.51596 AU	evening set	11925 Apr 21 03:51	20° $\mathcal{B}$ 58'28	
direct	11919 Jan 06 20:57	5° $\mathcal{B}$ 32'12					
evening set	11919 Apr 09 19:48	7° $\mathcal{B}$ 34'51		conjunction	11925 May 05 23:56	21° $\mathcal{B}$ 30'31	4°34'33
				minimum elong	11925 May 06 00:08	21° $\mathcal{B}$ 30'32	4°33'57
conjunction	11919 Apr 23 02:44	8° $\mathcal{B}$ 04'48	7°59'42	max. Earth dist.	11925 May 07 05:36	21° $\mathcal{B}$ 33'13	32.55024 AU
minimum elong	11919 Apr 23 03:05	8° $\mathcal{B}$ 04'50	7°59'15	morning rise	11925 May 20 19:01	22° $\mathcal{B}$ 02'29	
max. Earth dist.	11919 Apr 23 21:15	8° $\mathcal{B}$ 06'33	31.56336 AU	retrograde	11925 Aug 17 05:14	23° $\mathcal{B}$ 53'31	
morning rise	11919 May 06 08:46	8° $\mathcal{B}$ 34'41		opposition	11925 Nov 03 19:05	22° $\mathcal{B}$ 34'58	4°34'11
retrograde	11919 Aug 04 14:32	10° $\mathcal{B}$ 34'34		min. Earth dist.	11925 Nov 02 12:47	22° $\mathcal{B}$ 36'56	30.64792 AU
opposition	11919 Oct 21 14:54	9° $\mathcal{B}$ 13'57	8°14'19	direct	11926 Jan 23 05:16	21° $\mathcal{B}$ 15'01	
min. Earth dist.	11919 Oct 20 21:12	9° $\mathcal{B}$ 15'09	29.65308 AU	evening set	11926 Apr 23 08:59	23° $\mathcal{B}$ 06'48	
direct	11920 Jan 09 12:40	7° $\mathcal{B}$ 51'40					
evening set	11920 Apr 11 01:01	9° $\mathcal{B}$ 52'35		conjunction	11926 May 08 09:06	23° $\mathcal{B}$ 38'58	4°00'00
				minimum elong	11926 May 08 09:17	23° $\mathcal{B}$ 38'59	3°59'24
conjunction	11920 Apr 24 15:50	10° $\mathcal{B}$ 23'04	7°26'10	max. Earth dist.	11926 May 09 17:26	23° $\mathcal{B}$ 41'53	32.73760 AU
minimum elong	11920 Apr 24 16:10	10° $\mathcal{B}$ 23'06	7°25'43	morning rise	11926 May 23 07:51	24° $\mathcal{B}$ 11'02	
max. Earth dist.	11920 Apr 25 12:06	10° $\mathcal{B}$ 24'58	31.70828 AU	retrograde	11926 Aug 19 10:17	26° $\mathcal{B}$ 00'46	
morning rise	11920 May 08 05:51	10° $\mathcal{B}$ 53'29		min. Earth dist.	11926 Nov 04 22:21	24° $\mathcal{B}$ 44'34	30.83643 AU
retrograde	11920 Aug 06 03:07	12° $\mathcal{B}$ 51'44		opposition	11926 Nov 06 05:30	24° $\mathcal{B}$ 42'33	3°57'20
min. Earth dist.	11920 Oct 22 08:11	11° $\mathcal{B}$ 32'52	29.79967 AU	direct	11927 Jan 25 18:18	23° $\mathcal{B}$ 22'58	
opposition	11920 Oct 23 05:09	11° $\mathcal{B}$ 31'28	7°38'10	evening set	11927 Apr 25 14:08	25° $\mathcal{B}$ 13'24	
direct	11921 Jan 11 05:37	10° $\mathcal{B}$ 09'34					
evening set	11921 Apr 13 06:21	12° $\mathcal{B}$ 08'49		conjunction	11927 May 10 17:22	25° $\mathcal{B}$ 45'36	3°25'33
				minimum elong	11927 May 10 17:31	25° $\mathcal{B}$ 45'37	3°24'54
conjunction	11921 Apr 27 04:29	12° $\mathcal{B}$ 39'46	6°52'15	max. Earth dist.	11927 May 12 02:16	25° $\mathcal{B}$ 48'33	32.93052 AU
minimum elong	11921 Apr 27 04:47	12° $\mathcal{B}$ 39'48	6°51'45	morning rise	11927 May 25 19:31	26° $\mathcal{B}$ 17'43	
max. Earth dist.	11921 Apr 28 03:27	12° $\mathcal{B}$ 41'55	31.86197 AU	retrograde	11927 Aug 21 17:44	28° $\mathcal{B}$ 06'13	
morning rise	11921 May 11 01:39	13° $\mathcal{B}$ 10'39		min. Earth dist.	11927 Nov 07 05:11	26° $\mathcal{B}$ 50'29	31.03086 AU
	11921 Jul 18 15:32	15° $\mathcal{B}$		opposition	11927 Nov 08 15:06	26° $\mathcal{B}$ 48'18	3°20'38



direct	11928 Jan 28 04:50	25° <b>8</b> 29'04		opposition	11933 Nov 20 10:21	8° <b>II</b> 45'51	-0°13'13
evening set	11928 Apr 26 18:48	27° <b>8</b> 18'11		direct	11934 Feb 09 09:46	7° <b>II</b> 28'54	
				evening set	11934 May 08 20:21	9° <b>II</b> 11'37	
conjunction	11928 May 12 00:51	27° <b>8</b> 50'23	2°51'14	conjunction	11934 May 24 07:02	9° <b>II</b> 42'47	-0°28'40
minimum elong	11928 May 12 00:59	27° <b>8</b> 50'24	2°50'36	minimum elong	11934 May 24 07:00	9° <b>II</b> 42'47	0°29'24
max. Earth dist.	11928 May 13 12:29	27° <b>8</b> 53'33	33.12914 AU	max. Earth dist.	11934 May 26 03:39	9° <b>II</b> 46'34	34.44643 AU
morning rise	11928 May 27 05:35	28° <b>8</b> 22'30		morning rise	11934 Jun 08 16:44	10° <b>II</b> 13'52	
	11928 Jul 29 01:41	0° <b>II</b>		retrograde	11934 Sep 03 22:41	11° <b>II</b> 55'27	
retrograde	11928 Aug 22 21:29	0° <b>II</b> 09'50		min. Earth dist.	11934 Nov 20 17:37	10° <b>II</b> 42'43	32.56252 AU
	11928 Sep 17 08:48	30° <b>R</b> 8		opposition	11934 Nov 22 15:20	10° <b>II</b> 39'54	-0°47'20
min. Earth dist.	11928 Nov 08 13:28	28° <b>8</b> 54'25	31.23137 AU	direct	11935 Feb 11 15:36	9° <b>II</b> 23'21	
opposition	11928 Nov 10 00:06	28° <b>8</b> 52'12	2°44'09	evening set	11935 May 11 00:02	11° <b>II</b> 05'12	
direct	11929 Jan 29 15:04	27° <b>8</b> 33'19					
evening set	11929 Apr 28 23:32	29° <b>8</b> 21'12		conjunction	11935 May 26 09:58	11° <b>II</b> 36'04	-1°00'33
				minimum elong	11935 May 26 09:55	11° <b>II</b> 36'04	1°01'19
conjunction	11929 May 14 07:37	29° <b>8</b> 53'20	2°17'08	max. Earth dist.	11935 May 28 08:51	11° <b>II</b> 40'00	34.68256 AU
minimum elong	11929 May 14 07:43	29° <b>8</b> 53'20	2°16'28	morning rise	11935 Jun 10 18:39	12° <b>II</b> 06'51	
max. Earth dist.	11929 May 15 20:16	29° <b>8</b> 56'34	33.33385 AU	retrograde	11935 Sep 05 22:16	13° <b>II</b> 47'40	
	11929 May 17 11:16	0° <b>II</b>		min. Earth dist.	11935 Nov 22 22:00	12° <b>II</b> 35'17	32.80047 AU
morning rise	11929 May 29 14:31	0° <b>II</b> 25'22		opposition	11935 Nov 24 19:51	12° <b>II</b> 32'28	-1°20'55
retrograde	11929 Aug 25 02:57	2° <b>II</b> 11'35		direct	11936 Feb 13 22:06	11° <b>II</b> 16'20	
min. Earth dist.	11929 Nov 10 18:44	0° <b>II</b> 56'38	31.43829 AU	evening set	11936 May 12 03:36	12° <b>II</b> 57'21	
opposition	11929 Nov 12 08:06	0° <b>II</b> 54'16	2°07'56				
	11929 Dec 21 15:17	30° <b>R</b> 8		conjunction	11936 May 27 12:08	13° <b>II</b> 27'53	-1°31'57
direct	11930 Feb 01 00:48	29° <b>8</b> 35'44		minimum elong	11936 May 27 12:05	13° <b>II</b> 27'52	1°32'42
	11930 Mar 13 05:57	0° <b>II</b>		max. Earth dist.	11936 May 29 11:02	13° <b>II</b> 31'48	34.92147 AU
evening set	11930 May 01 04:05	1° <b>II</b> 22'28		morning rise	11936 Jun 11 19:40	13° <b>II</b> 58'19	
				retrograde	11936 Sep 06 23:39	15° <b>II</b> 38'26	
conjunction	11930 May 16 13:41	1° <b>II</b> 54'29	1°43'17	min. Earth dist.	11936 Nov 23 23:49	14° <b>II</b> 26'30	33.04094 AU
minimum elong	11930 May 16 13:46	1° <b>II</b> 54'29	1°42'37	opposition	11936 Nov 25 23:37	14° <b>II</b> 23'35	-1°53'55
max. Earth dist.	11930 May 18 04:38	1° <b>II</b> 57'53	33.54483 AU	direct	11937 Feb 15 02:37	13° <b>II</b> 07'50	
morning rise	11930 May 31 22:07	2° <b>II</b> 26'25		evening set	11937 May 14 07:05	14° <b>II</b> 48'04	
retrograde	11930 Aug 27 08:13	4° <b>II</b> 11'35					
min. Earth dist.	11930 Nov 13 01:01	2° <b>II</b> 57'02	31.65188 AU	conjunction	11937 May 29 13:54	15° <b>II</b> 18'14	-2°02'50
opposition	11930 Nov 14 15:46	2° <b>II</b> 54'35	1°32'02	minimum elong	11937 May 29 13:50	15° <b>II</b> 18'13	2°03'36
direct	11931 Feb 03 07:39	1° <b>II</b> 36'26		max. Earth dist.	11937 May 31 14:14	15° <b>II</b> 22'14	35.16232 AU
evening set	11931 May 03 08:16	3° <b>II</b> 22'04		morning rise	11937 Jun 13 19:42	15° <b>II</b> 48'19	
				retrograde	11937 Sep 09 00:04	17° <b>II</b> 27'45	
conjunction	11931 May 18 18:59	3° <b>II</b> 53'55	1°09'44	min. Earth dist.	11937 Nov 26 03:01	16° <b>II</b> 16'08	33.28337 AU
minimum elong	11931 May 18 19:02	3° <b>II</b> 53'56	1°09'02	opposition	11937 Nov 28 02:52	16° <b>II</b> 13'14	-2°26'19
max. Earth dist.	11931 May 20 11:45	3° <b>II</b> 57'28	33.76225 AU	direct	11938 Feb 17 05:57	14° <b>II</b> 57'52	
morning rise	11931 Jun 03 04:23	4° <b>II</b> 25'42		evening set	11938 May 16 10:22	16° <b>II</b> 37'21	
retrograde	11931 Aug 29 12:18	6° <b>II</b> 09'54					
min. Earth dist.	11931 Nov 15 05:46	4° <b>II</b> 55'48	31.87172 AU	conjunction	11938 May 31 15:07	17° <b>II</b> 07'07	-2°33'10
opposition	11931 Nov 16 22:37	4° <b>II</b> 53'15	0°56'30	minimum elong	11938 May 31 15:01	17° <b>II</b> 07'07	2°33'56
direct	11932 Feb 05 17:35	3° <b>II</b> 35'29		max. Earth dist.	11938 Jun 02 15:57	17° <b>II</b> 11'08	35.40483 AU
evening set	11932 May 04 12:28	5° <b>II</b> 20'05		morning rise	11938 Jun 15 18:47	17° <b>II</b> 36'49	
				retrograde	11938 Sep 11 00:44	19° <b>II</b> 15'36	
conjunction	11932 May 19 23:35	5° <b>II</b> 51'45	0°36'32	min. Earth dist.	11938 Nov 28 04:23	18° <b>II</b> 04'22	33.52725 AU
minimum elong	11932 May 19 23:37	5° <b>II</b> 51'45	0°35'50	opposition	11938 Nov 30 05:32	18° <b>II</b> 01'25	-2°58'07
max. Earth dist.	11932 May 21 17:35	5° <b>II</b> 55'22	33.98543 AU	direct	11939 Feb 19 10:22	16° <b>II</b> 46'23	
morning rise	11932 Jun 04 09:39	6° <b>II</b> 23'20		evening set	11939 May 18 13:20	18° <b>II</b> 25'10	
retrograde	11932 Aug 30 17:50	8° <b>II</b> 06'36					
min. Earth dist.	11932 Nov 16 10:04	6° <b>II</b> 52'58	32.09741 AU	conjunction	11939 Jun 02 15:29	18° <b>II</b> 54'31	-3°02'57
opposition	11932 Nov 18 04:42	6° <b>II</b> 50'19	0°21'24	minimum elong	11939 Jun 02 15:23	18° <b>II</b> 54'31	3°03'44
direct	11933 Feb 07 01:03	5° <b>II</b> 32'57		max. Earth dist.	11939 Jun 04 16:57	18° <b>II</b> 58'34	35.64854 AU
evening set	11933 May 06 16:24	7° <b>II</b> 16'35		morning rise	11939 Jun 17 16:51	19° <b>II</b> 23'48	
				retrograde	11939 Sep 13 02:16	21° <b>II</b> 02'00	
conjunction	11933 May 22 03:45	7° <b>II</b> 48'01	0°03'47	min. Earth dist.	11939 Nov 30 05:33	19° <b>II</b> 51'05	33.77271 AU
minimum elong	11933 May 22 03:44	7° <b>II</b> 48'01	0°03'03	opposition	11939 Dec 02 07:39	19° <b>II</b> 48'06	-3°29'17
behind sun begin	11933 May 21 21:21	7° <b>II</b> 47'30		direct	11940 Feb 21 12:19	18° <b>II</b> 33'25	
behind sun end	11933 May 22 10:07	7° <b>II</b> 48'32		evening set	11940 May 19 15:59	20° <b>II</b> 11'31	
max. Earth dist.	11933 May 23 23:57	7° <b>II</b> 51'48	34.21383 AU				
morning rise	11933 Jun 06 13:42	8° <b>II</b> 19'22		conjunction	11940 Jun 03 15:29	20° <b>II</b> 40'26	-3°32'09
desc. node	11933 Jul 03 02:44	9° <b>II</b> 08'20		minimum elong	11940 Jun 03 15:21	20° <b>II</b> 40'25	3°32'56
retrograde	11933 Sep 01 20:08	10° <b>II</b> 01'46		max. Earth dist.	11940 Jun 05 18:22	20° <b>II</b> 44'34	35.89377 AU
min. Earth dist.	11933 Nov 18 14:53	8° <b>II</b> 48'33	32.32788 AU				

morning rise	11940 Jun 18 13:54	21°II09'17	direct	11947 Mar 05 16:22	0°☾24'33
retrograde	11940 Sep 13 23:46	22°II46'53	evening set	11947 Jun 02 04:14	1°☾59'10
min. Earth dist.	11940 Dec 01 06:33	21°II36'17 34.01977 AU			
opposition	11940 Dec 03 08:57	21°II33'17 -3°59'49	conjunction	11947 Jun 15 23:12	2°☾24'34 -6°39'12
direct	11941 Feb 22 16:23	20°II18'56	minimum elong	11947 Jun 15 23:00	2°☾24'33 6°40'01
evening set	11941 May 21 18:33	21°II56'25	max. Earth dist.	11947 Jun 18 08:04	2°☾28'57 37.66512 AU
			morning rise	11947 Jun 29 17:26	2°☾49'55
conjunction	11941 Jun 05 14:42	22°II24'52 -4°00'45	retrograde	11947 Sep 26 03:03	4°☾24'41
minimum elong	11941 Jun 05 14:34	22°II24'51 4°01'33	min. Earth dist.	11947 Dec 13 19:31	3°☾16'33 35.80697 AU
max. Earth dist.	11941 Jun 07 17:33	22°II28'58 36.14072 AU	opposition	11947 Dec 16 03:54	3°☾13'19 -7°14'19
morning rise	11941 Jun 20 10:10	22°II53'16	direct	11948 Mar 06 16:50	2°☾01'29
retrograde	11941 Sep 15 22:11	24°II30'19	evening set	11948 Jun 03 05:20	3°☾35'45
min. Earth dist.	11941 Dec 03 05:31	23°II20'07 34.26909 AU			
opposition	11941 Dec 05 09:47	23°II17'01 -4°29'40	conjunction	11948 Jun 16 18:59	4°☾00'35 -7°03'22
direct	11942 Feb 24 19:08	22°II03'00	minimum elong	11948 Jun 16 18:48	4°☾00'34 7°04'11
evening set	11942 May 23 20:39	23°II39'54	max. Earth dist.	11948 Jun 19 03:09	4°☾04'53 37.92193 AU
			morning rise	11948 Jun 30 08:18	4°☾25'23
conjunction	11942 Jun 07 13:24	24°II07'53 -4°28'44	retrograde	11948 Sep 26 23:01	5°☾59'51
minimum elong	11942 Jun 07 13:15	24°II07'52 4°29'32	min. Earth dist.	11948 Dec 14 15:35	4°☾52'05 36.06526 AU
max. Earth dist.	11942 Jun 09 18:24	24°II12'07 36.38993 AU	opposition	11948 Dec 17 01:05	4°☾48'48 -7°39'19
morning rise	11942 Jun 22 05:13	24°II35'48	direct	11949 Mar 08 15:31	3°☾37'18
retrograde	11942 Sep 17 18:09	26°II12'23	evening set	11949 Jun 05 06:07	5°☾11'15
min. Earth dist.	11942 Dec 05 05:47	25°II02'29 34.52086 AU			
opposition	11942 Dec 07 10:12	24°II59'23 -4°58'51	conjunction	11949 Jun 18 14:33	5°☾35'31 -7°26'55
direct	11943 Feb 26 22:02	23°II45'43	minimum elong	11949 Jun 18 14:20	5°☾35'30 7°27'44
evening set	11943 May 25 22:41	25°II22'05	max. Earth dist.	11949 Jun 20 23:51	5°☾39'53 38.17778 AU
			morning rise	11949 Jul 01 22:25	5°☾59'46
conjunction	11943 Jun 09 11:31	25°II49'34 -4°56'06	retrograde	11949 Sep 28 16:29	7°☾33'58
minimum elong	11943 Jun 09 11:22	25°II49'33 4°56'55	min. Earth dist.	11949 Dec 16 13:29	6°☾26'26 36.32231 AU
max. Earth dist.	11943 Jun 11 16:36	25°II53'47 36.64164 AU	opposition	11949 Dec 18 22:06	6°☾23'13 -8°03'40
morning rise	11943 Jun 23 23:41	26°II17'00	direct	11950 Mar 10 14:25	5°☾12'02
retrograde	11943 Sep 19 15:14	27°II53'08	evening set	11950 Jun 07 06:43	6°☾45'38
min. Earth dist.	11943 Dec 07 03:20	26°II43'40 34.77515 AU			
opposition	11943 Dec 09 09:51	26°II40'28 -5°27'20	conjunction	11950 Jun 20 09:28	7°☾09'20 -7°49'50
direct	11944 Feb 28 22:35	25°II27'10	minimum elong	11950 Jun 20 09:16	7°☾09'19 7°50'40
evening set	11944 May 27 00:20	27°II03'02	max. Earth dist.	11950 Jun 22 18:05	7°☾13'38 38.43217 AU
			morning rise	11950 Jul 03 11:49	7°☾33'00
conjunction	11944 Jun 10 09:08	27°II30'01 -5°22'50	retrograde	11950 Sep 30 09:19	9°☾06'58
minimum elong	11944 Jun 10 08:58	27°II30'00 5°23'39	min. Earth dist.	11950 Dec 18 08:50	7°☾59'45 36.57771 AU
max. Earth dist.	11944 Jun 12 15:47	27°II34'20 36.89555 AU	opposition	11950 Dec 20 18:35	7°☾56'29 -8°27'19
morning rise	11944 Jun 24 17:15	27°II56'57	direct	11951 Mar 12 12:43	6°☾45'36
retrograde	11944 Sep 20 12:12	29°II32'42	evening set	11951 Jun 09 07:05	8°☾18'53
min. Earth dist.	11944 Dec 08 02:30	28°II23'32 35.03158 AU			
opposition	11944 Dec 10 09:09	28°II20'21 -5°55'08	conjunction	11951 Jun 22 04:04	8°☾42'00 -8°12'08
direct	11945 Mar 01 21:26	27°II07'25	minimum elong	11951 Jun 22 03:52	8°☾41'59 8°12'57
evening set	11945 May 29 01:52	28°II42'50	max. Earth dist.	11951 Jun 24 13:11	8°☾46'18 38.68475 AU
			morning rise	11951 Jul 05 00:44	9°☾05'06
conjunction	11945 Jun 12 06:19	29°II09'18 -5°48'56	retrograde	11951 Oct 02 03:39	10°☾38'50
minimum elong	11945 Jun 12 06:08	29°II09'17 5°49'45	min. Earth dist.	11951 Dec 20 05:21	9°☾31'48 36.83151 AU
max. Earth dist.	11945 Jun 14 13:29	29°II13'37 37.15125 AU	opposition	11951 Dec 22 14:37	9°☾28'35 -8°50'19
morning rise	11945 Jun 26 10:01	29°II35'43	direct	11952 Mar 13 08:38	8°☾17'58
	11945 Jul 10 01:30	0°☾	evening set	11952 Jun 10 07:07	9°☾50'57
retrograde	11945 Sep 22 09:58	1°☾11'06			
min. Earth dist.	11945 Dec 10 00:02	0°☾02'19 35.28938 AU	conjunction	11952 Jun 22 22:13	10°☾13'29 -8°33'49
	11945 Dec 11 16:11	30°☾II	minimum elong	11952 Jun 22 22:01	10°☾13'28 8°34'39
opposition	11945 Dec 12 07:44	29°II59'06 -6°22'13	max. Earth dist.	11952 Jun 25 07:30	10°☾17'46 38.93583 AU
direct	11946 Mar 03 19:34	28°II46'32	morning rise	11952 Jul 05 12:51	10°☾35'59
	11946 May 19 00:04	0°☾	retrograde	11952 Oct 02 21:10	12°☾09'30
evening set	11946 May 31 03:17	0°☾21'32	min. Earth dist.	11952 Dec 21 00:36	11°☾02'42 37.08376 AU
			opposition	11952 Dec 23 10:06	10°☾59'29 -9°12'39
conjunction	11946 Jun 14 02:59	0°☾47'28 -6°14'23	direct	11953 Mar 15 04:34	9°☾49'08
minimum elong	11946 Jun 14 02:48	0°☾47'27 6°15'12	evening set	11953 Jun 12 06:58	11°☾21'50
max. Earth dist.	11946 Jun 16 10:35	0°☾51'48 37.40794 AU			
morning rise	11946 Jun 28 02:13	1°☾13'22	conjunction	11953 Jun 24 15:44	11°☾43'46 -8°54'53
retrograde	11946 Sep 24 07:50	2°☾48'26	minimum elong	11953 Jun 24 15:32	11°☾43'45 8°55'42
min. Earth dist.	11946 Dec 11 21:32	1°☾40'00 35.54817 AU	max. Earth dist.	11953 Jun 27 00:44	11°☾48'00 39.18559 AU
opposition	11946 Dec 14 06:05	1°☾36'45 -6°48'37	morning rise	11953 Jul 07 00:21	12°☾05'41

retrograde	11953 Oct 04 15:37	13°☾38'59		minimum elong	11960 Jul 04 07:51	21°☾47'41	11°05'50
min. Earth dist.	11953 Dec 22 18:51	12°☾32'26	37.33528 AU	max. Earth dist.	11960 Jul 06 18:48	21°☾51'53	40.92202 AU
opposition	11953 Dec 25 05:09	12°☾29'12	-9°34'19	morning rise	11960 Jul 14 16:49	22°☾05'22	
direct	11954 Mar 16 23:19	11°☾19'06		retrograde	11960 Oct 14 06:26	23°☾38'05	
evening set	11954 Jun 14 06:28	12°☾51'33		min. Earth dist.	11961 Jan 01 19:16	22°☾33'23	39.08258 AU
				opposition	11961 Jan 04 07:17	22°☾30'09	-11°47'31
conjunction	11954 Jun 26 09:00	13°☾12'53	-9°15'19	direct	11961 Mar 27 04:15	21°☾22'07	
minimum elong	11954 Jun 26 08:48	13°☾12'52	9°16'09	evening set	11961 Jun 25 21:28	22°☾53'43	
max. Earth dist.	11954 Jun 28 19:25	13°☾17'12	39.43491 AU				
morning rise	11954 Jul 08 11:08	13°☾34'12		conjunction	11961 Jul 05 22:52	23°☾10'46	-11°21'16
retrograde	11954 Oct 06 07:16	15°☾07'19		minimum elong	11961 Jul 05 22:41	23°☾10'45	11°22'02
min. Earth dist.	11954 Dec 24 13:52	14°☾00'59	37.58649 AU	max. Earth dist.	11961 Jul 08 10:29	23°☾14'59	41.16444 AU
opposition	11954 Dec 26 23:52	13°☾57'46	-9°55'18	morning rise	11961 Jul 16 00:05	23°☾27'48	
direct	11955 Mar 18 20:01	12°☾47'57		retrograde	11961 Oct 15 19:18	25°☾00'31	
evening set	11955 Jun 16 05:45	14°☾20'12		min. Earth dist.	11962 Jan 03 12:35	23°☾56'00	39.32552 AU
				opposition	11962 Jan 05 23:23	23°☾52'51	-12°04'03
conjunction	11955 Jun 28 01:36	14°☾40'55	-9°35'08	direct	11962 Mar 28 22:32	22°☾45'05	
minimum elong	11955 Jun 28 01:24	14°☾40'54	9°35'56	evening set	11962 Jun 27 19:42	24°☾16'39	
max. Earth dist.	11955 Jun 30 11:25	14°☾45'10	39.68412 AU				
morning rise	11955 Jul 09 21:19	15°☾01'38		conjunction	11962 Jul 07 13:20	24°☾33'04	-11°36'57
retrograde	11955 Oct 07 23:52	16°☾34'36		minimum elong	11962 Jul 07 13:10	24°☾33'03	11°37'44
min. Earth dist.	11955 Dec 26 06:31	15°☾28'36	37.83770 AU	max. Earth dist.	11962 Jul 09 23:45	24°☾37'11	41.40393 AU
opposition	11955 Dec 28 18:01	15°☾25'19	-10°15'38	morning rise	11962 Jul 17 06:55	24°☾49'29	
direct	11956 Mar 19 14:51	14°☾15'46		retrograde	11962 Oct 17 08:28	26°☾22'13	
evening set	11956 Jun 17 04:47	15°☾47'51		min. Earth dist.	11963 Jan 05 03:36	25°☾17'58	39.56529 AU
				opposition	11963 Jan 07 15:05	25°☾14'47	-12°20'01
conjunction	11956 Jun 28 18:03	16°☾07'58	-9°54'19	direct	11963 Mar 30 15:22	24°☾07'17	
minimum elong	11956 Jun 28 17:51	16°☾07'57	9°55'08	evening set	11963 Jun 29 17:34	25°☾38'48	
max. Earth dist.	11956 Jul 01 05:06	16°☾12'16	39.93323 AU				
morning rise	11956 Jul 10 07:05	16°☾28'04		conjunction	11963 Jul 09 03:28	25°☾54'35	-11°52'06
retrograde	11956 Oct 08 14:05	18°☾00'56		minimum elong	11963 Jul 09 03:19	25°☾54'34	11°52'51
min. Earth dist.	11956 Dec 27 00:57	16°☾55'08	38.08875 AU	max. Earth dist.	11963 Jul 11 13:56	25°☾58'41	41.64005 AU
opposition	11956 Dec 29 11:45	16°☾51'54	-10°35'17	morning rise	11963 Jul 18 13:24	26°☾10'22	
direct	11957 Mar 21 10:18	15°☾42'39		retrograde	11963 Oct 18 21:58	27°☾43'08	
evening set	11957 Jun 19 03:45	17°☾14'35		min. Earth dist.	11964 Jan 06 20:09	26°☾39'01	39.80173 AU
				opposition	11964 Jan 09 06:33	26°☾35'54	-12°35'26
conjunction	11957 Jun 30 10:06	17°☾34'05	-10°12'54	direct	11964 Mar 31 08:11	25°☾28'39	
minimum elong	11957 Jun 30 09:54	17°☾34'05	10°13'42	evening set	11964 Jun 30 15:24	27°☾00'08	
max. Earth dist.	11957 Jul 02 20:58	17°☾38'22	40.18213 AU				
morning rise	11957 Jul 11 16:13	17°☾53'35		conjunction	11964 Jul 09 17:23	27°☾15'16	-12°06'43
retrograde	11957 Oct 10 05:16	19°☾26'23		minimum elong	11964 Jul 09 17:13	27°☾15'16	12°07'29
min. Earth dist.	11957 Dec 28 17:17	18°☾20'54	38.33923 AU	max. Earth dist.	11964 Jul 12 03:37	27°☾19'20	41.87303 AU
opposition	11957 Dec 31 05:07	18°☾17'38	-10°54'17	morning rise	11964 Jul 18 19:14	27°☾30'26	
direct	11958 Mar 23 04:40	17°☾08'41		retrograde	11964 Oct 19 12:00	29°☾03'11	
evening set	11958 Jun 21 02:19	18°☾40'30		min. Earth dist.	11965 Jan 07 11:05	27°☾59'16	40.03498 AU
				opposition	11965 Jan 09 21:21	27°☾56'11	-12°50'17
conjunction	11958 Jul 02 01:37	18°☾59'23	-10°30'52	direct	11965 Apr 01 23:32	26°☾49'08	
minimum elong	11958 Jul 02 01:25	18°☾59'23	10°31'41	evening set	11965 Jul 02 13:01	28°☾20'35	
max. Earth dist.	11958 Jul 04 12:47	19°☾03'40	40.43018 AU				
morning rise	11958 Jul 13 00:51	19°☾18'17		conjunction	11965 Jul 11 06:47	28°☾35'06	-12°20'49
retrograde	11958 Oct 11 23:16	20°☾51'03		minimum elong	11965 Jul 11 06:38	28°☾35'05	12°21'34
min. Earth dist.	11958 Dec 30 10:28	19°☾45'49	38.58883 AU	max. Earth dist.	11965 Jul 13 16:17	28°☾39'05	42.10314 AU
opposition	11959 Jan 01 22:18	19°☾42'34	-11°12'39	morning rise	11965 Jul 20 00:38	28°☾49'37	
direct	11959 Mar 24 19:32	18°☾33'55			11965 Sep 08 04:35	0°♂	
evening set	11959 Jun 23 00:51	20°☾05'38		retrograde	11965 Oct 21 03:55	0°♂22'24	
					11965 Dec 04 05:36	30°♂☾	
conjunction	11959 Jul 03 17:03	20°☾23'55	-10°48'14	min. Earth dist.	11966 Jan 09 01:31	29°☾18'40	40.26590 AU
minimum elong	11959 Jul 03 16:52	20°☾23'54	10°49'02	opposition	11966 Jan 11 12:05	29°☾15'35	-13°04'34
max. Earth dist.	11959 Jul 06 04:49	20°☾28'12	40.67707 AU	direct	11966 Apr 03 11:33	28°☾08'45	
morning rise	11959 Jul 14 09:00	20°☾42'12		evening set	11966 Jul 04 10:16	29°☾40'12	
retrograde	11959 Oct 13 14:13	22°☾14'56					
min. Earth dist.	11960 Jan 01 03:29	21°☾09'57	38.83676 AU	conjunction	11966 Jul 12 19:52	29°☾54'04	-12°34'22
opposition	11960 Jan 03 14:55	21°☾06'44	-11°30'23	minimum elong	11966 Jul 12 19:43	29°☾54'03	12°35'08
direct	11960 Mar 25 12:41	19°☾58'23		max. Earth dist.	11966 Jul 15 06:21	29°☾58'05	42.33122 AU
evening set	11960 Jun 23 23:16	21°☾30'02			11966 Jul 16 10:03	0°♂	
				morning rise	11966 Jul 21 05:21	0°♂07'56	
conjunction	11960 Jul 04 08:02	21°☾47'42	-11°05'02	retrograde	11966 Oct 22 15:50	1°♂40'46	

min. Earth dist.	11967 Jan 10 16:42	0°037'11	40.49492 AU	conjunction	11973 Jul 21 08:11	8°046'56	-13°54'50
opposition	11967 Jan 13 02:30	0°034'08	-13°18'18	minimum elong	11973 Jul 21 08:05	8°046'55	13°55'32
	11967 Feb 10 09:07	30°000'		max. Earth dist.	11973 Jul 23 17:31	8°050'45	43.87920 AU
direct	11967 Apr 05 03:16	29°027'32		morning rise	11973 Jul 27 02:11	8°056'06	
	11967 May 26 23:32	0°00'		retrograde	11973 Oct 31 02:30	10°029'58	
evening set	11967 Jul 06 07:38	0°058'59		min. Earth dist.	11974 Jan 19 14:31	9°027'43	42.04611 AU
				opposition	11974 Jan 21 22:45	9°024'50	-14°39'18
conjunction	11967 Jul 14 08:39	1°012'13	-12°47'24	direct	11974 Apr 14 01:27	8°019'53	
minimum elong	11967 Jul 14 08:31	1°012'12	12°48'09	evening set	11974 Jul 17 11:38	9°052'12	
max. Earth dist.	11967 Jul 16 18:10	1°016'09	42.55777 AU				
morning rise	11967 Jul 22 09:42	1°025'26		conjunction	11974 Jul 22 19:19	10°000'41	-14°04'25
retrograde	11967 Oct 24 03:20	2°058'20		minimum elong	11974 Jul 22 19:13	10°000'40	14°05'06
min. Earth dist.	11968 Jan 12 05:32	1°054'59	40.72257 AU	max. Earth dist.	11974 Jul 25 03:25	10°004'24	44.08890 AU
opposition	11968 Jan 14 16:22	1°051'54	-13°31'28	morning rise	11974 Jul 28 02:58	10°009'08	
direct	11968 Apr 05 17:48	0°045'31		retrograde	11974 Nov 01 11:49	11°043'15	
evening set	11968 Jul 07 04:42	2°017'01		min. Earth dist.	11975 Jan 21 02:31	10°041'12	42.25503 AU
				opposition	11975 Jan 23 10:58	10°038'18	-14°48'54
conjunction	11968 Jul 14 21:13	2°029'36	-12°59'54	direct	11975 Apr 15 15:28	9°033'34	
minimum elong	11968 Jul 14 21:04	2°029'35	13°00'38	evening set	11975 Jul 19 09:26	11°006'08	
max. Earth dist.	11968 Jul 17 07:34	2°033'35	42.78295 AU				
morning rise	11968 Jul 22 13:42	2°042'09		conjunction	11975 Jul 24 06:21	11°013'51	-14°13'35
retrograde	11968 Oct 24 14:07	4°015'10		minimum elong	11975 Jul 24 06:16	11°013'50	14°14'16
min. Earth dist.	11969 Jan 12 20:12	3°011'58	40.94879 AU	max. Earth dist.	11975 Jul 26 13:48	11°017'31	44.29415 AU
opposition	11969 Jan 15 06:09	3°008'56	-13°44'05	morning rise	11975 Jul 29 03:17	11°021'34	
direct	11969 Apr 07 09:05	2°002'47		retrograde	11975 Nov 02 23:36	12°055'57	
evening set	11969 Jul 09 01:49	3°034'22		min. Earth dist.	11976 Jan 22 15:42	11°054'00	42.45954 AU
				opposition	11976 Jan 24 22:54	11°051'11	-14°58'05
conjunction	11969 Jul 16 09:26	3°046'17	-13°11'53	direct	11976 Apr 16 03:52	10°046'38	
minimum elong	11969 Jul 16 09:19	3°046'16	13°12'36	evening set	11976 Jul 20 07:44	12°019'28	
max. Earth dist.	11969 Jul 18 19:30	3°050'14	43.00675 AU				
morning rise	11969 Jul 23 17:01	3°058'11		conjunction	11976 Jul 24 17:13	12°026'24	-14°22'20
retrograde	11969 Oct 26 01:01	5°031'19		minimum elong	11976 Jul 24 17:09	12°026'24	14°23'00
min. Earth dist.	11970 Jan 14 08:56	4°028'22	41.17331 AU	max. Earth dist.	11976 Jul 27 00:28	12°030'02	44.49512 AU
opposition	11970 Jan 16 19:31	4°025'18	-13°56'09	morning rise	11976 Jul 29 02:40	12°033'20	
direct	11970 Apr 09 00:14	3°019'24		retrograde	11976 Nov 03 09:54	14°008'01	
evening set	11970 Jul 10 22:46	4°051'04		min. Earth dist.	11977 Jan 23 04:01	13°006'12	42.65963 AU
				opposition	11977 Jan 25 10:32	13°003'26	-15°06'49
conjunction	11970 Jul 17 21:22	5°002'19	-13°23'20	direct	11977 Apr 17 16:28	11°059'03	
minimum elong	11970 Jul 17 21:15	5°002'18	13°24'04	evening set	11977 Jul 22 06:27	13°032'14	
max. Earth dist.	11970 Jul 20 07:02	5°006'13	43.22872 AU				
morning rise	11970 Jul 24 20:02	5°013'34		conjunction	11977 Jul 26 03:32	13°038'19	-14°30'40
retrograde	11970 Oct 27 15:02	6°046'50		minimum elong	11977 Jul 26 03:28	13°038'18	14°31'20
min. Earth dist.	11971 Jan 15 22:28	5°044'05	41.39597 AU	max. Earth dist.	11977 Jul 28 09:19	13°041'50	44.69202 AU
opposition	11971 Jan 18 08:46	5°041'03	-14°07'41	morning rise	11977 Jul 30 00:36	13°044'24	
direct	11971 Apr 10 12:31	4°035'23			11977 Sep 24 18:51	15°00'	
evening set	11971 Jul 12 19:46	6°007'11		retrograde	11977 Nov 04 22:29	15°019'28	
					11977 Dec 17 00:04	15°000'	
conjunction	11971 Jul 19 09:10	6°017'45	-13°34'19	min. Earth dist.	11978 Jan 24 15:23	14°017'48	42.85614 AU
minimum elong	11971 Jul 19 09:04	6°017'44	13°35'02	opposition	11978 Jan 26 21:58	14°015'02	-15°15'06
max. Earth dist.	11971 Jul 21 19:29	6°021'40	43.44860 AU	direct	11978 Apr 19 01:20	13°010'50	
morning rise	11971 Jul 25 22:31	6°028'20		evening set	11978 Jul 24 06:18	14°044'26	
retrograde	11971 Oct 29 03:53	8°001'46					
min. Earth dist.	11972 Jan 17 12:11	6°059'11	41.61598 AU	conjunction	11978 Jul 27 13:49	14°049'36	-14°38'34
opposition	11972 Jan 19 21:40	6°056'12	-14°18'42	minimum elong	11978 Jul 27 13:46	14°049'36	14°39'12
direct	11972 Apr 11 00:33	5°050'47		morning rise	11978 Jul 30 21:18	14°054'46	
evening set	11972 Jul 13 16:54	7°022'44		max. Earth dist.	11978 Jul 29 20:20	14°053'09	44.88567 AU
					11978 Aug 03 05:46	15°00'	
conjunction	11972 Jul 19 20:42	7°032'37	-13°44'48	retrograde	11978 Nov 06 08:17	16°030'18	
minimum elong	11972 Jul 19 20:36	7°032'36	13°45'30	min. Earth dist.	11979 Jan 26 03:52	15°028'42	43.04962 AU
max. Earth dist.	11972 Jul 22 05:37	7°036'25	43.66561 AU	opposition	11979 Jan 28 09:10	15°026'01	-15°22'58
morning rise	11972 Jul 26 00:32	7°042'30			11979 Feb 19 10:02	15°000'	
retrograde	11972 Oct 29 17:17	9°016'08		direct	11979 Apr 20 12:22	14°022'00	
min. Earth dist.	11973 Jan 18 00:16	8°013'47	41.83292 AU		11979 Jun 17 07:12	15°00'	
opposition	11973 Jan 20 10:11	8°010'48	-14°29'14	evening set	11979 Jul 26 07:55	15°056'09	
direct	11973 Apr 12 11:16	7°005'37					
evening set	11973 Jul 15 14:10	8°037'44		conjunction	11979 Jul 28 23:41	16°000'17	-14°46'02
				minimum elong	11979 Jul 28 23:38	16°000'17	14°46'40

morning rise	11979 Jul 31 15:26	16°04'26		max. Earth dist.	11987 Aug 09 01:48	25°012'47	46.50158 AU
max. Earth dist.	11979 Jul 31 05:11	16°03'46	45.07671 AU	retrograde	11987 Nov 16 18:46	26°046'57	
retrograde	11979 Nov 07 16:13	17°040'33		min. Earth dist.	11988 Feb 06 03:14	25°046'37	44.65834 AU
min. Earth dist.	11980 Jan 27 13:54	16°039'10	43.24055 AU	opposition	11988 Feb 08 04:03	25°044'12	-16°14'38
opposition	11980 Jan 29 19:59	16°036'26	-15°30'22	direct	11988 Apr 30 10:22	24°041'51	
direct	11980 Apr 20 23:54	15°032'36					
evening set	11980 Jul 27 13:28	17°007'36		conjunction	11988 Aug 07 09:33	26°016'28	-15°35'17
				minimum elong	11988 Aug 07 09:35	26°016'28	15°35'49
conjunction	11980 Jul 29 09:27	17°010'27	-14°53'05	max. Earth dist.	11988 Aug 09 10:30	26°019'32	46.66101 AU
minimum elong	11980 Jul 29 09:25	17°010'27	14°53'42	retrograde	11988 Nov 17 04:22	27°053'20	
morning rise	11980 Jul 31 05:27	17°013'17		min. Earth dist.	11989 Feb 06 13:52	26°053'01	44.81598 AU
max. Earth dist.	11980 Jul 31 14:52	17°013'54	45.26527 AU	opposition	11989 Feb 08 13:09	26°050'42	-16°18'31
retrograde	11980 Nov 08 00:48	18°050'17		direct	11989 May 01 19:03	25°048'28	
min. Earth dist.	11981 Jan 28 01:37	17°049'01	43.42914 AU				
opposition	11981 Jan 30 06:38	17°046'21	-15°37'19	conjunction	11989 Aug 08 17:45	27°022'40	-15°38'59
direct	11981 Apr 22 12:58	16°042'43		minimum elong	11989 Aug 08 17:48	27°022'41	15°39'29
				max. Earth dist.	11989 Aug 10 17:02	27°025'37	46.81592 AU
conjunction	11981 Jul 30 19:04	18°020'07	-14°59'42	retrograde	11989 Nov 18 13:18	28°059'09	
minimum elong	11981 Jul 30 19:02	18°020'07	15°00'19	min. Earth dist.	11990 Feb 07 22:29	27°058'57	44.96947 AU
max. Earth dist.	11981 Aug 02 00:33	18°023'34	45.45165 AU	opposition	11990 Feb 09 22:06	27°056'37	-16°22'04
retrograde	11981 Nov 09 10:49	19°059'34		direct	11990 May 03 02:20	26°054'31	
min. Earth dist.	11982 Jan 29 12:07	18°058'28	43.61522 AU				
opposition	11982 Jan 31 17:05	18°055'49	-15°43'50	conjunction	11990 Aug 10 01:43	28°028'20	-15°42'21
direct	11982 Apr 24 00:33	17°052'23		minimum elong	11990 Aug 10 01:45	28°028'20	15°42'51
				max. Earth dist.	11990 Aug 12 01:02	28°031'16	46.96692 AU
conjunction	11982 Aug 01 04:15	19°029'22	-15°05'55		11990 Oct 30 20:17	0°00	
minimum elong	11982 Aug 01 04:14	19°029'22	15°06'30	retrograde	11990 Nov 19 18:45	0°004'26	
max. Earth dist.	11982 Aug 03 08:41	19°032'43	45.63547 AU		11990 Dec 09 21:24	30°00	
retrograde	11982 Nov 10 23:07	21°008'26		min. Earth dist.	11991 Feb 09 08:57	29°004'15	45.11942 AU
min. Earth dist.	11983 Jan 30 22:29	20°007'30	43.79872 AU	opposition	11991 Feb 11 06:59	29°002'00	-16°25'15
opposition	11983 Feb 02 03:26	20°004'52	-15°49'56	direct	11991 May 04 12:34	28°000'01	
direct	11983 Apr 25 08:27	19°001'38					
				conjunction	11991 Aug 11 09:39	29°033'27	-15°45'22
conjunction	11983 Aug 02 13:34	20°038'13	-15°11'43	minimum elong	11991 Aug 11 09:43	29°033'27	15°45'50
minimum elong	11983 Aug 02 13:32	20°038'13	15°12'18	max. Earth dist.	11991 Aug 13 08:30	29°036'21	47.11485 AU
max. Earth dist.	11983 Aug 04 18:32	20°041'35	45.81648 AU		11991 Aug 29 12:02	0°00	
retrograde	11983 Nov 12 08:31	22°016'55		retrograde	11991 Nov 20 23:54	1°009'12	
min. Earth dist.	11984 Feb 01 09:52	21°016'05	43.97900 AU	min. Earth dist.	11992 Feb 10 17:04	0°009'09	45.26634 AU
opposition	11984 Feb 03 13:24	21°013'32	-15°55'37	opposition	11992 Feb 12 15:19	0°006'53	-16°28'04
direct	11984 Apr 25 17:42	20°010'30			11992 Feb 18 12:31	30°00	
				direct	11992 May 04 23:08	29°005'00	
conjunction	11984 Aug 02 22:37	21°046'41	-15°17'08		11992 Jul 16 05:34	0°00	
minimum elong	11984 Aug 02 22:37	21°046'41	15°17'43				
max. Earth dist.	11984 Aug 05 02:05	21°049'57	45.99418 AU	conjunction	11992 Aug 11 17:19	0°038'06	-15°48'01
retrograde	11984 Nov 12 17:04	23°025'00		minimum elong	11992 Aug 11 17:22	0°038'06	15°48'31
min. Earth dist.	11985 Feb 01 19:27	22°024'22	44.15565 AU	max. Earth dist.	11992 Aug 13 15:10	0°040'55	47.25993 AU
opposition	11985 Feb 03 23:15	22°021'48	-16°00'55	retrograde	11992 Nov 21 09:03	2°013'32	
direct	11985 Apr 27 02:20	21°018'58		min. Earth dist.	11993 Feb 11 02:07	1°013'33	45.41067 AU
				opposition	11993 Feb 12 23:45	1°011'19	-16°30'32
conjunction	11985 Aug 04 07:28	22°054'46	-15°22'11	direct	11993 May 06 07:35	0°009'36	
minimum elong	11985 Aug 04 07:27	22°054'46	15°22'45				
max. Earth dist.	11985 Aug 06 10:44	22°058'01	46.16786 AU	conjunction	11993 Aug 13 00:50	1°042'20	-15°50'20
retrograde	11985 Nov 14 00:41	24°032'44		minimum elong	11993 Aug 13 00:55	1°042'20	15°50'48
min. Earth dist.	11986 Feb 03 07:01	23°032'11	44.32807 AU	max. Earth dist.	11993 Aug 14 23:15	1°045'11	47.40251 AU
opposition	11986 Feb 05 09:07	23°029'42	-16°05'50	retrograde	11993 Nov 22 16:59	3°017'28	
direct	11986 Apr 28 12:46	22°027'03		min. Earth dist.	11994 Feb 12 11:04	2°017'34	45.55224 AU
				opposition	11994 Feb 14 07:59	2°015'23	-16°32'38
conjunction	11986 Aug 05 16:21	24°002'28	-15°26'53	direct	11994 May 07 16:18	1°013'48	
minimum elong	11986 Aug 05 16:23	24°002'28	15°27'27				
max. Earth dist.	11986 Aug 07 18:56	24°005'39	46.33720 AU	conjunction	11994 Aug 14 08:10	2°046'14	-15°52'18
retrograde	11986 Nov 15 07:48	25°040'04		minimum elong	11994 Aug 14 08:14	2°046'14	15°52'46
min. Earth dist.	11987 Feb 04 16:52	24°039'39	44.49569 AU	max. Earth dist.	11994 Aug 16 05:06	2°048'59	47.54248 AU
opposition	11987 Feb 06 18:37	24°037'11	-16°10'24	retrograde	11994 Nov 24 02:09	4°021'04	
direct	11987 Apr 30 01:08	23°034'42		min. Earth dist.	11995 Feb 13 18:47	3°021'20	45.69115 AU
				opposition	11995 Feb 15 15:58	3°019'08	-16°34'23
conjunction	11987 Aug 07 00:57	25°009'43	-15°31'15	direct	11995 May 08 21:11	2°017'43	
minimum elong	11987 Aug 07 00:58	25°009'43	15°31'47				

conjunction	11995 Aug 15 15:29	3° $\mathring{M}$ 49'51	-15°53'56	retrograde	12003 Dec 03 13:49	13° $\mathring{M}$ 42'10	
minimum elong	11995 Aug 15 15:35	3° $\mathring{M}$ 49'51	15°54'23	min. Earth dist.	12004 Feb 23 21:40	12° $\mathring{M}$ 43'02	46.75451 AU
max. Earth dist.	11995 Aug 17 12:39	3° $\mathring{M}$ 52'36	47.67953 AU	opposition	12004 Feb 25 10:39	12° $\mathring{M}$ 41'16	-16°36'22
retrograde	11995 Nov 25 09:10	5° $\mathring{M}$ 24'24		direct	12004 May 17 19:35	11° $\mathring{M}$ 40'58	
min. Earth dist.	11996 Feb 15 04:25	4° $\mathring{M}$ 24'44	45.82687 AU				
opposition	11996 Feb 16 23:57	4° $\mathring{M}$ 22'38	-16°35'47	conjunction	12004 Aug 24 04:25	13° $\mathring{M}$ 10'38	-15°55'28
direct	11996 May 09 04:11	3° $\mathring{M}$ 21'22		minimum elong	12004 Aug 24 04:34	13° $\mathring{M}$ 10'39	15°55'47
				max. Earth dist.	12004 Aug 25 17:31	13° $\mathring{M}$ 12'51	48.72377 AU
conjunction	11996 Aug 15 22:41	4° $\mathring{M}$ 53'13	-15°55'15	retrograde	12004 Dec 03 23:14	14° $\mathring{M}$ 42'57	
minimum elong	11996 Aug 15 22:45	4° $\mathring{M}$ 53'13	15°55'40	min. Earth dist.	12005 Feb 24 04:17	13° $\mathring{M}$ 43'54	46.85271 AU
max. Earth dist.	11996 Aug 17 19:01	4° $\mathring{M}$ 55'55	47.81331 AU	opposition	12005 Feb 25 17:18	13° $\mathring{M}$ 42'08	-16°35'07
retrograde	11996 Nov 25 14:08	6° $\mathring{M}$ 27'31		direct	12005 May 18 23:49	12° $\mathring{M}$ 41'56	
min. Earth dist.	11997 Feb 15 11:55	5° $\mathring{M}$ 28'00	45.95890 AU				
opposition	11997 Feb 17 07:35	5° $\mathring{M}$ 25'54	-16°36'52	conjunction	12005 Aug 25 10:37	14° $\mathring{M}$ 11'22	-15°54'13
direct	11997 May 10 13:40	4° $\mathring{M}$ 24'47		minimum elong	12005 Aug 25 10:45	14° $\mathring{M}$ 11'23	15°54'32
				max. Earth dist.	12005 Aug 27 00:01	14° $\mathring{M}$ 13'35	48.82068 AU
conjunction	11997 Aug 17 05:44	5° $\mathring{M}$ 56'22	-15°56'16	retrograde	12005 Dec 05 07:03	15° $\mathring{M}$ 43'26	
minimum elong	11997 Aug 17 05:51	5° $\mathring{M}$ 56'23	15°56'40	min. Earth dist.	12006 Feb 25 12:29	14° $\mathring{M}$ 44'25	46.94801 AU
max. Earth dist.	11997 Aug 19 00:47	5° $\mathring{M}$ 58'59	47.94314 AU	opposition	12006 Feb 27 00:02	14° $\mathring{M}$ 42'44	-16°33'34
retrograde	11997 Nov 26 22:23	7° $\mathring{M}$ 30'27		direct	12006 May 20 04:15	13° $\mathring{M}$ 42'38	
min. Earth dist.	11998 Feb 16 21:03	6° $\mathring{M}$ 31'00	46.08684 AU				
opposition	11998 Feb 18 15:23	6° $\mathring{M}$ 28'58	-16°37'39	conjunction	12006 Aug 26 16:36	15° $\mathring{M}$ 11'50	-15°52'40
direct	11998 May 11 22:28	5° $\mathring{M}$ 28'01		minimum elong	12006 Aug 26 16:46	15° $\mathring{M}$ 11'51	15°52'57
				max. Earth dist.	12006 Aug 28 05:13	15° $\mathring{M}$ 14'01	48.91487 AU
conjunction	11998 Aug 18 12:49	6° $\mathring{M}$ 59'20	-15°56'58	retrograde	12006 Dec 06 11:00	16° $\mathring{M}$ 43'42	
minimum elong	11998 Aug 18 12:55	6° $\mathring{M}$ 59'20	15°57'22	min. Earth dist.	12007 Feb 26 18:30	15° $\mathring{M}$ 44'47	47.04033 AU
max. Earth dist.	11998 Aug 20 07:53	7° $\mathring{M}$ 01'56	48.06858 AU	opposition	12007 Feb 28 06:29	15° $\mathring{M}$ 43'05	-16°31'44
retrograde	11998 Nov 28 07:04	8° $\mathring{M}$ 33'10		direct	12007 May 21 10:14	14° $\mathring{M}$ 43'05	
min. Earth dist.	11999 Feb 18 05:53	7° $\mathring{M}$ 33'47	46.20988 AU				
opposition	11999 Feb 19 23:00	7° $\mathring{M}$ 31'49	-16°38'08	conjunction	12007 Aug 27 22:35	16° $\mathring{M}$ 12'05	-15°50'50
direct	11999 May 13 06:13	6° $\mathring{M}$ 31'00		minimum elong	12007 Aug 27 22:44	16° $\mathring{M}$ 12'06	15°51'07
				max. Earth dist.	12007 Aug 29 10:06	16° $\mathring{M}$ 14'11	49.00585 AU
conjunction	11999 Aug 19 19:48	8° $\mathring{M}$ 02'03	-15°57'25	retrograde	12007 Dec 07 15:36	17° $\mathring{M}$ 43'45	
minimum elong	11999 Aug 19 19:55	8° $\mathring{M}$ 02'03	15°57'48	min. Earth dist.	12008 Feb 28 02:21	16° $\mathring{M}$ 44'52	47.12938 AU
max. Earth dist.	11999 Aug 21 12:48	8° $\mathring{M}$ 04'31	48.18902 AU	opposition	12008 Feb 29 12:51	16° $\mathring{M}$ 43'14	-16°29'36
retrograde	11999 Nov 29 16:52	9° $\mathring{M}$ 35'37		direct	12008 May 21 18:28	15° $\mathring{M}$ 43'21	
min. Earth dist.	12000 Feb 19 13:33	8° $\mathring{M}$ 36'21	46.32782 AU				
opposition	12000 Feb 21 06:19	8° $\mathring{M}$ 34'24	-16°38'21	conjunction	12008 Aug 28 04:38	17° $\mathring{M}$ 12'09	-15°48'43
direct	12000 May 13 11:01	7° $\mathring{M}$ 33'42		minimum elong	12008 Aug 28 04:49	17° $\mathring{M}$ 12'10	15°48'59
				max. Earth dist.	12008 Aug 29 16:20	17° $\mathring{M}$ 14'16	49.09343 AU
conjunction	12000 Aug 20 02:44	9° $\mathring{M}$ 04'29	-15°57'35	retrograde	12008 Dec 07 21:08	18° $\mathring{M}$ 43'38	
minimum elong	12000 Aug 20 02:51	9° $\mathring{M}$ 04'29	15°57'57	min. Earth dist.	12009 Feb 28 09:25	17° $\mathring{M}$ 44'49	47.21456 AU
max. Earth dist.	12000 Aug 21 19:19	9° $\mathring{M}$ 06'55	48.30428 AU	opposition	12009 Mar 01 19:10	17° $\mathring{M}$ 43'13	-16°27'11
retrograde	12000 Nov 29 22:03	10° $\mathring{M}$ 37'47		direct	12009 May 23 03:05	16° $\mathring{M}$ 43'27	
min. Earth dist.	12001 Feb 19 22:55	9° $\mathring{M}$ 38'30	46.44063 AU				
opposition	12001 Feb 21 13:42	9° $\mathring{M}$ 36'39	-16°38'17	conjunction	12009 Aug 29 10:21	18° $\mathring{M}$ 12'03	-15°46'21
direct	12001 May 14 17:58	8° $\mathring{M}$ 36'04		minimum elong	12009 Aug 29 10:31	18° $\mathring{M}$ 12'04	15°46'36
				max. Earth dist.	12009 Aug 30 20:08	18° $\mathring{M}$ 14'02	49.17693 AU
conjunction	12001 Aug 21 09:19	10° $\mathring{M}$ 06'34	-15°57'29	retrograde	12009 Dec 09 06:07	19° $\mathring{M}$ 43'22	
minimum elong	12001 Aug 21 09:27	10° $\mathring{M}$ 06'34	15°57'51	min. Earth dist.	12010 Mar 01 16:12	18° $\mathring{M}$ 44'37	47.29546 AU
max. Earth dist.	12001 Aug 23 00:55	10° $\mathring{M}$ 08'57	48.41482 AU	opposition	12010 Mar 03 01:29	18° $\mathring{M}$ 43'03	-16°24'32
retrograde	12001 Dec 01 01:24	11° $\mathring{M}$ 39'36		direct	12010 May 24 07:35	17° $\mathring{M}$ 43'23	
min. Earth dist.	12002 Feb 21 06:00	10° $\mathring{M}$ 40'24	46.54889 AU				
opposition	12002 Feb 22 20:50	10° $\mathring{M}$ 38'33	-16°37'56	conjunction	12010 Aug 30 16:21	19° $\mathring{M}$ 11'48	-15°43'44
direct	12002 May 16 02:12	9° $\mathring{M}$ 38'04		minimum elong	12010 Aug 30 16:33	19° $\mathring{M}$ 11'49	15°43'59
				max. Earth dist.	12010 Sep 01 01:51	19° $\mathring{M}$ 13'46	49.25572 AU
conjunction	12002 Aug 22 15:47	11° $\mathring{M}$ 08'17	-15°57'06	retrograde	12010 Dec 10 12:36	20° $\mathring{M}$ 42'56	
minimum elong	12002 Aug 22 15:55	11° $\mathring{M}$ 08'17	15°57'27	min. Earth dist.	12011 Mar 03 00:28	19° $\mathring{M}$ 44'11	47.37127 AU
max. Earth dist.	12002 Aug 24 06:16	11° $\mathring{M}$ 10'35	48.52112 AU	opposition	12011 Mar 04 07:41	19° $\mathring{M}$ 42'43	-16°21'37
retrograde	12002 Dec 02 07:51	12° $\mathring{M}$ 41'04		direct	12011 May 25 12:50	18° $\mathring{M}$ 43'09	
min. Earth dist.	12003 Feb 22 14:15	11° $\mathring{M}$ 41'53	46.65341 AU				
opposition	12003 Feb 24 03:51	11° $\mathring{M}$ 40'05	-16°37'18	conjunction	12011 Aug 31 22:16	20° $\mathring{M}$ 11'23	-15°40'54
direct	12003 May 17 10:33	10° $\mathring{M}$ 39'41		minimum elong	12011 Aug 31 22:26	20° $\mathring{M}$ 11'23	15°41'07
				max. Earth dist.	12011 Sep 02 06:14	20° $\mathring{M}$ 13'15	49.32937 AU
conjunction	12003 Aug 23 22:15	12° $\mathring{M}$ 09'37	-15°56'26	retrograde	12011 Dec 11 17:02	21° $\mathring{M}$ 42'20	
minimum elong	12003 Aug 23 22:23	12° $\mathring{M}$ 09'38	15°56'47	min. Earth dist.	12012 Mar 03 06:44	20° $\mathring{M}$ 43'39	47.44162 AU
max. Earth dist.	12003 Aug 25 12:58	12° $\mathring{M}$ 11'56	48.62400 AU	opposition	12012 Mar 04 13:44	20° $\mathring{M}$ 42'11	-16°18'29

direct	12012 May 25 18:03	19° <u>0</u> 42'41		minimum elong	12020 Sep 08 23:00	28° <u>0</u> 58'08	15°04'39
				max. Earth dist.	12020 Sep 09 23:40	28° <u>0</u> 59'34	49.79703 AU
conjunction	12012 Sep 01 04:00	21° <u>0</u> 10'45	-15°37'50		12020 Oct 28 04:19	0° <u>0</u>	
minimum elong	12012 Sep 01 04:11	21° <u>0</u> 10'45	15°38'02	retrograde	12020 Dec 19 20:35	0° <u>0</u> 27'50	
max. Earth dist.	12012 Sep 02 10:26	21° <u>0</u> 12'32	49.39740 AU		12021 Feb 11 16:43	30° <u>0</u> 11'00	
retrograde	12012 Dec 11 21:53	22° <u>0</u> 41'31		opposition	12021 Mar 13 16:34	29° <u>0</u> 28'14	-15°39'08
opposition	12013 Mar 05 19:49	21° <u>0</u> 41'26	-16°15'07	min. Earth dist.	12021 Mar 12 17:46	29° <u>0</u> 29'17	47.88623 AU
min. Earth dist.	12013 Mar 04 14:43	21° <u>0</u> 42'48	47.50653 AU	direct	12021 Jun 03 21:39	28° <u>0</u> 29'20	
direct	12013 May 27 00:47	20° <u>0</u> 42'00		evening set	12021 Sep 09 14:02	29° <u>0</u> 55'17	
conjunction	12013 Sep 02 09:45	22° <u>0</u> 09'51	-15°34'32	conjunction	12021 Sep 10 03:58	29° <u>0</u> 56'05	-14°59'16
minimum elong	12013 Sep 02 09:56	22° <u>0</u> 09'52	15°34'43	minimum elong	12021 Sep 10 04:12	29° <u>0</u> 56'06	14°59'22
max. Earth dist.	12013 Sep 03 15:55	22° <u>0</u> 11'37	49.46034 AU	evening rise	12021 Sep 10 18:23	29° <u>0</u> 56'55	
retrograde	12013 Dec 13 02:09	23° <u>0</u> 40'27		max. Earth dist.	12021 Sep 11 03:42	29° <u>0</u> 57'28	49.83149 AU
min. Earth dist.	12014 Mar 05 21:17	22° <u>0</u> 41'45	47.56645 AU		12021 Sep 12 23:47	0° <u>0</u>	
opposition	12014 Mar 07 01:43	22° <u>0</u> 40'25	-16°11'31	retrograde	12021 Dec 21 01:27	1° <u>0</u> 25'42	
direct	12014 May 28 09:15	21° <u>0</u> 41'02		opposition	12022 Mar 14 21:50	0° <u>0</u> 26'10	-15°33'31
				min. Earth dist.	12022 Mar 13 23:06	0° <u>0</u> 27'13	47.91761 AU
conjunction	12014 Sep 03 15:09	23° <u>0</u> 08'42	-15°31'00		12022 Apr 08 03:04	30° <u>0</u> 11'00	
minimum elong	12014 Sep 03 15:21	23° <u>0</u> 08'43	15°31'11	direct	12022 Jun 05 00:14	29° <u>0</u> 27'20	
max. Earth dist.	12014 Sep 04 19:29	23° <u>0</u> 10'21	49.51870 AU		12022 Jul 31 06:08	0° <u>0</u>	
retrograde	12014 Dec 14 10:21	24° <u>0</u> 39'08		evening set	12022 Sep 09 13:20	0° <u>0</u> 51'30	
min. Earth dist.	12015 Mar 07 03:43	23° <u>0</u> 40'27	47.62221 AU				
opposition	12015 Mar 08 07:32	23° <u>0</u> 39'09	-16°07'40	conjunction	12022 Sep 11 09:04	0° <u>0</u> 54'01	-14°53'47
direct	12015 May 29 13:59	22° <u>0</u> 39'49		minimum elong	12022 Sep 11 09:17	0° <u>0</u> 54'02	14°53'51
				max. Earth dist.	12022 Sep 12 07:19	0° <u>0</u> 55'18	49.86128 AU
conjunction	12015 Sep 04 20:42	24° <u>0</u> 07'19	-15°27'14	morning rise	12022 Sep 13 05:18	0° <u>0</u> 56'34	
minimum elong	12015 Sep 04 20:54	24° <u>0</u> 07'20	15°27'23	retrograde	12022 Dec 22 05:24	2° <u>0</u> 23'32	
max. Earth dist.	12015 Sep 06 01:05	24° <u>0</u> 08'58	49.57306 AU	min. Earth dist.	12023 Mar 15 06:32	1° <u>0</u> 25'01	47.94408 AU
retrograde	12015 Dec 15 17:16	25° <u>0</u> 37'35		opposition	12023 Mar 16 03:15	1° <u>0</u> 24'03	-15°27'40
min. Earth dist.	12016 Mar 07 10:53	24° <u>0</u> 38'53	47.67420 AU	direct	12023 Jun 06 04:59	0° <u>0</u> 25'16	
opposition	12016 Mar 08 13:09	24° <u>0</u> 37'39	-16°03'34	evening set	12023 Sep 10 01:44	1° <u>0</u> 48'22	
direct	12016 May 29 17:55	23° <u>0</u> 38'23					
conjunction	12016 Sep 05 02:04	25° <u>0</u> 05'44	-15°23'12	conjunction	12023 Sep 12 14:25	1° <u>0</u> 51'52	-14°48'05
minimum elong	12016 Sep 05 02:16	25° <u>0</u> 05'45	15°23'22	minimum elong	12023 Sep 12 14:40	1° <u>0</u> 51'52	14°48'08
max. Earth dist.	12016 Sep 06 05:25	25° <u>0</u> 07'19	49.62411 AU	max. Earth dist.	12023 Sep 13 12:13	1° <u>0</u> 53'07	49.88596 AU
retrograde	12016 Dec 15 21:45	26° <u>0</u> 35'51		morning rise	12023 Sep 15 03:39	1° <u>0</u> 55'23	
opposition	12017 Mar 09 18:43	25° <u>0</u> 35'58	-15°59'12	retrograde	12023 Dec 23 08:20	3° <u>0</u> 21'17	
min. Earth dist.	12017 Mar 08 16:03	25° <u>0</u> 37'13	47.72297 AU	opposition	12024 Mar 16 08:21	2° <u>0</u> 21'50	-15°21'37
direct	12017 May 30 21:28	24° <u>0</u> 36'46		min. Earth dist.	12024 Mar 15 12:26	2° <u>0</u> 22'46	47.96505 AU
				direct	12024 Jun 06 13:08	1° <u>0</u> 23'05	
conjunction	12017 Sep 06 07:11	26° <u>0</u> 03'58	-15°18'55	evening set	12024 Sep 09 17:19	2° <u>0</u> 45'18	
minimum elong	12017 Sep 06 07:24	26° <u>0</u> 03'59	15°19'03	conjunction	12024 Sep 12 19:32	2° <u>0</u> 49'34	-14°42'11
max. Earth dist.	12017 Sep 07 09:36	26° <u>0</u> 05'30	49.67198 AU	minimum elong	12024 Sep 12 19:46	2° <u>0</u> 49'35	14°42'13
retrograde	12017 Dec 17 01:19	27° <u>0</u> 33'58		max. Earth dist.	12024 Sep 13 15:05	2° <u>0</u> 50'42	49.90521 AU
min. Earth dist.	12018 Mar 09 23:09	26° <u>0</u> 35'20	47.76871 AU	morning rise	12024 Sep 15 22:20	2° <u>0</u> 53'53	
opposition	12018 Mar 11 00:24	26° <u>0</u> 34'09	-15°54'34	retrograde	12024 Dec 23 15:09	4° <u>0</u> 18'54	
direct	12018 Jun 01 04:52	25° <u>0</u> 35'01		opposition	12025 Mar 17 13:38	3° <u>0</u> 19'28	-15°15'21
				min. Earth dist.	12025 Mar 16 18:43	3° <u>0</u> 20'21	47.98075 AU
conjunction	12018 Sep 07 12:31	27° <u>0</u> 02'06	-15°14'23	direct	12025 Jun 07 19:03	2° <u>0</u> 20'44	
minimum elong	12018 Sep 07 12:43	27° <u>0</u> 02'06	15°14'31	evening set	12025 Sep 10 10:34	3° <u>0</u> 42'10	
max. Earth dist.	12018 Sep 08 15:10	27° <u>0</u> 03'38	49.71693 AU				
retrograde	12018 Dec 18 05:07	28° <u>0</u> 31'59		conjunction	12025 Sep 14 00:33	3° <u>0</u> 47'06	-14°36'04
min. Earth dist.	12019 Mar 11 04:52	27° <u>0</u> 33'24	47.81130 AU	minimum elong	12025 Sep 14 00:47	3° <u>0</u> 47'07	14°36'06
opposition	12019 Mar 12 05:45	27° <u>0</u> 32'14	-15°49'41	max. Earth dist.	12025 Sep 14 19:52	3° <u>0</u> 48'13	49.91924 AU
direct	12019 Jun 02 13:12	26° <u>0</u> 33'10		morning rise	12025 Sep 17 15:09	3° <u>0</u> 52'05	
				retrograde	12025 Dec 24 22:11	5° <u>0</u> 16'20	
conjunction	12019 Sep 08 17:39	28° <u>0</u> 00'08	-15°09'35	opposition	12026 Mar 18 18:51	4° <u>0</u> 16'54	-15°08'52
minimum elong	12019 Sep 08 17:52	28° <u>0</u> 00'09	15°09'42	min. Earth dist.	12026 Mar 18 01:38	4° <u>0</u> 17'42	47.99143 AU
max. Earth dist.	12019 Sep 09 18:31	28° <u>0</u> 01'34	49.75874 AU	direct	12026 Jun 08 23:46	3° <u>0</u> 18'10	
retrograde	12019 Dec 19 13:46	29° <u>0</u> 29'56		evening set	12026 Sep 11 05:00	4° <u>0</u> 38'53	
min. Earth dist.	12020 Mar 11 10:42	28° <u>0</u> 31'23	47.85068 AU				
opposition	12020 Mar 12 11:09	28° <u>0</u> 30'15	-15°44'32	conjunction	12026 Sep 15 05:33	4° <u>0</u> 44'25	-14°29'45
direct	12020 Jun 02 17:15	27° <u>0</u> 31'16		minimum elong	12026 Sep 15 05:47	4° <u>0</u> 44'26	14°29'45
				max. Earth dist.	12026 Sep 15 23:35	4° <u>0</u> 45'27	49.92879 AU
conjunction	12020 Sep 08 22:48	28° <u>0</u> 58'08	-15°04'33	morning rise	12026 Sep 19 06:44	4° <u>0</u> 49'59	

retrograde	12026 Dec 26 04:13	6° <u>♁</u> 13'32	minimum elong	12033 Sep 21 15:41	11° <u>♁</u> 22'12	13°38'53
opposition	12027 Mar 19 23:42	5° <u>♁</u> 14'06 -15°02'10	max. Earth dist.	12033 Sep 22 04:44	11° <u>♁</u> 22'57	49.90251 AU
min. Earth dist.	12027 Mar 19 06:23	5° <u>♁</u> 14'54 47.99793 AU	morning rise	12033 Sep 28 04:28	11° <u>♁</u> 31'09	
direct	12027 Jun 10 02:00	4° <u>♁</u> 15'22	retrograde	12034 Jan 01 10:42	12° <u>♁</u> 51'01	
evening set	12027 Sep 12 00:06	5° <u>♁</u> 35'26	opposition	12034 Mar 26 10:00	11° <u>♁</u> 51'44	-14°08'30
			min. Earth dist.	12034 Mar 25 22:18	11° <u>♁</u> 52'17	47.95240 AU
conjunction	12027 Sep 16 10:29	5° <u>♁</u> 41'32 -14°23'12	direct	12034 Jun 16 13:35	10° <u>♁</u> 53'11	
minimum elong	12027 Sep 16 10:43	5° <u>♁</u> 41'32 14°23'13	evening set	12034 Sep 16 00:57	12° <u>♁</u> 09'48	
max. Earth dist.	12027 Sep 17 03:19	5° <u>♁</u> 42'29 49.93433 AU				
morning rise	12027 Sep 20 21:33	5° <u>♁</u> 47'39	conjunction	12034 Sep 22 20:22	12° <u>♁</u> 19'07	-13°30'48
retrograde	12027 Dec 27 07:28	7° <u>♁</u> 10'33	minimum elong	12034 Sep 22 20:37	12° <u>♁</u> 19'08	13°30'42
opposition	12028 Mar 20 04:45	6° <u>♁</u> 11'06 -14°55'14	max. Earth dist.	12034 Sep 23 07:35	12° <u>♁</u> 19'45	49.88469 AU
min. Earth dist.	12028 Mar 19 13:11	6° <u>♁</u> 11'50 48.00078 AU	morning rise	12034 Sep 29 16:49	12° <u>♁</u> 28'30	
direct	12028 Jun 10 07:32	5° <u>♁</u> 12'22	retrograde	12035 Jan 02 17:33	13° <u>♁</u> 47'58	
evening set	12028 Sep 11 19:45	6° <u>♁</u> 31'50	opposition	12035 Mar 27 14:48	12° <u>♁</u> 48'43	-13°59'55
			min. Earth dist.	12035 Mar 27 04:21	12° <u>♁</u> 49'13	47.93101 AU
conjunction	12028 Sep 16 15:21	6° <u>♁</u> 38'27 -14°16'25	direct	12035 Jun 17 18:22	11° <u>♁</u> 50'12	
minimum elong	12028 Sep 16 15:35	6° <u>♁</u> 38'27 14°16'24	evening set	12035 Sep 16 22:50	13° <u>♁</u> 06'26	
max. Earth dist.	12028 Sep 17 08:23	6° <u>♁</u> 39'25 49.93655 AU				
morning rise	12028 Sep 21 11:38	6° <u>♁</u> 45'06	conjunction	12035 Sep 24 01:29	13° <u>♁</u> 16'08	-13°22'26
retrograde	12028 Dec 27 08:54	8° <u>♁</u> 07'23	minimum elong	12035 Sep 24 01:43	13° <u>♁</u> 16'09	13°22'19
opposition	12029 Mar 21 09:37	7° <u>♁</u> 07'57 -14°48'03	max. Earth dist.	12035 Sep 24 12:06	13° <u>♁</u> 16'45	49.86176 AU
min. Earth dist.	12029 Mar 20 18:09	7° <u>♁</u> 08'40 48.00037 AU	morning rise	12035 Oct 01 05:04	13° <u>♁</u> 25'56	
direct	12029 Jun 11 15:17	6° <u>♁</u> 09'13	retrograde	12036 Jan 04 00:46	14° <u>♁</u> 45'01	
evening set	12029 Sep 12 15:49	7° <u>♁</u> 28'07	opposition	12036 Mar 27 19:46	13° <u>♁</u> 45'47	-13°51'07
			min. Earth dist.	12036 Mar 27 11:05	13° <u>♁</u> 46'11	47.90417 AU
conjunction	12029 Sep 17 20:07	7° <u>♁</u> 35'14 -14°09'24	direct	12036 Jun 17 22:43	12° <u>♁</u> 47'17	
minimum elong	12029 Sep 17 20:20	7° <u>♁</u> 35'14 14°09'23	evening set	12036 Sep 16 20:58	14° <u>♁</u> 03'07	
max. Earth dist.	12029 Sep 18 11:24	7° <u>♁</u> 36'06 49.93579 AU				
morning rise	12029 Sep 23 01:11	7° <u>♁</u> 42'23	conjunction	12036 Sep 24 06:25	14° <u>♁</u> 13'13	-13°13'52
retrograde	12029 Dec 28 15:40	9° <u>♁</u> 04'07	minimum elong	12036 Sep 24 06:40	14° <u>♁</u> 13'14	13°13'45
opposition	12030 Mar 22 14:32	8° <u>♁</u> 04'41 -14°40'38	max. Earth dist.	12036 Sep 24 15:30	14° <u>♁</u> 13'44	49.83349 AU
min. Earth dist.	12030 Mar 21 23:34	8° <u>♁</u> 05'23 47.99720 AU	morning rise	12036 Oct 01 16:53	14° <u>♁</u> 23'24	
direct	12030 Jun 12 19:59	7° <u>♁</u> 05'59	retrograde	12037 Jan 04 08:02	15° <u>♁</u> 42'05	
evening set	12030 Sep 13 12:12	8° <u>♁</u> 24'22	opposition	12037 Mar 29 00:37	14° <u>♁</u> 42'52	-13°42'08
			min. Earth dist.	12037 Mar 28 16:09	14° <u>♁</u> 43'15	47.87193 AU
conjunction	12030 Sep 19 00:58	8° <u>♁</u> 31'56 -14°02'08	direct	12037 Jun 18 23:58	13° <u>♁</u> 44'21	
minimum elong	12030 Sep 19 01:13	8° <u>♁</u> 31'57 14°02'06	evening set	12037 Sep 17 19:09	14° <u>♁</u> 59'48	
max. Earth dist.	12030 Sep 19 16:25	8° <u>♁</u> 32'49 49.93218 AU				
morning rise	12030 Sep 24 14:32	8° <u>♁</u> 39'34	conjunction	12037 Sep 25 11:23	15° <u>♁</u> 10'18	-13°05'07
retrograde	12030 Dec 29 22:03	10° <u>♁</u> 00'47	minimum elong	12037 Sep 25 11:37	15° <u>♁</u> 10'19	13°04'58
opposition	12031 Mar 23 19:28	9° <u>♁</u> 01'23 -14°32'57	max. Earth dist.	12037 Sep 25 18:53	15° <u>♁</u> 10'43	49.79987 AU
min. Earth dist.	12031 Mar 23 05:47	9° <u>♁</u> 02'01 47.99102 AU	morning rise	12037 Oct 03 04:44	15° <u>♁</u> 20'51	
direct	12031 Jun 14 00:53	8° <u>♁</u> 02'43	retrograde	12038 Jan 05 12:08	16° <u>♁</u> 39'10	
evening set	12031 Sep 14 09:02	9° <u>♁</u> 20'36	opposition	12038 Mar 30 05:33	15° <u>♁</u> 39'55	-13°32'57
			min. Earth dist.	12038 Mar 29 23:11	15° <u>♁</u> 40'13	47.83468 AU
conjunction	12031 Sep 20 05:49	9° <u>♁</u> 28'38 -13°54'39	direct	12038 Jun 20 04:21	14° <u>♁</u> 41'23	
minimum elong	12031 Sep 20 06:03	9° <u>♁</u> 28'39 13°54'35	evening set	12038 Sep 18 17:31	15° <u>♁</u> 56'28	
max. Earth dist.	12031 Sep 20 20:17	9° <u>♁</u> 29'27 49.92570 AU				
morning rise	12031 Sep 26 03:23	9° <u>♁</u> 36'43	conjunction	12038 Sep 26 16:22	16° <u>♁</u> 07'20	-12°56'09
retrograde	12031 Dec 31 03:16	10° <u>♁</u> 57'27	minimum elong	12038 Sep 26 16:37	16° <u>♁</u> 07'20	12°56'01
min. Earth dist.	12032 Mar 23 10:19	9° <u>♁</u> 58'44 47.98180 AU	max. Earth dist.	12038 Sep 26 23:44	16° <u>♁</u> 07'45	49.76158 AU
opposition	12032 Mar 24 00:09	9° <u>♁</u> 58'06 -14°25'02	morning rise	12038 Oct 04 16:15	16° <u>♁</u> 18'15	
direct	12032 Jun 14 02:58	8° <u>♁</u> 59'27	retrograde	12039 Jan 06 12:57	17° <u>♁</u> 36'12	
evening set	12032 Sep 14 06:02	10° <u>♁</u> 16'53	opposition	12039 Mar 31 10:19	16° <u>♁</u> 36'55	-13°23'32
			min. Earth dist.	12039 Mar 31 04:18	16° <u>♁</u> 37'12	47.79290 AU
conjunction	12032 Sep 20 10:37	10° <u>♁</u> 25'22 -13°46'55	direct	12039 Jun 21 12:35	15° <u>♁</u> 38'21	
minimum elong	12032 Sep 20 10:52	10° <u>♁</u> 25'23 13°46'51	evening set	12039 Sep 19 16:05	16° <u>♁</u> 53'05	
max. Earth dist.	12032 Sep 20 23:54	10° <u>♁</u> 26'08 49.91592 AU				
morning rise	12032 Sep 26 16:09	10° <u>♁</u> 33'54	conjunction	12039 Sep 27 21:15	17° <u>♁</u> 04'19	-12°46'59
retrograde	12032 Dec 31 07:43	11° <u>♁</u> 54'11	minimum elong	12039 Sep 27 21:30	17° <u>♁</u> 04'19	12°46'48
opposition	12033 Mar 25 05:08	10° <u>♁</u> 54'52 -14°16'53	max. Earth dist.	12039 Sep 28 02:35	17° <u>♁</u> 04'37	49.71908 AU
min. Earth dist.	12033 Mar 24 17:00	10° <u>♁</u> 55'26 47.96916 AU	morning rise	12039 Oct 06 03:40	17° <u>♁</u> 15'36	
direct	12033 Jun 15 06:43	9° <u>♁</u> 56'16	retrograde	12040 Jan 07 18:46	18° <u>♁</u> 33'11	
evening set	12033 Sep 15 03:16	11° <u>♁</u> 13'17	opposition	12040 Mar 31 15:01	17° <u>♁</u> 33'53	-13°13'54
			min. Earth dist.	12040 Mar 31 09:53	17° <u>♁</u> 34'07	47.74734 AU
conjunction	12033 Sep 21 15:27	11° <u>♁</u> 22'12 -13°38'58	direct	12040 Jun 21 18:25	16° <u>♁</u> 35'17	



evening set	12040 Sep 19 14:37	17° <u>♁</u> 49'41	opposition	12047 Apr 08 00:59	24° <u>♁</u> 13'39 -11°59'57
			min. Earth dist.	12047 Apr 08 01:26	24° <u>♁</u> 13'38 47.33519 AU
conjunction	12040 Sep 28 02:13	18° <u>♁</u> 01'15 -12°37'36	direct	12047 Jun 28 23:52	23° <u>♁</u> 14'53
minimum elong	12040 Sep 28 02:28	18° <u>♁</u> 01'16 12°37'25	evening set	12047 Sep 25 09:06	24° <u>♁</u> 27'23
max. Earth dist.	12040 Sep 28 07:34	18° <u>♁</u> 01'33 49.67296 AU			
morning rise	12040 Oct 06 14:58	18° <u>♁</u> 12'55	conjunction	12047 Oct 05 13:38	24° <u>♁</u> 41'20 -11°25'33
retrograde	12041 Jan 08 01:25	19° <u>♁</u> 30'09	minimum elong	12047 Oct 05 13:53	24° <u>♁</u> 41'20 11°25'17
opposition	12041 Apr 01 19:53	18° <u>♁</u> 30'49 -13°04'03	max. Earth dist.	12047 Oct 05 11:48	24° <u>♁</u> 41'13 49.25694 AU
min. Earth dist.	12041 Apr 01 16:01	18° <u>♁</u> 31'00 47.69832 AU	morning rise	12047 Oct 15 19:43	24° <u>♁</u> 55'22
direct	12041 Jun 22 23:45	17° <u>♁</u> 32'11	retrograde	12048 Jan 15 17:23	26° <u>♁</u> 10'42
evening set	12041 Sep 20 13:19	18° <u>♁</u> 46'15	opposition	12048 Apr 08 06:02	25° <u>♁</u> 11'12 -11°48'31
			min. Earth dist.	12048 Apr 08 08:48	25° <u>♁</u> 11'05 47.25936 AU
conjunction	12041 Sep 29 07:00	18° <u>♁</u> 58'11 -12°27'59	direct	12048 Jun 29 02:51	24° <u>♁</u> 12'24
minimum elong	12041 Sep 29 07:15	18° <u>♁</u> 58'12 12°27'47	evening set	12048 Sep 25 09:06	25° <u>♁</u> 24'40
max. Earth dist.	12041 Sep 29 11:27	18° <u>♁</u> 58'26 49.62376 AU			
morning rise	12041 Oct 08 01:54	19° <u>♁</u> 10'12	conjunction	12048 Oct 05 19:08	25° <u>♁</u> 38'56 -11°14'26
retrograde	12042 Jan 09 07:41	20° <u>♁</u> 27'06	minimum elong	12048 Oct 05 19:22	25° <u>♁</u> 38'57 11°14'08
opposition	12042 Apr 03 00:39	19° <u>♁</u> 27'45 -12°53'57	max. Earth dist.	12048 Oct 05 16:47	25° <u>♁</u> 38'48 49.17975 AU
min. Earth dist.	12042 Apr 02 20:32	19° <u>♁</u> 27'56 47.64628 AU	morning rise	12048 Oct 16 06:31	25° <u>♁</u> 53'18
direct	12042 Jun 24 01:40	18° <u>♁</u> 29'06	retrograde	12049 Jan 15 19:36	27° <u>♁</u> 08'23
evening set	12042 Sep 21 12:11	19° <u>♁</u> 42'51	opposition	12049 Apr 09 11:07	26° <u>♁</u> 08'51 -11°36'52
			min. Earth dist.	12049 Apr 09 14:18	26° <u>♁</u> 08'42 47.17802 AU
conjunction	12042 Sep 30 11:58	19° <u>♁</u> 55'08 -12°18'08	direct	12049 Jun 30 10:13	25° <u>♁</u> 09'58
minimum elong	12042 Sep 30 12:12	19° <u>♁</u> 55'09 12°17'56	evening set	12049 Sep 26 09:07	26° <u>♁</u> 22'02
max. Earth dist.	12042 Sep 30 15:09	19° <u>♁</u> 55'19 49.57144 AU			
morning rise	12042 Oct 09 13:07	20° <u>♁</u> 07'30	conjunction	12049 Oct 07 00:21	26° <u>♁</u> 36'36 -11°03'06
retrograde	12043 Jan 10 12:54	21° <u>♁</u> 24'06	minimum elong	12049 Oct 07 00:35	26° <u>♁</u> 36'37 11°02'49
opposition	12043 Apr 04 05:26	20° <u>♁</u> 24'43 -12°43'36	max. Earth dist.	12049 Oct 06 19:43	26° <u>♁</u> 36'20 49.09720 AU
min. Earth dist.	12043 Apr 04 02:59	20° <u>♁</u> 24'49 47.59123 AU	morning rise	12049 Oct 17 17:15	26° <u>♁</u> 51'17
direct	12043 Jun 25 04:22	19° <u>♁</u> 26'02	retrograde	12050 Jan 17 00:49	28° <u>♁</u> 06'09
evening set	12043 Sep 22 11:13	20° <u>♁</u> 39'31	opposition	12050 Apr 10 16:16	27° <u>♁</u> 06'32 -11°25'01
			min. Earth dist.	12050 Apr 10 20:48	27° <u>♁</u> 06'19 47.09160 AU
conjunction	12043 Oct 01 17:02	20° <u>♁</u> 52'08 -12°08'03	direct	12050 Jul 01 16:16	26° <u>♁</u> 07'35
minimum elong	12043 Oct 01 17:18	20° <u>♁</u> 52'09 12°07'50	evening set	12050 Sep 27 09:17	27° <u>♁</u> 19'26
max. Earth dist.	12043 Oct 01 20:23	20° <u>♁</u> 52'20 49.51618 AU			
morning rise	12043 Oct 11 00:03	21° <u>♁</u> 04'50	conjunction	12050 Oct 08 05:53	27° <u>♁</u> 34'19 -10°51'35
retrograde	12044 Jan 11 14:58	22° <u>♁</u> 21'09	minimum elong	12050 Oct 08 06:07	27° <u>♁</u> 34'20 10°51'15
opposition	12044 Apr 04 10:12	21° <u>♁</u> 21'45 -12°33'02	max. Earth dist.	12050 Oct 08 00:55	27° <u>♁</u> 34'02 49.00970 AU
min. Earth dist.	12044 Apr 04 07:50	21° <u>♁</u> 21'52 47.53298 AU	morning rise	12050 Oct 19 03:57	27° <u>♁</u> 49'18
direct	12044 Jun 25 10:32	20° <u>♁</u> 23'03	retrograde	12051 Jan 18 06:56	29° <u>♁</u> 03'58
evening set	12044 Sep 22 10:20	21° <u>♁</u> 36'16	opposition	12051 Apr 11 21:16	28° <u>♁</u> 04'16 -11°12'57
			min. Earth dist.	12051 Apr 12 03:17	28° <u>♁</u> 03'59 47.00052 AU
conjunction	12044 Oct 01 21:53	21° <u>♁</u> 49'14 -11°57'45	direct	12051 Jul 02 22:16	27° <u>♁</u> 05'15
minimum elong	12044 Oct 01 22:07	21° <u>♁</u> 49'14 11°57'31	evening set	12051 Sep 28 09:40	28° <u>♁</u> 16'53
max. Earth dist.	12044 Oct 01 23:25	21° <u>♁</u> 49'19 49.45763 AU			
morning rise	12044 Oct 11 10:54	22° <u>♁</u> 02'16	conjunction	12051 Oct 09 11:18	28° <u>♁</u> 32'05 -10°39'50
retrograde	12045 Jan 11 20:36	23° <u>♁</u> 18'20	minimum elong	12051 Oct 09 11:32	28° <u>♁</u> 32'06 10°39'31
opposition	12045 Apr 05 15:08	22° <u>♁</u> 18'55 -12°22'13	max. Earth dist.	12051 Oct 09 05:07	28° <u>♁</u> 31'44 48.91804 AU
min. Earth dist.	12045 Apr 05 13:47	22° <u>♁</u> 18'58 47.47135 AU	morning rise	12051 Oct 20 14:31	28° <u>♁</u> 47'23
direct	12045 Jun 26 15:44	21° <u>♁</u> 20'12		12052 Jan 06 08:20	0° <u>♁</u>
evening set	12045 Sep 23 09:38	22° <u>♁</u> 33'10	retrograde	12052 Jan 19 14:00	0° <u>♁</u> 01'50
				12052 Feb 01 18:31	30° <u>♁</u>
conjunction	12045 Oct 03 03:04	22° <u>♁</u> 46'27 -11°47'13	opposition	12052 Apr 12 02:19	29° <u>♁</u> 02'04 -11°00'39
minimum elong	12045 Oct 03 03:19	22° <u>♁</u> 46'28 11°46'59	min. Earth dist.	12052 Apr 12 08:22	29° <u>♁</u> 01'47 46.90560 AU
max. Earth dist.	12045 Oct 03 04:23	22° <u>♁</u> 46'31 49.39534 AU	direct	12052 Jul 03 01:06	28° <u>♁</u> 02'58
morning rise	12045 Oct 12 21:50	22° <u>♁</u> 59'50	evening set	12052 Sep 28 09:57	29° <u>♁</u> 14'26
retrograde	12046 Jan 13 02:48	24° <u>♁</u> 15'38			
opposition	12046 Apr 06 20:04	23° <u>♁</u> 16'12 -12°11'12	conjunction	12052 Oct 09 16:35	29° <u>♁</u> 29'56 -10°27'52
min. Earth dist.	12046 Apr 06 20:10	23° <u>♁</u> 16'12 47.40562 AU	minimum elong	12052 Oct 09 16:49	29° <u>♁</u> 29'56 10°27'31
direct	12046 Jun 27 21:51	22° <u>♁</u> 17'29	max. Earth dist.	12052 Oct 09 09:07	29° <u>♁</u> 29'30 48.82262 AU
evening set	12046 Sep 24 09:17	23° <u>♁</u> 30'12	morning rise	12052 Oct 21 00:57	29° <u>♁</u> 45'32
				12052 Oct 31 20:56	0° <u>♁</u>
conjunction	12046 Oct 04 08:17	23° <u>♁</u> 43'49 -11°36'29	retrograde	12053 Jan 19 19:58	0° <u>♁</u> 59'48
minimum elong	12046 Oct 04 08:31	23° <u>♁</u> 43'50 11°36'13	opposition	12053 Apr 13 07:34	29° <u>♁</u> 59'58 -10°48'07
max. Earth dist.	12046 Oct 04 08:13	23° <u>♁</u> 43'49 49.32876 AU		12053 Apr 13 06:49	30° <u>♁</u>
morning rise	12046 Oct 14 08:42	23° <u>♁</u> 57'32	min. Earth dist.	12053 Apr 13 15:15	29° <u>♁</u> 59'36 46.80726 AU
retrograde	12047 Jan 14 11:04	25° <u>♁</u> 13'06	direct	12053 Jul 04 04:37	29° <u>♁</u> 00'47

	12053 Sep 20 09:34	0° <b>ℓ</b>		max. Earth dist.	12059 Oct 16 19:03	6° <b>ℓ</b> 19'44	48.06771 AU
evening set	12053 Sep 29 10:28	0° <b>ℓ</b> 12'06		morning rise	12059 Oct 30 02:14	6° <b>ℓ</b> 38'13	
				retrograde	12060 Jan 27 13:11	7° <b>ℓ</b> 51'43	
conjunction	12053 Oct 10 22:09	0° <b>ℓ</b> 27'54 -10°15'41		opposition	12060 Apr 19 21:18	6° <b>ℓ</b> 51'27	-9°13'42
minimum elong	12053 Oct 10 22:22	0° <b>ℓ</b> 27'54 10°15'20		min. Earth dist.	12060 Apr 20 10:46	6° <b>ℓ</b> 50'48	46.03040 AU
max. Earth dist.	12053 Oct 10 14:52	0° <b>ℓ</b> 27'28 48.72413 AU		direct	12060 Jul 10 16:45	5° <b>ℓ</b> 51'47	
morning rise	12053 Oct 22 11:20	0° <b>ℓ</b> 43'48		evening set	12060 Oct 04 19:36	7° <b>ℓ</b> 02'27	
retrograde	12054 Jan 20 22:40	1° <b>ℓ</b> 57'54					
opposition	12054 Apr 14 12:40	0° <b>ℓ</b> 58'00 -10°35'21		conjunction	12060 Oct 17 15:16	7° <b>ℓ</b> 20'18	-8°43'56
min. Earth dist.	12054 Apr 14 20:18	0° <b>ℓ</b> 57'38 46.70592 AU		minimum elong	12060 Oct 17 15:29	7° <b>ℓ</b> 20'18	8°43'30
	12054 Jun 24 18:49	30° <b>κ</b> 25		max. Earth dist.	12060 Oct 17 00:49	7° <b>ℓ</b> 19'27	47.94352 AU
direct	12054 Jul 05 10:53	29° <b>♊</b> 58'45		morning rise	12060 Oct 30 12:40	7° <b>ℓ</b> 38'15	
	12054 Jul 16 02:42	0° <b>ℓ</b>		retrograde	12061 Jan 27 18:52	8° <b>ℓ</b> 51'41	
evening set	12054 Sep 30 11:15	1° <b>ℓ</b> 09'55		opposition	12061 Apr 21 03:11	7° <b>ℓ</b> 51'18	-8°59'18
				min. Earth dist.	12061 Apr 21 18:02	7° <b>ℓ</b> 50'36	45.90229 AU
conjunction	12054 Oct 12 03:38	1° <b>ℓ</b> 26'01 -10°03'15		direct	12061 Jul 12 00:33	6° <b>ℓ</b> 51'32	
minimum elong	12054 Oct 12 03:52	1° <b>ℓ</b> 26'02 10°02'53		evening set	12061 Oct 05 21:51	8° <b>ℓ</b> 02'08	
max. Earth dist.	12054 Oct 11 18:34	1° <b>ℓ</b> 25'29 48.62276 AU					
morning rise	12054 Oct 23 21:51	1° <b>ℓ</b> 42'13		conjunction	12061 Oct 18 21:38	8° <b>ℓ</b> 20'14	-8°29'57
retrograde	12055 Jan 22 04:45	2° <b>ℓ</b> 56'11		minimum elong	12061 Oct 18 21:50	8° <b>ℓ</b> 20'15	8°29'30
opposition	12055 Apr 15 17:57	1° <b>ℓ</b> 56'13 -10°22'20		max. Earth dist.	12061 Oct 18 05:37	8° <b>ℓ</b> 19'18	47.81437 AU
min. Earth dist.	12055 Apr 16 02:33	1° <b>ℓ</b> 55'49 46.60184 AU		morning rise	12061 Oct 31 23:16	8° <b>ℓ</b> 38'28	
direct	12055 Jul 06 16:09	0° <b>ℓ</b> 56'54		retrograde	12062 Jan 29 03:20	9° <b>ℓ</b> 51'50	
evening set	12055 Oct 01 12:02	2° <b>ℓ</b> 07'58		opposition	12062 Apr 22 08:56	8° <b>ℓ</b> 51'20	-8°44'40
				min. Earth dist.	12062 Apr 23 00:11	8° <b>ℓ</b> 50'37	45.76943 AU
conjunction	12055 Oct 13 09:19	2° <b>ℓ</b> 24'21 -9°50'36		direct	12062 Jul 13 04:57	7° <b>ℓ</b> 51'25	
minimum elong	12055 Oct 13 09:32	2° <b>ℓ</b> 24'21 9°50'13		evening set	12062 Oct 07 00:10	9° <b>ℓ</b> 01'58	
max. Earth dist.	12055 Oct 13 00:11	2° <b>ℓ</b> 23'49 48.51852 AU		max. Earth dist.	12062 Oct 19 10:28	9° <b>ℓ</b> 19'19	47.68048 AU
morning rise	12055 Oct 25 08:14	2° <b>ℓ</b> 40'51					
retrograde	12056 Jan 23 10:39	3° <b>ℓ</b> 54'42		conjunction	12062 Oct 20 04:04	9° <b>ℓ</b> 20'21	-8°15'46
opposition	12056 Apr 15 23:13	2° <b>ℓ</b> 54'41 -10°09'05		minimum elong	12062 Oct 20 04:16	9° <b>ℓ</b> 20'21	8°15'18
min. Earth dist.	12056 Apr 16 08:47	2° <b>ℓ</b> 54'14 46.49480 AU		morning rise	12062 Nov 02 09:54	9° <b>ℓ</b> 38'52	
direct	12056 Jul 06 23:01	1° <b>ℓ</b> 55'19		retrograde	12063 Jan 30 11:37	10° <b>ℓ</b> 52'08	
evening set	12056 Oct 01 13:09	3° <b>ℓ</b> 06'15		opposition	12063 Apr 23 14:56	9° <b>ℓ</b> 51'31	-8°29'49
				min. Earth dist.	12063 Apr 24 08:09	9° <b>ℓ</b> 50'41	45.63216 AU
conjunction	12056 Oct 13 15:01	3° <b>ℓ</b> 22'56 -9°37'43		direct	12063 Jul 14 08:47	8° <b>ℓ</b> 51'27	
minimum elong	12056 Oct 13 15:15	3° <b>ℓ</b> 22'57 9°37'19		evening set	12063 Oct 08 02:39	10° <b>ℓ</b> 01'57	
max. Earth dist.	12056 Oct 13 04:58	3° <b>ℓ</b> 22'21 48.41150 AU					
morning rise	12056 Oct 25 18:38	3° <b>ℓ</b> 39'45		conjunction	12063 Oct 21 10:37	10° <b>ℓ</b> 20'36	-8°01'21
retrograde	12057 Jan 23 20:02	4° <b>ℓ</b> 53'29		minimum elong	12063 Oct 21 10:49	10° <b>ℓ</b> 20'37	8°00'51
opposition	12057 Apr 17 04:35	3° <b>ℓ</b> 53'25 -9°55'35		max. Earth dist.	12063 Oct 20 16:58	10° <b>ℓ</b> 19'34	47.54255 AU
min. Earth dist.	12057 Apr 17 14:09	3° <b>ℓ</b> 52'58 46.38482 AU		morning rise	12063 Nov 03 20:18	10° <b>ℓ</b> 39'23	
direct	12057 Jul 08 01:04	2° <b>ℓ</b> 53'59		retrograde	12064 Jan 31 17:02	11° <b>ℓ</b> 52'35	
evening set	12057 Oct 02 14:18	4° <b>ℓ</b> 04'51		opposition	12064 Apr 23 20:49	10° <b>ℓ</b> 51'50	-8°14'43
				min. Earth dist.	12064 Apr 24 14:02	10° <b>ℓ</b> 51'00	45.49112 AU
conjunction	12057 Oct 14 20:45	4° <b>ℓ</b> 21'50 -9°24'36		direct	12064 Jul 14 14:24	9° <b>ℓ</b> 51'37	
minimum elong	12057 Oct 14 20:57	4° <b>ℓ</b> 21'51 9°24'11		evening set	12064 Oct 08 05:26	11° <b>ℓ</b> 02'06	
max. Earth dist.	12057 Oct 14 09:22	4° <b>ℓ</b> 21'10 48.30107 AU					
morning rise	12057 Oct 27 05:03	4° <b>ℓ</b> 38'56		conjunction	12064 Oct 21 17:07	11° <b>ℓ</b> 21'01	-7°46'42
retrograde	12058 Jan 25 04:56	5° <b>ℓ</b> 52'35		minimum elong	12064 Oct 21 17:18	11° <b>ℓ</b> 21'02	7°46'13
opposition	12058 Apr 18 10:10	4° <b>ℓ</b> 52'28 -9°41'51		max. Earth dist.	12064 Oct 20 21:32	11° <b>ℓ</b> 19'52	47.40115 AU
min. Earth dist.	12058 Apr 18 21:45	4° <b>ℓ</b> 51'55 46.27120 AU		morning rise	12064 Nov 04 06:52	11° <b>ℓ</b> 40'04	
direct	12058 Jul 09 02:35	3° <b>ℓ</b> 52'58		retrograde	12065 Jan 31 23:40	12° <b>ℓ</b> 53'14	
evening set	12058 Oct 03 15:51	5° <b>ℓ</b> 03'46		opposition	12065 Apr 25 02:57	11° <b>ℓ</b> 52'20	-7°59'22
				min. Earth dist.	12065 Apr 25 21:24	11° <b>ℓ</b> 51'27	45.34702 AU
conjunction	12058 Oct 16 02:53	5° <b>ℓ</b> 21'02 -9°11'15		direct	12065 Jul 15 20:21	10° <b>ℓ</b> 51'59	
minimum elong	12058 Oct 16 03:06	5° <b>ℓ</b> 21'03 9°10'50		evening set	12065 Oct 09 08:09	12° <b>ℓ</b> 02'26	
max. Earth dist.	12058 Oct 15 15:15	5° <b>ℓ</b> 20'22 48.18674 AU					
morning rise	12058 Oct 28 15:32	5° <b>ℓ</b> 38'26		conjunction	12065 Oct 22 23:48	12° <b>ℓ</b> 21'37	-7°31'49
retrograde	12059 Jan 26 08:26	6° <b>ℓ</b> 52'00		minimum elong	12065 Oct 22 23:59	12° <b>ℓ</b> 21'38	7°31'18
opposition	12059 Apr 19 15:33	5° <b>ℓ</b> 51'49 -9°27'53		max. Earth dist.	12065 Oct 22 04:15	12° <b>ℓ</b> 20'28	47.25676 AU
min. Earth dist.	12059 Apr 20 03:27	5° <b>ℓ</b> 51'15 46.15323 AU		morning rise	12065 Nov 05 17:13	12° <b>ℓ</b> 40'57	
direct	12059 Jul 10 09:49	4° <b>ℓ</b> 52'15		retrograde	12066 Feb 02 04:11	13° <b>ℓ</b> 54'06	
evening set	12059 Oct 04 17:47	6° <b>ℓ</b> 03'00		opposition	12066 Apr 26 09:12	12° <b>ℓ</b> 53'04	-7°43'46
				min. Earth dist.	12066 Apr 27 04:20	12° <b>ℓ</b> 52'08	45.20003 AU
conjunction	12059 Oct 17 09:02	6° <b>ℓ</b> 20'32 -8°57'42		direct	12066 Jul 17 04:57	11° <b>ℓ</b> 52'34	
minimum elong	12059 Oct 17 09:14	6° <b>ℓ</b> 20'33 8°57'16		evening set	12066 Oct 10 11:23	13° <b>ℓ</b> 03'02	

max. Earth dist.	12066 Oct 23 10:04	13° <u>ℓ</u> 21'16	47.10978 AU	conjunction	12072 Oct 30 03:13	19° <u>ℓ</u> 36'17	-5°40'56
				minimum elong	12072 Oct 30 03:22	19° <u>ℓ</u> 36'17	5°40'20
conjunction	12066 Oct 24 06:39	13° <u>ℓ</u> 22'29	-7°16'42	morning rise	12072 Nov 13 20:15	19° <u>ℓ</u> 57'25	
minimum elong	12066 Oct 24 06:49	13° <u>ℓ</u> 22'29	7°16'11	retrograde	12073 Feb 09 15:08	21° <u>ℓ</u> 11'05	
morning rise	12066 Nov 07 03:49	13° <u>ℓ</u> 42'04		opposition	12073 May 03 08:36	20° <u>ℓ</u> 09'15	-5°47'31
retrograde	12067 Feb 03 12:54	14° <u>ℓ</u> 55'14		min. Earth dist.	12073 May 04 10:33	20° <u>ℓ</u> 07'58	44.08532 AU
opposition	12067 Apr 27 15:20	13° <u>ℓ</u> 54'04	-7°27'55	direct	12073 Jul 23 21:26	19° <u>ℓ</u> 07'51	
min. Earth dist.	12067 Apr 28 10:34	13° <u>ℓ</u> 53'08	45.05057 AU	evening set	12073 Oct 16 17:12	20° <u>ℓ</u> 19'00	
direct	12067 Jul 18 09:50	12° <u>ℓ</u> 53'27		max. Earth dist.	12073 Oct 30 07:48	20° <u>ℓ</u> 38'35	45.98961 AU
evening set	12067 Oct 11 14:47	14° <u>ℓ</u> 03'57					
				conjunction	12073 Oct 31 11:20	20° <u>ℓ</u> 40'15	-5°24'10
conjunction	12067 Oct 25 13:37	14° <u>ℓ</u> 23'39	-7°01'19	minimum elong	12073 Oct 31 11:29	20° <u>ℓ</u> 40'15	5°23'35
minimum elong	12067 Oct 25 13:48	14° <u>ℓ</u> 23'40	7°00'48	morning rise	12073 Nov 15 07:12	21° <u>ℓ</u> 01'38	
max. Earth dist.	12067 Oct 24 15:55	14° <u>ℓ</u> 22'22	46.96016 AU	retrograde	12074 Feb 11 00:36	22° <u>ℓ</u> 15'24	
morning rise	12067 Nov 08 14:25	14° <u>ℓ</u> 43'30		opposition	12074 May 04 15:59	21° <u>ℓ</u> 13'24	-5°29'56
	12067 Nov 20 17:56	15° <u>ℓ</u>		min. Earth dist.	12074 May 05 18:09	21° <u>ℓ</u> 12'07	43.90880 AU
retrograde	12068 Feb 04 23:08	15° <u>ℓ</u> 56'42		direct	12074 Jul 25 03:24	20° <u>ℓ</u> 11'49	
	12068 Apr 23 23:29	15° <u>κ</u> <u>ℓ</u>		evening set	12074 Oct 17 22:51	21° <u>ℓ</u> 23'08	
opposition	12068 Apr 27 21:54	14° <u>ℓ</u> 55'26	-7°11'48				
min. Earth dist.	12068 Apr 28 18:44	14° <u>ℓ</u> 54'25	44.89854 AU	conjunction	12074 Nov 01 19:37	21° <u>ℓ</u> 44'37	-5°07'11
direct	12068 Jul 18 13:04	13° <u>ℓ</u> 54'41		minimum elong	12074 Nov 01 19:45	21° <u>ℓ</u> 44'38	5°06'34
	12068 Oct 07 23:12	15° <u>ℓ</u>		max. Earth dist.	12074 Oct 31 13:43	21° <u>ℓ</u> 42'48	45.81186 AU
evening set	12068 Oct 11 18:14	15° <u>ℓ</u> 05'15		morning rise	12074 Nov 16 18:25	22° <u>ℓ</u> 06'15	
				retrograde	12075 Feb 12 09:46	23° <u>ℓ</u> 20'08	
conjunction	12068 Oct 25 20:38	15° <u>ℓ</u> 25'13	-6°45'43	opposition	12075 May 05 23:27	22° <u>ℓ</u> 17'58	-5°12'07
minimum elong	12068 Oct 25 20:48	15° <u>ℓ</u> 25'14	6°45'11	min. Earth dist.	12075 May 07 03:27	22° <u>ℓ</u> 16'35	43.72802 AU
max. Earth dist.	12068 Oct 24 23:02	15° <u>ℓ</u> 23'56	46.80803 AU	direct	12075 Jul 26 10:09	21° <u>ℓ</u> 16'11	
morning rise	12068 Nov 09 00:48	15° <u>ℓ</u> 45'20		evening set	12075 Oct 19 04:32	22° <u>ℓ</u> 27'39	
retrograde	12069 Feb 05 05:42	16° <u>ℓ</u> 58'35		max. Earth dist.	12075 Nov 01 22:05	22° <u>ℓ</u> 47'32	45.63003 AU
opposition	12069 Apr 29 04:29	15° <u>ℓ</u> 57'12	-6°55'26				
min. Earth dist.	12069 Apr 30 01:04	15° <u>ℓ</u> 56'12	44.74376 AU	conjunction	12075 Nov 03 04:08	22° <u>ℓ</u> 49'23	-4°49'57
	12069 Jul 01 18:56	15° <u>κ</u> <u>ℓ</u>		minimum elong	12075 Nov 03 04:15	22° <u>ℓ</u> 49'23	4°49'21
direct	12069 Jul 19 19:28	14° <u>ℓ</u> 56'21		morning rise	12075 Nov 18 05:24	23° <u>ℓ</u> 11'15	
	12069 Aug 06 19:24	15° <u>ℓ</u>		retrograde	12076 Feb 13 15:04	24° <u>ℓ</u> 25'17	
evening set	12069 Oct 12 22:15	16° <u>ℓ</u> 07'00		opposition	12076 May 06 07:09	23° <u>ℓ</u> 22'55	-4°54'02
max. Earth dist.	12069 Oct 26 04:24	16° <u>ℓ</u> 25'50	46.65289 AU	min. Earth dist.	12076 May 07 11:46	23° <u>ℓ</u> 21'30	43.54343 AU
				direct	12076 Jul 26 20:18	22° <u>ℓ</u> 20'56	
conjunction	12069 Oct 27 03:53	16° <u>ℓ</u> 27'14	-6°29'52	evening set	12076 Oct 19 10:31	23° <u>ℓ</u> 32'34	
minimum elong	12069 Oct 27 04:03	16° <u>ℓ</u> 27'15	6°29'19	max. Earth dist.	12076 Nov 02 05:10	23° <u>ℓ</u> 52'36	45.44481 AU
morning rise	12069 Nov 10 11:36	16° <u>ℓ</u> 47'37					
retrograde	12070 Feb 06 13:00	18° <u>ℓ</u> 00'56		conjunction	12076 Nov 03 12:31	23° <u>ℓ</u> 54'32	-4°32'30
opposition	12070 Apr 30 11:13	16° <u>ℓ</u> 59'27	-6°38'49	minimum elong	12076 Nov 03 12:38	23° <u>ℓ</u> 54'32	4°31'51
min. Earth dist.	12070 May 01 09:22	16° <u>ℓ</u> 58'23	44.58581 AU	morning rise	12076 Nov 18 16:26	24° <u>ℓ</u> 16'38	
direct	12070 Jul 21 02:02	15° <u>ℓ</u> 58'29		retrograde	12077 Feb 13 23:39	25° <u>ℓ</u> 30'50	
evening set	12070 Oct 14 02:29	17° <u>ℓ</u> 09'15		opposition	12077 May 07 15:01	24° <u>ℓ</u> 28'16	-4°35'41
max. Earth dist.	12070 Oct 27 11:48	17° <u>ℓ</u> 28'19	46.49406 AU	min. Earth dist.	12077 May 08 20:04	24° <u>ℓ</u> 26'49	43.35583 AU
				direct	12077 Jul 28 04:29	23° <u>ℓ</u> 26'05	
conjunction	12070 Oct 28 11:32	17° <u>ℓ</u> 29'45	-6°13'47	evening set	12077 Oct 20 16:53	24° <u>ℓ</u> 37'54	
minimum elong	12070 Oct 28 11:41	17° <u>ℓ</u> 29'45	6°13'13				
morning rise	12070 Nov 11 22:21	17° <u>ℓ</u> 50'23		conjunction	12077 Nov 04 21:19	25° <u>ℓ</u> 00'06	-4°14'47
retrograde	12071 Feb 07 19:16	19° <u>ℓ</u> 03'49		minimum elong	12077 Nov 04 21:26	25° <u>ℓ</u> 00'06	4°14'09
opposition	12071 May 01 18:10	18° <u>ℓ</u> 02'14	-6°21'57	max. Earth dist.	12077 Nov 03 12:58	24° <u>ℓ</u> 58'07	45.25655 AU
min. Earth dist.	12071 May 02 17:26	18° <u>ℓ</u> 01'05	44.42372 AU	morning rise	12077 Nov 20 03:36	25° <u>ℓ</u> 22'26	
direct	12071 Jul 22 10:48	17° <u>ℓ</u> 01'08		retrograde	12078 Feb 15 10:52	26° <u>ℓ</u> 36'49	
evening set	12071 Oct 15 07:10	18° <u>ℓ</u> 12'01		opposition	12078 May 08 23:04	25° <u>ℓ</u> 34'04	-4°17'05
				min. Earth dist.	12078 May 10 05:40	25° <u>ℓ</u> 32'32	43.16548 AU
conjunction	12071 Oct 29 19:14	18° <u>ℓ</u> 32'46	-5°57'28	direct	12078 Jul 29 10:14	24° <u>ℓ</u> 31'40	
minimum elong	12071 Oct 29 19:24	18° <u>ℓ</u> 32'47	5°56'54	evening set	12078 Oct 21 23:33	25° <u>ℓ</u> 43'42	
max. Earth dist.	12071 Oct 28 17:48	18° <u>ℓ</u> 31'14	46.33085 AU	max. Earth dist.	12078 Nov 04 21:52	26° <u>ℓ</u> 04'07	45.06586 AU
morning rise	12071 Nov 13 09:16	18° <u>ℓ</u> 53'40					
retrograde	12072 Feb 09 04:54	20° <u>ℓ</u> 07'12		conjunction	12078 Nov 06 06:22	26° <u>ℓ</u> 06'07	-3°56'50
opposition	12072 May 02 01:13	19° <u>ℓ</u> 05'30	-6°04'51	minimum elong	12078 Nov 06 06:28	26° <u>ℓ</u> 06'08	3°56'10
min. Earth dist.	12072 May 03 01:08	19° <u>ℓ</u> 04'20	44.25703 AU	morning rise	12078 Nov 21 14:50	26° <u>ℓ</u> 28'41	
direct	12072 Jul 22 16:24	18° <u>ℓ</u> 04'16		retrograde	12079 Feb 16 21:13	27° <u>ℓ</u> 43'16	
evening set	12072 Oct 15 12:07	19° <u>ℓ</u> 15'17		opposition	12079 May 10 07:15	26° <u>ℓ</u> 40'20	-3°58'14
max. Earth dist.	12072 Oct 29 00:08	19° <u>ℓ</u> 34'39	46.16265 AU	min. Earth dist.	12079 May 11 13:27	26° <u>ℓ</u> 38'49	42.97280 AU
				direct	12079 Jul 30 16:25	25° <u>ℓ</u> 37'43	

evening set	12079 Oct 23 06:39	26° $\mathcal{M}$ 50'00		minimum elong	12085 Nov 14 04:29	4° $\mathcal{A}$ 04'40	1°43'39
max. Earth dist.	12079 Nov 06 05:12	27° $\mathcal{M}$ 10'31	44.87279 AU	morning rise	12085 Nov 30 00:25	4° $\mathcal{A}$ 28'42	
				retrograde	12086 Feb 25 00:02	5° $\mathcal{A}$ 45'21	
conjunction	12079 Nov 07 15:25	27° $\mathcal{M}$ 12'39	-3°38'38	opposition	12086 May 17 23:35	4° $\mathcal{A}$ 41'00	-1°38'54
minimum elong	12079 Nov 07 15:31	27° $\mathcal{M}$ 12'39	3°37'58	min. Earth dist.	12086 May 19 12:40	4° $\mathcal{A}$ 39'05	41.54252 AU
morning rise	12079 Nov 23 02:06	27° $\mathcal{M}$ 35'26		direct	12086 Aug 07 04:46	3° $\mathcal{A}$ 36'48	
retrograde	12080 Feb 18 08:01	28° $\mathcal{M}$ 50'14		evening set	12086 Oct 30 20:00	4° $\mathcal{A}$ 51'27	
opposition	12080 May 10 15:45	27° $\mathcal{M}$ 47'06	-3°39'06	max. Earth dist.	12086 Nov 13 21:53	5° $\mathcal{A}$ 12'52	43.43419 AU
min. Earth dist.	12080 May 11 23:25	27° $\mathcal{M}$ 45'31	42.77793 AU				
direct	12080 Jul 30 23:39	26° $\mathcal{M}$ 44'17		conjunction	12086 Nov 15 15:33	5° $\mathcal{A}$ 15'33	-1°24'31
evening set	12080 Oct 23 13:59	27° $\mathcal{M}$ 56'51		minimum elong	12086 Nov 15 15:35	5° $\mathcal{A}$ 15'33	1°23'48
max. Earth dist.	12080 Nov 06 14:58	28° $\mathcal{M}$ 17'36	44.67750 AU	morning rise	12086 Dec 01 12:42	5° $\mathcal{A}$ 39'46	
				retrograde	12087 Feb 26 10:51	6° $\mathcal{A}$ 56'47	
conjunction	12080 Nov 08 00:55	28° $\mathcal{M}$ 19'43	-3°20'11	opposition	12087 May 19 09:46	5° $\mathcal{A}$ 52'10	-1°17'58
minimum elong	12080 Nov 08 01:01	28° $\mathcal{M}$ 19'43	3°19'31	min. Earth dist.	12087 May 20 24:00	5° $\mathcal{A}$ 50'11	41.32289 AU
morning rise	12080 Nov 23 13:25	28° $\mathcal{M}$ 42'43		direct	12087 Aug 08 15:25	4° $\mathcal{A}$ 47'42	
retrograde	12081 Feb 18 15:32	29° $\mathcal{M}$ 57'47		evening set	12087 Nov 01 06:24	6° $\mathcal{A}$ 02'45	
opposition	12081 May 12 00:27	28° $\mathcal{M}$ 54'28	-3°19'42	max. Earth dist.	12087 Nov 15 08:31	6° $\mathcal{A}$ 24'19	43.21309 AU
min. Earth dist.	12081 May 13 08:24	28° $\mathcal{M}$ 52'51	42.58072 AU				
direct	12081 Aug 01 10:17	27° $\mathcal{M}$ 51'27		conjunction	12087 Nov 17 02:53	6° $\mathcal{A}$ 27'02	-1°04'25
evening set	12081 Oct 24 21:49	29° $\mathcal{M}$ 04'18		minimum elong	12087 Nov 17 02:55	6° $\mathcal{A}$ 27'03	1°03'40
max. Earth dist.	12081 Nov 07 23:01	29° $\mathcal{M}$ 25'10	44.47979 AU	morning rise	12087 Dec 03 00:44	6° $\mathcal{A}$ 51'27	
				retrograde	12088 Feb 27 21:09	8° $\mathcal{A}$ 08'51	
conjunction	12081 Nov 09 10:30	29° $\mathcal{M}$ 27'24	-3°01'30	opposition	12088 May 19 20:14	7° $\mathcal{A}$ 03'59	-0°56'48
minimum elong	12081 Nov 09 10:35	29° $\mathcal{M}$ 27'24	3°00'49	min. Earth dist.	12088 May 21 11:44	7° $\mathcal{A}$ 01'55	41.10003 AU
morning rise	12081 Nov 25 00:59	29° $\mathcal{M}$ 50'37		direct	12088 Aug 09 02:13	5° $\mathcal{A}$ 59'13	
	12081 Dec 01 13:16	0° $\mathcal{A}$		evening set	12088 Nov 01 17:19	7° $\mathcal{A}$ 14'43	
retrograde	12082 Feb 20 02:01	1° $\mathcal{A}$ 05'57		max. Earth dist.	12088 Nov 15 19:32	7° $\mathcal{A}$ 36'24	42.98925 AU
opposition	12082 May 13 09:21	0° $\mathcal{A}$ 02'28	-3°00'03				
min. Earth dist.	12082 May 14 18:03	0° $\mathcal{A}$ 00'48	42.38089 AU	conjunction	12088 Nov 17 14:30	7° $\mathcal{A}$ 39'10	-0°44'05
	12082 May 15 09:52	30° $\mathcal{R}\mathcal{M}$		minimum elong	12088 Nov 17 14:31	7° $\mathcal{A}$ 39'11	0°43'21
direct	12082 Aug 02 18:34	28° $\mathcal{M}$ 59'14		morning rise	12088 Dec 03 13:01	8° $\mathcal{A}$ 03'45	
	12082 Oct 17 14:28	0° $\mathcal{A}$		retrograde	12089 Feb 28 10:04	9° $\mathcal{A}$ 21'36	
evening set	12082 Oct 26 06:11	0° $\mathcal{A}$ 12'25		opposition	12089 May 21 06:50	8° $\mathcal{A}$ 16'27	-0°35'21
max. Earth dist.	12082 Nov 09 08:06	0° $\mathcal{A}$ 33'26	44.27881 AU	min. Earth dist.	12089 May 22 22:11	8° $\mathcal{A}$ 14'24	40.87481 AU
				direct	12089 Aug 10 11:01	7° $\mathcal{A}$ 11'24	
conjunction	12082 Nov 10 20:36	0° $\mathcal{A}$ 35'43	-2°42'35	evening set	12089 Nov 03 04:44	8° $\mathcal{A}$ 27'22	
minimum elong	12082 Nov 10 20:41	0° $\mathcal{A}$ 35'43	2°41'53	max. Earth dist.	12089 Nov 17 05:50	8° $\mathcal{A}$ 49'06	42.76307 AU
morning rise	12082 Nov 26 12:39	0° $\mathcal{A}$ 59'10					
retrograde	12083 Feb 21 11:55	2° $\mathcal{A}$ 14'49		conjunction	12089 Nov 19 02:21	8° $\mathcal{A}$ 52'00	-0°23'32
opposition	12083 May 14 18:29	1° $\mathcal{A}$ 11'08	-2°40'09	minimum elong	12089 Nov 19 02:21	8° $\mathcal{A}$ 52'00	0°22'45
min. Earth dist.	12083 May 16 04:52	1° $\mathcal{A}$ 09'22	42.17754 AU	morning rise	12089 Dec 05 01:23	9° $\mathcal{A}$ 16'45	
direct	12083 Aug 04 03:28	0° $\mathcal{A}$ 07'42		retrograde	12090 Mar 02 00:29	10° $\mathcal{A}$ 35'03	
evening set	12083 Oct 27 15:00	1° $\mathcal{A}$ 21'13		opposition	12090 May 22 17:52	9° $\mathcal{A}$ 29'38	-0°13'40
max. Earth dist.	12083 Nov 10 17:51	1° $\mathcal{A}$ 42'22	44.07413 AU	min. Earth dist.	12090 May 24 10:47	9° $\mathcal{A}$ 27'29	40.64762 AU
				direct	12090 Aug 11 19:37	8° $\mathcal{A}$ 24'17	
conjunction	12083 Nov 12 06:58	1° $\mathcal{A}$ 44'43	-2°23'25	evening set	12090 Nov 04 16:37	9° $\mathcal{A}$ 40'47	
minimum elong	12083 Nov 12 07:02	1° $\mathcal{A}$ 44'43	2°22'42	max. Earth dist.	12090 Nov 18 18:32	10° $\mathcal{A}$ 02'41	42.53512 AU
morning rise	12083 Nov 28 00:29	2° $\mathcal{A}$ 08'22					
retrograde	12084 Feb 23 00:38	3° $\mathcal{A}$ 24'20		conjunction	12090 Nov 20 14:40	10° $\mathcal{A}$ 05'34	-0°02'46
opposition	12084 May 15 03:54	2° $\mathcal{A}$ 20'27	-2°19'59	minimum elong	12090 Nov 20 14:41	10° $\mathcal{A}$ 05'34	0°02'01
min. Earth dist.	12084 May 16 14:29	2° $\mathcal{A}$ 18'41	41.97020 AU	behind sun begin	12090 Nov 20 08:12	10° $\mathcal{A}$ 05'10	
direct	12084 Aug 04 10:39	1° $\mathcal{A}$ 16'47		behind sun end	12090 Nov 20 21:09	10° $\mathcal{A}$ 05'58	
evening set	12084 Oct 28 00:11	2° $\mathcal{A}$ 30'40		morning rise	12090 Dec 06 13:49	10° $\mathcal{A}$ 30'28	
max. Earth dist.	12084 Nov 11 02:00	2° $\mathcal{A}$ 51'53	43.86507 AU	asc. node	12091 Jan 07 02:19	11° $\mathcal{A}$ 14'09	
				retrograde	12091 Mar 03 13:57	11° $\mathcal{A}$ 49'15	
conjunction	12084 Nov 12 17:25	2° $\mathcal{A}$ 54'23	-2°04'01	opposition	12091 May 24 04:59	10° $\mathcal{A}$ 43'35	0°08'17
minimum elong	12084 Nov 12 17:29	2° $\mathcal{A}$ 54'23	2°03'18	min. Earth dist.	12091 May 25 21:38	10° $\mathcal{A}$ 41'26	40.41889 AU
morning rise	12084 Nov 28 12:23	3° $\mathcal{A}$ 18'13		direct	12091 Aug 13 06:45	9° $\mathcal{A}$ 37'57	
retrograde	12085 Feb 23 14:23	4° $\mathcal{A}$ 34'32		evening set	12091 Nov 06 05:11	10° $\mathcal{A}$ 55'00	
opposition	12085 May 16 13:45	3° $\mathcal{A}$ 30'25	-1°59'34	max. Earth dist.	12091 Nov 20 05:21	11° $\mathcal{A}$ 16'56	42.30580 AU
min. Earth dist.	12085 May 18 02:24	3° $\mathcal{A}$ 28'32	41.75849 AU				
direct	12085 Aug 05 17:22	2° $\mathcal{A}$ 26'30		conjunction	12091 Nov 22 03:10	11° $\mathcal{A}$ 19'57	0°18'20
evening set	12085 Oct 29 09:48	3° $\mathcal{A}$ 40'45		minimum elong	12091 Nov 22 03:09	11° $\mathcal{A}$ 19'57	0°19'07
max. Earth dist.	12085 Nov 12 12:45	4° $\mathcal{A}$ 02'08	43.65165 AU	morning rise	12091 Dec 08 02:30	11° $\mathcal{A}$ 45'01	
				retrograde	12092 Mar 04 04:32	13° $\mathcal{A}$ 04'19	
conjunction	12085 Nov 14 04:26	4° $\mathcal{A}$ 04'39	-1°44'23	opposition	12092 May 24 16:37	11° $\mathcal{A}$ 58'23	0°30'28

min. Earth dist.	12092 May 26 10:11	11° $\nearrow$ 56'11	40.18907 AU	morning rise	12098 Dec 16 23:49	20° $\nearrow$ 53'58	
direct	12092 Aug 13 17:05	10° $\nearrow$ 52'28		retrograde	12099 Mar 14 14:11	22° $\nearrow$ 17'52	
evening set	12092 Nov 06 17:59	12° $\nearrow$ 10'06		opposition	12099 Jun 03 12:07	21° $\nearrow$ 10'00	3°12'21
max. Earth dist.	12092 Nov 20 18:13	12° $\nearrow$ 32'10	42.07522 AU	min. Earth dist.	12099 Jun 05 11:13	21° $\nearrow$ 07'25	38.52273 AU
				direct	12099 Aug 23 07:11	20° $\nearrow$ 01'53	
conjunction	12092 Nov 22 16:00	12° $\nearrow$ 35'13	0°39'35	evening set	12099 Nov 17 07:39	21° $\nearrow$ 24'34	
minimum elong	12092 Nov 22 15:59	12° $\nearrow$ 35'13	0°40'21	max. Earth dist.	12099 Nov 30 17:19	21° $\nearrow$ 46'43	40.39715 AU
morning rise	12092 Dec 08 15:02	13° $\nearrow$ 00'26					
retrograde	12093 Mar 05 15:07	14° $\nearrow$ 20'18		conjunction	12099 Dec 02 22:26	21° $\nearrow$ 50'25	3°14'07
opposition	12093 May 26 04:38	13° $\nearrow$ 14'07	0°52'54	minimum elong	12099 Dec 02 22:21	21° $\nearrow$ 50'24	3°14'56
min. Earth dist.	12093 May 27 22:44	13° $\nearrow$ 11'52	39.95796 AU	morning rise	12099 Dec 18 13:47	22° $\nearrow$ 16'20	
direct	12093 Aug 15 06:18	12° $\nearrow$ 07'56		retrograde	12100 Mar 16 04:03	23° $\nearrow$ 41'00	
evening set	12093 Nov 08 07:40	13° $\nearrow$ 26'12		opposition	12100 Jun 05 02:52	22° $\nearrow$ 32'47	3°36'20
max. Earth dist.	12093 Nov 22 06:52	13° $\nearrow$ 48'20	41.84339 AU	min. Earth dist.	12100 Jun 07 03:18	22° $\nearrow$ 30'06	38.27423 AU
				direct	12100 Aug 24 21:34	21° $\nearrow$ 24'17	
conjunction	12093 Nov 24 05:19	13° $\nearrow$ 51'26	1°01'02	evening set	12100 Nov 19 01:50	22° $\nearrow$ 47'48	
minimum elong	12093 Nov 24 05:18	13° $\nearrow$ 51'26	1°01'50	max. Earth dist.	12100 Dec 02 09:29	23° $\nearrow$ 09'58	40.14710 AU
morning rise	12093 Dec 10 04:05	14° $\nearrow$ 16'48					
retrograde	12094 Mar 07 05:02	15° $\nearrow$ 37'16		conjunction	12100 Dec 04 14:37	23° $\nearrow$ 13'41	3°36'56
opposition	12094 May 27 16:45	14° $\nearrow$ 30'52	1°15'35	minimum elong	12100 Dec 04 14:31	23° $\nearrow$ 13'41	3°37'46
min. Earth dist.	12094 May 29 11:02	14° $\nearrow$ 28'35	39.72547 AU	morning rise	12100 Dec 20 03:50	23° $\nearrow$ 39'39	
direct	12094 Aug 16 17:11	13° $\nearrow$ 24'24		retrograde	12101 Mar 17 21:06	25° $\nearrow$ 05'08	
evening set	12094 Nov 09 22:02	14° $\nearrow$ 43'19		opposition	12101 Jun 06 17:53	23° $\nearrow$ 56'34	4°00'31
max. Earth dist.	12094 Nov 23 19:12	15° $\nearrow$ 05'29	41.60956 AU	min. Earth dist.	12101 Jun 08 17:59	23° $\nearrow$ 53'52	38.02431 AU
				direct	12101 Aug 26 10:44	22° $\nearrow$ 47'39	
conjunction	12094 Nov 25 19:07	15° $\nearrow$ 08'42	1°22'43	evening set	12101 Nov 20 21:01	24° $\nearrow$ 12'04	
minimum elong	12094 Nov 25 19:05	15° $\nearrow$ 08'42	1°23'31	max. Earth dist.	12101 Dec 04 00:31	24° $\nearrow$ 34'06	39.89568 AU
morning rise	12094 Dec 11 17:15	15° $\nearrow$ 34'11					
retrograde	12095 Mar 08 20:59	16° $\nearrow$ 55'18		conjunction	12101 Dec 06 07:21	24° $\nearrow$ 37'59	3°59'56
opposition	12095 May 29 05:30	15° $\nearrow$ 48'39	1°38'29	minimum elong	12101 Dec 06 07:13	24° $\nearrow$ 37'58	4°00'45
min. Earth dist.	12095 May 31 01:36	15° $\nearrow$ 46'16	39.49078 AU	morning rise	12101 Dec 21 18:14	25° $\nearrow$ 03'58	
direct	12095 Aug 18 01:44	14° $\nearrow$ 41'54					
evening set	12095 Nov 11 12:54	16° $\nearrow$ 01'32					
max. Earth dist.	12095 Nov 25 09:17	16° $\nearrow$ 23'47	41.37322 AU				
conjunction	12095 Nov 27 09:18	16° $\nearrow$ 27'01	1°44'36				
minimum elong	12095 Nov 27 09:14	16° $\nearrow$ 27'01	1°45'25				
morning rise	12095 Dec 13 06:28	16° $\nearrow$ 52'37					
retrograde	12096 Mar 09 12:48	18° $\nearrow$ 14'25					
opposition	12096 May 29 18:33	17° $\nearrow$ 07'29	2°01'37				
min. Earth dist.	12096 May 31 14:34	17° $\nearrow$ 05'06	39.25332 AU				
direct	12096 Aug 18 13:57	16° $\nearrow$ 00'26					
evening set	12096 Nov 12 04:40	17° $\nearrow$ 20'47					
max. Earth dist.	12096 Nov 25 21:41	17° $\nearrow$ 42'58	41.13379 AU				
conjunction	12096 Nov 27 23:53	17° $\nearrow$ 46'23	2°06'41				
minimum elong	12096 Nov 27 23:50	17° $\nearrow$ 46'23	2°07'30				
morning rise	12096 Dec 13 20:07	18° $\nearrow$ 12'05					
retrograde	12097 Mar 11 07:00	19° $\nearrow$ 34'34					
opposition	12097 May 31 08:04	18° $\nearrow$ 27'21	2°24'59				
min. Earth dist.	12097 Jun 02 05:48	18° $\nearrow$ 24'51	39.01280 AU				
direct	12097 Aug 20 01:51	17° $\nearrow$ 19'57					
evening set	12097 Nov 13 20:54	18° $\nearrow$ 41'04					
max. Earth dist.	12097 Nov 27 12:36	19° $\nearrow$ 03'18	40.89110 AU				
conjunction	12097 Nov 29 15:04	19° $\nearrow$ 06'46	2°28'59				
minimum elong	12097 Nov 29 14:59	19° $\nearrow$ 06'45	2°29'48				
morning rise	12097 Dec 15 09:49	19° $\nearrow$ 32'33					
retrograde	12098 Mar 12 22:13	20° $\nearrow$ 55'43					
opposition	12098 Jun 01 21:59	19° $\nearrow$ 48'11	2°48'33				
min. Earth dist.	12098 Jun 03 20:23	19° $\nearrow$ 45'39	38.76906 AU				
direct	12098 Aug 21 17:25	18° $\nearrow$ 40'27					
evening set	12098 Nov 15 14:00	20° $\nearrow$ 02'20					
max. Earth dist.	12098 Nov 29 02:28	20° $\nearrow$ 24'30	40.64543 AU				
conjunction	12098 Dec 01 06:31	20° $\nearrow$ 28'06	2°51'27				
minimum elong	12098 Dec 01 06:27	20° $\nearrow$ 28'06	2°52'16				