

direct	15600 Feb 03 04:36	9°II07'48		max. Earth dist.	15606 Jun 05 02:55	26°II29'11	31.32963 AU
evening set	15600 May 10 01:18	11°II24'15		morning rise	15606 Jun 17 09:01	26°II57'02	
				retrograde	15606 Sep 16 11:25	28°II59'31	
conjunction	15600 May 20 04:06	11°II48'01	11°36'46	opposition	15606 Dec 03 05:11	27°II38'20	8°59'44
minimum elong	15600 May 20 04:29	11°II48'03	11°35'58	min. Earth dist.	15606 Dec 02 13:35	27°II39'24	29.41396 AU
max. Earth dist.	15600 May 20 05:07	11°II48'07	30.78094 AU	direct	15607 Feb 20 18:59	26°II15'28	
morning rise	15600 May 30 07:01	12°II11'47		evening set	15607 May 24 19:39	28°II18'46	
retrograde	15600 Sep 01 20:05	14°II25'39					
opposition	15600 Nov 17 22:40	13°II03'06	12°10'37	conjunction	15607 Jun 07 02:25	28°II48'46	8°09'19
min. Earth dist.	15600 Nov 17 20:25	13°II03'15	28.85521 AU	minimum elong	15607 Jun 07 02:44	28°II48'48	8°08'26
direct	15601 Feb 05 00:43	11°II38'50		max. Earth dist.	15607 Jun 07 20:06	28°II50'27	31.45636 AU
evening set	15601 May 12 07:04	13°II53'20		morning rise	15607 Jun 20 08:34	29°II18'43	
					15607 Jul 09 16:38	0°☾	
conjunction	15601 May 22 22:59	14°II18'16	11°09'53	retrograde	15607 Sep 19 00:13	1°☾19'31	
minimum elong	15601 May 22 23:23	14°II18'18	11°09'03		15607 Dec 04 23:46	30°R II	
max. Earth dist.	15601 May 23 03:21	14°II18'41	30.84823 AU	opposition	15607 Dec 05 20:21	29°II58'36	8°25'10
morning rise	15601 Jun 02 14:41	14°II43'11		min. Earth dist.	15607 Dec 05 02:45	29°II59'48	29.54309 AU
retrograde	15601 Sep 04 12:21	16°II55'03		direct	15608 Feb 23 10:53	28°II36'04	
opposition	15601 Nov 20 17:07	15°II32'43	11°41'14		15608 May 08 08:19	0°☾	
min. Earth dist.	15601 Nov 20 13:25	15°II32'59	28.92390 AU	evening set	15608 May 26 01:37	0°☾37'42	
direct	15602 Feb 07 21:34	14°II08'40					
evening set	15602 May 14 13:08	16°II21'13		conjunction	15608 Jun 08 16:30	1°☾08'15	7°36'48
				minimum elong	15608 Jun 08 16:48	1°☾08'17	7°35'56
conjunction	15602 May 25 17:12	16°II47'13	10°41'56	max. Earth dist.	15608 Jun 09 13:04	1°☾10'11	31.59357 AU
minimum elong	15602 May 25 17:35	16°II47'15	10°41'07	morning rise	15608 Jun 22 06:29	1°☾38'44	
max. Earth dist.	15602 May 25 22:35	16°II47'44	30.92510 AU	retrograde	15608 Sep 20 12:10	3°☾37'54	
morning rise	15602 Jun 05 21:11	17°II13'11		opposition	15608 Dec 07 10:46	2°☾17'20	7°50'06
retrograde	15602 Sep 07 05:38	19°II23'07		min. Earth dist.	15608 Dec 06 14:45	2°☾18'41	29.68236 AU
opposition	15602 Nov 23 11:02	18°II00'58	11°10'45	direct	15609 Feb 25 04:09	0°☾55'10	
min. Earth dist.	15602 Nov 23 04:23	18°II01'26	29.00216 AU	evening set	15609 May 28 07:46	2°☾55'10	
direct	15603 Feb 10 17:29	16°II37'07					
evening set	15603 May 16 19:09	18°II47'46		conjunction	15609 Jun 11 05:53	3°☾26'12	7°03'51
				minimum elong	15609 Jun 11 06:10	3°☾26'13	7°02'58
conjunction	15603 May 28 10:54	19°II14'43	10°13'01	max. Earth dist.	15609 Jun 12 04:00	3°☾28'16	31.74044 AU
minimum elong	15603 May 28 11:16	19°II14'46	10°12'10	morning rise	15609 Jun 25 03:18	3°☾57'10	
max. Earth dist.	15603 May 28 19:25	19°II15'33	31.01140 AU	retrograde	15609 Sep 23 00:59	5°☾54'45	
morning rise	15603 Jun 09 02:14	19°II41'40		min. Earth dist.	15609 Dec 09 02:06	4°☾36'02	29.83127 AU
retrograde	15603 Sep 09 18:52	21°II49'40		opposition	15609 Dec 10 00:25	4°☾34'32	7°14'36
opposition	15603 Nov 26 04:32	20°II27'45	10°39'16	direct	15610 Feb 27 18:33	3°☾12'44	
min. Earth dist.	15603 Nov 25 20:46	20°II28'17	29.08993 AU	evening set	15610 May 30 13:49	5°☾11'11	
direct	15604 Feb 13 12:31	19°II04'07					
evening set	15604 May 18 01:21	21°II12'51		conjunction	15610 Jun 13 18:48	5°☾42'37	6°30'32
				minimum elong	15610 Jun 13 19:03	5°☾42'39	6°29'40
conjunction	15604 May 30 03:49	21°II40'42	9°43'13	max. Earth dist.	15610 Jun 14 19:56	5°☾44'58	31.89628 AU
minimum elong	15604 May 30 04:10	21°II40'44	9°42'22	morning rise	15610 Jun 27 22:39	6°☾13'59	
max. Earth dist.	15604 May 30 13:54	21°II41'40	31.10743 AU	retrograde	15610 Sep 25 12:25	8°☾10'03	
morning rise	15604 Jun 11 05:57	22°II08'31		opposition	15610 Dec 12 13:39	6°☾50'13	6°38'48
retrograde	15604 Sep 11 09:40	24°II14'37		min. Earth dist.	15610 Dec 11 13:57	6°☾51'47	29.98870 AU
opposition	15604 Nov 27 21:20	22°II52'55	10°06'52	direct	15611 Mar 02 11:36	5°☾28'48	
min. Earth dist.	15604 Nov 27 10:20	22°II53'40	29.18762 AU	evening set	15611 Jun 01 20:00	7°☾25'45	
direct	15605 Feb 15 07:47	21°II29'31					
evening set	15605 May 20 07:17	23°II36'23		conjunction	15611 Jun 16 06:47	7°☾57'31	5°56'59
				minimum elong	15611 Jun 16 07:01	7°☾57'32	5°56'05
conjunction	15605 Jun 01 19:59	24°II05'02	9°12'36	max. Earth dist.	15611 Jun 17 08:46	7°☾59'54	32.06007 AU
minimum elong	15605 Jun 01 20:20	24°II05'04	9°11'44	morning rise	15611 Jun 30 16:43	8°☾29'12	
max. Earth dist.	15605 Jun 02 09:04	24°II06'17	31.21333 AU	retrograde	15611 Sep 28 00:05	10°☾23'49	
morning rise	15605 Jun 14 08:09	24°II33'39		min. Earth dist.	15611 Dec 13 23:47	9°☾06'05	30.15402 AU
retrograde	15605 Sep 13 22:32	26°II37'55		opposition	15611 Dec 15 02:10	9°☾04'20	6°02'47
opposition	15605 Nov 30 13:42	25°II16'27	9°33'40	direct	15612 Mar 04 02:04	7°☾43'19	
min. Earth dist.	15605 Nov 30 01:16	25°II17'18	29.29555 AU	evening set	15612 Jun 03 02:02	9°☾38'48	
direct	15606 Feb 18 00:11	23°II53'18					
evening set	15606 May 22 13:30	25°II58'21		conjunction	15612 Jun 17 18:19	10°☾10'49	5°23'15
				minimum elong	15612 Jun 17 18:32	10°☾10'50	5°22'23
conjunction	15606 Jun 04 11:34	26°II27'43	8°41'16	max. Earth dist.	15612 Jun 18 23:05	10°☾13'27	32.23112 AU
minimum elong	15606 Jun 04 11:54	26°II27'45	8°40'25	morning rise	15612 Jul 02 09:22	10°☾42'45	

retrograde	15612 Sep 29 08:16	12°☾35'58		minimum elong	15619 Jul 03 06:08	24°☾55'25	1°27'21
min. Earth dist.	15612 Dec 15 11:08	11°☾18'38	30.32643 AU	max. Earth dist.	15619 Jul 04 21:39	24°☾58'52	33.59511 AU
opposition	15612 Dec 16 14:11	11°☾16'51	5°26'38	morning rise	15619 Jul 18 17:33	25°☾27'28	
direct	15613 Mar 06 16:11	9°☾56'13		retrograde	15619 Oct 14 05:06	27°☾12'14	
evening set	15613 Jun 05 08:05	11°☾50'17		min. Earth dist.	15619 Dec 30 16:26	25°☾57'48	31.70244 AU
				opposition	15620 Jan 01 06:33	25°☾55'24	1°16'24
conjunction	15613 Jun 20 04:59	12°☾22'30	4°49'25	direct	15620 Mar 21 21:28	24°☾37'12	
minimum elong	15613 Jun 20 05:10	12°☾22'31	4°48'32	evening set	15620 Jun 18 22:03	26°☾22'41	
max. Earth dist.	15613 Jun 21 10:19	12°☾25'10	32.40881 AU				
morning rise	15613 Jul 05 00:50	12°☾54'37		conjunction	15620 Jul 04 11:38	26°☾54'39	0°55'28
retrograde	15613 Oct 01 17:47	14°☾46'29		minimum elong	15620 Jul 04 11:40	26°☾54'39	0°54'39
min. Earth dist.	15613 Dec 17 19:47	13°☾29'39	30.50529 AU	max. Earth dist.	15620 Jul 06 03:45	26°☾58'07	33.81364 AU
opposition	15613 Dec 19 01:23	13°☾27'43	4°50'28	morning rise	15620 Jul 20 00:02	27°☾26'31	
direct	15614 Mar 09 05:48	12°☾07'27		retrograde	15620 Oct 15 10:41	29°☾10'20	
evening set	15614 Jun 07 14:04	14°☾00'08		min. Earth dist.	15620 Dec 31 20:12	27°☾56'23	31.92357 AU
				opposition	15621 Jan 02 12:56	27°☾53'50	0°41'46
conjunction	15614 Jun 22 15:07	14°☾32'29	4°15'34	direct	15621 Mar 24 05:25	26°☾36'01	
minimum elong	15614 Jun 22 15:17	14°☾32'30	4°14'43	evening set	15621 Jun 21 02:37	28°☾20'31	
max. Earth dist.	15614 Jun 23 22:41	14°☾35'21	32.59237 AU				
morning rise	15614 Jul 07 14:56	15°☾04'44		conjunction	15621 Jul 06 16:39	28°☾52'17	0°23'06
retrograde	15614 Oct 04 00:48	16°☾55'17		minimum elong	15621 Jul 06 16:39	28°☾52'17	0°22'17
min. Earth dist.	15614 Dec 20 05:51	15°☾38'49	30.69014 AU	max. Earth dist.	15621 Jul 08 11:13	28°☾55'55	34.03791 AU
opposition	15614 Dec 21 12:00	15°☾36'52	4°14'19	morning rise	15621 Jul 22 05:14	29°☾23'56	
direct	15615 Mar 11 17:02	14°☾16'57			15621 Aug 10 03:57	0°♂	
evening set	15615 Jun 09 19:57	16°☾08'19		retrograde	15621 Oct 17 12:47	1°♂06'50	
					15621 Dec 29 13:53	30°♂☾	
conjunction	15615 Jun 25 00:29	16°☾40'44	3°41'46	min. Earth dist.	15622 Jan 03 01:46	29°☾53'16	32.15022 AU
minimum elong	15615 Jun 25 00:38	16°☾40'45	3°40'54	opposition	15622 Jan 04 18:51	29°☾50'42	0°07'34
max. Earth dist.	15615 Jun 26 09:04	16°☾43'39	32.78165 AU	direct	15622 Mar 26 13:35	28°☾33'18	
morning rise	15615 Jul 10 03:46	17°☾13'03		desc. node	15622 Mar 27 23:38	28°☾33'20	
retrograde	15615 Oct 06 06:43	19°☾02'20			15622 Jun 14 15:32	0°♂	
opposition	15615 Dec 23 21:54	17°☾44'14	3°38'17	evening set	15622 Jun 23 07:10	0°♂16'51	
min. Earth dist.	15615 Dec 22 13:31	17°☾46'20	30.88064 AU				
direct	15616 Mar 13 05:56	16°☾24'40		conjunction	15622 Jul 08 20:56	0°♂48'22	-0°08'57
evening set	15616 Jun 11 01:30	18°☾14'44		minimum elong	15622 Jul 08 20:56	0°♂48'22	0°09'44
				behind sun begin	15622 Jul 08 15:38	0°♂47'57	
conjunction	15616 Jun 26 08:55	18°☾47'10	3°08'05	behind sun end	15622 Jul 09 02:14	0°♂48'48	
minimum elong	15616 Jun 26 09:02	18°☾47'10	3°07'14	max. Earth dist.	15622 Jul 10 15:57	0°♂52'02	34.26714 AU
max. Earth dist.	15616 Jun 27 19:02	18°☾50'12	32.97629 AU	morning rise	15622 Jul 24 09:26	1°♂19'46	
morning rise	15616 Jul 11 15:08	19°☾19'29		retrograde	15622 Oct 19 15:29	3°♂01'48	
retrograde	15616 Oct 07 12:46	21°☾07'34		min. Earth dist.	15623 Jan 05 04:45	1°♂48'45	32.38154 AU
min. Earth dist.	15616 Dec 23 21:38	19°☾51'55	31.07695 AU	opposition	15623 Jan 06 23:58	1°♂46'04	-0°26'10
opposition	15616 Dec 25 07:09	19°☾49'46	3°02'25	direct	15623 Mar 28 21:20	0°♂29'04	
direct	15617 Mar 15 15:08	18°☾30'32		evening set	15623 Jun 25 11:33	2°♂11'45	
evening set	15617 Jun 13 06:52	20°☾19'21					
				conjunction	15623 Jul 11 00:41	2°♂42'59	-0°40'27
conjunction	15617 Jun 28 16:46	20°☾51'45	2°34'33	minimum elong	15623 Jul 11 00:40	2°♂42'59	0°41'14
minimum elong	15617 Jun 28 16:52	20°☾51'45	2°33'42	max. Earth dist.	15623 Jul 12 21:24	2°♂46'45	34.50041 AU
max. Earth dist.	15617 Jun 30 04:44	20°☾54'55	33.17663 AU	morning rise	15623 Jul 26 12:32	3°♂14'06	
morning rise	15617 Jul 14 01:14	21°☾24'01		retrograde	15623 Oct 21 17:17	4°♂55'21	
retrograde	15617 Oct 09 17:48	23°☾10'56		min. Earth dist.	15624 Jan 07 08:59	3°♂42'41	32.61688 AU
min. Earth dist.	15617 Dec 26 04:32	21°☾55'41	31.27908 AU	opposition	15624 Jan 09 04:44	3°♂39'59	-0°59'23
opposition	15617 Dec 27 15:29	21°☾53'27	2°26'47	direct	15624 Mar 30 02:07	2°♂23'24	
direct	15618 Mar 18 01:43	20°☾34'32		evening set	15624 Jun 26 15:34	4°♂05'14	
evening set	15618 Jun 15 12:13	22°☾22'11					
				conjunction	15624 Jul 12 03:43	4°♂36'09	-1°11'30
conjunction	15618 Jun 30 23:46	22°☾54'29	2°01'14	minimum elong	15624 Jul 12 03:41	4°♂36'09	1°12'15
minimum elong	15618 Jun 30 23:51	22°☾54'29	2°00'25	max. Earth dist.	15624 Jul 14 01:22	4°♂39'59	34.73710 AU
max. Earth dist.	15618 Jul 02 12:39	22°☾57'43	33.38275 AU	morning rise	15624 Jul 27 14:30	5°♂06'58	
morning rise	15618 Jul 16 10:09	23°☾26'40		retrograde	15624 Oct 22 18:00	6°♂47'28	
retrograde	15618 Oct 12 00:21	25°☾12'29		min. Earth dist.	15625 Jan 08 11:52	5°♂35'13	32.85518 AU
min. Earth dist.	15618 Dec 28 10:14	23°☾57'39	31.48760 AU	opposition	15625 Jan 10 08:46	5°♂32'28	-1°32'03
opposition	15618 Dec 29 23:19	23°☾55'18	1°51'26	direct	15625 Apr 01 08:23	4°♂16'16	
direct	15619 Mar 20 10:46	22°☾36'44		evening set	15625 Jun 28 19:40	5°♂57'20	
evening set	15619 Jun 17 17:07	24°☾23'16					
				conjunction	15625 Jul 14 06:15	6°♂27'54	-1°42'04
conjunction	15619 Jul 03 06:05	24°☾55'25	1°28'12	minimum elong	15625 Jul 14 06:11	6°♂27'53	1°42'49

max. Earth dist.	15625 Jul 16 04:15	6°Ω31'43	34.97618 AU	opposition	15632 Jan 23 20:59	17°Ω59'29	-5°03'50
morning rise	15625 Jul 29 15:43	6°Ω58'22		direct	15632 Apr 14 08:03	16°Ω45'44	
retrograde	15625 Oct 24 20:30	8°Ω38'10		evening set	15632 Jul 11 16:45	18°Ω22'15	
min. Earth dist.	15626 Jan 10 14:19	7°Ω26'19	33.09592 AU				
opposition	15626 Jan 12 12:11	7°Ω23'31	-2°04'09	conjunction	15632 Jul 26 07:12	18°Ω49'46	-5°00'28
direct	15626 Apr 03 11:03	6°Ω07'43		minimum elong	15632 Jul 26 07:05	18°Ω49'45	5°01'06
evening set	15626 Jun 30 23:28	7°Ω48'02		max. Earth dist.	15632 Jul 28 10:16	18°Ω53'48	36.69283 AU
				morning rise	15632 Aug 09 20:50	19°Ω17'11	
conjunction	15626 Jul 16 08:21	8°Ω18'13	-2°12'06	retrograde	15632 Nov 05 11:10	20°Ω53'01	
minimum elong	15626 Jul 16 08:17	8°Ω18'13	2°12'50	min. Earth dist.	15633 Jan 22 17:05	19°Ω43'34	34.82597 AU
max. Earth dist.	15626 Jul 18 07:42	8°Ω22'08	35.21719 AU	opposition	15633 Jan 24 20:29	19°Ω40'33	-5°31'28
morning rise	15626 Jul 31 15:49	8°Ω48'19		direct	15633 Apr 16 05:46	18°Ω27'09	
retrograde	15626 Oct 26 20:49	10°Ω27'27		evening set	15633 Jul 13 18:37	20°Ω03'11	
min. Earth dist.	15627 Jan 12 17:16	9°Ω15'56	33.33827 AU				
opposition	15627 Jan 14 15:10	9°Ω13'09	-2°35'40	conjunction	15633 Jul 28 05:10	20°Ω30'11	-5°26'25
direct	15627 Apr 05 15:33	7°Ω57'43		minimum elong	15633 Jul 28 05:01	20°Ω30'10	5°27'03
evening set	15627 Jul 03 03:05	9°Ω37'19		max. Earth dist.	15633 Jul 30 09:40	20°Ω34'19	36.94571 AU
				morning rise	15633 Aug 11 14:35	20°Ω57'07	
conjunction	15627 Jul 18 09:34	10°Ω07'07	-2°41'36	retrograde	15633 Nov 07 07:19	22°Ω32'31	
minimum elong	15627 Jul 18 09:29	10°Ω07'07	2°42'20	min. Earth dist.	15634 Jan 24 15:52	21°Ω23'23	35.08115 AU
max. Earth dist.	15627 Jul 20 08:34	10°Ω10'58	35.45950 AU	opposition	15634 Jan 26 19:18	21°Ω20'23	-5°58'26
morning rise	15627 Aug 02 15:01	10°Ω36'49		direct	15634 Apr 18 06:12	20°Ω07'20	
retrograde	15627 Oct 28 22:32	12°Ω15'19		evening set	15634 Jul 15 20:26	21°Ω42'55	
min. Earth dist.	15628 Jan 14 17:59	11°Ω04'13	33.58204 AU				
opposition	15628 Jan 16 17:32	11°Ω01'21	-3°06'35	conjunction	15634 Jul 30 02:27	22°Ω09'24	-5°51'44
direct	15628 Apr 06 18:43	9°Ω46'16		minimum elong	15634 Jul 30 02:19	22°Ω09'23	5°52'20
evening set	15628 Jul 04 06:22	11°Ω25'11		max. Earth dist.	15634 Aug 01 06:37	22°Ω13'28	37.20024 AU
				morning rise	15634 Aug 13 07:44	22°Ω35'49	
conjunction	15628 Jul 19 10:26	11°Ω54'34	-3°10'33	retrograde	15634 Nov 09 06:26	24°Ω10'51	
minimum elong	15628 Jul 19 10:21	11°Ω54'33	3°11'15	min. Earth dist.	15635 Jan 26 12:43	23°Ω02'07	35.33788 AU
max. Earth dist.	15628 Jul 21 11:07	11°Ω58'31	35.70296 AU	opposition	15635 Jan 28 17:45	22°Ω59'03	-6°24'42
morning rise	15628 Aug 03 13:13	12°Ω23'51		direct	15635 Apr 20 04:24	21°Ω46'21	
retrograde	15628 Oct 29 21:21	14°Ω01'44		evening set	15635 Jul 17 21:44	23°Ω21'31	
min. Earth dist.	15629 Jan 15 20:08	12°Ω50'54	33.82706 AU				
opposition	15629 Jan 17 19:17	12°Ω48'04	-3°36'52	conjunction	15635 Jul 31 23:17	23°Ω47'29	-6°16'25
direct	15629 Apr 09 00:01	11°Ω33'20		minimum elong	15635 Jul 31 23:08	23°Ω47'28	6°17'01
evening set	15629 Jul 06 09:25	13°Ω11'36		max. Earth dist.	15635 Aug 03 05:09	23°Ω51'39	37.45582 AU
				morning rise	15635 Aug 14 23:53	24°Ω13'22	
conjunction	15629 Jul 21 10:32	13°Ω40'32	-3°38'56	retrograde	15635 Nov 11 03:18	25°Ω48'03	
minimum elong	15629 Jul 21 10:26	13°Ω40'31	3°39'38	min. Earth dist.	15636 Jan 28 11:18	24°Ω39'36	35.59540 AU
max. Earth dist.	15629 Jul 23 10:52	13°Ω44'26	35.94768 AU	opposition	15636 Jan 30 15:52	24°Ω36'34	-6°50'17
morning rise	15629 Aug 05 10:35	14°Ω09'23		direct	15636 Apr 21 03:54	23°Ω24'14	
	15629 Sep 03 17:50	15°Ω		evening set	15636 Jul 18 23:03	24°Ω59'01	
retrograde	15629 Oct 31 20:49	15°Ω46'40					
	15629 Dec 31 19:08	15°Ω		conjunction	15636 Aug 01 19:42	25°Ω24'26	-6°40'28
min. Earth dist.	15630 Jan 17 19:34	14°Ω36'14	34.07351 AU	minimum elong	15636 Aug 01 19:33	25°Ω24'25	6°41'02
opposition	15630 Jan 19 20:20	14°Ω33'19	-4°06'30	max. Earth dist.	15636 Aug 04 01:05	25°Ω28'32	37.71184 AU
direct	15630 Apr 11 03:57	13°Ω18'53		morning rise	15636 Aug 15 15:35	25°Ω49'47	
evening set	15630 Jul 08 12:10	14°Ω56'33		retrograde	15636 Nov 11 22:38	27°Ω24'08	
	15630 Jul 10 08:10	15°Ω		min. Earth dist.	15637 Jan 29 07:27	26°Ω16'04	35.85302 AU
conjunction	15630 Jul 23 10:02	15°Ω25'01	-4°06'43	opposition	15637 Jan 31 13:13	26°Ω12'58	-7°15'11
minimum elong	15630 Jul 23 09:55	15°Ω25'01	4°07'23	direct	15637 Apr 23 03:02	25°Ω00'58	
max. Earth dist.	15630 Jul 25 11:45	15°Ω29'00	36.19384 AU	evening set	15637 Jul 21 00:07	26°Ω35'23	
morning rise	15630 Aug 07 06:51	15°Ω53'25					
retrograde	15630 Nov 02 16:58	17°Ω30'10		conjunction	15637 Aug 03 15:44	27°Ω00'16	-7°03'54
min. Earth dist.	15631 Jan 19 20:02	16°Ω20'00	34.32197 AU	minimum elong	15637 Aug 03 15:34	27°Ω00'15	7°04'27
opposition	15631 Jan 21 20:58	16°Ω17'06	-4°35'30	max. Earth dist.	15637 Aug 05 21:45	27°Ω04'24	37.96747 AU
direct	15631 Apr 13 05:57	15°Ω03'00		morning rise	15637 Aug 17 06:39	27°Ω25'05	
evening set	15631 Jul 10 14:36	16°Ω40'05		retrograde	15637 Nov 13 16:01	28°Ω59'08	
				min. Earth dist.	15638 Jan 31 05:03	27°Ω51'19	36.11012 AU
conjunction	15631 Jul 25 09:00	17°Ω08'04	-4°33'54	opposition	15638 Feb 02 10:24	27°Ω48'16	-7°39'25
minimum elong	15631 Jul 25 08:52	17°Ω08'04	4°34'34	direct	15638 Apr 25 02:13	26°Ω36'36	
max. Earth dist.	15631 Jul 27 11:27	17°Ω12'06	36.44221 AU	evening set	15638 Jul 23 00:57	28°Ω10'40	
morning rise	15631 Aug 09 02:15	17°Ω35'59					
retrograde	15631 Nov 04 12:46	19°Ω12'15		conjunction	15638 Aug 05 11:21	28°Ω34'59	-7°26'43
min. Earth dist.	15632 Jan 21 18:45	18°Ω02'27	34.57272 AU	minimum elong	15638 Aug 05 11:12	28°Ω34'58	7°27'14
				max. Earth dist.	15638 Aug 07 17:27	28°Ω39'06	38.22225 AU

morning rise	15638 Aug 18 20:55	28°05'15"	min. Earth dist.	15645 Feb 10 18:29	8°02'26"	37.87591 AU
	15638 Sep 26 12:31	0°00'		opposition	15645 Feb 13 01:22	8°02'23"
retrograde	15638 Nov 15 08:41	0°00'33"01	direct	15645 May 06 01:13	7°00'13'43	
	15639 Jan 06 07:22	30°00'00"	evening set	15645 Aug 03 23:11	8°00'45'52	
min. Earth dist.	15639 Feb 02 01:29	29°00'25'30	36.36596 AU			
opposition	15639 Feb 04 07:01	29°00'22'27	-8°02'59"	conjunction	15645 Aug 15 15:47	9°00'06'08 -9°49'18"
direct	15639 Apr 27 01:21	28°00'11'06		minimum elong	15645 Aug 15 15:38	9°00'06'08 9°49'41"
evening set	15639 Jul 25 01:39	29°00'44'49		max. Earth dist.	15645 Aug 17 23:18	9°00'10'11 39.97188 AU
	15639 Aug 02 12:47	0°00'		morning rise	15645 Aug 27 07:50	9°00'26'23
				retrograde	15645 Nov 25 06:27	10°00'58'43
conjunction	15639 Aug 07 06:27	0°00'08'35	-7°48'54"	min. Earth dist.	15646 Feb 12 12:02	9°00'52'56 38.12621 AU
minimum elong	15639 Aug 07 06:18	0°00'08'34	7°49'25"	opposition	15646 Feb 14 18:56	9°00'49'54 -10°29'34"
max. Earth dist.	15639 Aug 09 12:04	0°00'12'38	38.47554 AU	direct	15646 May 07 20:05	8°00'40'32
morning rise	15639 Aug 20 10:46	0°00'32'17		evening set	15646 Aug 05 21:53	10°00'12'31
retrograde	15639 Nov 17 04:04	2°00'05'48				
min. Earth dist.	15640 Feb 03 21:11	0°00'58'33	36.62043 AU	conjunction	15646 Aug 17 07:45	10°00'32'12 -10°07'14"
opposition	15640 Feb 06 03:16	0°00'55'29	-8°25'53"	minimum elong	15646 Aug 17 07:36	10°00'32'11 10°07'36"
	15640 Mar 23 21:23	30°00'00"		max. Earth dist.	15646 Aug 19 14:46	10°00'36'11 40.22013 AU
direct	15640 Apr 27 20:50	29°00'44'26		morning rise	15646 Aug 28 17:24	10°00'51'52
	15640 Jun 01 01:31	0°00'		retrograde	15646 Nov 26 23:58	12°00'24'07
evening set	15640 Jul 26 01:51	1°00'17'50		min. Earth dist.	15647 Feb 14 04:13	11°00'18'39 38.37616 AU
				opposition	15647 Feb 16 12:10	11°00'15'35 -10°47'54"
conjunction	15640 Aug 08 01:13	1°00'41'01	-8°10'30"	direct	15647 May 09 11:57	10°00'06'32
minimum elong	15640 Aug 08 01:04	1°00'41'00	8°10'59"	evening set	15647 Aug 07 20:16	11°00'38'22
max. Earth dist.	15640 Aug 10 07:42	1°00'45'06	38.72730 AU			
morning rise	15640 Aug 20 23:47	2°00'04'10		conjunction	15647 Aug 18 23:35	11°00'57'28 -10°24'34"
retrograde	15640 Nov 17 21:34	3°00'37'25		minimum elong	15647 Aug 18 23:26	11°00'57'28 10°24'55"
min. Earth dist.	15641 Feb 04 17:47	2°00'30'21	36.87313 AU	max. Earth dist.	15647 Aug 21 07:49	12°00'01'31 40.46777 AU
opposition	15641 Feb 06 23:01	2°00'27'21	-8°48'08"	morning rise	15647 Aug 30 02:27	12°00'16'34
direct	15641 Apr 29 18:04	1°00'16'35		retrograde	15647 Nov 28 16:17	13°00'48'44
evening set	15641 Jul 28 02:00	2°00'49'40		min. Earth dist.	15648 Feb 15 22:00	12°00'43'29 38.62515 AU
				opposition	15648 Feb 18 05:05	12°00'40'29 -11°05'37"
conjunction	15641 Aug 09 19:23	3°00'12'16	-8°31'28"	direct	15648 May 10 04:30	11°00'31'45
minimum elong	15641 Aug 09 19:13	3°00'12'16	8°31'56"	evening set	15648 Aug 08 18:33	13°00'03'28
max. Earth dist.	15641 Aug 12 00:46	3°00'16'15	38.97741 AU			
morning rise	15641 Aug 22 12:19	3°00'34'51		conjunction	15648 Aug 19 14:55	13°00'21'59 -10°41'19"
retrograde	15641 Nov 19 16:48	5°00'07'51		minimum elong	15648 Aug 19 14:47	13°00'21'59 10°41'39"
min. Earth dist.	15642 Feb 06 11:48	4°00'01'05	37.12449 AU	max. Earth dist.	15648 Aug 21 22:12	13°00'25'56 40.71421 AU
opposition	15642 Feb 08 18:06	3°00'58'02	-9°09'44"	morning rise	15648 Aug 30 11:03	13°00'40'29
direct	15642 May 01 13:02	2°00'47'31		retrograde	15648 Nov 29 09:12	15°00'12'36
evening set	15642 Jul 30 01:42	4°00'20'20		min. Earth dist.	15649 Feb 16 13:35	14°00'07'40 38.87257 AU
				opposition	15649 Feb 18 21:31	14°00'04'38 -11°22'42"
conjunction	15642 Aug 11 13:12	4°00'42'22	-8°51'51"	direct	15649 May 11 20:21	12°00'56'12
minimum elong	15642 Aug 11 13:03	4°00'42'21	8°52'18"	evening set	15649 Aug 10 16:36	14°00'27'50
max. Earth dist.	15642 Aug 13 19:46	4°00'46'24	39.22637 AU			
morning rise	15642 Aug 24 00:07	5°00'04'22		conjunction	15649 Aug 21 06:05	14°00'45'46 -10°57'30"
retrograde	15642 Nov 21 09:49	6°00'37'09		minimum elong	15649 Aug 21 05:57	14°00'45'45 10°57'48"
min. Earth dist.	15643 Feb 08 07:29	5°00'30'33	37.37509 AU	max. Earth dist.	15649 Aug 23 13:47	14°00'49'43 40.95866 AU
opposition	15643 Feb 10 13:04	5°00'27'33	-9°30'41"	morning rise	15649 Aug 31 19:21	15°00'03'41
direct	15643 May 03 08:51	4°00'17'19		retrograde	15649 Nov 30 22:50	16°00'35'45
evening set	15643 Aug 01 01:05	5°00'49'52		min. Earth dist.	15650 Feb 18 06:45	15°00'31'02 39.11783 AU
				opposition	15650 Feb 20 13:42	15°00'28'04 -11°39'12"
conjunction	15643 Aug 13 06:21	6°00'11'18	-9°11'37"	direct	15650 May 13 13:36	14°00'19'56
minimum elong	15643 Aug 13 06:11	6°00'11'18	9°12'02"	evening set	15650 Aug 12 14:37	15°00'51'29
max. Earth dist.	15643 Aug 15 12:44	6°00'15'18	39.47490 AU			
morning rise	15643 Aug 25 11:07	6°00'32'43		conjunction	15650 Aug 22 21:01	16°00'08'49 -11°13'08"
retrograde	15643 Nov 23 00:16	8°00'05'19		minimum elong	15650 Aug 22 20:54	16°00'08'48 11°13'26"
min. Earth dist.	15644 Feb 10 00:39	6°00'59'02	37.62542 AU	max. Earth dist.	15650 Aug 25 04:24	16°00'12'44 41.20076 AU
opposition	15644 Feb 12 07:26	6°00'55'59	-9°50'58"	morning rise	15650 Sep 02 03:07	16°00'26'08
direct	15644 May 04 06:05	5°00'46'01		retrograde	15650 Dec 02 10:19	17°00'58'10
evening set	15644 Aug 02 00:15	7°00'18'20		min. Earth dist.	15651 Feb 19 22:38	16°00'53'42 39.36026 AU
				opposition	15651 Feb 22 05:36	16°00'50'45 -11°55'08"
conjunction	15644 Aug 13 23:12	7°00'39'12	-9°30'46"	direct	15651 May 15 08:57	15°00'42'54
minimum elong	15644 Aug 13 23:03	7°00'39'11	9°31'11"	evening set	15651 Aug 14 12:17	17°00'14'22
max. Earth dist.	15644 Aug 16 06:03	7°00'43'13	39.72330 AU			
morning rise	15644 Aug 25 21:49	8°00'00'02		conjunction	15651 Aug 24 11:26	17°00'31'06 -11°28'14"
retrograde	15644 Nov 23 15:36	9°00'32'29		minimum elong	15651 Aug 24 11:19	17°00'31'06 11°28'29"

max. Earth dist.	15651 Aug 26 17:57	17° $\mathring{M}$ 34'56	41.43976 AU	conjunction	15658 Sep 02 08:12	26° $\mathring{M}$ 43'42	-12°59'27
morning rise	15651 Sep 03 10:31	17° $\mathring{M}$ 47'50		minimum elong	15658 Sep 02 08:06	26° $\mathring{M}$ 43'42	12°59'35
retrograde	15651 Dec 04 00:56	19° $\mathring{M}$ 19'51		max. Earth dist.	15658 Sep 04 13:09	26° $\mathring{M}$ 47'18	43.03668 AU
min. Earth dist.	15652 Feb 21 14:23	18° $\mathring{M}$ 15'36	39.59957 AU	morning rise	15658 Sep 10 01:55	26° $\mathring{M}$ 56'15	
opposition	15652 Feb 23 21:15	18° $\mathring{M}$ 12'39	-12°10'29	retrograde	15658 Dec 12 18:16	28° $\mathring{M}$ 28'17	
direct	15652 May 16 00:53	17° $\mathring{M}$ 05'04		min. Earth dist.	15659 Mar 02 18:49	27° $\mathring{M}$ 25'20	41.20056 AU
evening set	15652 Aug 15 09:51	18° $\mathring{M}$ 36'27		opposition	15659 Mar 05 00:43	27° $\mathring{M}$ 22'31	-13°42'48
				direct	15659 May 26 08:24	26° $\mathring{M}$ 16'31	
conjunction	15652 Aug 25 01:51	18° $\mathring{M}$ 52'36	-11°42'48	evening set	15659 Aug 27 10:28	27° $\mathring{M}$ 47'40	
minimum elong	15652 Aug 25 01:44	18° $\mathring{M}$ 52'35	11°43'04				
max. Earth dist.	15652 Aug 27 08:44	18° $\mathring{M}$ 56'26	41.67551 AU	conjunction	15659 Sep 03 20:13	27° $\mathring{M}$ 59'36	-13°10'26
morning rise	15652 Sep 03 17:32	19° $\mathring{M}$ 08'44		minimum elong	15659 Sep 03 20:10	27° $\mathring{M}$ 59'36	13°10'33
retrograde	15652 Dec 04 14:05	20° $\mathring{M}$ 40'43		max. Earth dist.	15659 Sep 06 02:04	28° $\mathring{M}$ 03'14	43.25730 AU
min. Earth dist.	15653 Feb 22 06:47	19° $\mathring{M}$ 36'36	39.83536 AU	morning rise	15659 Sep 11 05:55	28° $\mathring{M}$ 11'34	
opposition	15653 Feb 24 12:23	19° $\mathring{M}$ 33'45	-12°25'18	retrograde	15659 Dec 14 06:48	29° $\mathring{M}$ 43'41	
direct	15653 May 17 17:23	18° $\mathring{M}$ 26'24		min. Earth dist.	15660 Mar 03 09:18	28° $\mathring{M}$ 40'52	41.42156 AU
evening set	15653 Aug 17 07:20	19° $\mathring{M}$ 57'42		opposition	15660 Mar 05 13:53	28° $\mathring{M}$ 38'08	-13°53'51
				direct	15660 May 26 21:28	27° $\mathring{M}$ 32'23	
conjunction	15653 Aug 26 15:45	20° $\mathring{M}$ 13'14	-11°56'52	evening set	15660 Aug 28 06:35	29° $\mathring{M}$ 03'35	
minimum elong	15653 Aug 26 15:39	20° $\mathring{M}$ 13'14	11°57'06				
max. Earth dist.	15653 Aug 28 21:10	20° $\mathring{M}$ 16'57	41.90791 AU	conjunction	15660 Sep 04 08:04	29° $\mathring{M}$ 14'55	-13°20'56
morning rise	15653 Sep 05 00:07	20° $\mathring{M}$ 28'47		minimum elong	15660 Sep 04 08:00	29° $\mathring{M}$ 14'55	13°21'02
retrograde	15653 Dec 06 05:40	22° $\mathring{M}$ 00'44		max. Earth dist.	15660 Sep 06 12:49	29° $\mathring{M}$ 18'27	43.47559 AU
min. Earth dist.	15654 Feb 23 20:57	20° $\mathring{M}$ 56'51	40.06799 AU	morning rise	15660 Sep 11 09:32	29° $\mathring{M}$ 26'16	
opposition	15654 Feb 26 03:13	20° $\mathring{M}$ 53'58	-12°39'35		15660 Oct 03 07:23	0° $\mathring{A}$	
direct	15654 May 19 06:46	19° $\mathring{M}$ 46'50		retrograde	15660 Dec 14 18:45	0° $\mathring{A}$ 58'29	
evening set	15654 Aug 19 04:14	21° $\mathring{M}$ 18'03			15661 Mar 01 14:15	30° $\mathring{R}$ $\mathring{M}$	
conjunction	15654 Aug 28 05:16	21° $\mathring{M}$ 33'00	-12°10'25	min. Earth dist.	15661 Mar 04 21:21	29° $\mathring{M}$ 55'55	41.63987 AU
minimum elong	15654 Aug 28 05:09	21° $\mathring{M}$ 32'59	12°10'39	opposition	15661 Mar 07 02:28	29° $\mathring{M}$ 53'10	-14°04'24
max. Earth dist.	15654 Aug 30 11:26	21° $\mathring{M}$ 36'44	42.13733 AU	direct	15661 May 28 09:26	28° $\mathring{M}$ 47'40	
morning rise	15654 Sep 06 06:07	21° $\mathring{M}$ 47'57			15661 Aug 18 00:31	0° $\mathring{A}$	
retrograde	15654 Dec 07 19:31	23° $\mathring{M}$ 19'52		evening set	15661 Aug 30 02:30	0° $\mathring{A}$ 18'56	
min. Earth dist.	15655 Feb 25 12:44	22° $\mathring{M}$ 16'06	40.29799 AU	conjunction	15661 Sep 05 19:44	0° $\mathring{A}$ 29'41	-13°30'59
opposition	15655 Feb 27 17:52	22° $\mathring{M}$ 13'17	-12°53'19	minimum elong	15661 Sep 05 19:41	0° $\mathring{A}$ 29'41	13°31'04
direct	15655 May 20 21:17	21° $\mathring{M}$ 06'22		max. Earth dist.	15661 Sep 08 00:22	0° $\mathring{A}$ 33'12	43.69085 AU
evening set	15655 Aug 21 01:11	22° $\mathring{M}$ 37'31		morning rise	15661 Sep 12 13:00	0° $\mathring{A}$ 40'25	
conjunction	15655 Aug 29 18:29	22° $\mathring{M}$ 51'53	-12°23'27	retrograde	15661 Dec 16 05:56	2° $\mathring{A}$ 12'46	
minimum elong	15655 Aug 29 18:23	22° $\mathring{M}$ 51'52	12°23'39	min. Earth dist.	15662 Mar 06 11:09	1° $\mathring{A}$ 10'20	41.85498 AU
max. Earth dist.	15655 Sep 01 00:01	22° $\mathring{M}$ 55'33	42.36460 AU	opposition	15662 Mar 08 15:09	1° $\mathring{A}$ 07'40	-14°14'28
morning rise	15655 Sep 07 11:38	23° $\mathring{M}$ 06'13		direct	15662 May 29 22:13	0° $\mathring{A}$ 02'25	
retrograde	15655 Dec 09 07:13	24° $\mathring{M}$ 38'08		evening set	15662 Aug 31 22:25	1° $\mathring{A}$ 33'46	
min. Earth dist.	15656 Feb 27 02:12	23° $\mathring{M}$ 34'34	40.52601 AU	conjunction	15662 Sep 07 07:09	1° $\mathring{A}$ 43'55	-13°40'35
opposition	15656 Feb 29 07:58	23° $\mathring{M}$ 31'44	-13°06'30	minimum elong	15662 Sep 07 07:05	1° $\mathring{A}$ 43'54	13°40'38
direct	15656 May 21 12:16	22° $\mathring{M}$ 25'02		max. Earth dist.	15662 Sep 09 11:27	1° $\mathring{A}$ 47'23	43.90269 AU
evening set	15656 Aug 21 21:42	23° $\mathring{M}$ 56'09		morning rise	15662 Sep 13 15:49	1° $\mathring{A}$ 54'02	
conjunction	15656 Aug 30 07:16	24° $\mathring{M}$ 09'54	-12°35'58	retrograde	15662 Dec 17 15:05	3° $\mathring{A}$ 26'31	
minimum elong	15656 Aug 30 07:10	24° $\mathring{M}$ 09'54	12°36'09	min. Earth dist.	15663 Mar 08 00:03	2° $\mathring{A}$ 24'17	42.06615 AU
max. Earth dist.	15656 Sep 01 12:42	24° $\mathring{M}$ 13'34	42.59009 AU	opposition	15663 Mar 10 03:31	2° $\mathring{A}$ 21'38	-14°24'06
morning rise	15656 Sep 07 16:49	24° $\mathring{M}$ 23'39		direct	15663 May 31 13:03	1° $\mathring{A}$ 16'37	
retrograde	15656 Dec 09 18:18	25° $\mathring{M}$ 55'35		evening set	15663 Sep 02 18:21	2° $\mathring{A}$ 48'05	
min. Earth dist.	15657 Feb 27 16:23	24° $\mathring{M}$ 52'12	40.75252 AU	conjunction	15663 Sep 08 18:20	2° $\mathring{A}$ 57'36	-13°49'45
opposition	15657 Mar 01 21:53	24° $\mathring{M}$ 49'23	-13°19'08	minimum elong	15663 Sep 08 18:18	2° $\mathring{A}$ 57'36	13°49'48
direct	15657 May 23 03:59	23° $\mathring{M}$ 42'54		max. Earth dist.	15663 Sep 10 21:11	3° $\mathring{A}$ 00'58	44.11040 AU
evening set	15657 Aug 23 18:12	25° $\mathring{M}$ 14'01		morning rise	15663 Sep 14 18:26	3° $\mathring{A}$ 07'07	
conjunction	15657 Aug 31 19:57	25° $\mathring{M}$ 27'10	-12°47'57	retrograde	15663 Dec 19 02:58	4° $\mathring{A}$ 39'45	
minimum elong	15657 Aug 31 19:53	25° $\mathring{M}$ 27'09	12°48'06	min. Earth dist.	15664 Mar 08 12:28	3° $\mathring{A}$ 37'41	42.27315 AU
max. Earth dist.	15657 Sep 03 01:58	25° $\mathring{M}$ 30'50	42.81419 AU	opposition	15664 Mar 10 15:37	3° $\mathring{A}$ 35'04	-14°33'16
morning rise	15657 Sep 08 21:33	25° $\mathring{M}$ 40'18		direct	15664 Jun 01 01:19	2° $\mathring{A}$ 30'16	
retrograde	15657 Dec 11 04:12	27° $\mathring{M}$ 12'17		evening set	15664 Sep 03 14:15	4° $\mathring{A}$ 01'51	
min. Earth dist.	15658 Mar 01 06:13	26° $\mathring{M}$ 09'04	40.97735 AU	conjunction	15664 Sep 09 05:28	4° $\mathring{A}$ 10'44	-13°58'30
opposition	15658 Mar 03 11:23	26° $\mathring{M}$ 06'17	-13°31'14	minimum elong	15664 Sep 09 05:25	4° $\mathring{A}$ 10'44	13°58'31
direct	15658 May 24 20:29	25° $\mathring{M}$ 00'03		max. Earth dist.	15664 Sep 11 08:33	4° $\mathring{A}$ 14'06	44.31376 AU
evening set	15658 Aug 25 14:30	26° $\mathring{M}$ 31'10		morning rise	15664 Sep 14 20:38	4° $\mathring{A}$ 19'38	

retrograde	15664 Dec 19 14:43	5° <u>♁</u> 52'26		minimum elong	15671 Sep 18 03:22	12° <u>♁</u> 25'58	14°48'12
min. Earth dist.	15665 Mar 10 01:58	4° <u>♁</u> 50'27	42.47547 AU	morning rise	15671 Sep 20 15:33	12° <u>♁</u> 29'49	
opposition	15665 Mar 12 03:32	4° <u>♁</u> 47'55	-14°42'02	max. Earth dist.	15671 Sep 20 03:20	12° <u>♁</u> 29'02	45.64029 AU
direct	15665 Jun 02 13:22	3° <u>♁</u> 43'20		retrograde	15671 Dec 28 13:05	14° <u>♁</u> 04'36	
evening set	15665 Sep 05 10:16	5° <u>♁</u> 15'03		min. Earth dist.	15672 Mar 18 08:33	13° <u>♁</u> 03'34	43.79949 AU
				opposition	15672 Mar 20 07:22	13° <u>♁</u> 01'14	-15°31'19
conjunction	15665 Sep 10 16:11	5° <u>♁</u> 23'17	-14°06'51	direct	15672 Jun 10 17:04	11° <u>♁</u> 57'57	
minimum elong	15665 Sep 10 16:10	5° <u>♁</u> 23'17	14°06'52	evening set	15672 Sep 16 16:27	13° <u>♁</u> 31'51	
max. Earth dist.	15665 Sep 12 17:34	5° <u>♁</u> 26'31	44.51262 AU				
morning rise	15665 Sep 15 22:10	5° <u>♁</u> 31'32		conjunction	15672 Sep 18 12:34	13° <u>♁</u> 34'40	-14°53'46
retrograde	15665 Dec 21 03:23	7° <u>♁</u> 04'30		minimum elong	15672 Sep 18 12:35	13° <u>♁</u> 34'40	14°53'39
min. Earth dist.	15666 Mar 11 13:07	6° <u>♁</u> 02'42	42.67342 AU	morning rise	15672 Sep 20 08:46	13° <u>♁</u> 37'28	
opposition	15666 Mar 13 15:00	6° <u>♁</u> 00'10	-14°50'22	max. Earth dist.	15672 Sep 20 11:50	13° <u>♁</u> 37'40	45.81948 AU
direct	15666 Jun 03 22:49	4° <u>♁</u> 55'45		retrograde	15672 Dec 28 20:51	15° <u>♁</u> 12'54	
evening set	15666 Sep 07 06:09	6° <u>♁</u> 27'37		min. Earth dist.	15673 Mar 19 18:17	14° <u>♁</u> 12'04	43.97784 AU
				opposition	15673 Mar 21 17:15	14° <u>♁</u> 09'44	-15°36'41
conjunction	15666 Sep 12 02:41	6° <u>♁</u> 35'12	-14°14'48	direct	15673 Jun 12 02:40	13° <u>♁</u> 06'37	
minimum elong	15666 Sep 12 02:40	6° <u>♁</u> 35'12	14°14'47				
max. Earth dist.	15666 Sep 14 04:01	6° <u>♁</u> 38'25	44.70739 AU	conjunction	15673 Sep 19 21:28	14° <u>♁</u> 42'56	-14°58'53
morning rise	15666 Sep 16 23:15	6° <u>♁</u> 42'48		minimum elong	15673 Sep 19 21:28	14° <u>♁</u> 42'56	14°58'45
retrograde	15666 Dec 22 12:32	8° <u>♁</u> 15'57		evening set	15673 Sep 19 01:46	14° <u>♁</u> 41'41	
min. Earth dist.	15667 Mar 13 01:58	7° <u>♁</u> 14'13	42.86770 AU	morning rise	15673 Sep 20 17:11	14° <u>♁</u> 44'11	
opposition	15667 Mar 15 02:28	7° <u>♁</u> 11'46	-14°58'16	max. Earth dist.	15673 Sep 21 19:44	14° <u>♁</u> 45'52	45.99527 AU
direct	15667 Jun 05 10:44	6° <u>♁</u> 07'32		retrograde	15673 Dec 30 04:14	16° <u>♁</u> 20'48	
evening set	15667 Sep 09 02:13	7° <u>♁</u> 39'33		min. Earth dist.	15674 Mar 21 04:58	15° <u>♁</u> 20'05	44.15272 AU
				opposition	15674 Mar 23 03:03	15° <u>♁</u> 17'48	-15°41'40
conjunction	15667 Sep 13 12:50	7° <u>♁</u> 46'29	-14°22'20	direct	15674 Jun 13 14:07	14° <u>♁</u> 14'53	
minimum elong	15667 Sep 13 12:49	7° <u>♁</u> 46'29	14°22'18				
max. Earth dist.	15667 Sep 15 13:54	7° <u>♁</u> 49'40	44.89894 AU	conjunction	15674 Sep 21 06:26	15° <u>♁</u> 50'48	-15°03'37
morning rise	15667 Sep 17 23:27	7° <u>♁</u> 53'24		minimum elong	15674 Sep 21 06:29	15° <u>♁</u> 50'48	15°03'28
retrograde	15667 Dec 23 19:09	9° <u>♁</u> 26'46		max. Earth dist.	15674 Sep 23 04:57	15° <u>♁</u> 53'45	46.16741 AU
min. Earth dist.	15668 Mar 13 12:56	8° <u>♁</u> 25'11	43.05886 AU	retrograde	15674 Dec 31 10:55	17° <u>♁</u> 28'19	
opposition	15668 Mar 15 13:30	8° <u>♁</u> 22'44	-15°05'45	min. Earth dist.	15675 Mar 22 15:49	16° <u>♁</u> 27'42	44.32346 AU
direct	15668 Jun 06 00:26	7° <u>♁</u> 18'40		opposition	15675 Mar 24 12:45	16° <u>♁</u> 25'28	-15°46'16
evening set	15668 Sep 09 22:29	8° <u>♁</u> 50'55		direct	15675 Jun 15 03:02	15° <u>♁</u> 22'44	
conjunction	15668 Sep 13 22:46	8° <u>♁</u> 57'09	-14°29'26	conjunction	15675 Sep 22 15:03	16° <u>♁</u> 58'15	-15°08'01
minimum elong	15668 Sep 13 22:45	8° <u>♁</u> 57'09	14°29'23	minimum elong	15675 Sep 22 15:05	16° <u>♁</u> 58'15	15°07'51
max. Earth dist.	15668 Sep 15 22:55	9° <u>♁</u> 00'16	45.08768 AU	max. Earth dist.	15675 Sep 24 11:42	17° <u>♁</u> 01'04	46.33521 AU
morning rise	15668 Sep 17 23:07	9° <u>♁</u> 03'23		retrograde	15676 Jan 01 21:29	18° <u>♁</u> 35'24	
retrograde	15668 Dec 24 04:35	10° <u>♁</u> 36'59		min. Earth dist.	15676 Mar 23 01:16	17° <u>♁</u> 34'56	44.48966 AU
min. Earth dist.	15669 Mar 14 23:45	9° <u>♁</u> 35'34	43.24761 AU	opposition	15676 Mar 24 22:13	17° <u>♁</u> 32'42	-15°50'32
opposition	15669 Mar 17 00:12	9° <u>♁</u> 33'07	-15°12'47	direct	15676 Jun 15 11:57	16° <u>♁</u> 30'08	
direct	15669 Jun 07 12:23	8° <u>♁</u> 29'14					
evening set	15669 Sep 11 19:20	10° <u>♁</u> 01'45		conjunction	15676 Sep 22 23:47	18° <u>♁</u> 05'15	-15°12'05
				minimum elong	15676 Sep 22 23:51	18° <u>♁</u> 05'15	15°11'54
conjunction	15669 Sep 15 08:38	10° <u>♁</u> 07'15	-14°36'08	max. Earth dist.	15676 Sep 24 20:16	18° <u>♁</u> 08'02	46.49821 AU
minimum elong	15669 Sep 15 08:37	10° <u>♁</u> 07'15	14°36'05	retrograde	15677 Jan 02 06:57	19° <u>♁</u> 42'02	
max. Earth dist.	15669 Sep 17 09:24	10° <u>♁</u> 10'24	45.27419 AU	min. Earth dist.	15677 Mar 24 12:35	18° <u>♁</u> 41'35	44.65089 AU
morning rise	15669 Sep 18 21:57	10° <u>♁</u> 12'45		opposition	15677 Mar 26 07:29	18° <u>♁</u> 39'28	-15°54'28
retrograde	15669 Dec 25 13:25	11° <u>♁</u> 46'41		direct	15677 Jun 16 21:06	17° <u>♁</u> 37'02	
min. Earth dist.	15670 Mar 16 11:21	10° <u>♁</u> 45'22	43.43395 AU				
opposition	15670 Mar 18 10:50	10° <u>♁</u> 42'58	-15°19'23	conjunction	15677 Sep 24 08:17	19° <u>♁</u> 11'45	-15°15'50
direct	15670 Jun 09 00:55	9° <u>♁</u> 39'17		minimum elong	15677 Sep 24 08:20	19° <u>♁</u> 11'45	15°15'38
evening set	15670 Sep 13 16:37	11° <u>♁</u> 12'08		max. Earth dist.	15677 Sep 26 03:29	19° <u>♁</u> 14'27	46.65648 AU
				retrograde	15678 Jan 03 14:52	20° <u>♁</u> 48'09	
conjunction	15670 Sep 16 18:00	11° <u>♁</u> 16'50	-14°42'25	min. Earth dist.	15678 Mar 25 21:37	19° <u>♁</u> 47'49	44.80734 AU
minimum elong	15670 Sep 16 18:01	11° <u>♁</u> 16'50	14°42'20	opposition	15678 Mar 27 16:33	19° <u>♁</u> 45'43	-15°58'03
morning rise	15670 Sep 19 19:29	11° <u>♁</u> 21'33		direct	15678 Jun 18 05:13	18° <u>♁</u> 43'25	
max. Earth dist.	15670 Sep 18 17:31	11° <u>♁</u> 19'53	45.45846 AU				
retrograde	15670 Dec 27 01:25	12° <u>♁</u> 55'52		conjunction	15678 Sep 25 16:21	20° <u>♁</u> 17'44	-15°19'15
min. Earth dist.	15671 Mar 17 21:00	11° <u>♁</u> 54'45	43.61801 AU	minimum elong	15678 Sep 25 16:24	20° <u>♁</u> 17'44	15°19'03
opposition	15671 Mar 19 21:12	11° <u>♁</u> 52'20	-15°25'34	max. Earth dist.	15678 Sep 27 10:39	20° <u>♁</u> 20'22	46.81015 AU
direct	15671 Jun 10 09:22	10° <u>♁</u> 48'50		retrograde	15679 Jan 04 22:11	21° <u>♁</u> 53'45	
evening set	15671 Sep 15 15:14	12° <u>♁</u> 22'08		min. Earth dist.	15679 Mar 27 07:43	20° <u>♁</u> 53'28	44.95967 AU
				opposition	15679 Mar 29 01:34	20° <u>♁</u> 51'25	-16°01'19
conjunction	15671 Sep 18 03:22	12° <u>♁</u> 25'58	-14°48'17	direct	15679 Jun 19 13:54	19° <u>♁</u> 49'15	

conjunction	15679 Sep 27 00:26	21° <u>♂</u> 23'10	-15°22'20	minimum elong	15687 Oct 05 11:09	29° <u>♂</u> 53'55	15°34'43
minimum elong	15679 Sep 27 00:29	21° <u>♂</u> 23'11	15°22'06	max. Earth dist.	15687 Oct 07 00:17	29° <u>♂</u> 56'09	48.05387 AU
max. Earth dist.	15679 Sep 28 18:54	21° <u>♂</u> 25'49	46.96014 AU		15687 Oct 09 15:41	0° <u>♂</u>	
retrograde	15680 Jan 06 03:30	22° <u>♂</u> 58'51		retrograde	15688 Jan 14 18:17	1° <u>♂</u> 27'21	
min. Earth dist.	15680 Mar 27 17:01	21° <u>♂</u> 58'38	45.10846 AU	min. Earth dist.	15688 Apr 05 13:15	0° <u>♂</u> 28'02	46.19066 AU
opposition	15680 Mar 29 10:09	21° <u>♂</u> 56'37	-16°04'13	opposition	15688 Apr 07 02:02	0° <u>♂</u> 26'16	-16°15'12
direct	15680 Jun 20 01:29	20° <u>♂</u> 54'34			15688 Apr 30 16:14	30° <u>♀</u> <u>♂</u>	
				direct	15688 Jun 28 15:54	29° <u>♂</u> 25'28	
conjunction	15680 Sep 27 08:10	22° <u>♂</u> 28'07	-15°25'05		15688 Aug 24 13:18	0° <u>♂</u>	
minimum elong	15680 Sep 27 08:14	22° <u>♂</u> 28'08	15°24'51				
max. Earth dist.	15680 Sep 29 01:10	22° <u>♂</u> 30'40	47.10699 AU	conjunction	15688 Oct 05 17:58	0° <u>♂</u> 56'40	-15°35'18
retrograde	15681 Jan 06 12:08	24° <u>♂</u> 03'28		minimum elong	15688 Oct 05 18:04	0° <u>♂</u> 56'40	15°34'56
min. Earth dist.	15681 Mar 29 01:17	23° <u>♂</u> 03'22	45.25441 AU	max. Earth dist.	15688 Oct 07 06:02	0° <u>♂</u> 58'50	48.17305 AU
opposition	15681 Mar 30 18:38	23° <u>♂</u> 01'21	-16°06'47	retrograde	15689 Jan 15 02:08	2° <u>♂</u> 29'51	
direct	15681 Jun 21 10:30	21° <u>♂</u> 59'27		min. Earth dist.	15689 Apr 06 22:33	1° <u>♂</u> 30'33	46.30732 AU
				opposition	15689 Apr 08 09:34	1° <u>♂</u> 28'52	-16°15'12
conjunction	15681 Sep 28 15:48	23° <u>♂</u> 32'39	-15°27'30	direct	15689 Jun 29 20:29	0° <u>♂</u> 28'11	
minimum elong	15681 Sep 28 15:53	23° <u>♂</u> 32'39	15°27'13				
max. Earth dist.	15681 Sep 30 09:22	23° <u>♂</u> 35'13	47.25111 AU	conjunction	15689 Oct 07 00:49	1° <u>♂</u> 59'07	-15°35'17
retrograde	15682 Jan 07 21:30	25° <u>♂</u> 07'41		minimum elong	15689 Oct 07 00:56	1° <u>♂</u> 59'07	15°34'55
min. Earth dist.	15682 Mar 30 10:58	24° <u>♂</u> 07'39	45.39766 AU	max. Earth dist.	15689 Oct 08 12:24	2° <u>♂</u> 01'15	48.28705 AU
opposition	15682 Apr 01 03:02	24° <u>♂</u> 05'42	-16°08'59	retrograde	15690 Jan 16 05:55	3° <u>♂</u> 32'02	
direct	15682 Jun 22 18:24	23° <u>♂</u> 03'56		min. Earth dist.	15690 Apr 08 06:36	2° <u>♂</u> 32'47	46.41863 AU
				opposition	15690 Apr 09 16:51	2° <u>♂</u> 31'09	-16°14'57
conjunction	15682 Sep 29 23:17	24° <u>♂</u> 36'49	-15°29'33	direct	15690 Jul 01 05:58	1° <u>♂</u> 30'34	
minimum elong	15682 Sep 29 23:22	24° <u>♂</u> 36'49	15°29'17				
max. Earth dist.	15682 Oct 01 15:55	24° <u>♂</u> 39'18	47.39282 AU	conjunction	15690 Oct 08 07:23	3° <u>♂</u> 01'11	-15°35'00
retrograde	15683 Jan 09 05:57	26° <u>♂</u> 11'32		minimum elong	15690 Oct 08 07:29	3° <u>♂</u> 01'12	15°34'36
min. Earth dist.	15683 Mar 31 18:31	25° <u>♂</u> 11'41	45.53836 AU	max. Earth dist.	15690 Oct 09 17:05	3° <u>♂</u> 03'13	48.39603 AU
opposition	15683 Apr 02 11:10	25° <u>♂</u> 09'43	-16°10'49	retrograde	15691 Jan 17 11:10	4° <u>♂</u> 33'51	
direct	15683 Jun 24 00:06	24° <u>♂</u> 08'07		min. Earth dist.	15691 Apr 09 14:20	3° <u>♂</u> 34'39	46.52537 AU
				opposition	15691 Apr 11 00:02	3° <u>♂</u> 33'02	-16°14'26
conjunction	15683 Oct 01 06:31	25° <u>♂</u> 40'41	-15°31'17	direct	15691 Jul 02 15:08	2° <u>♂</u> 32'32	
minimum elong	15683 Oct 01 06:37	25° <u>♂</u> 40'41	15°30'59				
max. Earth dist.	15683 Oct 02 22:37	25° <u>♂</u> 43'08	47.53185 AU	conjunction	15691 Oct 09 13:51	4° <u>♂</u> 02'52	-15°34'27
retrograde	15684 Jan 10 12:33	27° <u>♂</u> 15'08		minimum elong	15691 Oct 09 13:59	4° <u>♂</u> 02'53	15°34'03
min. Earth dist.	15684 Apr 01 03:47	26° <u>♂</u> 15'22	45.67630 AU	max. Earth dist.	15691 Oct 10 23:53	4° <u>♂</u> 04'55	48.50067 AU
opposition	15684 Apr 02 19:17	26° <u>♂</u> 13'27	-16°12'19	retrograde	15692 Jan 18 18:02	5° <u>♂</u> 35'16	
direct	15684 Jun 24 08:04	25° <u>♂</u> 12'01		min. Earth dist.	15692 Apr 09 22:57	4° <u>♂</u> 36'04	46.62797 AU
				opposition	15692 Apr 11 07:06	4° <u>♂</u> 34'32	-16°13'38
conjunction	15684 Oct 01 13:52	26° <u>♂</u> 44'18	-15°32'41	direct	15692 Jul 03 00:47	3° <u>♂</u> 34'07	
minimum elong	15684 Oct 01 13:57	26° <u>♂</u> 44'18	15°32'23				
max. Earth dist.	15684 Oct 03 06:07	26° <u>♂</u> 46'46	47.66801 AU	conjunction	15692 Oct 09 20:12	5° <u>♂</u> 04'10	-15°33'38
retrograde	15685 Jan 10 16:34	28° <u>♂</u> 18'29		minimum elong	15692 Oct 09 20:19	5° <u>♂</u> 04'10	15°33'12
min. Earth dist.	15685 Apr 02 12:09	27° <u>♂</u> 18'50	45.81094 AU	max. Earth dist.	15692 Oct 11 04:52	5° <u>♂</u> 06'07	48.60167 AU
opposition	15685 Apr 04 03:02	27° <u>♂</u> 16'58	-16°13'30	retrograde	15693 Jan 19 02:47	6° <u>♂</u> 36'18	
direct	15685 Jun 25 18:28	26° <u>♂</u> 15'42		min. Earth dist.	15693 Apr 11 05:12	5° <u>♂</u> 37'11	46.72715 AU
				opposition	15693 Apr 12 13:47	5° <u>♂</u> 35'39	-16°12'32
conjunction	15685 Oct 02 20:58	27° <u>♂</u> 47'42	-15°33'46	direct	15693 Jul 04 06:16	4° <u>♂</u> 35'18	
minimum elong	15685 Oct 02 21:04	27° <u>♂</u> 47'43	15°33'27				
max. Earth dist.	15685 Oct 04 11:32	27° <u>♂</u> 50'03	47.80074 AU	conjunction	15693 Oct 11 02:24	6° <u>♂</u> 05'06	-15°32'31
retrograde	15686 Jan 12 01:03	29° <u>♂</u> 21'38		minimum elong	15693 Oct 11 02:32	6° <u>♂</u> 05'06	15°32'06
min. Earth dist.	15686 Apr 03 20:08	28° <u>♂</u> 22'08	45.94201 AU	max. Earth dist.	15693 Oct 12 10:34	6° <u>♂</u> 07'01	48.69940 AU
opposition	15686 Apr 05 10:51	28° <u>♂</u> 20'16	-16°14'21	retrograde	15694 Jan 20 09:19	7° <u>♂</u> 37'00	
direct	15686 Jun 27 02:27	27° <u>♂</u> 19'10		opposition	15694 Apr 13 20:41	6° <u>♂</u> 36'25	-16°11'09
				min. Earth dist.	15694 Apr 12 13:32	6° <u>♂</u> 37'53	46.82330 AU
conjunction	15686 Oct 04 03:59	28° <u>♂</u> 50'54	-15°34'33	direct	15694 Jul 05 11:21	5° <u>♂</u> 36'10	
minimum elong	15686 Oct 04 04:04	28° <u>♂</u> 50'55	15°34'14				
max. Earth dist.	15686 Oct 05 18:43	28° <u>♂</u> 53'15	47.92954 AU	conjunction	15694 Oct 12 08:28	7° <u>♂</u> 05'43	-15°31'07
	15686 Nov 26 11:14	0° <u>♂</u>		minimum elong	15694 Oct 12 08:37	7° <u>♂</u> 05'43	15°30'40
retrograde	15687 Jan 13 09:32	0° <u>♂</u> 24'37		max. Earth dist.	15694 Oct 13 16:45	7° <u>♂</u> 07'38	48.79432 AU
	15687 Mar 03 16:44	30° <u>♀</u> <u>♂</u>		retrograde	15695 Jan 21 12:29	8° <u>♂</u> 37'23	
min. Earth dist.	15687 Apr 05 05:47	29° <u>♂</u> 25'09	46.06875 AU	min. Earth dist.	15695 Apr 13 20:15	7° <u>♂</u> 38'21	46.91642 AU
opposition	15687 Apr 06 18:39	29° <u>♂</u> 23'23	-16°14'55	opposition	15695 Apr 15 03:20	7° <u>♂</u> 36'53	-16°09'28
direct	15687 Jun 28 11:04	28° <u>♂</u> 22'27		direct	15695 Jul 06 18:20	6° <u>♂</u> 36'44	
conjunction	15687 Oct 05 11:02	29° <u>♂</u> 53'54	-15°35'04	conjunction	15695 Oct 13 14:26	8° <u>♂</u> 06'04	-15°29'26

minimum elong	15695 Oct 13 14:34	8°M06'04	15°29'00	conjunction	15703 Oct 22 12:24	16°M02'29	-15°07'00
max. Earth dist.	15695 Oct 14 21:08	8°M07'53	48.88622 AU	minimum elong	15703 Oct 22 12:33	16°M02'29	15°06'27
retrograde	15696 Jan 22 18:01	9°M37'31		max. Earth dist.	15703 Oct 23 12:01	16°M03'51	49.47161 AU
min. Earth dist.	15696 Apr 14 03:06	8°M38'33	47.00656 AU	retrograde	15704 Jan 31 20:35	17°M32'35	
opposition	15696 Apr 15 09:47	8°M37'06	-16°07'29	opposition	15704 Apr 24 11:10	16°M32'49	-15°42'41
direct	15696 Jul 07 01:07	7°M37'04		min. Earth dist.	15704 Apr 23 12:51	16°M33'52	47.57002 AU
				direct	15704 Jul 16 02:08	15°M33'28	
conjunction	15696 Oct 13 20:28	9°M06'11	-15°27'29				
minimum elong	15696 Oct 13 20:37	9°M06'11	15°27'01	conjunction	15704 Oct 22 17:51	17°M01'07	-15°03'09
max. Earth dist.	15696 Oct 15 03:28	9°M08'01	48.97497 AU	minimum elong	15704 Oct 22 18:01	17°M01'08	15°02'36
retrograde	15697 Jan 22 23:42	10°M37'27		max. Earth dist.	15704 Oct 31 17:19	17°M02'29	49.52392 AU
min. Earth dist.	15697 Apr 15 11:03	9°M38'32	47.09320 AU	retrograde	15705 Jan 31 23:26	18°M31'04	
opposition	15697 Apr 16 16:16	9°M37'09	-16°05'14	opposition	15705 Apr 25 16:49	17°M31'21	-15°38'30
direct	15697 Jul 08 09:34	8°M37'13		min. Earth dist.	15705 Apr 24 18:33	17°M32'23	47.61993 AU
				direct	15705 Jul 17 07:20	16°M32'03	
conjunction	15697 Oct 15 02:13	10°M06'07	-15°25'16				
minimum elong	15697 Oct 15 02:21	10°M06'08	15°24'47	conjunction	15705 Oct 23 22:55	17°M59'33	-14°59'03
max. Earth dist.	15697 Oct 16 07:53	10°M07'52	49.06019 AU	minimum elong	15705 Oct 23 23:05	17°M59'34	14°58'28
retrograde	15698 Jan 24 07:26	11°M37'13		evening set	15705 Oct 23 01:16	17°M58'18	
opposition	15698 Apr 17 22:36	10°M37'01	-16°02'44	morning rise	15705 Oct 24 20:55	18°M00'50	
min. Earth dist.	15698 Apr 16 17:13	10°M38'24	47.17605 AU	max. Earth dist.	15705 Oct 24 20:47	18°M00'50	49.57287 AU
direct	15698 Jul 09 14:58	9°M37'12		retrograde	15706 Feb 02 03:10	19°M29'21	
				opposition	15706 Apr 26 22:30	18°M29'41	-15°34'04
conjunction	15698 Oct 16 08:02	11°M05'55	-15°22'47	min. Earth dist.	15706 Apr 26 00:45	18°M30'42	47.66682 AU
minimum elong	15698 Oct 16 08:12	11°M05'56	15°22'18	direct	15706 Jul 18 13:01	17°M30'26	
max. Earth dist.	15698 Oct 17 12:56	11°M07'37	49.14127 AU	evening set	15706 Oct 23 09:40	18°M55'20	
retrograde	15699 Jan 25 15:34	12°M36'51					
min. Earth dist.	15699 Apr 18 01:27	11°M38'03	47.25458 AU	conjunction	15706 Oct 25 04:11	18°M57'48	-14°54'42
opposition	15699 Apr 19 05:00	11°M36'45	-15°59'57	minimum elong	15706 Oct 25 04:21	18°M57'49	14°54'08
direct	15699 Jul 10 18:38	10°M37'03		morning rise	15706 Oct 26 23:05	19°M00'18	
				max. Earth dist.	15706 Oct 26 02:29	18°M59'06	49.61892 AU
conjunction	15699 Oct 17 13:54	12°M05'36	-15°20'04	retrograde	15707 Feb 03 07:15	20°M27'29	
minimum elong	15699 Oct 17 14:02	12°M05'36	15°19'34	min. Earth dist.	15707 Apr 27 07:30	19°M28'50	47.71072 AU
max. Earth dist.	15699 Oct 18 18:14	12°M07'16	49.21780 AU	opposition	15707 Apr 28 04:06	19°M27'52	-15°29'23
retrograde	15700 Jan 26 19:44	13°M36'22		direct	15707 Jul 19 20:54	18°M28'41	
min. Earth dist.	15700 Apr 19 08:14	12°M37'37	47.32802 AU	evening set	15707 Oct 24 00:23	19°M52'37	
opposition	15700 Apr 20 11:12	12°M36'21	-15°56'57				
direct	15700 Jul 12 00:41	11°M36'45		conjunction	15707 Oct 26 09:15	19°M55'55	-14°50'06
				minimum elong	15707 Oct 26 09:26	19°M55'56	14°49'30
conjunction	15700 Oct 18 19:39	13°M05'07	-15°17'08	max. Earth dist.	15707 Oct 27 06:20	19°M57'09	49.66218 AU
minimum elong	15700 Oct 18 19:49	13°M05'08	15°16'37	morning rise	15707 Oct 28 18:32	19°M59'15	
max. Earth dist.	15700 Oct 19 21:53	13°M06'40	49.28903 AU	retrograde	15708 Feb 04 14:23	21°M25'29	
retrograde	15701 Jan 28 00:42	14°M35'44		opposition	15708 Apr 28 09:33	20°M25'56	-15°24'26
opposition	15701 Apr 21 17:18	13°M35'48	-15°53'44	min. Earth dist.	15708 Apr 27 12:36	20°M26'55	47.75172 AU
min. Earth dist.	15701 Apr 20 15:29	13°M37'01	47.39612 AU	direct	15708 Jul 20 02:50	19°M26'49	
direct	15701 Jul 13 07:45	12°M36'17		evening set	15708 Oct 23 17:35	20°M49'57	
conjunction	15701 Oct 20 01:29	14°M04'28	-15°13'59	conjunction	15708 Oct 26 14:20	20°M53'56	-14°45'15
minimum elong	15701 Oct 20 01:37	14°M04'29	15°13'27	minimum elong	15708 Oct 26 14:30	20°M53'56	14°44'39
max. Earth dist.	15701 Oct 21 03:32	14°M06'00	49.35484 AU	max. Earth dist.	15708 Oct 27 10:47	20°M55'07	49.70229 AU
	15701 Dec 01 13:17	15°M		morning rise	15708 Oct 29 11:30	20°M57'56	
retrograde	15702 Jan 29 05:44	15°M34'55		retrograde	15709 Feb 04 22:51	22°M23'24	
	15702 Mar 31 01:29	15°RM		opposition	15709 Apr 29 15:01	21°M23'55	-15°19'13
opposition	15702 Apr 22 23:28	14°M35'03	-15°50'17	min. Earth dist.	15709 Apr 28 19:43	21°M24'49	47.78950 AU
min. Earth dist.	15702 Apr 21 23:18	14°M36'11	47.45872 AU	direct	15709 Jul 21 05:58	20°M24'53	
direct	15702 Jul 14 16:58	13°M35'35		evening set	15709 Oct 24 12:14	21°M47'18	
	15702 Oct 18 17:26	15°M					
conjunction	15702 Oct 21 06:56	15°M03'36	-15°10'36	conjunction	15709 Oct 27 19:28	21°M51'53	-14°40'10
minimum elong	15702 Oct 21 07:06	15°M03'36	15°10'04	minimum elong	15709 Oct 27 19:39	21°M51'53	14°39'33
max. Earth dist.	15702 Oct 22 07:18	15°M05'01	49.41555 AU	max. Earth dist.	15709 Oct 28 15:45	21°M53'03	49.73920 AU
retrograde	15703 Jan 30 13:56	16°M33'52		morning rise	15709 Oct 31 03:09	21°M56'29	
min. Earth dist.	15703 Apr 23 05:13	15°M35'11	47.51647 AU	retrograde	15710 Feb 06 03:45	23°M21'14	
opposition	15703 Apr 24 05:23	15°M34'04	-15°46'36	opposition	15710 Apr 30 20:26	22°M21'49	-15°13'47
	15703 May 26 11:24	15°RM		min. Earth dist.	15710 Apr 30 01:13	22°M22'43	47.82369 AU
direct	15703 Jul 15 22:05	14°M34'39		direct	15710 Jul 22 08:39	21°M22'51	
	15703 Sep 02 21:14	15°M		evening set	15710 Oct 25 07:29	22°M44'38	



conjunction	15710 Oct 29 00:20	22° <del>ℳ</del> 49'46 -14°34'50	opposition	15717 May 07 09:18	29° <del>ℳ</del> 04'13 -14°29'36
minimum elong	15710 Oct 29 00:31	22° <del>ℳ</del> 49'46 14°34'13	min. Earth dist.	15717 May 06 21:35	29° <del>ℳ</del> 04'46 47.93059 AU
max. Earth dist.	15710 Oct 29 18:55	22° <del>ℳ</del> 50'50 49.77225 AU	direct	15717 Jul 29 00:53	28° <del>ℳ</del> 05'26
morning rise	15710 Nov 01 17:41	22° <del>ℳ</del> 54'55	evening set	15717 Oct 29 11:33	29° <del>ℳ</del> 23'26
retrograde	15711 Feb 07 08:23	24° <del>ℳ</del> 19'02			
min. Earth dist.	15711 May 01 07:50	23° <del>ℳ</del> 20'31 47.85384 AU	conjunction	15717 Nov 04 11:14	29° <del>ℳ</del> 31'40 -13°51'44
opposition	15711 May 02 01:55	23° <del>ℳ</del> 19'41 -15°08'06	minimum elong	15717 Nov 04 11:25	29° <del>ℳ</del> 31'41 13°51'03
direct	15711 Jul 23 14:01	22° <del>ℳ</del> 20'47	max. Earth dist.	15717 Nov 04 23:17	29° <del>ℳ</del> 32'22 49.86965 AU
evening set	15711 Oct 26 03:42	23° <del>ℳ</del> 41'56	morning rise	15717 Nov 10 11:36	29° <del>ℳ</del> 39'57
				15717 Nov 25 09:25	0° <del>♂</del>
conjunction	15711 Oct 30 05:34	23° <del>ℳ</del> 47'35 -14°29'18	retrograde	15718 Feb 13 17:16	1° <del>♂</del> 00'21
minimum elong	15711 Oct 30 05:46	23° <del>ℳ</del> 47'36 14°28'40	opposition	15718 May 08 14:21	0° <del>♂</del> 01'07 -14°22'24
max. Earth dist.	15711 Oct 31 00:05	23° <del>ℳ</del> 48'40 49.80085 AU	min. Earth dist.	15718 May 08 02:23	0° <del>♂</del> 01'40 47.92913 AU
morning rise	15711 Nov 03 07:56	23° <del>ℳ</del> 53'16		15718 May 09 14:18	30° <del>♂</del> <del>ℳ</del>
retrograde	15712 Feb 08 10:34	25° <del>ℳ</del> 16'47	direct	15718 Jul 30 06:25	29° <del>ℳ</del> 02'20
opposition	15712 May 02 07:11	24° <del>ℳ</del> 17'28 -15°02'12		15718 Oct 15 12:47	0° <del>♂</del>
min. Earth dist.	15712 May 01 14:39	24° <del>ℳ</del> 18'14 47.87911 AU	evening set	15718 Oct 30 09:17	0° <del>♂</del> 19'54
direct	15712 Jul 23 22:46	23° <del>ℳ</del> 18'37			
evening set	15712 Oct 26 00:24	24° <del>ℳ</del> 39'12	conjunction	15718 Nov 05 15:54	0° <del>♂</del> 28'31 -13°44'42
			minimum elong	15718 Nov 05 16:06	0° <del>♂</del> 28'32 13°44'00
conjunction	15712 Oct 30 10:41	24° <del>ℳ</del> 45'20 -14°23'33	max. Earth dist.	15718 Nov 06 03:22	0° <del>♂</del> 29'11 49.86762 AU
minimum elong	15712 Oct 30 10:51	24° <del>ℳ</del> 45'21 14°22'55	morning rise	15718 Nov 11 23:15	0° <del>♂</del> 37'12
max. Earth dist.	15712 Oct 31 03:15	24° <del>ℳ</del> 46'18 49.82446 AU	retrograde	15719 Feb 15 00:37	1° <del>♂</del> 57'10
morning rise	15712 Nov 03 21:27	24° <del>ℳ</del> 51'30	opposition	15719 May 09 19:29	0° <del>♂</del> 57'57 -14°14'58
retrograde	15713 Feb 08 17:22	26° <del>ℳ</del> 14'26	min. Earth dist.	15719 May 09 09:03	0° <del>♂</del> 58'26 47.92463 AU
opposition	15713 May 03 12:30	25° <del>ℳ</del> 15'10 -14°56'06		15719 Jul 22 18:36	30° <del>♂</del> <del>ℳ</del>
min. Earth dist.	15713 May 02 20:13	25° <del>ℳ</del> 15'55 47.89916 AU	direct	15719 Jul 31 10:28	29° <del>ℳ</del> 59'12
direct	15713 Jul 25 04:33	24° <del>ℳ</del> 16'20		15719 Aug 09 00:25	0° <del>♂</del>
evening set	15713 Oct 26 21:19	25° <del>ℳ</del> 36'23	evening set	15719 Oct 31 07:26	1° <del>♂</del> 16'21
conjunction	15713 Oct 31 15:40	25° <del>ℳ</del> 42'57 -14°17'37	conjunction	15719 Nov 06 20:47	1° <del>♂</del> 25'21 -13°37'26
minimum elong	15713 Oct 31 15:51	25° <del>ℳ</del> 42'58 14°16'58	minimum elong	15719 Nov 06 20:58	1° <del>♂</del> 25'22 13°36'45
max. Earth dist.	15713 Nov 01 07:13	25° <del>ℳ</del> 43'51 49.84262 AU	max. Earth dist.	15719 Nov 07 08:08	1° <del>♂</del> 26'00 49.86271 AU
morning rise	15713 Nov 05 10:36	25° <del>ℳ</del> 49'34	morning rise	15719 Nov 13 10:47	1° <del>♂</del> 34'24
retrograde	15714 Feb 10 00:47	27° <del>ℳ</del> 11'58	retrograde	15720 Feb 16 05:36	2° <del>♂</del> 53'57
opposition	15714 May 04 17:56	26° <del>ℳ</del> 12'43 -14°49'48	opposition	15720 May 10 00:16	1° <del>♂</del> 54'46 -14°07'17
min. Earth dist.	15714 May 04 03:47	26° <del>ℳ</del> 13'22 47.91381 AU	min. Earth dist.	15720 May 09 13:46	1° <del>♂</del> 55'16 47.91708 AU
direct	15714 Jul 26 09:19	25° <del>ℳ</del> 13'55	direct	15720 Jul 31 12:35	0° <del>♂</del> 56'04
evening set	15714 Oct 27 18:41	26° <del>ℳ</del> 33'24	evening set	15720 Oct 31 05:35	2° <del>♂</del> 12'49
conjunction	15714 Nov 01 20:44	26° <del>ℳ</del> 40'24 -14°11'28	conjunction	15720 Nov 07 01:28	2° <del>♂</del> 22'12 -13°29'56
minimum elong	15714 Nov 01 20:55	26° <del>ℳ</del> 40'25 14°10'48	minimum elong	15720 Nov 07 01:40	2° <del>♂</del> 22'13 13°29'14
max. Earth dist.	15714 Nov 02 11:45	26° <del>ℳ</del> 41'16 49.85573 AU	max. Earth dist.	15720 Nov 07 11:12	2° <del>♂</del> 22'46 49.85469 AU
morning rise	15714 Nov 06 23:18	26° <del>ℳ</del> 47'27	morning rise	15720 Nov 13 22:11	2° <del>♂</del> 31'37
retrograde	15715 Feb 11 04:43	28° <del>ℳ</del> 09'19	retrograde	15721 Feb 16 11:00	3° <del>♂</del> 50'48
opposition	15715 May 05 23:04	27° <del>ℳ</del> 10'04 -14°43'18	opposition	15721 May 11 05:18	2° <del>♂</del> 51'40 -13°59'22
min. Earth dist.	15715 May 05 09:08	27° <del>ℳ</del> 10'42 47.92350 AU	min. Earth dist.	15721 May 10 19:48	2° <del>♂</del> 52'06 47.90641 AU
direct	15715 Jul 27 13:31	26° <del>ℳ</del> 11'16	direct	15721 Aug 01 16:18	1° <del>♂</del> 53'00
evening set	15715 Oct 28 16:06	27° <del>ℳ</del> 30'14	evening set	15721 Nov 01 03:44	3° <del>♂</del> 09'23
conjunction	15715 Nov 03 01:33	27° <del>ℳ</del> 37'40 -14°05'07	conjunction	15721 Nov 08 06:12	3° <del>♂</del> 19'08 -13°22'13
minimum elong	15715 Nov 03 01:45	27° <del>ℳ</del> 37'41 14°04'27	minimum elong	15721 Nov 08 06:23	3° <del>♂</del> 19'08 13°21'30
max. Earth dist.	15715 Nov 03 14:39	27° <del>ℳ</del> 38'25 49.86415 AU	max. Earth dist.	15721 Nov 08 16:09	3° <del>♂</del> 19'42 49.84332 AU
morning rise	15715 Nov 08 11:41	27° <del>ℳ</del> 45'08	morning rise	15721 Nov 15 09:23	3° <del>♂</del> 28'55
retrograde	15716 Feb 12 08:42	29° <del>ℳ</del> 06'28	retrograde	15722 Feb 17 13:00	4° <del>♂</del> 47'44
opposition	15716 May 06 04:15	28° <del>ℳ</del> 07'13 -14°36'34	opposition	15722 May 12 10:22	3° <del>♂</del> 48'38 -13°51'14
min. Earth dist.	15716 May 05 15:25	28° <del>ℳ</del> 07'49 47.92895 AU	min. Earth dist.	15722 May 12 01:55	3° <del>♂</del> 49'02 47.89204 AU
direct	15716 Jul 27 17:31	27° <del>ℳ</del> 08'25	direct	15722 Aug 03 00:11	2° <del>♂</del> 50'01
evening set	15716 Oct 28 13:43	28° <del>ℳ</del> 26'54	evening set	15722 Nov 02 02:18	4° <del>♂</del> 06'04
conjunction	15716 Nov 03 06:28	28° <del>ℳ</del> 34'44 -13°58'32	conjunction	15722 Nov 09 11:00	4° <del>♂</del> 16'10 -13°14'16
minimum elong	15716 Nov 03 06:40	28° <del>ℳ</del> 34'45 13°57'51	minimum elong	15722 Nov 09 11:12	4° <del>♂</del> 16'10 13°13'33
max. Earth dist.	15716 Nov 03 19:49	28° <del>ℳ</del> 35'30 49.86857 AU	max. Earth dist.	15722 Nov 09 19:26	4° <del>♂</del> 16'39 49.82819 AU
morning rise	15716 Nov 08 23:49	28° <del>ℳ</del> 42'37	morning rise	15722 Nov 16 20:31	4° <del>♂</del> 26'19
	15717 Jan 25 08:47	0° <del>♂</del>	retrograde	15723 Feb 18 19:39	5° <del>♂</del> 44'48
retrograde	15717 Feb 12 11:31	0° <del>♂</del> 03'28	opposition	15723 May 13 15:16	4° <del>♂</del> 45'44 -13°42'52
	15717 Mar 02 21:02	30° <del>♂</del> <del>ℳ</del>	min. Earth dist.	15723 May 13 07:03	4° <del>♂</del> 46'07 47.87363 AU

direct	15723 Aug 04 05:36	3°♂47'09	retrograde	15730 Feb 25 10:03	12°♂25'08
evening set	15723 Nov 03 00:52	5°♂02'52	opposition	15730 May 20 02:22	11°♂25'57 -12°38'43
conjunction	15723 Nov 10 15:53	5°♂13'19 -13°06'08	min. Earth dist.	15730 May 20 01:17	11°♂26'00 47.60390 AU
minimum elong	15723 Nov 10 16:04	5°♂13'19 13°05'24	direct	15730 Aug 10 13:30	10°♂27'14
max. Earth dist.	15723 Nov 10 23:17	5°♂13'44 49.80847 AU	evening set	15730 Nov 07 18:46	11°♂40'41
morning rise	15723 Nov 18 07:45	5°♂23'50	conjunction	15730 Nov 17 02:05	11°♂53'26 -12°03'38
retrograde	15724 Feb 20 04:28	6°♂41'58	minimum elong	15730 Nov 17 02:16	11°♂53'27 12°02'52
opposition	15724 May 13 20:23	5°♂42'57 -13°34'18	max. Earth dist.	15730 Nov 17 02:05	11°♂53'26 49.53126 AU
min. Earth dist.	15724 May 13 14:22	5°♂43'13 47.85030 AU	morning rise	15730 Nov 26 10:35	12°♂06'15
direct	15724 Aug 04 09:35	4°♂44'23	retrograde	15731 Feb 26 16:14	13°♂22'09
evening set	15724 Nov 02 23:50	5°♂59'46	opposition	15731 May 21 07:19	12°♂22'56 -12°28'41
conjunction	15724 Nov 10 20:54	6°♂10'33 -12°57'47	min. Earth dist.	15731 May 21 07:22	12°♂22'56 47.54938 AU
minimum elong	15724 Nov 10 21:06	6°♂10'34 12°57'03	direct	15731 Aug 11 15:48	11°♂24'11
max. Earth dist.	15724 Nov 11 03:36	6°♂10'56 49.78363 AU	evening set	15731 Nov 08 18:11	12°♂37'22
morning rise	15724 Nov 18 18:46	6°♂21'25	conjunction	15731 Nov 18 07:04	12°♂50'26 -11°53'51
retrograde	15725 Feb 20 09:07	7°♂39'14	minimum elong	15731 Nov 18 07:15	12°♂50'26 11°53'04
opposition	15725 May 15 01:20	6°♂40'13 -13°25'33	max. Earth dist.	15731 Nov 18 07:17	12°♂50'26 49.47640 AU
min. Earth dist.	15725 May 14 19:38	6°♂40'29 47.82148 AU	morning rise	15731 Nov 27 20:56	13°♂03'33
direct	15725 Aug 05 12:51	5°♂41'40	retrograde	15732 Feb 27 17:40	14°♂19'12
evening set	15725 Nov 03 22:50	6°♂56'42	opposition	15732 May 21 12:19	13°♂19'56 -12°18'25
conjunction	15725 Nov 12 01:49	7°♂07'51 -12°49'16	min. Earth dist.	15732 May 21 13:04	13°♂19'54 47.49170 AU
minimum elong	15725 Nov 12 02:00	7°♂07'51 12°48'31	direct	15732 Aug 11 22:57	12°♂21'09
max. Earth dist.	15725 Nov 12 06:14	7°♂08'06 49.75324 AU	evening set	15732 Nov 08 17:47	13°♂34'05
morning rise	15725 Nov 20 05:47	7°♂19'02	conjunction	15732 Nov 18 11:52	13°♂47'27 -11°43'50
retrograde	15726 Feb 21 13:38	8°♂36'31	minimum elong	15732 Nov 18 12:03	13°♂47'28 11°43'03
opposition	15726 May 16 06:29	7°♂37'29 -13°16'36	max. Earth dist.	15732 Nov 18 10:49	13°♂47'24 49.41853 AU
min. Earth dist.	15726 May 16 02:18	7°♂37'41 47.78721 AU	morning rise	15732 Nov 28 07:07	14°♂00'54
direct	15726 Aug 06 15:42	6°♂38'56	retrograde	15733 Feb 27 22:05	15°♂16'17
evening set	15726 Nov 04 21:47	7°♂53'38	opposition	15733 May 22 17:14	14°♂17'01 -12°07'55
conjunction	15726 Nov 13 06:46	8°♂05'07 -12°40'33	min. Earth dist.	15733 May 22 18:02	14°♂16'58 47.43098 AU
minimum elong	15726 Nov 13 06:58	8°♂05'07 12°39'48	direct	15733 Aug 13 05:03	13°♂18'12
max. Earth dist.	15726 Nov 13 11:05	8°♂05'21 49.71743 AU	evening set	15733 Nov 09 17:25	14°♂30'54
morning rise	15726 Nov 21 16:35	8°♂16'38	conjunction	15733 Nov 19 16:50	14°♂44'34 -11°33'37
retrograde	15727 Feb 22 15:41	9°♂33'47	minimum elong	15733 Nov 19 17:02	14°♂44'35 11°32'49
opposition	15727 May 17 11:34	8°♂34'43 -13°07'27	max. Earth dist.	15733 Nov 19 15:04	14°♂44'28 49.35738 AU
min. Earth dist.	15727 May 17 08:44	8°♂34'51 47.74761 AU	morning rise	15733 Nov 29 17:27	14°♂58'20
direct	15727 Aug 07 23:03	7°♂36'07	retrograde	15734 Mar 01 05:56	16°♂13'30
evening set	15727 Nov 05 21:03	8°♂50'30	opposition	15734 May 23 22:25	15°♂14'12 -11°57'11
conjunction	15727 Nov 14 11:39	9°♂02'18 -12°31'38	min. Earth dist.	15734 May 24 00:57	15°♂14'05 47.36685 AU
minimum elong	15727 Nov 14 11:50	9°♂02'18 12°30'52	direct	15734 Aug 14 10:03	14°♂15'22
max. Earth dist.	15727 Nov 14 14:17	9°♂02'27 49.67675 AU	evening set	15734 Nov 10 17:13	15°♂27'51
morning rise	15727 Nov 23 03:14	9°♂14'09	conjunction	15734 Nov 20 21:51	15°♂41'50 -11°23'10
retrograde	15728 Feb 23 20:27	10°♂30'58	minimum elong	15734 Nov 20 22:01	15°♂41'51 11°22'22
opposition	15728 May 17 16:21	9°♂31'52 -12°58'05	max. Earth dist.	15734 Nov 20 19:47	15°♂41'43 49.29270 AU
min. Earth dist.	15728 May 17 13:45	9°♂32'00 47.70351 AU	morning rise	15734 Dec 01 03:32	15°♂55'54
direct	15728 Aug 08 05:01	8°♂33'14	retrograde	15735 Mar 02 11:40	17°♂10'51
evening set	15728 Nov 05 20:11	9°♂47'18	opposition	15735 May 25 03:26	16°♂11'33 -11°46'15
conjunction	15728 Nov 14 16:32	9°♂59'24 -12°22'31	min. Earth dist.	15735 May 25 06:00	16°♂11'26 47.29875 AU
minimum elong	15728 Nov 14 16:43	9°♂59'25 12°21'46	direct	15735 Aug 15 13:39	15°♂12'41
max. Earth dist.	15728 Nov 14 18:15	9°♂59'30 49.63171 AU	evening set	15735 Nov 11 17:21	16°♂24'59
morning rise	15728 Nov 23 13:54	10°♂11'35	conjunction	15735 Nov 22 02:57	16°♂39'16 -11°12'31
retrograde	15729 Feb 24 03:29	11°♂28'05	minimum elong	15735 Nov 22 03:09	16°♂39'16 11°11'43
opposition	15729 May 18 21:25	10°♂28'57 -12°48'31	max. Earth dist.	15735 Nov 21 22:51	16°♂39'02 49.22366 AU
min. Earth dist.	15729 May 18 20:34	10°♂28'59 47.65542 AU	morning rise	15735 Dec 02 13:56	16°♂53'38
direct	15729 Aug 09 10:59	9°♂30'16	retrograde	15736 Mar 02 18:08	18°♂08'23
evening set	15729 Nov 06 19:24	10°♂44'00	opposition	15736 May 25 08:29	17°♂09'03 -11°35'06
conjunction	15729 Nov 15 21:18	10°♂56'26 -12°13'11	min. Earth dist.	15736 May 25 12:45	17°♂08'51 47.22610 AU
minimum elong	15729 Nov 15 21:30	10°♂56'27 12°12'24	direct	15736 Aug 15 16:07	16°♂10'10
max. Earth dist.	15729 Nov 15 22:59	10°♂56'32 49.58313 AU	evening set	15736 Nov 11 17:35	17°♂22'17
morning rise	15729 Nov 25 00:08	11°♂08'57	conjunction	15736 Nov 22 08:20	17°♂36'52 -11°01'40

minimum elong	15736 Nov 22 08:31	17° $\nearrow$ 36'52	11°00'52	evening set	15743 Nov 17 22:21	24° $\nearrow$ 06'33	
max. Earth dist.	15736 Nov 22 04:00	17° $\nearrow$ 36'37	49.14967 AU				
morning rise	15736 Dec 03 00:12	17° $\nearrow$ 51'31		conjunction	15743 Nov 29 21:48	24° $\nearrow$ 23'08	-9°40'02
retrograde	15737 Mar 03 21:11	19° $\nearrow$ 06'05		minimum elong	15743 Nov 29 21:58	24° $\nearrow$ 23'08	9°39'13
opposition	15737 May 26 13:45	18° $\nearrow$ 06'43	-11°23'44	max. Earth dist.	15743 Nov 29 10:23	24° $\nearrow$ 22'28	48.50325 AU
min. Earth dist.	15737 May 26 19:16	18° $\nearrow$ 06'28	47.14814 AU	morning rise	15743 Dec 11 22:43	24° $\nearrow$ 39'48	
direct	15737 Aug 16 22:44	17° $\nearrow$ 07'48		retrograde	15744 Mar 10 14:11	25° $\nearrow$ 53'16	
evening set	15737 Nov 12 17:57	18° $\nearrow$ 19'44		opposition	15744 Jun 02 02:59	24° $\nearrow$ 53'25	-9°58'15
				min. Earth dist.	15744 Jun 02 14:36	24° $\nearrow$ 52'52	46.47927 AU
conjunction	15737 Nov 23 13:29	18° $\nearrow$ 34'36	-10°50'38	direct	15744 Aug 23 11:42	23° $\nearrow$ 53'59	
minimum elong	15737 Nov 23 13:40	18° $\nearrow$ 34'37	10°49'50	evening set	15744 Nov 17 23:35	25° $\nearrow$ 04'53	
max. Earth dist.	15737 Nov 23 07:17	18° $\nearrow$ 34'15	49.07041 AU				
morning rise	15737 Dec 04 10:21	18° $\nearrow$ 49'33		conjunction	15744 Nov 30 03:25	25° $\nearrow$ 21'44	-9°27'29
retrograde	15738 Mar 05 02:27	20° $\nearrow$ 03'56		minimum elong	15744 Nov 30 03:36	25° $\nearrow$ 21'45	9°26'39
opposition	15738 May 27 19:01	19° $\nearrow$ 04'31	-11°12'11	max. Earth dist.	15744 Nov 29 15:57	25° $\nearrow$ 21'04	48.39781 AU
min. Earth dist.	15738 May 28 00:59	19° $\nearrow$ 04'15	47.06490 AU	morning rise	15744 Dec 12 08:36	25° $\nearrow$ 38'41	
direct	15738 Aug 18 04:05	18° $\nearrow$ 05'32		retrograde	15745 Mar 11 21:29	26° $\nearrow$ 52'04	
evening set	15738 Nov 13 18:24	19° $\nearrow$ 17'17		opposition	15745 Jun 03 08:29	25° $\nearrow$ 52'09	-9°45'06
				min. Earth dist.	15745 Jun 03 19:39	25° $\nearrow$ 51'38	46.37108 AU
conjunction	15738 Nov 24 18:51	19° $\nearrow$ 32'27	-10°39'24	direct	15745 Aug 24 15:34	24° $\nearrow$ 52'39	
minimum elong	15738 Nov 24 19:02	19° $\nearrow$ 32'27	10°38'35	evening set	15745 Nov 19 00:52	26° $\nearrow$ 03'28	
max. Earth dist.	15738 Nov 24 11:25	19° $\nearrow$ 32'01	48.98581 AU				
morning rise	15738 Dec 05 20:39	19° $\nearrow$ 47'42		conjunction	15745 Dec 01 08:53	26° $\nearrow$ 20'36	-9°14'42
retrograde	15739 Mar 06 09:20	21° $\nearrow$ 01'54		minimum elong	15745 Dec 01 09:02	26° $\nearrow$ 20'36	9°13'52
opposition	15739 May 29 00:18	20° $\nearrow$ 02'25	-11°00'25	max. Earth dist.	15745 Nov 30 19:48	26° $\nearrow$ 19'50	48.28946 AU
min. Earth dist.	15739 May 29 08:18	20° $\nearrow$ 02'03	46.97656 AU	morning rise	15745 Dec 13 18:33	26° $\nearrow$ 37'50	
direct	15739 Aug 19 10:23	19° $\nearrow$ 03'22		retrograde	15746 Mar 13 05:43	27° $\nearrow$ 51'07	
evening set	15739 Nov 14 19:00	20° $\nearrow$ 14'55		opposition	15746 Jun 04 14:14	26° $\nearrow$ 51'09	-9°31'42
				min. Earth dist.	15746 Jun 05 02:48	26° $\nearrow$ 50'34	46.25993 AU
conjunction	15739 Nov 26 00:16	20° $\nearrow$ 30'22	-10°27'57	direct	15746 Aug 25 17:45	25° $\nearrow$ 51'35	
minimum elong	15739 Nov 26 00:27	20° $\nearrow$ 30'23	10°27'09	evening set	15746 Nov 20 02:25	27° $\nearrow$ 02'21	
max. Earth dist.	15739 Nov 25 16:28	20° $\nearrow$ 29'55	48.89652 AU				
morning rise	15739 Dec 07 06:44	20° $\nearrow$ 45'55		conjunction	15746 Dec 02 14:48	27° $\nearrow$ 19'45	-9°01'41
retrograde	15740 Mar 06 16:31	21° $\nearrow$ 59'56		minimum elong	15746 Dec 02 14:58	27° $\nearrow$ 19'46	9°00'52
opposition	15740 May 29 05:29	21° $\nearrow$ 00'23	-10°48'27	max. Earth dist.	15746 Dec 02 01:55	27° $\nearrow$ 19'00	48.17785 AU
min. Earth dist.	15740 May 29 13:33	21° $\nearrow$ 00'00	46.88374 AU	morning rise	15746 Dec 15 04:32	27° $\nearrow$ 37'15	
direct	15740 Aug 19 13:38	20° $\nearrow$ 01'15		retrograde	15747 Mar 14 09:47	28° $\nearrow$ 50'28	
evening set	15740 Nov 14 19:40	21° $\nearrow$ 12'39		opposition	15747 Jun 05 19:53	27° $\nearrow$ 50'27	-9°18'05
				min. Earth dist.	15747 Jun 06 09:17	27° $\nearrow$ 49'49	46.14514 AU
conjunction	15740 Nov 26 05:28	21° $\nearrow$ 28'23	-10°16'19	direct	15747 Aug 26 23:17	26° $\nearrow$ 50'49	
minimum elong	15740 Nov 26 05:39	21° $\nearrow$ 28'24	10°15'29	evening set	15747 Nov 21 04:22	28° $\nearrow$ 01'32	
max. Earth dist.	15740 Nov 25 19:47	21° $\nearrow$ 27'49	48.80300 AU				
morning rise	15740 Dec 07 16:47	21° $\nearrow$ 44'13		conjunction	15747 Dec 03 20:44	28° $\nearrow$ 19'12	-8°48'28
retrograde	15741 Mar 07 23:52	22° $\nearrow$ 58'04		minimum elong	15747 Dec 03 20:53	28° $\nearrow$ 19'12	8°47'38
opposition	15741 May 30 10:49	21° $\nearrow$ 58'26	-10°36'15	max. Earth dist.	15747 Dec 03 06:07	28° $\nearrow$ 18'21	48.06237 AU
min. Earth dist.	15741 May 30 20:13	21° $\nearrow$ 58'00	46.78718 AU	morning rise	15747 Dec 16 14:42	28° $\nearrow$ 36'58	
direct	15741 Aug 20 15:23	20° $\nearrow$ 59'13		retrograde	15748 Mar 14 15:28	29° $\nearrow$ 50'08	
evening set	15741 Nov 15 20:23	22° $\nearrow$ 10'29		opposition	15748 Jun 06 01:40	28° $\nearrow$ 50'02	-9°04'15
				min. Earth dist.	15748 Jun 06 15:38	28° $\nearrow$ 49'23	46.02616 AU
conjunction	15741 Nov 27 10:56	22° $\nearrow$ 26'29	-10°04'27	direct	15748 Aug 27 04:37	27° $\nearrow$ 50'19	
minimum elong	15741 Nov 27 11:06	22° $\nearrow$ 26'30	10°03'38	evening set	15748 Nov 21 06:24	29° $\nearrow$ 01'00	
max. Earth dist.	15741 Nov 27 01:27	22° $\nearrow$ 25'57	48.70601 AU	max. Earth dist.	15748 Dec 03 11:04	29° $\nearrow$ 18'01	47.94210 AU
morning rise	15741 Dec 09 02:44	22° $\nearrow$ 42'36					
retrograde	15742 Mar 09 02:31	23° $\nearrow$ 56'18		conjunction	15748 Dec 04 02:49	29° $\nearrow$ 18'56	-8°35'02
opposition	15742 May 31 16:11	22° $\nearrow$ 56'36	-10°23'49	minimum elong	15748 Dec 04 02:59	29° $\nearrow$ 18'57	8°34'12
min. Earth dist.	15742 Jun 01 02:10	22° $\nearrow$ 56'08	46.68734 AU	morning rise	15748 Dec 17 00:49	29° $\nearrow$ 36'59	
direct	15742 Aug 21 22:29	21° $\nearrow$ 57'18			15749 Jan 03 09:30	0° $\overline{\text{B}}$	
evening set	15742 Nov 16 21:19	23° $\nearrow$ 08'26		retrograde	15749 Mar 15 21:36	0° $\overline{\text{B}}$ 50'06	
					15749 May 29 09:51	30° $\text{R}$ $\nearrow$	
conjunction	15742 Nov 28 16:15	23° $\nearrow$ 24'43	-9°52'21	opposition	15749 Jun 07 07:45	29° $\nearrow$ 49'55	-8°50'11
minimum elong	15742 Nov 28 16:25	23° $\nearrow$ 24'44	9°51'31	min. Earth dist.	15749 Jun 07 23:43	29° $\nearrow$ 49'09	45.90214 AU
max. Earth dist.	15742 Nov 28 05:35	23° $\nearrow$ 24'06	48.60608 AU	direct	15749 Aug 28 12:40	28° $\nearrow$ 50'06	
morning rise	15742 Dec 10 12:40	23° $\nearrow$ 41'07			15749 Nov 21 20:12	0° $\overline{\text{B}}$	
retrograde	15743 Mar 10 06:29	24° $\nearrow$ 54'41		evening set	15749 Nov 22 08:45	0° $\overline{\text{B}}$ 00'43	
opposition	15743 Jun 01 21:33	23° $\nearrow$ 54'55	-10°11'09				
min. Earth dist.	15743 Jun 02 07:36	23° $\nearrow$ 54'26	46.58470 AU	conjunction	15749 Dec 05 09:09	0° $\overline{\text{B}}$ 18'55	-8°21'24
direct	15743 Aug 23 05:32	22° $\nearrow$ 55'32		minimum elong	15749 Dec 05 09:18	0° $\overline{\text{B}}$ 18'56	8°20'33

max. Earth dist.	15749 Dec 04 16:45	0°317'57	47.81684 AU	direct	15756 Sep 04 03:34	5°353'58	
morning rise	15749 Dec 18 11:00	0°337'14		evening set	15756 Nov 28 05:54	7°304'35	
retrograde	15750 Mar 17 05:35	1°350'18		max. Earth dist.	15756 Dec 11 08:49	7°323'13	46.82181 AU
opposition	15750 Jun 08 13:46	0°350'01	-8°35'55				
min. Earth dist.	15750 Jun 09 05:55	0°349'15	45.77297 AU	conjunction	15756 Dec 12 07:22	7°324'34	-6°39'49
	15750 Jul 30 07:22	30°38'21		minimum elong	15756 Dec 12 07:29	7°324'35	6°38'59
direct	15750 Aug 29 18:16	29°37'50'05		morning rise	15756 Dec 26 10:20	7°344'40	
	15750 Sep 28 17:15	0°3		retrograde	15757 Mar 24 08:13	8°357'44	
evening set	15750 Nov 23 11:15	1°300'39		opposition	15757 Jun 15 10:39	7°356'32	-6°49'29
				min. Earth dist.	15757 Jun 16 08:40	7°355'28	44.75755 AU
conjunction	15750 Dec 06 15:24	1°319'07	-8°07'33	direct	15757 Sep 05 09:25	6°355'39	
minimum elong	15750 Dec 06 15:33	1°319'08	8°06'43	evening set	15757 Nov 29 09:55	8°306'23	
max. Earth dist.	15750 Dec 05 20:45	1°318'01	47.68636 AU				
morning rise	15750 Dec 19 21:18	1°337'41		conjunction	15757 Dec 13 14:26	8°326'37	-6°24'23
retrograde	15751 Mar 18 15:29	2°350'42		minimum elong	15757 Dec 13 14:33	8°326'37	6°23'32
opposition	15751 Jun 09 19:59	1°350'18	-8°21'25	max. Earth dist.	15757 Dec 12 14:26	8°325'10	46.66753 AU
min. Earth dist.	15751 Jun 10 13:58	1°349'26	45.63880 AU	morning rise	15757 Dec 27 20:44	8°346'58	
direct	15751 Aug 30 20:38	0°350'14		retrograde	15758 Mar 25 16:06	10°300'06	
evening set	15751 Nov 24 13:54	2°300'46		opposition	15758 Jun 16 17:33	8°358'49	-6°33'18
				min. Earth dist.	15758 Jun 17 15:59	8°357'43	44.60072 AU
conjunction	15751 Dec 07 21:58	2°319'29	-7°53'30	direct	15758 Sep 06 15:04	7°357'49	
minimum elong	15751 Dec 07 22:06	2°319'30	7°52'39	evening set	15758 Nov 30 14:04	9°308'39	
max. Earth dist.	15751 Dec 07 03:11	2°318'23	47.55105 AU				
morning rise	15751 Dec 21 07:29	2°338'19		conjunction	15758 Dec 14 21:45	9°329'08	-6°08'43
retrograde	15752 Mar 18 20:45	3°351'17		minimum elong	15758 Dec 14 21:52	9°329'08	6°07'52
opposition	15752 Jun 10 02:03	2°350'44	-8°06'42	max. Earth dist.	15758 Dec 13 21:06	9°327'39	46.51009 AU
min. Earth dist.	15752 Jun 10 20:45	2°349'51	45.50005 AU	morning rise	15758 Dec 29 07:08	9°349'44	
direct	15752 Aug 31 03:29	1°350'32		retrograde	15759 Mar 26 22:43	11°303'00	
evening set	15752 Nov 24 16:48	3°301'03		opposition	15759 Jun 18 00:43	10°301'36	-6°16'52
max. Earth dist.	15752 Dec 07 08:05	3°318'49	47.41161 AU	min. Earth dist.	15759 Jun 19 00:47	10°300'25	44.44045 AU
				direct	15759 Sep 07 23:27	9°300'29	
conjunction	15752 Dec 08 04:23	3°320'01	-7°39'13	evening set	15759 Dec 01 18:40	10°311'27	
minimum elong	15752 Dec 08 04:31	3°320'01	7°38'23	max. Earth dist.	15759 Dec 15 04:12	10°330'39	46.34900 AU
morning rise	15752 Dec 21 17:41	3°339'06					
retrograde	15753 Mar 20 01:42	4°352'02		conjunction	15759 Dec 16 05:22	10°332'10	-5°52'49
opposition	15753 Jun 11 08:19	3°351'21	-7°51'45	minimum elong	15759 Dec 16 05:29	10°332'11	5°51'59
min. Earth dist.	15753 Jun 12 03:32	3°350'26	45.35759 AU	morning rise	15759 Dec 30 17:40	10°353'01	
direct	15753 Sep 01 10:07	2°351'00		retrograde	15760 Mar 27 07:30	12°306'25	
evening set	15753 Nov 25 19:39	4°301'30		opposition	15760 Jun 18 07:48	11°304'54	-6°00'12
				min. Earth dist.	15760 Jun 19 08:01	11°303'43	44.27617 AU
conjunction	15753 Dec 09 10:52	4°320'44	-7°24'43	direct	15760 Sep 08 06:29	10°303'40	
minimum elong	15753 Dec 09 11:00	4°320'45	7°23'52	evening set	15760 Dec 01 23:40	11°314'46	
max. Earth dist.	15753 Dec 08 13:49	4°319'29	47.26851 AU	max. Earth dist.	15760 Dec 15 09:44	11°334'05	46.18344 AU
morning rise	15753 Dec 23 03:44	4°340'05					
retrograde	15754 Mar 21 07:56	5°353'01		conjunction	15760 Dec 16 13:06	11°335'44	-5°36'42
opposition	15754 Jun 12 14:50	4°352'11	-7°36'33	minimum elong	15760 Dec 16 13:12	11°335'45	5°35'52
min. Earth dist.	15754 Jun 13 11:31	4°351'12	45.21175 AU	morning rise	15760 Dec 31 04:23	11°356'50	
direct	15754 Sep 02 18:00	3°351'42		retrograde	15761 Mar 28 20:07	13°310'22	
evening set	15754 Nov 26 22:52	5°302'13		opposition	15761 Jun 19 15:23	12°308'43	-5°43'18
				min. Earth dist.	15761 Jun 20 17:34	12°307'27	44.10725 AU
conjunction	15754 Dec 10 17:37	5°321'42	-7°09'59	direct	15761 Sep 09 09:32	11°307'20	
minimum elong	15754 Dec 10 17:45	5°321'42	7°09'10	evening set	15761 Dec 03 04:42	12°318'35	
max. Earth dist.	15754 Dec 09 20:23	5°320'26	47.12241 AU				
morning rise	15754 Dec 24 13:55	5°341'17		conjunction	15761 Dec 17 21:04	12°339'48	-5°20'21
retrograde	15755 Mar 22 15:49	6°354'15		minimum elong	15761 Dec 17 21:11	12°339'48	5°19'32
opposition	15755 Jun 13 21:09	5°353'18	-7°21'07	max. Earth dist.	15761 Dec 16 17:32	12°338'08	46.01297 AU
min. Earth dist.	15755 Jun 14 17:29	5°352'19	45.06305 AU	morning rise	15762 Jan 01 14:58	13°301'08	
direct	15755 Sep 03 23:49	4°352'39		retrograde	15762 Mar 30 04:46	14°314'48	
evening set	15755 Nov 28 02:23	6°303'13		opposition	15762 Jun 20 23:03	13°313'00	-5°26'10
max. Earth dist.	15755 Dec 11 01:31	6°321'35	46.97345 AU	min. Earth dist.	15762 Jun 22 01:48	13°311'42	43.93323 AU
				direct	15762 Sep 10 16:17	12°311'27	
conjunction	15755 Dec 12 00:24	6°322'57	-6°55'01	evening set	15762 Dec 04 10:18	13°322'51	
minimum elong	15755 Dec 12 00:32	6°322'57	6°54'11	max. Earth dist.	15762 Dec 17 23:39	13°342'29	45.83754 AU
morning rise	15755 Dec 26 00:15	6°342'48					
retrograde	15756 Mar 23 01:28	7°355'48		conjunction	15762 Dec 19 05:12	13°344'18	-5°03'48
opposition	15756 Jun 14 03:51	6°354'43	-7°05'26	minimum elong	15762 Dec 19 05:17	13°344'18	5°02'58
min. Earth dist.	15756 Jun 15 01:38	6°353'40	44.91168 AU	morning rise	15763 Jan 03 01:55	14°305'52	

retrograde	15763 Mar 31 12:52	15°319'39		conjunction	15769 Dec 26 18:44	21°326'51	-3°01'21
opposition	15763 Jun 22 06:43	14°317'41	-5°08'47	minimum elong	15769 Dec 26 18:47	21°326'51	3°00'33
min. Earth dist.	15763 Jun 23 10:36	14°316'19	43.75446 AU	morning rise	15770 Jan 11 06:28	21°349'58	
direct	15763 Sep 11 23:23	13°315'56		retrograde	15770 Apr 08 04:25	23°305'12	
evening set	15763 Dec 05 16:03	14°327'30		opposition	15770 Jun 29 17:47	22°301'48	-3°00'08
max. Earth dist.	15763 Dec 19 07:03	14°347'18	45.65735 AU	min. Earth dist.	15770 Jul 01 02:00	22°300'10	42.41190 AU
				direct	15770 Sep 19 08:50	20°358'33	
conjunction	15763 Dec 20 13:34	14°349'11	-4°47'01	evening set	15770 Dec 12 16:45	22°311'44	
minimum elong	15763 Dec 20 13:40	14°349'11	4°46'11	max. Earth dist.	15770 Dec 26 16:24	22°332'39	44.31069 AU
morning rise	15764 Jan 04 12:45	15°310'58					
retrograde	15764 Mar 31 18:47	16°324'55		conjunction	15770 Dec 28 04:27	22°334'56	-2°42'54
opposition	15764 Jun 22 14:42	15°322'45	-4°51'10	minimum elong	15770 Dec 28 04:31	22°334'56	2°42'06
min. Earth dist.	15764 Jun 23 20:08	15°321'17	43.57125 AU	morning rise	15771 Jan 12 17:54	22°358'15	
direct	15764 Sep 12 09:47	14°320'48		retrograde	15771 Apr 09 15:59	24°313'48	
evening set	15764 Dec 05 21:57	15°332'31		opposition	15771 Jul 01 03:03	23°310'13	-2°40'44
				min. Earth dist.	15771 Jul 02 13:02	23°308'29	42.21052 AU
conjunction	15764 Dec 20 21:53	15°354'25	-4°30'00	direct	15771 Sep 20 16:34	22°306'46	
minimum elong	15764 Dec 20 21:58	15°354'25	4°29'09	evening set	15771 Dec 14 01:15	23°320'17	
max. Earth dist.	15764 Dec 19 14:51	15°352'30	45.47319 AU	max. Earth dist.	15771 Dec 28 02:42	23°341'25	44.10835 AU
morning rise	15765 Jan 04 23:27	16°316'26					
retrograde	15765 Apr 02 02:43	17°330'33		conjunction	15771 Dec 29 14:35	23°343'41	-2°24'13
opposition	15765 Jun 23 22:43	16°328'11	-4°33'18	minimum elong	15771 Dec 29 14:38	23°343'41	2°23'26
min. Earth dist.	15765 Jun 25 03:57	16°326'43	43.38443 AU	morning rise	15772 Jan 14 05:21	24°307'12	
direct	15765 Sep 13 18:37	15°326'00		retrograde	15772 Apr 10 03:19	25°323'06	
evening set	15765 Dec 07 04:18	16°337'54		opposition	15772 Jul 01 12:34	24°319'20	-2°21'05
max. Earth dist.	15765 Dec 20 21:45	16°358'01	45.28556 AU	min. Earth dist.	15772 Jul 02 22:35	24°317'36	42.00593 AU
				direct	15772 Sep 21 00:32	23°315'40	
conjunction	15765 Dec 22 06:25	17°300'01	-4°12'45	evening set	15772 Dec 14 10:16	24°329'34	
minimum elong	15765 Dec 22 06:30	17°300'02	4°11'56	max. Earth dist.	15772 Dec 28 10:55	24°350'45	43.90243 AU
morning rise	15766 Jan 06 10:23	17°322'17					
retrograde	15766 Apr 03 13:36	18°336'34		conjunction	15772 Dec 30 00:44	24°353'09	-2°05'19
opposition	15766 Jun 25 07:00	17°333'59	-4°15'11	minimum elong	15772 Dec 30 00:47	24°353'09	2°04'31
min. Earth dist.	15766 Jun 26 13:55	17°332'27	43.19460 AU	morning rise	15773 Jan 14 16:58	25°316'52	
direct	15766 Sep 15 01:05	16°331'36		retrograde	15773 Apr 11 16:57	26°333'07	
evening set	15766 Dec 08 10:47	17°343'42		opposition	15773 Jul 02 22:29	25°329'09	-2°01'10
max. Earth dist.	15766 Dec 22 06:55	18°304'02	45.09514 AU	min. Earth dist.	15773 Jul 04 09:56	25°327'20	41.79759 AU
				direct	15773 Sep 22 07:31	24°325'16	
conjunction	15766 Dec 23 15:16	18°306'02	-3°55'15	evening set	15773 Dec 15 19:43	25°339'33	
minimum elong	15766 Dec 23 15:20	18°306'02	3°54'25	max. Earth dist.	15773 Dec 29 21:02	26°300'53	43.69234 AU
morning rise	15767 Jan 07 21:15	18°328'30					
retrograde	15767 Apr 05 00:17	19°342'59		conjunction	15773 Dec 31 11:31	26°303'20	-1°46'10
opposition	15767 Jun 26 15:22	18°340'12	-3°56'49	minimum elong	15773 Dec 31 11:33	26°303'20	1°45'23
min. Earth dist.	15767 Jun 27 22:13	18°338'39	43.00212 AU	morning rise	15774 Jan 16 04:45	26°327'15	
direct	15767 Sep 16 07:38	17°337'35		retrograde	15774 Apr 13 03:34	27°343'52	
evening set	15767 Dec 09 17:49	18°349'55		opposition	15774 Jul 04 08:39	26°339'40	-1°41'01
max. Earth dist.	15767 Dec 23 14:12	19°310'22	44.90229 AU	min. Earth dist.	15774 Jul 05 21:16	26°337'47	41.58497 AU
				direct	15774 Sep 23 18:10	25°335'32	
conjunction	15767 Dec 25 00:09	19°312'28	-3°37'32	evening set	15774 Dec 17 05:38	26°350'13	
minimum elong	15767 Dec 25 00:14	19°312'28	3°36'43	max. Earth dist.	15774 Dec 31 06:46	27°311'39	43.47813 AU
morning rise	15768 Jan 09 08:19	19°335'09					
retrograde	15768 Apr 05 12:07	20°349'51		conjunction	15775 Jan 01 22:27	27°314'12	-1°26'48
opposition	15768 Jun 26 23:51	19°346'52	-3°38'11	minimum elong	15775 Jan 01 22:29	27°314'12	1°26'01
min. Earth dist.	15768 Jun 28 07:24	19°345'17	42.80749 AU	morning rise	15775 Jan 17 16:47	27°338'18	
direct	15768 Sep 16 13:17	18°344'01		retrograde	15775 Apr 14 14:53	28°355'18	
evening set	15768 Dec 10 01:04	19°356'37		opposition	15775 Jul 05 18:58	27°350'51	-1°20'37
max. Earth dist.	15768 Dec 23 23:17	20°317'16	44.70721 AU	min. Earth dist.	15775 Jul 07 07:53	27°348'57	41.36831 AU
				direct	15775 Sep 25 04:33	26°346'28	
conjunction	15768 Dec 25 09:25	20°319'23	-3°19'34	evening set	15775 Dec 18 16:01	28°301'34	
minimum elong	15768 Dec 25 09:29	20°319'24	3°18'44	max. Earth dist.	15776 Jan 01 16:20	28°323'03	43.25978 AU
morning rise	15769 Jan 09 19:21	20°342'17					
retrograde	15769 Apr 06 20:13	21°357'14		conjunction	15776 Jan 03 09:38	28°325'43	-1°07'13
opposition	15769 Jun 28 08:46	20°354'02	-3°19'17	minimum elong	15776 Jan 03 09:40	28°325'44	1°06'26
min. Earth dist.	15769 Jun 29 17:11	20°352'25	42.61072 AU	morning rise	15776 Jan 19 04:48	28°350'01	
direct	15769 Sep 17 22:35	19°351'00			15776 Mar 21 00:21	0°	
evening set	15769 Dec 11 08:36	21°303'52		retrograde	15776 Apr 15 01:48	0°	
max. Earth dist.	15769 Dec 25 08:14	21°324'41	44.51017 AU		15776 May 10 10:56	30°R3	
				opposition	15776 Jul 06 05:36	29°302'43	-0°59'59

min. Earth dist.	15776 Jul 07 20:23	29°30'43	41.14793 AU	opposition	15782 Jul 14 03:14	6°29'31	1°09'03
direct	15776 Sep 25 14:58	27°35'04		min. Earth dist.	15782 Jul 15 20:05	6°27'20	39.78060 AU
evening set	15776 Dec 19 02:42	29°31'35		direct	15782 Oct 03 06:56	5°23'10	
max. Earth dist.	15777 Jan 02 03:55	29°35'15	43.03812 AU	evening set	15782 Dec 27 05:27	6°41'58	
				max. Earth dist.	15783 Jan 10 02:10	7°04'08	41.66564 AU
conjunction	15777 Jan 03 21:08	29°37'55	-0°47'23				
minimum elong	15777 Jan 03 21:09	29°37'55	0°46'38	conjunction	15783 Jan 12 00:02	7°07'13	1°16'14
	15777 Jan 18 03:20	0°		minimum elong	15783 Jan 12 00:01	7°07'13	1°16'56
morning rise	15777 Jan 19 16:52	0°02'23		morning rise	15783 Jan 27 19:59	7°32'35	
retrograde	15777 Apr 16 14:09	1°20'13		retrograde	15783 Apr 25 00:49	8°53'39	
opposition	15777 Jul 07 16:26	0°15'16	-0°39'05	opposition	15783 Jul 15 16:07	7°47'06	1°31'23
min. Earth dist.	15777 Jul 09 07:00	0°13'15	40.92459 AU	min. Earth dist.	15783 Jul 17 10:29	7°44'50	39.54769 AU
	15777 Jul 20 00:07	30°R3		direct	15783 Oct 04 16:25	6°40'29	
direct	15777 Sep 27 00:45	29°31'19		evening set	15783 Dec 28 19:57	7°59'57	
	15777 Dec 02 09:39	0°		max. Earth dist.	15784 Jan 11 16:22	8°22'14	41.43139 AU
evening set	15777 Dec 20 13:51	0°26'18					
max. Earth dist.	15778 Jan 03 13:38	0°48'00	42.81371 AU	conjunction	15784 Jan 13 13:59	8°25'19	1°37'34
				minimum elong	15784 Jan 13 13:57	8°25'19	1°38'17
conjunction	15778 Jan 05 08:39	0°50'48	-0°27'21	morning rise	15784 Jan 29 09:00	8°50'48	
minimum elong	15778 Jan 05 08:40	0°50'48	0°26'35	retrograde	15784 Apr 25 17:19	10°12'33	
morning rise	15778 Jan 21 05:04	1°15'26		opposition	15784 Jul 16 05:15	9°05'44	1°53'56
retrograde	15778 Apr 18 06:05	2°33'44		min. Earth dist.	15784 Jul 17 23:53	9°03'26	39.31259 AU
opposition	15778 Jul 09 03:38	1°28'30	-0°17'56	direct	15784 Oct 05 03:05	7°58'49	
min. Earth dist.	15778 Jul 10 19:29	1°26'25	40.69892 AU	evening set	15784 Dec 29 11:16	9°19'01	
direct	15778 Sep 28 07:25	0°23'16		max. Earth dist.	15785 Jan 12 05:01	9°41'16	41.19470 AU
evening set	15778 Dec 22 01:29	1°39'45					
max. Earth dist.	15779 Jan 05 01:55	2°01'37	42.58702 AU	conjunction	15785 Jan 14 04:15	9°44'29	1°59'06
				minimum elong	15785 Jan 14 04:12	9°44'29	1°59'47
conjunction	15779 Jan 06 20:47	2°04'25	-0°07'07	morning rise	15785 Jan 29 22:28	10°10'04	
minimum elong	15779 Jan 06 20:47	2°04'25	0°06'23	retrograde	15785 Apr 27 11:43	11°32'31	
behind sun begin	15779 Jan 06 14:42	2°04'03		opposition	15785 Jul 17 18:52	10°25'25	2°16'41
behind sun end	15779 Jan 07 02:53	2°04'48		min. Earth dist.	15785 Jul 19 14:20	10°23'04	39.07489 AU
morning rise	15779 Jan 22 17:20	2°29'12		direct	15785 Oct 06 13:29	9°18'11	
retrograde	15779 Apr 19 18:42	3°47'59		evening set	15785 Dec 31 03:06	10°39'07	
asc. node	15779 May 12 20:02	3°41'41		max. Earth dist.	15786 Jan 13 18:55	11°01'24	40.95483 AU
opposition	15779 Jul 10 14:58	2°42'29	0°03'27				
min. Earth dist.	15779 Jul 12 07:08	2°40'23	40.47128 AU	conjunction	15786 Jan 15 19:04	11°04'42	2°20'49
direct	15779 Sep 29 18:08	1°36'59		minimum elong	15786 Jan 15 19:01	11°04'42	2°21'30
evening set	15779 Dec 23 13:43	2°54'00		morning rise	15786 Jan 31 12:01	11°30'23	
max. Earth dist.	15780 Jan 06 13:21	3°15'56	42.35870 AU	retrograde	15786 Apr 29 02:35	12°53'32	
				opposition	15786 Jul 19 09:02	11°46'08	2°39'40
conjunction	15780 Jan 08 09:04	3°18'49	0°13'28	min. Earth dist.	15786 Jul 21 05:52	11°43'41	38.83386 AU
minimum elong	15780 Jan 08 09:04	3°18'49	0°14'13	direct	15786 Oct 08 03:58	10°38'34	
behind sun begin	15780 Jan 08 06:05	3°18'38		evening set	15787 Jan 01 19:46	12°00'15	
behind sun end	15780 Jan 08 12:03	3°19'00		max. Earth dist.	15787 Jan 15 09:38	12°22'33	40.71172 AU
morning rise	15780 Jan 24 05:50	3°43'45					
retrograde	15780 Apr 20 07:44	5°03'02		conjunction	15787 Jan 17 10:24	12°25'55	2°42'43
opposition	15780 Jul 11 02:41	3°57'17	0°25'05	minimum elong	15787 Jan 17 10:20	12°25'55	2°43'23
min. Earth dist.	15780 Jul 12 18:57	3°55'09	40.24228 AU	morning rise	15787 Feb 02 01:56	12°51'41	
direct	15780 Sep 30 06:08	2°51'28		retrograde	15787 Apr 30 17:33	14°15'33	
evening set	15780 Dec 24 02:18	4°09'03		opposition	15787 Jul 20 23:17	13°07'50	3°02'51
max. Earth dist.	15781 Jan 07 01:03	4°31'04	42.12889 AU	min. Earth dist.	15787 Jul 22 20:14	13°05'22	38.58973 AU
				direct	15787 Oct 09 19:38	11°59'55	
conjunction	15781 Jan 08 21:36	4°34'02	0°34'10	evening set	15788 Jan 03 13:07	13°22'23	
minimum elong	15781 Jan 08 21:35	4°34'02	0°34'54	max. Earth dist.	15788 Jan 16 23:20	13°44'35	40.46542 AU
morning rise	15781 Jan 24 18:13	4°59'07					
retrograde	15781 Apr 21 19:45	6°18'58		conjunction	15788 Jan 19 02:03	13°48'07	3°04'49
opposition	15781 Jul 12 14:56	5°12'56	0°46'57	minimum elong	15788 Jan 19 01:59	13°48'07	3°05'28
min. Earth dist.	15781 Jul 14 08:21	5°10'44	40.01200 AU	morning rise	15788 Feb 03 16:00	14°13'57	
direct	15781 Oct 01 18:57	4°06'51			15788 Mar 05 18:56	15°	
evening set	15781 Dec 25 15:30	5°25'01		retrograde	15788 May 01 09:32	15°38'35	
max. Earth dist.	15782 Jan 08 14:24	5°47'11	41.89797 AU		15788 Jun 28 12:37	15°R	
				opposition	15788 Jul 21 14:14	14°30'31	3°26'14
conjunction	15782 Jan 10 10:40	5°50'08	0°55'06	min. Earth dist.	15788 Jul 23 12:59	14°27'56	38.34280 AU
minimum elong	15782 Jan 10 10:38	5°50'08	0°55'50	direct	15788 Oct 10 08:58	13°22'14	
morning rise	15782 Jan 26 06:57	6°15'22		evening set	15789 Jan 04 06:50	14°45'30	
retrograde	15782 Apr 23 08:43	7°35'49			15789 Jan 13 00:42	15°	

max. Earth dist.	15789 Jan 17 15:39	15°07'46"	40.21660 AU	retrograde	15795 May 12 21:05	25°50'36"	
				opposition	15795 Aug 01 10:29	24°40'03"	6°14'24"
conjunction	15789 Jan 19 18:03	15°11'18"	3°27'04"	min. Earth dist.	15795 Aug 03 11:47	24°37'12"	36.58522 AU
minimum elong	15789 Jan 19 17:58	15°11'17"	3°27'43"	direct	15795 Oct 20 18:16	23°29'06"	
morning rise	15789 Feb 04 05:56	15°37'11"		evening set	15796 Jan 16 09:42	24°59'27"	
retrograde	15789 May 03 01:32	17°02'37"		max. Earth dist.	15796 Jan 28 18:10	25°21'12"	38.44938 AU
opposition	15789 Jul 23 05:29	15°54'11"	3°49'49"				
min. Earth dist.	15789 Jul 25 03:56	15°51'37"	38.09369 AU	conjunction	15796 Jan 30 23:50	25°25'11"	6°06'28"
	15789 Sep 08 00:13	15°00'00"		minimum elong	15796 Jan 30 23:41	25°25'10"	6°07'00"
direct	15789 Oct 11 23:40	14°45'31"		morning rise	15796 Feb 14 14:09	25°50'58"	
	15789 Nov 14 09:58	15°00'00"		retrograde	15796 May 13 17:55	27°23'23"	
evening set	15790 Jan 06 01:33	16°09'38"		opposition	15796 Aug 02 05:12	26°12'29"	6°38'51"
max. Earth dist.	15790 Jan 19 06:29	16°31'48"	39.96585 AU	min. Earth dist.	15796 Aug 04 06:20	26°09'38"	36.33360 AU
				direct	15796 Oct 21 11:28	25°01'11"	
conjunction	15790 Jan 21 10:28	16°35'28"	3°49'29"	evening set	15797 Jan 17 10:12	26°32'47"	
minimum elong	15790 Jan 21 10:23	16°35'28"	3°50'07"	max. Earth dist.	15797 Jan 29 13:00	26°54'19"	38.19593 AU
morning rise	15790 Feb 05 20:21	17°01'24"					
retrograde	15790 May 04 21:14	18°27'40"		conjunction	15797 Jan 31 19:51	26°58'25"	6°29'33"
opposition	15790 Jul 24 21:05	17°18'52"	4°13'34"	minimum elong	15797 Jan 31 19:43	26°58'24"	6°30'05"
min. Earth dist.	15790 Jul 26 20:36	17°16'13"	37.84318 AU	morning rise	15797 Feb 15 05:59	27°24'06"	
direct	15790 Oct 13 11:53	16°09'48"		retrograde	15797 May 15 18:49	28°57'44"	
evening set	15791 Jan 07 20:51	17°34'50"		opposition	15797 Aug 04 00:29	27°46'29"	7°03'23"
max. Earth dist.	15791 Jan 20 23:32	17°57'00"	39.71373 AU	min. Earth dist.	15797 Aug 06 02:16	27°43'35"	36.08127 AU
				direct	15797 Oct 23 03:47	26°34'48"	
conjunction	15791 Jan 23 03:32	18°00'41"	4°12'03"	evening set	15798 Jan 19 11:44	28°07'42"	
minimum elong	15791 Jan 23 03:26	18°00'41"	4°12'40"	max. Earth dist.	15798 Jan 31 09:30	28°29'03"	37.94124 AU
morning rise	15791 Feb 07 10:47	18°26'38"					
retrograde	15791 May 06 15:53	19°53'47"		conjunction	15798 Feb 02 16:53	28°33'13"	6°52'41"
opposition	15791 Jul 26 13:14	18°44'37"	4°37'28"	minimum elong	15798 Feb 02 16:43	28°33'12"	6°53'11"
min. Earth dist.	15791 Jul 28 13:12	18°41'56"	37.59162 AU	morning rise	15798 Feb 16 22:10	28°58'47"	
direct	15791 Oct 15 03:06	17°35'10"			15798 Mar 28 02:11	0°00'00"	
evening set	15792 Jan 09 16:59	19°01'08"		retrograde	15798 May 17 17:40	0°00'00"	
max. Earth dist.	15792 Jan 22 16:19	19°23'15"	39.46093 AU		15798 Jul 08 10:00	30°00'00"	
				opposition	15798 Aug 05 20:23	29°22'03"	7°27'57"
conjunction	15792 Jan 24 20:50	19°27'01"	4°34'44"	min. Earth dist.	15798 Aug 07 23:13	29°19'04"	35.82763 AU
minimum elong	15792 Jan 24 20:43	19°27'00"	4°35'20"	direct	15798 Oct 24 22:15	28°09'58"	
morning rise	15792 Feb 09 01:24	19°52'57"		evening set	15799 Jan 21 14:22	29°44'12"	
retrograde	15792 May 07 11:43	21°21'03"			15799 Jan 30 08:37	0°00'00"	
opposition	15792 Jul 27 05:42	20°11'31"	5°01'32"	max. Earth dist.	15799 Feb 02 06:35	0°05'19"	37.68530 AU
min. Earth dist.	15792 Jul 29 05:27	20°08'49"	37.33979 AU				
direct	15792 Oct 15 18:28	19°01'40"		conjunction	15799 Feb 04 14:28	0°09'34"	7°15'49"
evening set	15793 Jan 10 13:52	20°28'39"		minimum elong	15799 Feb 04 14:18	0°09'33"	7°16'19"
max. Earth dist.	15793 Jan 23 09:23	20°50'40"	39.20784 AU	morning rise	15799 Feb 18 14:43	0°34'58"	
				retrograde	15799 May 19 17:08	2°11'08"	
conjunction	15793 Jan 25 14:44	20°54'31"	4°57'33"	opposition	15799 Aug 07 16:48	0°59'09"	7°52'33"
minimum elong	15793 Jan 25 14:37	20°54'31"	4°58'08"	min. Earth dist.	15799 Aug 09 19:28	0°56'09"	35.57285 AU
morning rise	15793 Feb 09 16:12	21°20'27"			15799 Sep 25 09:00	30°00'00"	
retrograde	15793 May 09 05:26	22°49'32"		direct	15799 Oct 26 19:00	29°46'38"	
opposition	15793 Jul 28 22:53	21°39'39"	5°25'43"		15799 Nov 26 18:39	0°00'00"	
min. Earth dist.	15793 Jul 30 23:38	21°36'53"	37.08801 AU	evening set	15800 Jan 23 17:52	1°22'15"	
direct	15793 Oct 17 11:18	20°29'26"		max. Earth dist.	15800 Feb 04 03:12	1°43'01"	37.42810 AU
evening set	15794 Jan 12 11:28	21°57'29"					
max. Earth dist.	15794 Jan 25 04:26	22°19'28"	38.95499 AU	conjunction	15800 Feb 06 12:32	1°47'25"	7°38'58"
				minimum elong	15800 Feb 06 12:21	1°47'25"	7°39'25"
conjunction	15794 Jan 27 09:08	22°23'19"	5°20'27"	morning rise	15800 Feb 20 07:20	2°12'38"	
minimum elong	15794 Jan 27 09:01	22°23'18"	5°21'01"	retrograde	15800 May 21 15:52	3°50'09"	
morning rise	15794 Feb 11 07:12	22°49'13"		opposition	15800 Aug 09 13:56	2°37'44"	8°17'09"
retrograde	15794 May 10 23:58	24°19'21"		min. Earth dist.	15800 Aug 11 18:00	2°34'38"	35.31719 AU
opposition	15794 Jul 30 16:25	23°09'07"	5°50'01"	direct	15800 Oct 28 15:23	1°24'47"	
min. Earth dist.	15794 Aug 01 16:25	23°06'22"	36.83653 AU	evening set	15801 Jan 25 22:23	3°01'49"	
direct	15794 Oct 19 04:19	21°58'32"		max. Earth dist.	15801 Feb 06 02:37	3°22'23"	37.17039 AU
evening set	15795 Jan 14 10:12	23°27'42"					
max. Earth dist.	15795 Jan 26 21:55	23°49'31"	38.70224 AU	conjunction	15801 Feb 08 11:21	3°26'47"	8°02'04"
				minimum elong	15801 Feb 08 11:10	3°26'46"	8°02'31"
conjunction	15795 Jan 29 04:08	23°53'30"	5°43'25"	morning rise	15801 Feb 22 00:12	3°51'46"	
minimum elong	15795 Jan 29 04:00	23°53'30"	5°43'59"	retrograde	15801 May 23 14:37	5°30'40"	
morning rise	15795 Feb 12 22:39	24°19'22"		opposition	15801 Aug 11 11:30	4°17'50"	8°41'42"

min. Earth dist.	15801 Aug 13 14:56	4° <del>11</del> 14'44	35.06141 AU	morning rise	15808 Mar 04 04:58	16° <del>10</del> 08'49	
direct	15801 Oct 30 12:19	3° <del>10</del> 04'24		retrograde	15808 Jun 05 12:00	17° <del>11</del> 59'11	
evening set	15802 Jan 28 03:57	4° <del>11</del> 42'54		opposition	15808 Aug 23 13:17	16° <del>11</del> 43'23	11°29'09
max. Earth dist.	15802 Feb 08 00:28	5° <del>11</del> 03'05	36.91275 AU	min. Earth dist.	15808 Aug 25 16:03	16° <del>11</del> 40'11	33.32064 AU
				direct	15808 Nov 11 03:13	15° <del>11</del> 26'45	
conjunction	15802 Feb 10 10:37	5° <del>11</del> 07'37	8°25'05	evening set	15809 Feb 12 02:42	17° <del>11</del> 17'35	
minimum elong	15802 Feb 10 10:25	5° <del>11</del> 07'36	8°25'30	max. Earth dist.	15809 Feb 20 16:01	17° <del>11</del> 34'34	35.16392 AU
morning rise	15802 Feb 23 17:23	5° <del>11</del> 32'21					
retrograde	15802 May 25 15:00	7° <del>11</del> 12'42		conjunction	15809 Feb 23 01:31	17° <del>11</del> 39'21	11°00'58
opposition	15802 Aug 13 09:46	5° <del>11</del> 59'25	9°06'12	minimum elong	15809 Feb 23 01:17	17° <del>11</del> 39'20	11°01'15
min. Earth dist.	15802 Aug 15 14:14	5° <del>11</del> 56'15	34.80619 AU	morning rise	15809 Mar 06 00:04	18° <del>11</del> 01'07	
direct	15802 Nov 01 07:34	4° <del>11</del> 45'31		retrograde	15809 Jun 07 17:47	19° <del>11</del> 53'26	
evening set	15803 Jan 30 10:34	6° <del>11</del> 25'33		opposition	15809 Aug 25 16:28	18° <del>11</del> 37'14	11°51'53
max. Earth dist.	15803 Feb 10 01:15	6° <del>11</del> 45'27	36.65582 AU	min. Earth dist.	15809 Aug 27 20:00	18° <del>11</del> 33'58	33.08293 AU
				direct	15809 Nov 13 02:54	17° <del>11</del> 20'10	
conjunction	15803 Feb 12 10:46	6° <del>11</del> 49'59	8°48'01	evening set	15810 Feb 14 17:54	19° <del>11</del> 13'04	
minimum elong	15803 Feb 12 10:34	6° <del>11</del> 49'58	8°48'26	max. Earth dist.	15810 Feb 22 22:24	19° <del>11</del> 29'29	34.92466 AU
morning rise	15803 Feb 25 10:41	7° <del>11</del> 14'25					
retrograde	15803 May 27 15:00	8° <del>11</del> 56'15		conjunction	15810 Feb 25 06:55	19° <del>11</del> 34'14	11°21'58
opposition	15803 Aug 15 08:33	7° <del>11</del> 42'32	9°30'35	minimum elong	15810 Feb 25 06:42	19° <del>11</del> 34'13	11°22'12
min. Earth dist.	15803 Aug 17 12:44	7° <del>11</del> 39'21	34.55211 AU	morning rise	15810 Mar 07 19:23	19° <del>11</del> 55'23	
direct	15803 Nov 03 04:42	6° <del>11</del> 28'09		retrograde	15810 Jun 09 23:17	21° <del>11</del> 49'41	
evening set	15804 Feb 01 18:23	8° <del>11</del> 09'48		opposition	15810 Aug 27 20:31	20° <del>11</del> 33'06	12°14'11
max. Earth dist.	15804 Feb 12 01:16	8° <del>11</del> 29'16	36.40049 AU	min. Earth dist.	15810 Aug 29 23:40	20° <del>11</del> 29'50	32.84725 AU
				direct	15810 Nov 15 04:47	19° <del>11</del> 15'36	
conjunction	15804 Feb 14 11:21	8° <del>11</del> 33'53	9°10'48	evening set	15811 Feb 17 10:38	21° <del>11</del> 10'38	
minimum elong	15804 Feb 14 11:08	8° <del>11</del> 33'52	9°11'10	max. Earth dist.	15811 Feb 25 03:39	21° <del>11</del> 26'15	34.68747 AU
morning rise	15804 Feb 27 04:16	8° <del>11</del> 57'59					
retrograde	15804 May 28 18:43	10° <del>11</del> 41'23		conjunction	15811 Feb 27 13:02	21° <del>11</del> 31'07	11°42'32
opposition	15804 Aug 16 08:04	9° <del>11</del> 27'13	9°54'48	minimum elong	15811 Feb 27 12:48	21° <del>11</del> 31'06	11°42'44
min. Earth dist.	15804 Aug 18 11:59	9° <del>11</del> 24'02	34.30012 AU	morning rise	15811 Mar 09 15:06	21° <del>11</del> 51'35	
direct	15804 Nov 04 01:22	8° <del>11</del> 12'21		retrograde	15811 Jun 12 07:58	23° <del>11</del> 47'58	
evening set	15805 Feb 03 02:59	9° <del>11</del> 55'41		opposition	15811 Aug 30 01:13	22° <del>11</del> 30'57	12°36'01
max. Earth dist.	15805 Feb 13 02:49	10° <del>11</del> 14'46	36.14729 AU	min. Earth dist.	15811 Sep 01 04:25	22° <del>11</del> 27'40	32.61376 AU
				direct	15811 Nov 17 06:26	21° <del>11</del> 13'00	
conjunction	15805 Feb 15 12:36	10° <del>11</del> 19'24	9°33'24	evening set	15812 Feb 20 04:33	23° <del>11</del> 10'15	
minimum elong	15805 Feb 15 12:24	10° <del>11</del> 19'23	9°33'45	max. Earth dist.	15812 Feb 27 11:01	23° <del>11</del> 25'07	34.45242 AU
morning rise	15805 Feb 27 21:56	10° <del>11</del> 43'08					
retrograde	15805 May 30 21:17	12° <del>11</del> 28'10		conjunction	15812 Feb 29 20:03	23° <del>11</del> 30'00	12°02'36
opposition	15805 Aug 18 08:24	11° <del>11</del> 13'33	10°18'49	minimum elong	15812 Feb 29 19:50	23° <del>11</del> 29'59	12°02'46
min. Earth dist.	15805 Aug 20 12:36	11° <del>11</del> 10'20	34.05063 AU	morning rise	15812 Mar 10 11:00	23° <del>11</del> 49'43	
direct	15805 Nov 05 23:59	9° <del>11</del> 58'13		retrograde	15812 Jun 13 15:49	25° <del>11</del> 48'13	
evening set	15806 Feb 05 13:07	11° <del>11</del> 43'18		opposition	15812 Aug 31 06:55	24° <del>11</del> 30'47	12°57'19
max. Earth dist.	15806 Feb 15 05:32	12° <del>11</del> 01'59	35.89698 AU	min. Earth dist.	15812 Sep 02 10:17	24° <del>11</del> 27'28	32.38260 AU
				direct	15812 Nov 18 11:11	23° <del>11</del> 12'23	
conjunction	15806 Feb 17 14:42	12° <del>11</del> 06'37	9°55'45	evening set	15813 Feb 21 23:52	25° <del>11</del> 11'54	
minimum elong	15806 Feb 17 14:29	12° <del>11</del> 06'36	9°56'04	max. Earth dist.	15813 Feb 28 18:55	25° <del>11</del> 25'56	34.22019 AU
morning rise	15806 Mar 01 16:01	12° <del>11</del> 29'55					
retrograde	15806 Jun 02 02:38	14° <del>11</del> 16'38		conjunction	15813 Mar 03 03:38	25° <del>11</del> 30'50	12°22'07
opposition	15806 Aug 20 09:09	13° <del>11</del> 01'37	10°42'34	minimum elong	15813 Mar 03 03:25	25° <del>11</del> 30'49	12°22'16
min. Earth dist.	15806 Aug 22 12:19	12° <del>11</del> 58'26	33.80425 AU	morning rise	15813 Mar 12 06:57	25° <del>11</del> 49'44	
direct	15806 Nov 08 01:26	11° <del>11</del> 45'50		retrograde	15813 Jun 16 02:39	27° <del>11</del> 50'25	
evening set	15807 Feb 08 00:22	13° <del>11</del> 32'45		opposition	15813 Sep 02 13:13	26° <del>11</del> 32'34	13°18'02
max. Earth dist.	15807 Feb 17 07:44	13° <del>11</del> 50'53	35.64966 AU	min. Earth dist.	15813 Sep 04 15:38	26° <del>11</del> 29'17	32.15451 AU
				direct	15813 Nov 20 17:28	25° <del>11</del> 13'42	
conjunction	15807 Feb 19 17:34	13° <del>11</del> 55'36	10°17'50	evening set	15814 Feb 24 20:35	27° <del>11</del> 15'34	
minimum elong	15807 Feb 19 17:21	13° <del>11</del> 55'35	10°18'09	max. Earth dist.	15814 Mar 03 03:20	27° <del>11</del> 28'40	33.99114 AU
morning rise	15807 Mar 03 10:30	14° <del>11</del> 18'27					
retrograde	15807 Jun 04 08:00	16° <del>11</del> 06'57		conjunction	15814 Mar 05 12:12	27° <del>11</del> 33'37	12°41'02
opposition	15807 Aug 22 10:55	14° <del>11</del> 51'31	11°06'02	minimum elong	15814 Mar 05 12:00	27° <del>11</del> 33'36	12°41'08
min. Earth dist.	15807 Aug 24 14:51	14° <del>11</del> 48'17	33.56098 AU	morning rise	15814 Mar 14 03:20	27° <del>11</del> 51'38	
direct	15807 Nov 10 01:28	13° <del>11</del> 35'19		retrograde	15814 Jun 18 12:05	29° <del>11</del> 54'34	
evening set	15808 Feb 10 12:50	15° <del>11</del> 24'09		opposition	15814 Sep 04 20:17	28° <del>11</del> 36'18	13°38'04
max. Earth dist.	15808 Feb 19 12:36	15° <del>11</del> 41'50	35.40544 AU	min. Earth dist.	15814 Sep 06 23:20	28° <del>11</del> 32'57	31.93000 AU
				direct	15814 Nov 22 22:57	27° <del>11</del> 16'58	
conjunction	15808 Feb 21 21:08	15° <del>11</del> 46'30	10°39'35	evening set	15815 Feb 27 18:53	29° <del>11</del> 21'14	
minimum elong	15808 Feb 21 20:55	15° <del>11</del> 46'28	10°39'51	max. Earth dist.	15815 Mar 05 13:59	29° <del>11</del> 33'26	33.76619 AU



conjunction	15815 Mar 07 21:33	29° $\text{H}$ 38'20	12°59'16	opposition	15821 Sep 19 20:11	13° $\text{Y}$ 57'20	15°32'42
minimum elong	15815 Mar 07 21:21	29° $\text{H}$ 38'19	12°59'22	min. Earth dist.	15821 Sep 21 16:50	13° $\text{Y}$ 54'17	30.51848 AU
morning rise	15815 Mar 15 23:41	29° $\text{H}$ 55'23		direct	15821 Dec 07 11:07	12° $\text{Y}$ 35'12	
	15815 Mar 18 04:30	0° $\text{Y}$		evening set	15822 Mar 20 05:41	14° $\text{Y}$ 59'10	
retrograde	15815 Jun 20 23:26	2° $\text{Y}$ 00'38		max. Earth dist.	15822 Mar 21 12:10	15° $\text{Y}$ 02'01	32.36114 AU
opposition	15815 Sep 07 04:07	0° $\text{Y}$ 41'57	13°57'21				
min. Earth dist.	15815 Sep 09 05:40	0° $\text{Y}$ 38'40	31.70989 AU	conjunction	15822 Mar 23 12:44	15° $\text{Y}$ 06'33	14°41'30
	15815 Oct 05 00:56	30° $\text{R}$ $\text{H}$		minimum elong	15822 Mar 23 12:37	15° $\text{Y}$ 06'32	14°41'21
direct	15815 Nov 25 07:07	29° $\text{H}$ 22'10		morning rise	15822 Mar 26 19:33	15° $\text{Y}$ 13'55	
	15816 Jan 13 23:49	0° $\text{Y}$		retrograde	15822 Jul 06 21:09	17° $\text{Y}$ 38'05	
evening set	15816 Mar 01 18:21	1° $\text{Y}$ 28'55		opposition	15822 Sep 22 09:30	16° $\text{Y}$ 16'57	15°44'30
max. Earth dist.	15816 Mar 06 23:35	1° $\text{Y}$ 40'01	33.54600 AU	min. Earth dist.	15822 Sep 24 04:24	16° $\text{Y}$ 14'00	30.34329 AU
				direct	15822 Dec 10 00:39	14° $\text{Y}$ 54'28	
conjunction	15816 Mar 09 07:26	1° $\text{Y}$ 44'59	13°16'44	evening set	15823 Mar 23 23:00	17° $\text{Y}$ 22'07	
minimum elong	15816 Mar 09 07:14	1° $\text{Y}$ 44'58	13°16'47	max. Earth dist.	15823 Mar 24 04:39	17° $\text{Y}$ 22'39	32.18728 AU
morning rise	15816 Mar 16 20:07	2° $\text{Y}$ 00'59					
retrograde	15816 Jun 22 11:42	4° $\text{Y}$ 08'39		conjunction	15823 Mar 26 04:33	17° $\text{Y}$ 27'09	14°51'40
opposition	15816 Sep 08 12:51	2° $\text{Y}$ 49'32	14°15'49	minimum elong	15823 Mar 26 04:28	17° $\text{Y}$ 27'08	14°51'31
min. Earth dist.	15816 Sep 10 14:31	2° $\text{Y}$ 46'14	31.49501 AU	morning rise	15823 Mar 28 09:56	17° $\text{Y}$ 32'10	
direct	15816 Nov 26 13:28	1° $\text{Y}$ 29'18		retrograde	15823 Jul 09 13:18	19° $\text{Y}$ 59'52	
evening set	15817 Mar 04 19:32	3° $\text{Y}$ 38'39		opposition	15823 Sep 24 23:55	18° $\text{Y}$ 38'26	15°54'58
max. Earth dist.	15817 Mar 09 12:32	3° $\text{Y}$ 48'44	33.33150 AU	min. Earth dist.	15823 Sep 26 18:56	18° $\text{Y}$ 35'28	30.17433 AU
				direct	15823 Dec 12 13:07	17° $\text{Y}$ 15'37	
conjunction	15817 Mar 11 18:20	3° $\text{Y}$ 53'34	13°33'23	max. Earth dist.	15824 Mar 25 22:52	19° $\text{Y}$ 45'12	32.02003 AU
minimum elong	15817 Mar 11 18:09	3° $\text{Y}$ 53'33	13°33'25				
morning rise	15817 Mar 18 16:37	4° $\text{Y}$ 08'26		conjunction	15824 Mar 27 20:56	19° $\text{Y}$ 49'33	15°00'34
retrograde	15817 Jun 24 22:09	6° $\text{Y}$ 18'34		minimum elong	15824 Mar 27 20:52	19° $\text{Y}$ 49'33	15°00'21
opposition	15817 Sep 10 22:13	4° $\text{Y}$ 59'04	14°33'21	retrograde	15824 Jul 11 07:42	22° $\text{Y}$ 23'23	
min. Earth dist.	15817 Sep 12 22:16	4° $\text{Y}$ 55'51	31.28606 AU	opposition	15824 Sep 26 14:55	21° $\text{Y}$ 01'39	16°04'03
direct	15817 Nov 28 22:09	3° $\text{Y}$ 38'24		min. Earth dist.	15824 Sep 28 07:52	20° $\text{Y}$ 58'49	30.01178 AU
evening set	15818 Mar 07 22:16	5° $\text{Y}$ 50'25		direct	15824 Dec 14 05:12	19° $\text{Y}$ 38'31	
max. Earth dist.	15818 Mar 12 00:10	5° $\text{Y}$ 59'15	33.12342 AU	max. Earth dist.	15825 Mar 28 16:15	22° $\text{Y}$ 09'16	31.85951 AU
conjunction	15818 Mar 14 05:56	6° $\text{Y}$ 04'06	13°49'07	conjunction	15825 Mar 30 14:05	22° $\text{Y}$ 13'38	15°08'07
minimum elong	15818 Mar 14 05:45	6° $\text{Y}$ 04'05	13°49'06	minimum elong	15825 Mar 30 14:03	22° $\text{Y}$ 13'38	15°07'54
morning rise	15818 Mar 20 13:15	6° $\text{Y}$ 17'46		retrograde	15825 Jul 14 01:49	24° $\text{Y}$ 48'31	
retrograde	15818 Jun 27 10:42	8° $\text{Y}$ 30'27		opposition	15825 Sep 29 06:34	23° $\text{Y}$ 26'29	16°11'40
opposition	15818 Sep 13 08:30	7° $\text{Y}$ 10'35	14°49'53	min. Earth dist.	15825 Sep 30 23:22	23° $\text{Y}$ 23'39	29.85609 AU
min. Earth dist.	15818 Sep 15 07:54	7° $\text{Y}$ 07'24	31.08378 AU	direct	15825 Dec 16 19:56	22° $\text{Y}$ 03'00	
direct	15818 Dec 01 05:33	5° $\text{Y}$ 49'30		max. Earth dist.	15826 Mar 31 12:31	24° $\text{Y}$ 35'05	31.70634 AU
evening set	15819 Mar 11 02:46	8° $\text{Y}$ 04'18					
max. Earth dist.	15819 Mar 14 14:45	8° $\text{Y}$ 11'56	32.92221 AU	conjunction	15826 Apr 02 08:00	24° $\text{Y}$ 39'15	15°14'15
				minimum elong	15826 Apr 02 07:58	24° $\text{Y}$ 39'15	15°13'59
conjunction	15819 Mar 16 18:29	8° $\text{Y}$ 16'39	14°03'51	retrograde	15826 Jul 16 19:27	27° $\text{Y}$ 15'06	
minimum elong	15819 Mar 16 18:19	8° $\text{Y}$ 16'38	14°03'49	opposition	15826 Oct 01 22:51	25° $\text{Y}$ 52'47	16°17'44
morning rise	15819 Mar 22 09:45	8° $\text{Y}$ 28'59		min. Earth dist.	15826 Oct 03 13:38	25° $\text{Y}$ 50'05	29.70765 AU
retrograde	15819 Jun 29 22:52	10° $\text{Y}$ 44'20		direct	15826 Dec 19 12:57	24° $\text{Y}$ 29'00	
opposition	15819 Sep 15 19:35	9° $\text{Y}$ 24'07	15°05'20	max. Earth dist.	15827 Apr 03 07:12	27° $\text{Y}$ 02'08	31.56098 AU
min. Earth dist.	15819 Sep 17 17:56	9° $\text{Y}$ 20'59	30.88836 AU				
direct	15819 Dec 03 14:18	8° $\text{Y}$ 02'40		conjunction	15827 Apr 05 02:14	27° $\text{Y}$ 06'17	15°18'55
evening set	15820 Mar 13 09:10	10° $\text{Y}$ 20'21		minimum elong	15827 Apr 05 02:14	27° $\text{Y}$ 06'17	15°18'38
max. Earth dist.	15820 Mar 16 04:32	10° $\text{Y}$ 26'32	32.72829 AU	retrograde	15827 Jul 19 14:46	29° $\text{Y}$ 43'02	
				opposition	15827 Oct 04 15:44	28° $\text{Y}$ 20'27	16°22'11
conjunction	15820 Mar 18 07:40	10° $\text{Y}$ 31'14	14°17'32	min. Earth dist.	15827 Oct 06 05:35	28° $\text{Y}$ 17'48	29.56728 AU
minimum elong	15820 Mar 18 07:32	10° $\text{Y}$ 31'13	14°17'28	direct	15827 Dec 22 04:33	26° $\text{Y}$ 56'21	
morning rise	15820 Mar 23 05:53	10° $\text{Y}$ 42'06		max. Earth dist.	15828 Apr 05 05:02	29° $\text{Y}$ 30'44	31.42426 AU
retrograde	15820 Jul 01 14:16	13° $\text{Y}$ 00'14					
opposition	15820 Sep 17 07:25	11° $\text{Y}$ 39'42	15°19'37	conjunction	15828 Apr 06 21:09	29° $\text{Y}$ 34'37	15°22'03
min. Earth dist.	15820 Sep 19 04:20	11° $\text{Y}$ 36'39	30.70011 AU	minimum elong	15828 Apr 06 21:11	29° $\text{Y}$ 34'37	15°21'43
direct	15820 Dec 04 23:18	10° $\text{Y}$ 17'54			15828 Apr 17 19:36	0° $\text{B}$	
evening set	15821 Mar 16 17:46	12° $\text{Y}$ 38'38		retrograde	15828 Jul 21 08:47	2° $\text{B}$ 12'11	
max. Earth dist.	15821 Mar 18 20:04	12° $\text{Y}$ 43'17	32.54133 AU	opposition	15828 Oct 06 09:11	0° $\text{B}$ 49'21	16°24'57
				min. Earth dist.	15828 Oct 07 21:16	0° $\text{B}$ 46'49	29.43560 AU
conjunction	15821 Mar 20 21:45	12° $\text{Y}$ 47'53	14°30'06		15828 Nov 06 14:29	30° $\text{R}$ $\text{Y}$	
minimum elong	15821 Mar 20 21:37	12° $\text{Y}$ 47'52	14°30'00	direct	15828 Dec 23 21:37	29° $\text{Y}$ 24'59	
morning rise	15821 Mar 25 01:25	12° $\text{Y}$ 57'07			15829 Feb 07 20:27	0° $\text{B}$	
retrograde	15821 Jul 04 04:06	15° $\text{Y}$ 18'10		max. Earth dist.	15829 Apr 08 01:11	2° $\text{B}$ 00'19	31.29698 AU

conjunction	15829 Apr 09 16:17	2° <del>8</del> 04'08	15°23'35	min. Earth dist.	15836 Oct 27 16:20	21° <del>8</del> 14'13	28.75494 AU
minimum elong	15829 Apr 09 16:21	2° <del>8</del> 04'08	15°23'13	direct	15837 Jan 13 07:49	19° <del>8</del> 50'24	
retrograde	15829 Jul 24 04:05	4° <del>8</del> 42'28		evening set	15837 Apr 26 17:23	22° <del>8</del> 24'25	
opposition	15829 Oct 09 03:05	3° <del>8</del> 19'24	16°25'58				
min. Earth dist.	15829 Oct 10 13:14	3° <del>8</del> 16'59	29.31353 AU	conjunction	15837 Apr 30 14:54	22° <del>8</del> 33'44	14°33'51
direct	15829 Dec 26 14:40	1° <del>8</del> 54'46		minimum elong	15837 Apr 30 15:12	22° <del>8</del> 33'46	14°33'15
max. Earth dist.	15830 Apr 10 23:59	4° <del>8</del> 31'12	31.17979 AU	max. Earth dist.	15837 Apr 29 18:44	22° <del>8</del> 31'43	30.66546 AU
				morning rise	15837 May 04 12:56	22° <del>8</del> 43'06	
conjunction	15830 Apr 12 12:08	4° <del>8</del> 34'45	15°23'27	retrograde	15837 Aug 13 21:11	25° <del>8</del> 15'11	
minimum elong	15830 Apr 12 12:14	4° <del>8</del> 34'45	15°23'03	opposition	15837 Oct 29 16:17	23° <del>8</del> 51'36	15°26'51
retrograde	15830 Jul 26 21:44	7° <del>8</del> 13'46		min. Earth dist.	15837 Oct 30 10:20	23° <del>8</del> 50'19	28.71584 AU
opposition	15830 Oct 11 21:32	5° <del>8</del> 50'31	16°25'10	direct	15838 Jan 16 06:42	22° <del>8</del> 26'19	
min. Earth dist.	15830 Oct 13 06:07	5° <del>8</del> 48'13	29.20160 AU	evening set	15838 Apr 28 17:27	24° <del>8</del> 58'13	
direct	15830 Dec 29 08:41	4° <del>8</del> 25'41					
max. Earth dist.	15831 Apr 13 21:43	7° <del>8</del> 03'01	31.07357 AU	conjunction	15838 May 03 12:24	25° <del>8</del> 09'41	14°19'53
				minimum elong	15838 May 03 12:42	25° <del>8</del> 09'42	14°19'15
conjunction	15831 Apr 15 08:12	7° <del>8</del> 06'24	15°21'36	max. Earth dist.	15838 May 02 17:24	25° <del>8</del> 07'47	30.63351 AU
minimum elong	15831 Apr 15 08:20	7° <del>8</del> 06'25	15°21'11	morning rise	15838 May 08 07:50	25° <del>8</del> 21'11	
retrograde	15831 Jul 29 18:53	9° <del>8</del> 46'02		retrograde	15838 Aug 16 18:17	27° <del>8</del> 51'03	
opposition	15831 Oct 14 16:23	8° <del>8</del> 22'39	16°22'30	opposition	15838 Nov 01 12:46	26° <del>8</del> 27'28	15°11'07
min. Earth dist.	15831 Oct 15 22:05	8° <del>8</del> 20'33	29.10062 AU	min. Earth dist.	15838 Nov 02 05:06	26° <del>8</del> 26'19	28.68683 AU
direct	15832 Jan 01 02:56	6° <del>8</del> 57'39		direct	15839 Jan 19 03:19	25° <del>8</del> 02'11	
max. Earth dist.	15832 Apr 15 20:55	9° <del>8</del> 35'56	30.97856 AU	evening set	15839 Apr 30 19:24	27° <del>8</del> 32'04	
conjunction	15832 Apr 17 04:35	9° <del>8</del> 39'03	15°18'01	conjunction	15839 May 06 09:55	27° <del>8</del> 45'28	14°04'15
minimum elong	15832 Apr 17 04:44	9° <del>8</del> 39'04	15°17'33	minimum elong	15839 May 06 10:15	27° <del>8</del> 45'30	14°03'36
retrograde	15832 Jul 31 13:14	12° <del>8</del> 19'14		max. Earth dist.	15839 May 05 18:22	27° <del>8</del> 43'55	30.61197 AU
opposition	15832 Oct 16 11:47	10° <del>8</del> 55'46	16°17'56	morning rise	15839 May 12 00:50	27° <del>8</del> 58'55	
min. Earth dist.	15832 Oct 17 16:15	10° <del>8</del> 53'44	29.01059 AU		15839 Jul 11 14:12	0° <del>II</del>	
direct	15833 Jan 02 20:55	9° <del>8</del> 30'40		retrograde	15839 Aug 19 14:35	0° <del>II</del> 26'38	
max. Earth dist.	15833 Apr 18 20:02	12° <del>8</del> 09'45	30.89491 AU		15839 Sep 28 15:18	30° <del>R</del> <del>8</del>	
				opposition	15839 Nov 04 09:17	29° <del>8</del> 03'05	14°53'37
conjunction	15833 Apr 20 01:24	12° <del>8</del> 12'39	15°12'40	min. Earth dist.	15839 Nov 04 23:31	29° <del>8</del> 02'05	28.66801 AU
minimum elong	15833 Apr 20 01:36	12° <del>8</del> 12'40	15°12'11	direct	15840 Jan 22 02:07	27° <del>8</del> 37'49	
retrograde	15833 Aug 03 10:23	14° <del>8</del> 53'18			15840 Apr 29 12:51	0° <del>II</del>	
opposition	15833 Oct 19 07:12	13° <del>8</del> 29'46	16°11'28	evening set	15840 May 01 22:06	0° <del>II</del> 05'40	
min. Earth dist.	15833 Oct 20 08:45	13° <del>8</del> 27'57	28.93140 AU				
direct	15834 Jan 05 18:06	12° <del>8</del> 04'36		conjunction	15840 May 08 06:55	0° <del>II</del> 20'53	13°47'00
				minimum elong	15840 May 08 07:15	0° <del>II</del> 20'55	13°46'21
conjunction	15834 Apr 22 22:35	14° <del>8</del> 47'06	15°05'33	max. Earth dist.	15840 May 07 16:41	0° <del>II</del> 19'28	30.60110 AU
minimum elong	15834 Apr 22 22:46	14° <del>8</del> 47'07	15°05'02	morning rise	15840 May 14 16:11	0° <del>II</del> 36'08	
max. Earth dist.	15834 Apr 21 19:16	14° <del>8</del> 44'23	30.82202 AU	retrograde	15840 Aug 21 10:18	3° <del>II</del> 01'46	
	15834 Apr 28 08:35	15° <del>8</del>		opposition	15840 Nov 06 05:36	1° <del>II</del> 38'15	14°34'23
retrograde	15834 Aug 06 06:16	17° <del>8</del> 28'06		min. Earth dist.	15840 Nov 06 17:15	1° <del>II</del> 37'25	28.65998 AU
opposition	15834 Oct 22 03:14	16° <del>8</del> 04'33	16°03'06	direct	15841 Jan 23 23:29	0° <del>II</del> 13'00	
min. Earth dist.	15834 Oct 23 03:52	16° <del>8</del> 02'48	28.86259 AU	evening set	15841 May 04 01:45	2° <del>II</del> 38'51	
	15834 Dec 04 01:53	15° <del>R</del> <del>8</del>					
direct	15835 Jan 08 13:24	14° <del>8</del> 39'20		conjunction	15841 May 11 03:59	2° <del>II</del> 55'45	13°28'11
	15835 Feb 12 09:37	15° <del>8</del>		minimum elong	15841 May 11 04:21	2° <del>II</del> 55'48	13°27'29
evening set	15835 Apr 24 08:19	17° <del>8</del> 18'41		max. Earth dist.	15841 May 10 17:21	2° <del>II</del> 54'42	30.60130 AU
				morning rise	15841 May 18 06:30	3° <del>II</del> 12'42	
conjunction	15835 Apr 25 19:52	17° <del>8</del> 22'13	14°56'42	retrograde	15841 Aug 24 04:18	5° <del>II</del> 36'13	
minimum elong	15835 Apr 25 20:07	17° <del>8</del> 22'15	14°56'10	opposition	15841 Nov 09 01:41	4° <del>II</del> 12'46	14°13'27
max. Earth dist.	15835 Apr 24 19:13	17° <del>8</del> 19'46	30.75967 AU	min. Earth dist.	15841 Nov 09 11:36	4° <del>II</del> 12'04	28.66301 AU
morning rise	15835 Apr 27 07:55	17° <del>8</del> 25'49		direct	15842 Jan 26 21:10	2° <del>II</del> 47'34	
retrograde	15835 Aug 09 03:43	20° <del>8</del> 03'29		evening set	15842 May 06 05:56	5° <del>II</del> 11'25	
opposition	15835 Oct 24 23:24	18° <del>8</del> 39'55	15°52'52				
min. Earth dist.	15835 Oct 25 21:08	18° <del>8</del> 38'22	28.80378 AU	conjunction	15842 May 14 00:33	5° <del>II</del> 29'55	13°07'48
direct	15836 Jan 11 11:01	17° <del>8</del> 14'40		minimum elong	15842 May 14 00:55	5° <del>II</del> 29'57	13°07'06
evening set	15836 Apr 24 20:18	19° <del>8</del> 50'58		max. Earth dist.	15842 May 13 15:36	5° <del>II</del> 29'02	30.61315 AU
				morning rise	15842 May 21 19:33	5° <del>II</del> 48'27	
conjunction	15836 Apr 27 17:18	19° <del>8</del> 57'50	14°46'08	retrograde	15842 Aug 27 00:26	8° <del>II</del> 09'54	
minimum elong	15836 Apr 27 17:33	19° <del>8</del> 57'52	14°45'33	opposition	15842 Nov 11 21:36	6° <del>II</del> 46'31	13°50'51
max. Earth dist.	15836 Apr 26 18:06	19° <del>8</del> 55'32	30.70745 AU	min. Earth dist.	15842 Nov 12 04:10	6° <del>II</del> 46'03	28.67787 AU
morning rise	15836 Apr 30 14:47	20° <del>8</del> 04'46		direct	15843 Jan 29 18:14	5° <del>II</del> 21'24	
retrograde	15836 Aug 11 00:50	22° <del>8</del> 39'16		evening set	15843 May 08 10:19	7° <del>II</del> 43'15	
opposition	15836 Oct 26 19:48	21° <del>8</del> 15'40	15°40'47				

conjunction	15843 May 16 20:46	8° $\Pi$ 03'15	12°45'56	direct	15850 Feb 16 13:49	22° $\Pi$ 52'47	
minimum elong	15843 May 16 21:09	8° $\Pi$ 03'18	12°45'12	evening set	15850 May 22 01:44	25° $\Pi$ 01'15	
max. Earth dist.	15843 May 16 15:31	8° $\Pi$ 02'44	30.63705 AU				
morning rise	15843 May 25 07:24	8° $\Pi$ 23'17		conjunction	15850 Jun 03 06:17	25° $\Pi$ 29'16	9°37'48
retrograde	15843 Aug 29 16:53	10° $\Pi$ 42'41		minimum elong	15850 Jun 03 06:38	25° $\Pi$ 29'18	9°37'00
opposition	15843 Nov 14 17:24	9° $\Pi$ 19'26	13°26'41	max. Earth dist.	15850 Jun 03 18:30	25° $\Pi$ 30'27	31.12848 AU
min. Earth dist.	15843 Nov 14 22:16	9° $\Pi$ 19'05	28.70488 AU	morning rise	15850 Jun 15 10:15	25° $\Pi$ 57'15	
direct	15844 Feb 01 14:02	7° $\Pi$ 54'27		retrograde	15850 Sep 15 13:11	28° $\Pi$ 03'09	
evening set	15844 May 09 15:14	10° $\Pi$ 14'18		opposition	15850 Dec 02 00:45	26° $\Pi$ 41'35	10°01'00
				min. Earth dist.	15850 Dec 01 13:25	26° $\Pi$ 42'22	29.21010 AU
conjunction	15844 May 18 16:35	10° $\Pi$ 35'43	12°22'37	direct	15851 Feb 19 10:20	25° $\Pi$ 18'21	
minimum elong	15844 May 18 16:57	10° $\Pi$ 35'45	12°21'54	evening set	15851 May 24 08:03	27° $\Pi$ 25'00	
max. Earth dist.	15844 May 18 13:34	10° $\Pi$ 35'25	30.67353 AU				
morning rise	15844 May 27 18:08	10° $\Pi$ 57'09		conjunction	15851 Jun 05 22:25	27° $\Pi$ 53'48	9°07'05
retrograde	15844 Aug 31 10:50	13° $\Pi$ 14'32		minimum elong	15851 Jun 05 22:46	27° $\Pi$ 53'50	9°06'16
opposition	15844 Nov 16 12:37	11° $\Pi$ 51'27	13°01'00	max. Earth dist.	15851 Jun 06 11:39	27° $\Pi$ 55'04	31.23807 AU
min. Earth dist.	15844 Nov 16 13:51	11° $\Pi$ 51'22	28.74427 AU	morning rise	15851 Jun 18 12:27	28° $\Pi$ 22'34	
direct	15845 Feb 03 11:46	10° $\Pi$ 26'38			15851 Aug 09 07:57	0° $\Theta$	
evening set	15845 May 11 20:18	12° $\Pi$ 44'33		retrograde	15851 Sep 18 04:49	0° $\Theta$ 26'40	
					15851 Oct 29 04:11	30° $\mathbb{R}$ $\Pi$	
conjunction	15845 May 21 12:05	13° $\Pi$ 07'17	11°57'58	opposition	15851 Dec 04 17:02	29° $\Pi$ 05'22	9°27'42
minimum elong	15845 May 21 12:29	13° $\Pi$ 07'19	11°57'12	min. Earth dist.	15851 Dec 04 03:02	29° $\Pi$ 06'19	29.32097 AU
max. Earth dist.	15845 May 21 12:13	13° $\Pi$ 07'18	30.72226 AU	direct	15852 Feb 22 04:49	27° $\Pi$ 42'25	
morning rise	15845 May 31 03:55	13° $\Pi$ 30'02		evening set	15852 May 25 14:20	29° $\Pi$ 47'18	
retrograde	15845 Sep 03 03:39	15° $\Pi$ 45'25			15852 May 31 05:26	0° $\Theta$	
opposition	15845 Nov 19 07:44	14° $\Pi$ 22'33	12°33'54				
min. Earth dist.	15845 Nov 19 07:25	14° $\Pi$ 22'34	28.79566 AU	conjunction	15852 Jun 07 14:11	0° $\Theta$ 16'48	8°35'41
direct	15846 Feb 06 06:37	12° $\Pi$ 57'57		minimum elong	15852 Jun 07 14:31	0° $\Theta$ 16'50	8°34'54
evening set	15846 May 14 01:48	15° $\Pi$ 13'56		max. Earth dist.	15852 Jun 08 06:29	0° $\Theta$ 18'21	31.35635 AU
				morning rise	15852 Jun 20 13:16	0° $\Theta$ 46'15	
conjunction	15846 May 24 07:05	15° $\Pi$ 37'54	11°32'03	retrograde	15852 Sep 19 16:51	2° $\Theta$ 48'35	
minimum elong	15846 May 24 07:28	15° $\Pi$ 37'56	11°31'17	opposition	15852 Dec 06 08:38	1° $\Theta$ 27'34	8°53'44
max. Earth dist.	15846 May 24 09:44	15° $\Pi$ 38'09	30.78280 AU	min. Earth dist.	15852 Dec 05 17:36	1° $\Theta$ 28'36	29.44050 AU
morning rise	15846 Jun 03 12:21	16° $\Pi$ 01'53		direct	15853 Feb 23 22:56	0° $\Theta$ 04'55	
retrograde	15846 Sep 05 20:55	18° $\Pi$ 15'18		evening set	15853 May 27 20:47	2° $\Theta$ 08'02	
opposition	15846 Nov 22 02:18	16° $\Pi$ 52'40	12°05'29				
min. Earth dist.	15846 Nov 21 22:45	16° $\Pi$ 52'55	28.85835 AU	conjunction	15853 Jun 10 05:05	2° $\Theta$ 38'09	8°03'42
direct	15847 Feb 09 03:29	15° $\Pi$ 28'20		minimum elong	15853 Jun 10 05:24	2° $\Theta$ 38'11	8°02'53
evening set	15847 May 16 07:27	17° $\Pi$ 42'23		max. Earth dist.	15853 Jun 10 22:23	2° $\Theta$ 39'48	31.48330 AU
				morning rise	15853 Jun 23 12:49	3° $\Theta$ 08'13	
conjunction	15847 May 27 01:37	18° $\Pi$ 07'30	11°04'58	retrograde	15853 Sep 22 06:24	5° $\Theta$ 08'50	
minimum elong	15847 May 27 02:01	18° $\Pi$ 07'33	11°04'11	opposition	15853 Dec 08 23:34	3° $\Theta$ 48'05	8°19'11
max. Earth dist.	15847 May 27 06:32	18° $\Pi$ 07'59	30.85428 AU	min. Earth dist.	15853 Dec 08 05:33	3° $\Theta$ 49'19	29.56890 AU
morning rise	15847 Jun 06 19:45	18° $\Pi$ 32'38		direct	15854 Feb 26 16:16	2° $\Theta$ 25'43	
retrograde	15847 Sep 08 13:27	20° $\Pi$ 44'08		evening set	15854 May 30 02:57	4° $\Theta$ 27'08	
opposition	15847 Nov 24 20:41	19° $\Pi$ 21'45	11°35'53				
min. Earth dist.	15847 Nov 24 15:30	19° $\Pi$ 22'06	28.93184 AU	conjunction	15854 Jun 12 19:17	4° $\Theta$ 57'48	7°31'13
direct	15848 Feb 11 22:39	17° $\Pi$ 57'40		minimum elong	15854 Jun 12 19:34	4° $\Theta$ 57'50	7°30'24
evening set	15848 May 17 13:17	20° $\Pi$ 09'50		max. Earth dist.	15854 Jun 13 15:42	4° $\Theta$ 59'43	31.61897 AU
				morning rise	15854 Jun 26 10:43	5° $\Theta$ 28'23	
conjunction	15848 May 28 19:39	20° $\Pi$ 36'00	10°36'50	retrograde	15854 Sep 24 17:31	7° $\Theta$ 27'20	
minimum elong	15848 May 28 20:01	20° $\Pi$ 36'03	10°36'03	opposition	15854 Dec 11 14:01	6° $\Theta$ 06'53	7°44'08
max. Earth dist.	15848 May 29 03:23	20° $\Pi$ 36'46	30.93621 AU	min. Earth dist.	15854 Dec 10 18:53	6° $\Theta$ 08'10	29.70641 AU
morning rise	15848 Jun 09 01:42	21° $\Pi$ 02'10		direct	15855 Mar 01 07:40	4° $\Theta$ 44'48	
retrograde	15848 Sep 10 05:41	23° $\Pi$ 11'46		evening set	15855 Jun 01 09:12	6° $\Theta$ 44'34	
opposition	15848 Nov 26 14:32	21° $\Pi$ 49'39	11°05'12				
min. Earth dist.	15848 Nov 26 06:55	21° $\Pi$ 50'11	29.01522 AU	conjunction	15855 Jun 15 08:39	7° $\Theta$ 15'41	6°58'18
direct	15849 Feb 13 19:49	20° $\Pi$ 25'51		minimum elong	15855 Jun 15 08:55	7° $\Theta$ 15'42	6°57'28
evening set	15849 May 19 19:28	22° $\Pi$ 36'09		max. Earth dist.	15855 Jun 16 06:42	7° $\Theta$ 17'45	31.76389 AU
				morning rise	15855 Jun 29 07:16	7° $\Theta$ 46'44	
conjunction	15849 May 31 13:11	23° $\Pi$ 03'18	10°07'45	retrograde	15855 Sep 27 03:52	9° $\Theta$ 44'04	
minimum elong	15849 May 31 13:33	23° $\Pi$ 03'20	10°06'57	min. Earth dist.	15855 Dec 13 05:15	8° $\Theta$ 25'25	29.85341 AU
max. Earth dist.	15849 May 31 22:22	23° $\Pi$ 04'11	31.02770 AU	opposition	15855 Dec 14 03:39	8° $\Theta$ 23'55	7°08'41
morning rise	15849 Jun 12 06:43	23° $\Pi$ 30'25		direct	15856 Mar 02 23:57	7° $\Theta$ 02'09	
retrograde	15849 Sep 12 21:55	25° $\Pi$ 38'09		evening set	15856 Jun 02 15:14	9° $\Theta$ 00'19	
opposition	15849 Nov 29 07:49	24° $\Pi$ 16'18	10°33'32				
min. Earth dist.	15849 Nov 28 22:13	24° $\Pi$ 16'58	29.10817 AU	conjunction	15856 Jun 16 21:16	9° $\Theta$ 31'50	6°25'02

minimum elong	15856 Jun 16 21:31	9° $\overline{03}$ 1'51	6°24'13	evening set	15863 Jun 17 08:19	24° $\overline{06}$ 1'6	
max. Earth dist.	15856 Jun 17 21:56	9° $\overline{03}$ 34'07	31.91813 AU				
morning rise	15856 Jul 01 02:22	10° $\overline{00}$ 03'15		conjunction	15863 Jul 02 18:37	24° $\overline{03}$ 38'40	2°29'17
retrograde	15856 Sep 28 13:07	11° $\overline{05}$ 59'04		minimum elong	15863 Jul 02 18:43	24° $\overline{03}$ 38'40	2°28'30
opposition	15856 Dec 15 16:47	10° $\overline{05}$ 39'14	6°32'55	max. Earth dist.	15863 Jul 04 07:23	24° $\overline{03}$ 41'54	33.21609 AU
min. Earth dist.	15856 Dec 14 16:53	10° $\overline{05}$ 40'49	30.00999 AU	morning rise	15863 Jul 18 03:32	25° $\overline{05}$ 10'57	
direct	15857 Mar 05 13:22	9° $\overline{05}$ 17'49		retrograde	15863 Oct 13 23:34	26° $\overline{05}$ 57'45	
evening set	15857 Jun 04 21:20	11° $\overline{05}$ 14'28		min. Earth dist.	15863 Dec 30 06:45	25° $\overline{05}$ 42'39	31.31950 AU
				opposition	15863 Dec 31 17:51	25° $\overline{05}$ 40'24	2°21'13
conjunction	15857 Jun 19 09:18	11° $\overline{05}$ 46'17	5°51'30	direct	15864 Mar 21 05:06	24° $\overline{05}$ 21'40	
minimum elong	15857 Jun 19 09:32	11° $\overline{05}$ 46'18	5°50'40	evening set	15864 Jun 18 13:43	26° $\overline{05}$ 09'13	
max. Earth dist.	15857 Jun 20 12:03	11° $\overline{05}$ 48'45	32.08171 AU				
morning rise	15857 Jul 03 20:10	12° $\overline{05}$ 18'01		conjunction	15864 Jul 04 01:44	26° $\overline{05}$ 41'30	1°56'03
retrograde	15857 Sep 30 22:39	14° $\overline{05}$ 12'22		minimum elong	15864 Jul 04 01:49	26° $\overline{05}$ 41'31	1°55'18
min. Earth dist.	15857 Dec 17 02:38	12° $\overline{05}$ 54'38	30.17566 AU	max. Earth dist.	15864 Jul 05 14:59	26° $\overline{05}$ 44'46	33.42375 AU
opposition	15857 Dec 18 05:01	12° $\overline{05}$ 52'53	5°56'56	morning rise	15864 Jul 19 12:27	27° $\overline{05}$ 13'41	
direct	15858 Mar 08 03:18	11° $\overline{05}$ 31'51		retrograde	15864 Oct 15 03:45	28° $\overline{05}$ 59'24	
evening set	15858 Jun 07 03:25	13° $\overline{05}$ 27'02		min. Earth dist.	15864 Dec 31 12:29	27° $\overline{05}$ 44'45	31.52835 AU
				opposition	15865 Jan 02 01:37	27° $\overline{05}$ 42'23	1°45'58
conjunction	15858 Jun 21 20:33	13° $\overline{05}$ 59'06	5°17'47	direct	15865 Mar 23 15:39	26° $\overline{05}$ 23'59	
minimum elong	15858 Jun 21 20:45	13° $\overline{05}$ 59'07	5°16'59	evening set	15865 Jun 20 19:01	28° $\overline{05}$ 10'25	
max. Earth dist.	15858 Jun 23 01:01	14° $\overline{05}$ 01'42	32.25389 AU				
morning rise	15858 Jul 06 12:42	14° $\overline{05}$ 31'05		conjunction	15865 Jul 06 08:12	28° $\overline{05}$ 42'35	1°23'06
retrograde	15858 Oct 03 08:37	16° $\overline{05}$ 24'02		minimum elong	15865 Jul 06 08:15	28° $\overline{05}$ 42'35	1°22'21
opposition	15858 Dec 20 16:50	15° $\overline{05}$ 04'54	5°20'49	max. Earth dist.	15865 Jul 07 22:52	28° $\overline{05}$ 45'56	33.63532 AU
min. Earth dist.	15858 Dec 19 12:33	15° $\overline{05}$ 06'46	30.34997 AU	morning rise	15865 Jul 21 20:06	29° $\overline{05}$ 14'37	
direct	15859 Mar 10 15:37	13° $\overline{05}$ 44'16			15865 Aug 14 18:13	0° $\overline{05}$	
evening set	15859 Jun 09 09:11	15° $\overline{05}$ 38'03		retrograde	15865 Oct 17 07:09	0° $\overline{05}$ 59'17	
					15865 Dec 23 18:53	30° $\overline{05}$	
conjunction	15859 Jun 24 07:03	16° $\overline{05}$ 10'18	4°43'59	min. Earth dist.	15866 Jan 02 18:59	29° $\overline{05}$ 44'59	31.74152 AU
minimum elong	15859 Jun 24 07:14	16° $\overline{05}$ 10'19	4°43'10	opposition	15866 Jan 04 08:47	29° $\overline{05}$ 42'36	1°11'03
max. Earth dist.	15859 Jun 25 14:10	16° $\overline{05}$ 13'07	32.43405 AU	direct	15866 Mar 25 23:21	28° $\overline{05}$ 24'32	
morning rise	15859 Jul 09 03:38	16° $\overline{05}$ 42'27			15866 Jun 18 00:44	0° $\overline{05}$	
retrograde	15859 Oct 05 17:38	18° $\overline{05}$ 34'04		evening set	15866 Jun 22 23:58	0° $\overline{05}$ 09'54	
min. Earth dist.	15859 Dec 21 22:10	17° $\overline{05}$ 17'16	30.53182 AU				
opposition	15859 Dec 23 03:57	17° $\overline{05}$ 15'19	4°44'40	conjunction	15866 Jul 08 13:57	0° $\overline{05}$ 41'52	0°50'29
direct	15860 Mar 12 06:08	15° $\overline{05}$ 55'04		minimum elong	15866 Jul 08 13:59	0° $\overline{05}$ 41'52	0°49'45
evening set	15860 Jun 10 15:11	17° $\overline{05}$ 47'30		max. Earth dist.	15866 Jul 10 05:56	0° $\overline{05}$ 45'19	33.85117 AU
				morning rise	15866 Jul 24 02:29	1° $\overline{05}$ 13'43	
conjunction	15860 Jun 25 16:54	18° $\overline{05}$ 19'52	4°10'09	retrograde	15866 Oct 19 10:04	2° $\overline{05}$ 57'25	
minimum elong	15860 Jun 25 17:04	18° $\overline{05}$ 19'53	4°09'22	min. Earth dist.	15867 Jan 05 00:03	1° $\overline{05}$ 43'29	31.95910 AU
max. Earth dist.	15860 Jun 27 00:45	18° $\overline{05}$ 22'45	32.62109 AU	opposition	15867 Jan 06 15:16	1° $\overline{05}$ 41'01	0°36'32
morning rise	15860 Jul 10 17:36	18° $\overline{05}$ 52'09		direct	15867 Mar 28 07:38	0° $\overline{05}$ 23'18	
retrograde	15860 Oct 07 03:12	20° $\overline{05}$ 42'29		evening set	15867 Jun 25 04:38	2° $\overline{05}$ 07'39	
min. Earth dist.	15860 Dec 23 06:15	19° $\overline{05}$ 26'10	30.72053 AU				
opposition	15860 Dec 24 14:13	19° $\overline{05}$ 24'05	4°08'33	conjunction	15867 Jul 10 18:42	2° $\overline{05}$ 39'23	0°18'14
direct	15861 Mar 14 17:50	18° $\overline{05}$ 04'14		minimum elong	15867 Jul 10 18:43	2° $\overline{05}$ 39'23	0°17'30
evening set	15861 Jun 12 20:58	19° $\overline{05}$ 55'23		max. Earth dist.	15867 Jul 12 11:36	2° $\overline{05}$ 42'53	34.07139 AU
				morning rise	15867 Jul 26 07:36	3° $\overline{05}$ 11'01	
conjunction	15861 Jun 28 02:16	20° $\overline{05}$ 27'49	3°36'23	retrograde	15867 Oct 21 14:12	4° $\overline{05}$ 53'48	
minimum elong	15861 Jun 28 02:24	20° $\overline{05}$ 27'50	3°35'35	min. Earth dist.	15868 Jan 07 04:07	3° $\overline{05}$ 40'16	32.18169 AU
max. Earth dist.	15861 Jun 29 12:34	20° $\overline{05}$ 30'53	32.81429 AU	opposition	15868 Jan 08 21:05	3° $\overline{05}$ 37'43	0°02'28
morning rise	15861 Jul 13 06:08	21° $\overline{05}$ 00'09		desc. node	15868 Feb 04 15:26	2° $\overline{05}$ 59'19	
retrograde	15861 Oct 09 09:58	22° $\overline{05}$ 49'15		direct	15868 Mar 29 13:55	2° $\overline{05}$ 20'20	
min. Earth dist.	15861 Dec 25 15:39	21° $\overline{05}$ 33'19	30.91508 AU	evening set	15868 Jun 26 09:04	4° $\overline{05}$ 03'44	
opposition	15861 Dec 27 00:07	21° $\overline{05}$ 31'13	3°32'34				
direct	15862 Mar 17 06:16	20° $\overline{05}$ 11'45		conjunction	15868 Jul 11 23:03	4° $\overline{05}$ 35'13	-0°13'41
evening set	15862 Jun 15 02:44	22° $\overline{05}$ 01'39		minimum elong	15868 Jul 11 23:03	4° $\overline{05}$ 35'13	0°14'23
				behind sun begin	15868 Jul 11 20:03	4° $\overline{05}$ 34'58	
conjunction	15862 Jun 30 10:41	22° $\overline{05}$ 34'05	3°02'45	behind sun end	15868 Jul 12 02:03	4° $\overline{05}$ 35'27	
minimum elong	15862 Jun 30 10:48	22° $\overline{05}$ 34'06	3°01'58	max. Earth dist.	15868 Jul 13 18:13	4° $\overline{05}$ 38'53	34.29655 AU
max. Earth dist.	15862 Jul 01 21:16	22° $\overline{05}$ 37'10	33.01282 AU	morning rise	15868 Jul 27 11:33	5° $\overline{05}$ 06'35	
morning rise	15862 Jul 15 17:29	23° $\overline{05}$ 06'25		retrograde	15868 Oct 22 16:54	6° $\overline{05}$ 48'29	
retrograde	15862 Oct 11 18:09	24° $\overline{05}$ 54'21		min. Earth dist.	15869 Jan 08 08:23	5° $\overline{05}$ 35'20	32.40930 AU
min. Earth dist.	15862 Dec 27 22:27	23° $\overline{05}$ 38'55	31.11491 AU	opposition	15869 Jan 10 02:07	5° $\overline{05}$ 32'44	-0°31'09
opposition	15862 Dec 29 09:17	23° $\overline{05}$ 36'40	2°56'46	direct	15869 Mar 31 21:50	4° $\overline{05}$ 15'44	
direct	15863 Mar 19 18:36	22° $\overline{05}$ 17'34		evening set	15869 Jun 28 13:29	5° $\overline{05}$ 58'15	

conjunction	15869 Jul 14 02:37	6°Ω29'26 -0°45'05	retrograde	15875 Nov 04 19:56	19°Ω31'26	
minimum elong	15869 Jul 14 02:35	6°Ω29'26 0°45'48	min. Earth dist.	15876 Jan 21 21:05	18°Ω21'03	34.10835 AU
max. Earth dist.	15869 Jul 15 22:04	6°Ω33'06 34.52663 AU	opposition	15876 Jan 23 21:30	18°Ω18'10	-4°10'34
morning rise	15869 Jul 29 14:36	7°Ω00'31	direct	15876 Apr 14 01:52	17°Ω03'52	
retrograde	15869 Oct 24 21:08	8°Ω41'37	evening set	15876 Jul 11 13:38	18°Ω41'31	
min. Earth dist.	15870 Jan 10 10:30	7°Ω28'57 32.64202 AU				
opposition	15870 Jan 12 06:36	7°Ω26'13 -1°04'15	conjunction	15876 Jul 26 11:08	19°Ω09'56	-4°10'30
direct	15870 Apr 03 03:30	6°Ω09'36	minimum elong	15876 Jul 26 11:01	19°Ω09'55	4°11'05
evening set	15870 Jun 30 17:24	7°Ω51'18	max. Earth dist.	15876 Jul 28 12:22	19°Ω13'53	36.22937 AU
			morning rise	15876 Aug 10 07:42	19°Ω38'17	
conjunction	15870 Jul 16 05:33	8°Ω22'10 -1°16'02	retrograde	15876 Nov 05 19:49	21°Ω15'03	
minimum elong	15870 Jul 16 05:30	8°Ω22'10 1°16'43	min. Earth dist.	15877 Jan 22 20:04	20°Ω05'03	34.35800 AU
max. Earth dist.	15870 Jul 18 03:20	8°Ω26'00 34.76140 AU	opposition	15877 Jan 24 21:52	20°Ω02'06	-4°39'25
morning rise	15870 Jul 31 16:17	8°Ω52'56	direct	15877 Apr 16 02:19	18°Ω48'07	
retrograde	15870 Oct 26 21:38	10°Ω33'18	evening set	15877 Jul 13 16:13	20°Ω25'12	
min. Earth dist.	15871 Jan 12 14:16	9°Ω20'59 32.87930 AU				
opposition	15871 Jan 14 10:36	9°Ω18'15 -1°36'48	conjunction	15877 Jul 28 10:18	20°Ω53'08	-4°37'34
direct	15871 Apr 05 09:27	8°Ω02'02	minimum elong	15877 Jul 28 10:10	20°Ω53'08	4°38'09
evening set	15871 Jul 02 21:17	9°Ω42'58	max. Earth dist.	15877 Jul 30 12:58	20°Ω57'10	36.47794 AU
			morning rise	15877 Aug 12 03:12	21°Ω21'00	
conjunction	15871 Jul 18 07:51	10°Ω13'29 -1°46'29	retrograde	15877 Nov 07 17:27	22°Ω57'16	
minimum elong	15871 Jul 18 07:47	10°Ω13'29 1°47'10	min. Earth dist.	15878 Jan 24 20:44	21°Ω47'30	34.60806 AU
max. Earth dist.	15871 Jul 20 05:52	10°Ω17'18 35.00032 AU	opposition	15878 Jan 26 21:58	21°Ω44'36	-5°07'37
morning rise	15871 Aug 02 17:12	10°Ω43'54	direct	15878 Apr 18 05:40	20°Ω30'57	
retrograde	15871 Oct 28 22:23	12°Ω23'34	evening set	15878 Jul 15 18:26	22°Ω07'28	
min. Earth dist.	15872 Jan 14 15:23	11°Ω11'44 33.12047 AU				
opposition	15872 Jan 16 13:44	11°Ω08'54 -2°08'47	conjunction	15878 Jul 30 08:34	22°Ω34'55	-5°04'01
direct	15872 Apr 06 15:32	9°Ω53'05	minimum elong	15878 Jul 30 08:26	22°Ω34'54	5°04'34
evening set	15872 Jul 04 00:55	11°Ω33'17	max. Earth dist.	15878 Aug 01 10:47	22°Ω38'53	36.72694 AU
			morning rise	15878 Aug 13 21:45	23°Ω02'17	
conjunction	15872 Jul 19 09:37	12°Ω03'27 -2°16'25	retrograde	15878 Nov 09 15:25	24°Ω38'03	
minimum elong	15872 Jul 19 09:33	12°Ω03'26 2°17'04	min. Earth dist.	15879 Jan 26 18:37	23°Ω28'38	34.85877 AU
max. Earth dist.	15872 Jul 21 09:15	12°Ω07'22 35.24246 AU	opposition	15879 Jan 28 21:20	23°Ω25'40	-5°35'09
morning rise	15872 Aug 03 17:05	12°Ω33'30	direct	15879 Apr 20 07:58	22°Ω12'18	
retrograde	15872 Oct 29 22:16	14°Ω12'31	evening set	15879 Jul 17 20:22	23°Ω48'18	
min. Earth dist.	15873 Jan 15 17:55	13°Ω01'03 33.36473 AU				
opposition	15873 Jan 17 16:33	12°Ω58'13 -2°40'10	conjunction	15879 Aug 01 06:24	24°Ω15'14	-5°29'52
direct	15873 Apr 08 19:07	11°Ω42'48	minimum elong	15879 Aug 01 06:15	24°Ω15'13	5°30'25
evening set	15873 Jul 06 04:23	13°Ω22'19	max. Earth dist.	15879 Aug 03 09:52	24°Ω19'16	36.97669 AU
			morning rise	15879 Aug 15 15:31	24°Ω42'06	
conjunction	15873 Jul 21 10:51	13°Ω52'04 -2°45'47	retrograde	15879 Nov 11 10:34	26°Ω17'25	
minimum elong	15873 Jul 21 10:46	13°Ω52'04 2°46'26	min. Earth dist.	15880 Jan 28 17:30	25°Ω08'15	35.11073 AU
max. Earth dist.	15873 Jul 23 11:06	13°Ω56'01 35.48715 AU	opposition	15880 Jan 30 20:12	25°Ω05'17	-6°02'00
morning rise	15873 Aug 05 16:01	14°Ω21'44	direct	15880 Apr 21 08:29	23°Ω52'14	
	15873 Aug 26 20:25	15°Ω	evening set	15880 Jul 18 22:00	25°Ω27'44	
retrograde	15873 Oct 31 20:51	16°Ω00'08				
	15874 Jan 10 04:38	15°RΩ	conjunction	15880 Aug 02 03:44	25°Ω54'08	-5°55'06
min. Earth dist.	15874 Jan 17 18:59	14°Ω49'05 33.61114 AU	minimum elong	15880 Aug 02 03:35	25°Ω54'08	5°55'37
opposition	15874 Jan 19 18:39	14°Ω46'12 -3°10'56	max. Earth dist.	15880 Aug 04 07:47	25°Ω58'12	37.22786 AU
direct	15874 Apr 10 23:21	13°Ω31'10	morning rise	15880 Aug 16 08:26	26°Ω20'29	
	15874 Jul 02 23:32	15°Ω	retrograde	15880 Nov 12 04:13	27°Ω55'24	
evening set	15874 Jul 08 07:46	15°Ω10'02	min. Earth dist.	15881 Jan 29 14:46	26°Ω46'33	35.36417 AU
			opposition	15881 Jan 31 18:30	26°Ω43'33	-6°28'11
conjunction	15874 Jul 23 11:28	15°Ω39'22 -3°14'36	direct	15881 Apr 23 09:38	25°Ω30'47	
minimum elong	15874 Jul 23 11:22	15°Ω39'21 3°15'13	evening set	15881 Jul 20 23:26	27°Ω05'50	
max. Earth dist.	15874 Jul 25 12:02	15°Ω43'19 35.73354 AU				
morning rise	15874 Aug 07 14:09	16°Ω08'37	conjunction	15881 Aug 04 00:23	27°Ω31'43	-6°19'41
retrograde	15874 Nov 02 21:03	17°Ω46'27	minimum elong	15881 Aug 04 00:14	27°Ω31'42	6°20'11
min. Earth dist.	15875 Jan 19 19:53	16°Ω35'46 33.85931 AU	max. Earth dist.	15881 Aug 06 04:48	27°Ω35'46	37.48056 AU
opposition	15875 Jan 21 20:23	16°Ω32'52 -3°41'04	morning rise	15881 Aug 18 00:38	27°Ω57'32	
direct	15875 Apr 13 00:04	15°Ω18'12	retrograde	15881 Nov 14 00:32	29°Ω32'04	
evening set	15875 Jul 10 10:40	16°Ω56'26	min. Earth dist.	15882 Jan 31 11:33	28°Ω23'34	35.61947 AU
			opposition	15882 Feb 02 16:24	28°Ω20'31	-6°53'40
conjunction	15875 Jul 25 11:35	17°Ω25'20 -3°42'51	direct	15882 Apr 25 06:45	27°Ω08'05	
minimum elong	15875 Jul 25 11:29	17°Ω25'19 3°43'28	evening set	15882 Jul 23 00:30	28°Ω42'43	
max. Earth dist.	15875 Jul 27 13:24	17°Ω29'22 35.98118 AU				
morning rise	15875 Aug 09 11:13	17°Ω54'08	conjunction	15882 Aug 05 20:46	29°Ω08'03	-6°43'38

minimum elong	15882 Aug 05 20:37	29°08'03	6°44'07	min. Earth dist.	15889 Feb 11 06:09	9°00'12'39	37.41600 AU
max. Earth dist.	15882 Aug 08 02:37	29°08'12'12	37.73504 AU	opposition	15889 Feb 13 12:56	9°00'09'36	-9°32'57
morning rise	15882 Aug 19 16:02	29°08'33'20		direct	15889 May 06 08:27	7°00'59'31	
	15882 Sep 03 23:35	0°00'00		evening set	15889 Aug 04 02:09	9°00'32'08	
retrograde	15882 Nov 15 19:11	1°00'07'33					
	15883 Feb 01 21:18	30°00'00		conjunction	15889 Aug 16 06:57	9°00'53'32	-9°13'44
min. Earth dist.	15883 Feb 02 09:00	29°08'59'20	35.87628 AU	minimum elong	15889 Aug 16 06:47	9°00'53'32	9°14'05
opposition	15883 Feb 04 13:49	29°08'56'17	-7°18'27	max. Earth dist.	15889 Aug 18 13:59	9°00'57'35	39.51618 AU
direct	15883 Apr 27 05:09	28°08'44'12		morning rise	15889 Aug 28 11:06	10°00'14'54	
	15883 Jul 14 12:36	0°00'00		retrograde	15889 Nov 26 01:33	11°00'47'35	
evening set	15883 Jul 25 01:21	0°00'18'28		min. Earth dist.	15890 Feb 13 01:43	10°00'41'24	37.66697 AU
				opposition	15890 Feb 15 07:28	10°00'38'25	-9°53'06
conjunction	15883 Aug 07 16:24	0°00'43'15	-7°06'57	direct	15890 May 08 04:10	9°00'28'38	
minimum elong	15883 Aug 07 16:15	0°00'43'15	7°07'24	evening set	15890 Aug 06 01:34	11°00'01'02	
max. Earth dist.	15883 Aug 09 21:52	0°00'47'20	37.99076 AU				
morning rise	15883 Aug 21 06:50	1°00'08'00		conjunction	15890 Aug 17 23:56	11°00'21'51	-9°32'46
retrograde	15883 Nov 17 16:21	2°00'41'55		minimum elong	15890 Aug 17 23:47	11°00'21'50	9°33'07
min. Earth dist.	15884 Feb 04 04:18	1°00'34'05	36.13417 AU	max. Earth dist.	15890 Aug 20 05:47	11°00'25'47	39.76421 AU
opposition	15884 Feb 06 10:40	1°00'30'58	-7°42'32	morning rise	15890 Aug 29 21:55	11°00'42'38	
direct	15884 Apr 28 01:33	0°00'19'13		retrograde	15890 Nov 27 19:37	13°00'15'09	
evening set	15884 Jul 26 01:58	1°00'53'09		min. Earth dist.	15891 Feb 14 18:43	12°00'09'15	37.91595 AU
				opposition	15891 Feb 17 01:25	12°00'06'13	-10°12'37
conjunction	15884 Aug 08 11:52	2°00'17'24	-7°29'37	direct	15891 May 09 22:00	10°00'56'42	
minimum elong	15884 Aug 08 11:43	2°00'17'23	7°30'04	evening set	15891 Aug 08 00:25	12°00'28'53	
max. Earth dist.	15884 Aug 10 18:50	2°00'21'34	38.24711 AU				
morning rise	15884 Aug 21 20:58	2°00'41'36		conjunction	15891 Aug 19 16:27	12°00'49'07	-9°51'13
retrograde	15884 Nov 18 11:18	4°00'15'15		minimum elong	15891 Aug 19 16:18	12°00'49'07	9°51'31
min. Earth dist.	15885 Feb 05 01:23	3°00'07'40	36.39240 AU	max. Earth dist.	15891 Aug 21 23:15	12°00'53'06	40.01038 AU
opposition	15885 Feb 07 07:07	3°00'04'37	-8°05'57	morning rise	15891 Aug 31 08:03	13°00'09'20	
direct	15885 Apr 29 23:24	1°00'53'13		retrograde	15891 Nov 29 11:54	14°00'41'41	
evening set	15885 Jul 28 02:30	3°00'26'52		min. Earth dist.	15892 Feb 16 13:11	13°00'35'57	38.16338 AU
				opposition	15892 Feb 18 19:05	13°00'32'59	-10°31'31
conjunction	15885 Aug 10 06:51	3°00'50'33	-7°51'40	direct	15892 May 10 16:37	12°00'23'44	
minimum elong	15885 Aug 10 06:41	3°00'50'32	7°52'05	evening set	15892 Aug 08 23:14	13°00'55'44	
max. Earth dist.	15885 Aug 12 13:16	3°00'54'39	38.50350 AU				
morning rise	15885 Aug 23 10:32	4°00'14'11		conjunction	15892 Aug 20 08:38	14°00'15'23	-10°09'04
retrograde	15885 Nov 20 05:41	5°00'47'36		minimum elong	15892 Aug 20 08:29	14°00'15'22	10°09'22
min. Earth dist.	15886 Feb 06 20:21	4°00'40'23	36.65030 AU	max. Earth dist.	15892 Aug 22 15:07	14°00'19'18	40.25533 AU
opposition	15886 Feb 09 03:09	4°00'37'17	-8°28'41	morning rise	15892 Aug 31 17:35	14°00'34'59	
direct	15886 May 01 21:00	3°00'26'14		retrograde	15892 Nov 30 00:50	16°00'07'13	
evening set	15886 Jul 30 02:38	4°00'59'36		min. Earth dist.	15893 Feb 17 05:29	15°00'01'45	38.40974 AU
				opposition	15893 Feb 19 12:05	14°00'58'46	-10°49'47
conjunction	15886 Aug 12 01:19	5°00'22'43	-8°13'05	direct	15893 May 12 12:32	13°00'49'45	
minimum elong	15886 Aug 12 01:10	5°00'22'42	8°13'30	evening set	15893 Aug 10 21:43	15°00'21'36	
max. Earth dist.	15886 Aug 14 08:16	5°00'26'50	38.75911 AU				
morning rise	15886 Aug 24 23:27	5°00'45'48		conjunction	15893 Aug 22 00:20	15°00'40'39	-10°26'20
retrograde	15886 Nov 21 22:25	7°00'19'01		minimum elong	15893 Aug 22 00:11	15°00'40'38	10°26'36
min. Earth dist.	15887 Feb 08 16:31	6°00'12'04	36.90733 AU	max. Earth dist.	15893 Aug 24 06:51	15°00'44'34	40.49946 AU
opposition	15887 Feb 10 22:57	6°00'09'00	-8°50'45	morning rise	15893 Sep 02 02:43	15°00'59'40	
direct	15887 May 03 17:53	4°00'58'18		retrograde	15893 Dec 01 14:46	17°00'31'48	
evening set	15887 Aug 01 02:41	6°00'31'24		min. Earth dist.	15894 Feb 18 22:10	16°00'26'35	38.65562 AU
				opposition	15894 Feb 21 05:00	16°00'23'35	-11°07'25
conjunction	15887 Aug 13 19:37	6°00'53'57	-8°33'54	direct	15894 May 14 06:52	15°00'14'52	
minimum elong	15887 Aug 13 19:27	6°00'53'56	8°34'17	evening set	15894 Aug 12 19:47	16°00'46'33	
max. Earth dist.	15887 Aug 16 02:44	6°00'58'03	39.01351 AU				
morning rise	15887 Aug 26 11:51	7°00'16'28		conjunction	15894 Aug 23 15:41	17°00'05'01	-10°43'01
retrograde	15887 Nov 23 14:13	8°00'49'29		minimum elong	15894 Aug 23 15:33	17°00'05'00	10°43'17
min. Earth dist.	15888 Feb 10 11:44	7°00'42'50	37.16266 AU	max. Earth dist.	15894 Aug 25 23:07	17°00'08'58	40.74315 AU
opposition	15888 Feb 12 18:03	7°00'39'47	-9°12'10	morning rise	15894 Sep 03 11:08	17°00'23'27	
direct	15888 May 04 15:09	6°00'29'23		retrograde	15894 Dec 03 04:39	18°00'55'30	
evening set	15888 Aug 02 02:38	8°00'02'15		min. Earth dist.	15895 Feb 20 14:55	17°00'50'30	38.90076 AU
				opposition	15895 Feb 22 21:30	17°00'47'32	-11°24'25
conjunction	15888 Aug 14 13:27	8°00'24'14	-8°54'07	direct	15895 May 16 00:45	16°00'39'06	
minimum elong	15888 Aug 14 13:17	8°00'24'13	8°54'29	evening set	15895 Aug 14 17:52	18°00'10'40	
max. Earth dist.	15888 Aug 16 19:45	8°00'28'15	39.26594 AU				
morning rise	15888 Aug 26 23:52	8°00'46'10		conjunction	15895 Aug 25 06:40	18°00'28'32	-10°59'07
retrograde	15888 Nov 24 09:01	10°00'19'01		minimum elong	15895 Aug 25 06:32	18°00'28'31	10°59'21

max. Earth dist.	15895 Aug 27 13:17	18° $\mathring{M}$ 32'24	40.98605 AU	conjunction	15902 Sep 04 07:49	27° $\mathring{M}$ 51'51	-12°36'43
morning rise	15895 Sep 04 19:19	18° $\mathring{M}$ 46'23		minimum elong	15902 Sep 04 07:42	27° $\mathring{M}$ 51'50	12°36'50
retrograde	15895 Dec 04 21:07	20° $\mathring{M}$ 18'23		max. Earth dist.	15902 Sep 06 12:09	27° $\mathring{M}$ 55'25	42.62378 AU
min. Earth dist.	15896 Feb 22 05:51	19° $\mathring{M}$ 13'40	39.14505 AU	morning rise	15902 Sep 12 16:53	28° $\mathring{M}$ 05'34	
opposition	15896 Feb 24 13:24	19° $\mathring{M}$ 10'40	-11°40'49	retrograde	15902 Dec 14 20:00	29° $\mathring{M}$ 37'29	
direct	15896 May 16 15:15	18° $\mathring{M}$ 02'31		min. Earth dist.	15903 Mar 04 16:31	28° $\mathring{M}$ 34'10	40.78465 AU
evening set	15896 Aug 15 15:35	19° $\mathring{M}$ 33'59		opposition	15903 Mar 06 21:35	28° $\mathring{M}$ 31'23	-13°19'52
				direct	15903 May 28 02:56	27° $\mathring{M}$ 24'58	
conjunction	15896 Aug 25 21:29	19° $\mathring{M}$ 51'15	-11°14'39	evening set	15903 Aug 28 19:09	28° $\mathring{M}$ 56'05	
minimum elong	15896 Aug 25 21:21	19° $\mathring{M}$ 51'15	11°14'53				
max. Earth dist.	15896 Aug 28 05:07	19° $\mathring{M}$ 55'11	41.22780 AU	conjunction	15903 Sep 05 20:32	29° $\mathring{M}$ 09'12	-12°48'40
morning rise	15896 Sep 05 03:04	20° $\mathring{M}$ 08'32		minimum elong	15903 Sep 05 20:28	29° $\mathring{M}$ 09'11	12°48'46
retrograde	15896 Dec 05 12:16	21° $\mathring{M}$ 40'29		max. Earth dist.	15903 Sep 08 01:12	29° $\mathring{M}$ 12'46	42.84431 AU
min. Earth dist.	15897 Feb 22 22:50	20° $\mathring{M}$ 35'57	39.38784 AU	morning rise	15903 Sep 13 21:51	29° $\mathring{M}$ 22'18	
opposition	15897 Feb 25 05:17	20° $\mathring{M}$ 33'02	-11°56'37		15903 Oct 08 08:14	0° $\mathring{A}$	
direct	15897 May 18 06:53	19° $\mathring{M}$ 25'09		retrograde	15903 Dec 16 07:49	0° $\mathring{A}$ 54'15	
evening set	15897 Aug 17 13:12	20° $\mathring{M}$ 56'32			15904 Feb 27 02:49	30° $\mathring{R}$ $\mathring{M}$	
				min. Earth dist.	15904 Mar 05 07:23	29° $\mathring{M}$ 51'01	41.00540 AU
conjunction	15897 Aug 27 11:49	21° $\mathring{M}$ 13'14	-11°29'37	opposition	15904 Mar 07 11:08	29° $\mathring{M}$ 48'19	-13°31'56
minimum elong	15897 Aug 27 11:42	21° $\mathring{M}$ 13'13	11°29'49	direct	15904 May 28 17:18	28° $\mathring{M}$ 42'07	
max. Earth dist.	15897 Aug 29 18:30	21° $\mathring{M}$ 17'04	41.46788 AU		15904 Aug 21 08:36	0° $\mathring{A}$	
morning rise	15897 Sep 06 10:13	21° $\mathring{M}$ 29'54		evening set	15904 Aug 29 15:35	0° $\mathring{A}$ 13'13	
retrograde	15897 Dec 07 03:16	23° $\mathring{M}$ 01'49					
min. Earth dist.	15898 Feb 24 13:31	21° $\mathring{M}$ 57'35	39.62861 AU	conjunction	15904 Sep 06 08:57	0° $\mathring{A}$ 25'44	-13°00'08
opposition	15898 Feb 26 20:42	21° $\mathring{M}$ 54'38	-12°11'51	minimum elong	15904 Sep 06 08:51	0° $\mathring{A}$ 25'43	13°00'13
direct	15898 May 19 22:17	20° $\mathring{M}$ 47'02		max. Earth dist.	15904 Sep 08 13:07	0° $\mathring{A}$ 29'15	43.06219 AU
evening set	15898 Aug 19 10:34	22° $\mathring{M}$ 18'22		morning rise	15904 Sep 14 02:11	0° $\mathring{A}$ 38'14	
				retrograde	15904 Dec 16 17:26	2° $\mathring{A}$ 10'13	
conjunction	15898 Aug 29 01:58	22° $\mathring{M}$ 34'28	-11°44'03	min. Earth dist.	15905 Mar 06 20:21	1° $\mathring{A}$ 07'11	41.22365 AU
minimum elong	15898 Aug 29 01:50	22° $\mathring{M}$ 34'27	11°44'15	opposition	15905 Mar 09 00:23	1° $\mathring{A}$ 04'28	-13°43'29
max. Earth dist.	15898 Aug 31 08:51	22° $\mathring{M}$ 38'17	41.70560 AU		15905 May 19 03:48	30° $\mathring{R}$ $\mathring{M}$	
morning rise	15898 Sep 07 17:13	22° $\mathring{M}$ 50'32		direct	15905 May 30 08:43	29° $\mathring{M}$ 58'28	
retrograde	15898 Dec 08 16:51	24° $\mathring{M}$ 22'27			15905 Jun 10 11:26	0° $\mathring{A}$	
min. Earth dist.	15899 Feb 26 05:37	23° $\mathring{M}$ 18'24	39.86691 AU	evening set	15905 Aug 31 11:36	1° $\mathring{A}$ 29'35	
opposition	15899 Feb 28 11:57	23° $\mathring{M}$ 15'30	-12°26'30				
direct	15899 May 21 13:54	22° $\mathring{M}$ 08'11		conjunction	15905 Sep 07 20:51	1° $\mathring{A}$ 41'30	-13°11'07
evening set	15899 Aug 21 07:50	23° $\mathring{M}$ 39'27		minimum elong	15905 Sep 07 20:47	1° $\mathring{A}$ 41'29	13°11'10
				max. Earth dist.	15905 Sep 10 00:37	1° $\mathring{A}$ 44'59	43.27788 AU
conjunction	15899 Aug 30 15:53	23° $\mathring{M}$ 54'57	-11°57'58	morning rise	15905 Sep 15 06:08	1° $\mathring{A}$ 53'24	
minimum elong	15899 Aug 30 15:46	23° $\mathring{M}$ 54'57	11°58'07	retrograde	15905 Dec 18 05:09	3° $\mathring{A}$ 25'28	
max. Earth dist.	15899 Sep 01 22:35	23° $\mathring{M}$ 58'45	41.94060 AU	min. Earth dist.	15906 Mar 08 09:23	2° $\mathring{A}$ 22'36	41.44010 AU
morning rise	15899 Sep 08 23:39	24° $\mathring{M}$ 10'26		opposition	15906 Mar 10 13:28	2° $\mathring{A}$ 19'54	-13°54'31
retrograde	15899 Dec 10 03:29	25° $\mathring{M}$ 42'21		direct	15906 May 31 22:26	1° $\mathring{A}$ 14'07	
min. Earth dist.	15900 Feb 27 20:50	24° $\mathring{M}$ 38'30	40.10191 AU	evening set	15906 Sep 02 07:35	2° $\mathring{A}$ 45'16	
opposition	15900 Mar 02 02:46	24° $\mathring{M}$ 35'38	-12°40'37				
direct	15900 May 23 07:58	23° $\mathring{M}$ 28'34		conjunction	15906 Sep 09 08:42	2° $\mathring{A}$ 56'34	-13°21'36
evening set	15900 Aug 23 04:59	24° $\mathring{M}$ 59'48		minimum elong	15906 Sep 09 08:38	2° $\mathring{A}$ 56'34	13°21'38
				max. Earth dist.	15906 Sep 11 13:14	3° $\mathring{A}$ 00'06	43.49197 AU
conjunction	15900 Sep 01 05:27	25° $\mathring{M}$ 14'42	-12°11'22	morning rise	15906 Sep 16 09:43	3° $\mathring{A}$ 07'53	
minimum elong	15900 Sep 01 05:20	25° $\mathring{M}$ 14'41	12°11'31	retrograde	15906 Dec 19 15:36	4° $\mathring{A}$ 40'02	
max. Earth dist.	15900 Sep 03 10:49	25° $\mathring{M}$ 18'23	42.17204 AU	min. Earth dist.	15907 Mar 09 22:42	3° $\mathring{A}$ 37'21	41.65476 AU
morning rise	15900 Sep 10 05:53	25° $\mathring{M}$ 29'36		opposition	15907 Mar 12 02:09	3° $\mathring{A}$ 34'40	-14°05'03
retrograde	15900 Dec 11 17:06	27° $\mathring{M}$ 01'31		direct	15907 Jun 02 13:06	2° $\mathring{A}$ 29'08	
min. Earth dist.	15901 Mar 01 11:26	25° $\mathring{M}$ 57'52	40.33332 AU	evening set	15907 Sep 04 03:25	4° $\mathring{A}$ 00'21	
opposition	15901 Mar 03 17:17	25° $\mathring{M}$ 55'01	-12°54'12				
direct	15901 May 24 22:54	24° $\mathring{M}$ 48'11		conjunction	15907 Sep 10 20:07	4° $\mathring{A}$ 11'03	-13°31'36
evening set	15901 Aug 25 01:57	26° $\mathring{M}$ 19'22		minimum elong	15907 Sep 10 20:04	4° $\mathring{A}$ 11'02	13°31'38
				max. Earth dist.	15907 Sep 12 23:26	4° $\mathring{A}$ 14'28	43.70436 AU
conjunction	15901 Sep 02 18:55	26° $\mathring{M}$ 33'41	-12°24'17	morning rise	15907 Sep 17 12:53	4° $\mathring{A}$ 21'45	
minimum elong	15901 Sep 02 18:50	26° $\mathring{M}$ 33'40	12°24'24	retrograde	15907 Dec 21 05:43	5° $\mathring{A}$ 54'01	
max. Earth dist.	15901 Sep 05 00:44	26° $\mathring{M}$ 37'22	42.39980 AU	min. Earth dist.	15908 Mar 10 10:20	4° $\mathring{A}$ 51'34	41.86762 AU
morning rise	15901 Sep 11 11:41	26° $\mathring{M}$ 47'59		opposition	15908 Mar 12 14:31	4° $\mathring{A}$ 48'52	-14°15'05
retrograde	15901 Dec 13 06:08	28° $\mathring{M}$ 19'54		direct	15908 Jun 02 23:04	3° $\mathring{A}$ 43'34	
min. Earth dist.	15902 Mar 03 03:14	27° $\mathring{M}$ 16'22	40.56081 AU	evening set	15908 Sep 04 23:02	5° $\mathring{A}$ 14'53	
opposition	15902 Mar 05 07:41	27° $\mathring{M}$ 13'36	-13°07'17				
direct	15902 May 26 13:53	26° $\mathring{M}$ 07'00		conjunction	15908 Sep 11 07:24	5° $\mathring{A}$ 24'58	-13°41'08
evening set	15902 Aug 26 22:40	27° $\mathring{M}$ 38'08		minimum elong	15908 Sep 11 07:21	5° $\mathring{A}$ 24'58	13°41'08

max. Earth dist.	15908 Sep 13 11:24	5° <u>♁</u> 28'25	43.91473 AU	conjunction	15915 Sep 20 08:36	13° <u>♁</u> 48'22	-14°35'56
morning rise	15908 Sep 17 15:44	5° <u>♁</u> 35'04		minimum elong	15915 Sep 20 08:35	13° <u>♁</u> 48'21	14°35'49
retrograde	15908 Dec 21 18:28	7° <u>♁</u> 07'29		max. Earth dist.	15915 Sep 22 07:58	13° <u>♁</u> 51'24	45.29522 AU
min. Earth dist.	15909 Mar 11 23:49	6° <u>♁</u> 05'10	42.07826 AU	morning rise	15915 Sep 23 22:25	13° <u>♁</u> 53'53	
opposition	15909 Mar 14 02:43	6° <u>♁</u> 02'33	-14°24'37	retrograde	15915 Dec 30 17:31	15° <u>♁</u> 27'44	
direct	15909 Jun 04 09:43	4° <u>♁</u> 57'30		min. Earth dist.	15916 Mar 20 11:02	14° <u>♁</u> 26'26	43.45368 AU
evening set	15909 Sep 06 18:49	6° <u>♁</u> 28'55		opposition	15916 Mar 22 09:48	14° <u>♁</u> 24'05	-15°19'08
				direct	15916 Jun 12 18:51	13° <u>♁</u> 20'25	
				evening set	15916 Sep 17 16:10	14° <u>♁</u> 53'12	
conjunction	15909 Sep 12 18:29	6° <u>♁</u> 38'24	-13°50'13				
minimum elong	15909 Sep 12 18:26	6° <u>♁</u> 38'24	13°50'13	conjunction	15916 Sep 20 18:11	14° <u>♁</u> 57'57	-14°42'11
max. Earth dist.	15909 Sep 14 21:44	6° <u>♁</u> 41'47	44.12286 AU	minimum elong	15916 Sep 20 18:11	14° <u>♁</u> 57'57	14°42'03
morning rise	15909 Sep 18 18:07	6° <u>♁</u> 47'53		morning rise	15916 Sep 23 20:16	15° <u>♁</u> 02'42	
retrograde	15909 Dec 23 03:44	8° <u>♁</u> 20'26		max. Earth dist.	15916 Sep 22 17:34	15° <u>♁</u> 00'59	45.47666 AU
min. Earth dist.	15910 Mar 13 11:17	7° <u>♁</u> 18'22	42.28627 AU	retrograde	15916 Dec 30 22:44	16° <u>♁</u> 36'53	
opposition	15910 Mar 15 14:38	7° <u>♁</u> 15'44	-14°33'41	min. Earth dist.	15917 Mar 21 21:35	15° <u>♁</u> 35'41	43.63451 AU
direct	15910 Jun 05 22:28	6° <u>♁</u> 10'55		opposition	15917 Mar 23 20:04	15° <u>♁</u> 33'21	-15°25'17
evening set	15910 Sep 08 14:16	7° <u>♁</u> 42'28		direct	15917 Jun 14 08:55	14° <u>♁</u> 29'50	
				evening set	15917 Sep 19 14:32	16° <u>♁</u> 03'01	
conjunction	15910 Sep 14 05:10	7° <u>♁</u> 51'20	-13°58'51				
minimum elong	15910 Sep 14 05:07	7° <u>♁</u> 51'20	13°58'48	conjunction	15917 Sep 22 03:25	16° <u>♁</u> 06'54	-14°48'02
max. Earth dist.	15910 Sep 16 07:55	7° <u>♁</u> 54'41	44.32805 AU	minimum elong	15917 Sep 22 03:25	16° <u>♁</u> 06'54	14°47'54
morning rise	15910 Sep 19 20:07	8° <u>♁</u> 00'12		morning rise	15917 Sep 24 16:22	16° <u>♁</u> 10'48	
retrograde	15910 Dec 24 13:08	9° <u>♁</u> 32'56		max. Earth dist.	15917 Sep 24 01:33	16° <u>♁</u> 09'51	45.65525 AU
min. Earth dist.	15911 Mar 14 23:56	8° <u>♁</u> 31'01	42.49120 AU	retrograde	15918 Jan 01 07:48	17° <u>♁</u> 45'25	
opposition	15911 Mar 17 02:27	8° <u>♁</u> 28'27	-14°42'18	min. Earth dist.	15918 Mar 23 07:34	16° <u>♁</u> 44'22	43.81289 AU
direct	15911 Jun 07 11:26	7° <u>♁</u> 23'52		opposition	15918 Mar 25 06:15	16° <u>♁</u> 42'02	-15°31'02
evening set	15911 Sep 10 10:05	8° <u>♁</u> 55'34		direct	15918 Jun 15 20:15	15° <u>♁</u> 38'40	
				evening set	15918 Sep 21 15:16	17° <u>♁</u> 12'24	
conjunction	15911 Sep 15 15:57	9° <u>♁</u> 03'49	-14°07'03				
minimum elong	15911 Sep 15 15:55	9° <u>♁</u> 03'49	14°07'01	conjunction	15918 Sep 23 12:31	17° <u>♁</u> 15'17	-14°53'30
max. Earth dist.	15911 Sep 17 18:43	9° <u>♁</u> 07'08	44.52993 AU	minimum elong	15918 Sep 23 12:33	17° <u>♁</u> 15'17	14°53'20
morning rise	15911 Sep 20 21:47	9° <u>♁</u> 12'03		morning rise	15918 Sep 25 09:52	17° <u>♁</u> 18'10	
retrograde	15911 Dec 25 21:34	10° <u>♁</u> 44'59		max. Earth dist.	15918 Sep 25 11:27	17° <u>♁</u> 18'16	45.83153 AU
min. Earth dist.	15912 Mar 15 12:21	9° <u>♁</u> 43'12	42.69229 AU	retrograde	15919 Jan 02 17:03	18° <u>♁</u> 53'24	
opposition	15912 Mar 17 13:49	9° <u>♁</u> 40'41	-14°50'29	min. Earth dist.	15919 Mar 24 18:47	17° <u>♁</u> 52'26	43.98884 AU
direct	15912 Jun 08 01:46	8° <u>♁</u> 36'19		opposition	15919 Mar 26 16:15	17° <u>♁</u> 50'10	-15°36'22
evening set	15912 Sep 11 05:56	10° <u>♁</u> 08'11		direct	15919 Jun 17 07:30	16° <u>♁</u> 46'59	
				evening set	15919 Sep 23 23:07	18° <u>♁</u> 21'44	
conjunction	15912 Sep 16 02:25	10° <u>♁</u> 15'47	-14°14'51				
minimum elong	15912 Sep 16 02:24	10° <u>♁</u> 15'47	14°14'47	conjunction	15919 Sep 24 21:27	18° <u>♁</u> 23'09	-14°58'33
max. Earth dist.	15912 Sep 18 03:30	10° <u>♁</u> 18'59	44.72778 AU	minimum elong	15919 Sep 24 21:28	18° <u>♁</u> 23'09	14°58'23
morning rise	15912 Sep 20 22:58	10° <u>♁</u> 23'23		morning rise	15919 Sep 25 19:49	18° <u>♁</u> 24'34	
retrograde	15912 Dec 26 09:23	11° <u>♁</u> 56'31		max. Earth dist.	15919 Sep 26 19:12	18° <u>♁</u> 26'03	46.00556 AU
min. Earth dist.	15913 Mar 16 23:37	10° <u>♁</u> 54'56	42.88923 AU	retrograde	15920 Jan 04 03:11	20° <u>♁</u> 00'53	
opposition	15913 Mar 19 01:10	10° <u>♁</u> 52'25	-14°58'14	min. Earth dist.	15920 Mar 25 03:35	19° <u>♁</u> 00'06	44.16241 AU
direct	15913 Jun 09 12:43	9° <u>♁</u> 48'16		opposition	15920 Mar 27 01:45	18° <u>♁</u> 57'48	-15°41'17
evening set	15913 Sep 13 01:52	11° <u>♁</u> 20'19		direct	15920 Jun 17 15:24	17° <u>♁</u> 54'48	
conjunction	15913 Sep 17 12:43	11° <u>♁</u> 27'14	-14°22'16	conjunction	15920 Sep 25 06:14	19° <u>♁</u> 30'35	-15°03'14
minimum elong	15913 Sep 17 12:41	11° <u>♁</u> 27'14	14°22'12	minimum elong	15920 Sep 25 06:16	19° <u>♁</u> 30'35	15°03'03
max. Earth dist.	15913 Sep 19 14:03	11° <u>♁</u> 30'27	44.92125 AU	max. Earth dist.	15920 Sep 27 03:58	19° <u>♁</u> 33'28	46.17706 AU
morning rise	15913 Sep 21 23:33	11° <u>♁</u> 34'11		retrograde	15921 Jan 04 12:42	21° <u>♁</u> 07'56	
retrograde	15913 Dec 27 20:55	13° <u>♁</u> 07'32		min. Earth dist.	15921 Mar 26 14:29	20° <u>♁</u> 07'15	44.33339 AU
min. Earth dist.	15914 Mar 18 12:36	12° <u>♁</u> 06'01	43.08159 AU	opposition	15921 Mar 28 11:25	20° <u>♁</u> 05'02	-15°45'49
opposition	15914 Mar 20 12:25	12° <u>♁</u> 03'36	-15°05'36	direct	15921 Jun 18 23:32	19° <u>♁</u> 02'13	
direct	15914 Jun 10 23:37	10° <u>♁</u> 59'37					
evening set	15914 Sep 14 22:15	12° <u>♁</u> 31'53		conjunction	15921 Sep 26 14:46	20° <u>♁</u> 37'37	-15°07'32
				minimum elong	15921 Sep 26 14:48	20° <u>♁</u> 37'37	15°07'20
conjunction	15914 Sep 18 22:49	12° <u>♁</u> 38'07	-14°29'17	max. Earth dist.	15921 Sep 28 12:17	20° <u>♁</u> 40'29	46.34591 AU
minimum elong	15914 Sep 18 22:48	12° <u>♁</u> 38'07	14°29'11	retrograde	15922 Jan 05 19:01	22° <u>♁</u> 14'37	
max. Earth dist.	15914 Sep 20 22:38	12° <u>♁</u> 41'12	45.11034 AU	min. Earth dist.	15922 Mar 28 00:03	21° <u>♁</u> 14'06	44.50124 AU
morning rise	15914 Sep 22 23:25	12° <u>♁</u> 44'22		opposition	15922 Mar 29 20:49	21° <u>♁</u> 11'53	-15°49'58
retrograde	15914 Dec 29 08:37	14° <u>♁</u> 17'57		direct	15922 Jun 20 09:49	20° <u>♁</u> 09'16	
min. Earth dist.	15915 Mar 19 23:08	13° <u>♁</u> 16'35	43.26955 AU				
opposition	15915 Mar 21 23:08	13° <u>♁</u> 14'10	-15°12'34	conjunction	15922 Sep 27 23:11	21° <u>♁</u> 44'18	-15°11'29
direct	15915 Jun 12 08:09	12° <u>♁</u> 10'21		minimum elong	15922 Sep 27 23:14	21° <u>♁</u> 44'18	15°11'17
evening set	15915 Sep 16 18:49	13° <u>♁</u> 42'50					



max. Earth dist.	15922 Sep 29 19:26	21° <u>♂</u> 47'05	46.51144 AU	max. Earth dist.	15930 Oct 08 04:35	0° <u>♂</u> 27'28	47.67760 AU
retrograde	15923 Jan 07 03:45	23° <u>♂</u> 20'59		retrograde	15931 Jan 15 20:02	1° <u>♂</u> 59'16	
min. Earth dist.	15923 Mar 29 09:43	22° <u>♂</u> 20'36	44.66568 AU	min. Earth dist.	15931 Apr 07 12:30	0° <u>♂</u> 59'33	45.81850 AU
opposition	15923 Mar 31 05:58	22° <u>♂</u> 18'25	-15°53'45	opposition	15931 Apr 09 01:54	0° <u>♂</u> 57'45	-16°12'20
direct	15923 Jun 21 19:26	21° <u>♂</u> 15'59			15931 Jun 12 21:16	30° <u>♂</u> 00'	
				direct	15931 Jun 30 16:52	29° <u>♂</u> 56'29	
conjunction	15923 Sep 29 07:38	22° <u>♂</u> 50'40	-15°15'05		15931 Jul 18 08:33	0° <u>♂</u>	
minimum elong	15923 Sep 29 07:40	22° <u>♂</u> 50'40	15°14'51				
max. Earth dist.	15923 Oct 01 04:07	22° <u>♂</u> 53'27	46.67321 AU	conjunction	15931 Oct 07 21:03	1° <u>♂</u> 28'27	-15°32'39
retrograde	15924 Jan 08 11:50	24° <u>♂</u> 27'02		minimum elong	15931 Oct 07 21:09	1° <u>♂</u> 28'27	15°32'19
min. Earth dist.	15924 Mar 29 20:20	23° <u>♂</u> 26'45	44.82583 AU	max. Earth dist.	15931 Oct 09 11:12	1° <u>♂</u> 30'46	47.80667 AU
opposition	15924 Mar 31 15:04	23° <u>♂</u> 24'39	-15°57'11	retrograde	15932 Jan 17 02:43	3° <u>♂</u> 02'18	
direct	15924 Jun 22 06:37	22° <u>♂</u> 22'24		min. Earth dist.	15932 Apr 07 19:57	2° <u>♂</u> 02'44	45.94621 AU
				opposition	15932 Apr 09 09:34	2° <u>♂</u> 00'55	-16°13'11
conjunction	15924 Sep 29 15:49	23° <u>♂</u> 56'44	-15°18'22	direct	15932 Jun 30 22:09	0° <u>♂</u> 59'46	
minimum elong	15924 Sep 29 15:52	23° <u>♂</u> 56'44	15°18'07				
max. Earth dist.	15924 Oct 01 10:27	23° <u>♂</u> 59'24	46.83053 AU	conjunction	15932 Oct 08 03:53	2° <u>♂</u> 31'27	-15°33'26
retrograde	15925 Jan 08 22:46	25° <u>♂</u> 32'47		minimum elong	15932 Oct 08 03:58	2° <u>♂</u> 31'28	15°33'04
min. Earth dist.	15925 Mar 31 05:10	24° <u>♂</u> 32'39	44.98127 AU	max. Earth dist.	15932 Oct 09 16:58	2° <u>♂</u> 33'42	47.93276 AU
opposition	15925 Apr 01 23:54	24° <u>♂</u> 30'34	-16°00'18	retrograde	15933 Jan 17 09:11	4° <u>♂</u> 05'03	
direct	15925 Jun 23 13:23	23° <u>♂</u> 28'29		min. Earth dist.	15933 Apr 09 04:21	3° <u>♂</u> 05'33	46.07102 AU
				opposition	15933 Apr 10 17:14	3° <u>♂</u> 03'47	-16°13'43
conjunction	15925 Sep 30 23:59	25° <u>♂</u> 02'29	-15°21'20	direct	15933 Jul 02 06:05	2° <u>♂</u> 02'47	
minimum elong	15925 Oct 01 00:02	25° <u>♂</u> 02'29	15°21'03				
max. Earth dist.	15925 Oct 02 18:08	25° <u>♂</u> 05'06	46.98291 AU	conjunction	15933 Oct 09 10:50	3° <u>♂</u> 34'11	-15°33'54
retrograde	15926 Jan 10 08:11	26° <u>♂</u> 38'12		minimum elong	15933 Oct 09 10:56	3° <u>♂</u> 34'11	15°33'32
min. Earth dist.	15926 Apr 01 15:58	25° <u>♂</u> 38'07	45.13167 AU	max. Earth dist.	15933 Oct 11 00:21	3° <u>♂</u> 36'27	48.05589 AU
opposition	15926 Apr 03 08:48	25° <u>♂</u> 36'08	-16°03'06	retrograde	15934 Jan 18 12:47	5° <u>♂</u> 07'31	
direct	15926 Jun 24 20:27	24° <u>♂</u> 34'13		min. Earth dist.	15934 Apr 10 12:49	4° <u>♂</u> 08'06	46.19248 AU
				opposition	15934 Apr 12 00:45	4° <u>♂</u> 06'22	-16°13'57
conjunction	15926 Oct 02 07:58	26° <u>♂</u> 07'52	-15°23'59	direct	15934 Jul 03 17:12	3° <u>♂</u> 05'31	
minimum elong	15926 Oct 02 08:02	26° <u>♂</u> 07'52	15°23'43				
max. Earth dist.	15926 Oct 04 01:17	26° <u>♂</u> 10'25	47.13033 AU	conjunction	15934 Oct 10 17:28	4° <u>♂</u> 36'38	-15°34'04
retrograde	15927 Jan 11 13:16	27° <u>♂</u> 43'15		minimum elong	15934 Oct 10 17:34	4° <u>♂</u> 36'38	15°33'40
min. Earth dist.	15927 Apr 03 00:52	26° <u>♂</u> 43'16	45.27691 AU	max. Earth dist.	15934 Oct 12 05:16	4° <u>♂</u> 38'48	48.17559 AU
opposition	15927 Apr 04 17:21	26° <u>♂</u> 41'18	-16°05'35	retrograde	15935 Jan 19 21:23	6° <u>♂</u> 09'44	
direct	15927 Jun 26 06:26	25° <u>♂</u> 39'31		min. Earth dist.	15935 Apr 11 20:07	5° <u>♂</u> 10'26	46.31029 AU
				opposition	15935 Apr 13 08:05	5° <u>♂</u> 08'43	-16°13'52
conjunction	15927 Oct 03 15:43	27° <u>♂</u> 12'49	-15°26'21	direct	15935 Jul 05 00:51	4° <u>♂</u> 07'59	
minimum elong	15927 Oct 03 15:47	27° <u>♂</u> 12'50	15°26'03				
max. Earth dist.	15927 Oct 05 07:24	27° <u>♂</u> 15'16	47.27279 AU	conjunction	15935 Oct 12 00:14	5° <u>♂</u> 38'50	-15°33'57
retrograde	15928 Jan 12 19:22	28° <u>♂</u> 47'53		minimum elong	15935 Oct 12 00:21	5° <u>♂</u> 38'51	15°33'33
min. Earth dist.	15928 Apr 03 10:03	27° <u>♂</u> 47'58	45.41762 AU	max. Earth dist.	15935 Oct 13 11:53	5° <u>♂</u> 40'59	48.29124 AU
opposition	15928 Apr 05 01:39	27° <u>♂</u> 46'03	-16°07'46	retrograde	15936 Jan 21 06:38	7° <u>♂</u> 11'42	
direct	15928 Jun 26 16:07	26° <u>♂</u> 44'23		min. Earth dist.	15936 Apr 12 05:24	6° <u>♂</u> 12'26	46.42375 AU
				opposition	15936 Apr 13 15:19	6° <u>♂</u> 10'48	-16°13'30
conjunction	15928 Oct 03 23:24	28° <u>♂</u> 17'21	-15°28'25	direct	15936 Jul 05 07:45	5° <u>♂</u> 10'12	
minimum elong	15928 Oct 03 23:28	28° <u>♂</u> 17'21	15°28'07				
max. Earth dist.	15928 Oct 05 15:24	28° <u>♂</u> 19'48	47.41108 AU	conjunction	15936 Oct 12 06:56	6° <u>♂</u> 40'48	-15°33'34
retrograde	15929 Jan 13 01:34	29° <u>♂</u> 52'05		minimum elong	15936 Oct 12 07:03	6° <u>♂</u> 40'48	15°33'09
min. Earth dist.	15929 Apr 04 19:35	28° <u>♂</u> 52'13	45.55434 AU	max. Earth dist.	15936 Oct 13 17:32	6° <u>♂</u> 42'53	48.40244 AU
opposition	15929 Apr 06 09:57	28° <u>♂</u> 50'21	-16°09'37	retrograde	15937 Jan 21 12:44	8° <u>♂</u> 13'25	
direct	15929 Jun 28 03:07	27° <u>♂</u> 48'49		opposition	15937 Apr 14 22:28	7° <u>♂</u> 12'38	-16°12'53
				min. Earth dist.	15937 Apr 13 12:38	7° <u>♂</u> 14'15	46.53234 AU
conjunction	15929 Oct 05 06:37	29° <u>♂</u> 21'25	-15°30'09	direct	15937 Jul 06 13:26	6° <u>♂</u> 12'09	
minimum elong	15929 Oct 05 06:43	29° <u>♂</u> 21'26	15°29'49				
max. Earth dist.	15929 Oct 06 21:14	29° <u>♂</u> 23'47	47.54587 AU	conjunction	15937 Oct 13 13:22	7° <u>♂</u> 42'29	-15°32'55
	15929 Nov 01 07:09	0° <u>♂</u>		minimum elong	15937 Oct 13 13:29	7° <u>♂</u> 42'30	15°32'31
retrograde	15930 Jan 14 10:47	0° <u>♂</u> 55'52		max. Earth dist.	15937 Oct 14 22:21	7° <u>♂</u> 44'28	48.50849 AU
	15930 Apr 02 18:53	30° <u>♂</u> 00'		retrograde	15938 Jan 22 18:42	9° <u>♂</u> 14'51	
min. Earth dist.	15930 Apr 06 03:09	29° <u>♂</u> 56'08	45.68788 AU	min. Earth dist.	15938 Apr 14 21:18	8° <u>♂</u> 15'42	46.63576 AU
opposition	15930 Apr 07 18:01	29° <u>♂</u> 54'15	-16°11'08	opposition	15938 Apr 16 05:41	8° <u>♂</u> 14'10	-16°11'59
direct	15930 Jun 29 10:48	28° <u>♂</u> 52'50		direct	15938 Jul 07 19:28	7° <u>♂</u> 13'46	
	15930 Sep 19 05:08	0° <u>♂</u>					
conjunction	15930 Oct 06 13:54	0° <u>♂</u> 25'07	-15°31'34	conjunction	15938 Oct 14 19:59	8° <u>♂</u> 43'51	-15°32'02
minimum elong	15930 Oct 06 13:58	0° <u>♂</u> 25'07	15°31'14	minimum elong	15938 Oct 14 20:06	8° <u>♂</u> 43'52	15°31'36
				max. Earth dist.	15938 Oct 16 04:48	8° <u>♂</u> 45'49	48.60936 AU

retrograde	15939 Jan 23 22:24	10° <del>11</del> 15'58		minimum elong	15946 Oct 22 19:07	16° <del>11</del> 43'51	15°14'58
min. Earth dist.	15939 Apr 16 05:27	9° <del>11</del> 16'50	46.73380 AU	max. Earth dist.	15946 Oct 23 22:06	16° <del>11</del> 45'26	49.27786 AU
opposition	15939 Apr 17 12:31	9° <del>11</del> 15'21	-16°10'51	retrograde	15947 Feb 01 01:06	18° <del>11</del> 14'24	
direct	15939 Jul 09 05:01	8° <del>11</del> 15'03		opposition	15947 Apr 25 15:22	17° <del>11</del> 14'28	-15°51'57
				min. Earth dist.	15947 Apr 24 12:50	17° <del>11</del> 15'42	47.38594 AU
conjunction	15939 Oct 16 02:16	9° <del>11</del> 44'52	-15°30'54	direct	15947 Jul 17 07:21	16° <del>11</del> 14'54	
minimum elong	15939 Oct 16 02:23	9° <del>11</del> 44'52	15°30'28				
max. Earth dist.	15939 Oct 17 09:07	9° <del>11</del> 46'42	48.70516 AU	conjunction	15947 Oct 24 00:29	17° <del>11</del> 43'06	-15°12'13
retrograde	15940 Jan 25 05:06	11° <del>11</del> 16'44		minimum elong	15947 Oct 24 00:38	17° <del>11</del> 43'07	15°11'41
opposition	15940 Apr 17 19:14	10° <del>11</del> 16'11	-16°09'28	max. Earth dist.	15947 Oct 25 02:14	17° <del>11</del> 44'36	49.34671 AU
min. Earth dist.	15940 Apr 16 12:23	10° <del>11</del> 17'39	46.82710 AU	retrograde	15948 Feb 02 07:07	19° <del>11</del> 13'31	
direct	15940 Jul 09 12:25	9° <del>11</del> 15'57		opposition	15948 Apr 25 21:26	18° <del>11</del> 13'41	-15°48'22
				min. Earth dist.	15948 Apr 24 20:27	18° <del>11</del> 14'51	47.45222 AU
conjunction	15940 Oct 16 08:21	10° <del>11</del> 45'30	-15°29'31	direct	15948 Jul 17 10:48	17° <del>11</del> 14'14	
minimum elong	15940 Oct 16 08:29	10° <del>11</del> 45'30	15°29'03				
max. Earth dist.	15940 Oct 17 15:07	10° <del>11</del> 47'19	48.79643 AU	conjunction	15948 Oct 24 06:02	18° <del>11</del> 42'17	-15°08'43
retrograde	15941 Jan 25 12:24	12° <del>11</del> 17'08		minimum elong	15948 Oct 24 06:12	18° <del>11</del> 42'18	15°08'11
min. Earth dist.	15941 Apr 17 20:46	11° <del>11</del> 18'02	46.91622 AU	max. Earth dist.	15948 Oct 25 07:49	18° <del>11</del> 43'48	49.41119 AU
opposition	15941 Apr 19 01:58	11° <del>11</del> 16'39	-16°07'48	retrograde	15949 Feb 02 09:33	20° <del>11</del> 12'34	
direct	15941 Jul 10 19:50	10° <del>11</del> 16'29		min. Earth dist.	15949 Apr 26 03:27	19° <del>11</del> 13'56	47.51365 AU
				opposition	15949 Apr 27 03:25	19° <del>11</del> 12'49	-15°44'34
conjunction	15941 Oct 17 14:24	11° <del>11</del> 45'47	-15°27'52	direct	15949 Jul 18 18:11	18° <del>11</del> 13'27	
minimum elong	15941 Oct 17 14:31	11° <del>11</del> 45'48	15°27'24				
max. Earth dist.	15941 Oct 18 20:23	11° <del>11</del> 47'34	48.88412 AU	conjunction	15949 Oct 25 11:32	19° <del>11</del> 41'22	-15°04'59
retrograde	15942 Jan 26 19:08	13° <del>11</del> 17'11		minimum elong	15949 Oct 25 11:41	19° <del>11</del> 41'23	15°04'26
min. Earth dist.	15942 Apr 19 02:55	12° <del>11</del> 18'10	47.00197 AU	max. Earth dist.	15949 Oct 26 11:10	19° <del>11</del> 42'45	49.47071 AU
opposition	15942 Apr 20 08:24	12° <del>11</del> 16'47	-16°05'52	retrograde	15950 Feb 03 15:13	21° <del>11</del> 11'31	
direct	15942 Jul 12 00:03	11° <del>11</del> 16'42		min. Earth dist.	15950 Apr 27 09:51	20° <del>11</del> 12'56	47.56999 AU
				opposition	15950 Apr 28 09:18	20° <del>11</del> 11'50	-15°40'32
conjunction	15942 Oct 18 20:11	12° <del>11</del> 45'46	-15°25'56	direct	15950 Jul 20 00:33	19° <del>11</del> 12'33	
minimum elong	15942 Oct 18 20:20	12° <del>11</del> 45'47	15°25'27				
max. Earth dist.	15942 Oct 20 01:12	12° <del>11</del> 47'29	48.96859 AU	conjunction	15950 Oct 26 17:03	20° <del>11</del> 40'18	-15°01'03
retrograde	15943 Jan 28 01:15	14° <del>11</del> 16'58		minimum elong	15950 Oct 26 17:13	20° <del>11</del> 40'18	15°00'30
min. Earth dist.	15943 Apr 20 10:25	13° <del>11</del> 17'59	47.08477 AU	max. Earth dist.	15950 Oct 27 16:13	20° <del>11</del> 41'39	49.52489 AU
opposition	15943 Apr 21 14:51	13° <del>11</del> 16'38	-16°03'39	retrograde	15951 Feb 04 21:45	22° <del>11</del> 10'18	
direct	15943 Jul 13 05:08	12° <del>11</del> 16'39		opposition	15951 Apr 29 15:12	21° <del>11</del> 10'40	-15°36'17
				min. Earth dist.	15951 Apr 28 17:48	21° <del>11</del> 11'40	47.62087 AU
conjunction	15943 Oct 20 02:05	13° <del>11</del> 45'31	-15°23'43	direct	15951 Jul 21 09:06	20° <del>11</del> 11'26	
minimum elong	15943 Oct 20 02:13	13° <del>11</del> 45'32	15°23'14	evening set	15951 Oct 26 12:51	21° <del>11</del> 13'03	
max. Earth dist.	15943 Oct 21 07:25	13° <del>11</del> 47'15	49.05028 AU				
	15943 Dec 20 16:06	15° <del>11</del>		conjunction	15951 Oct 27 22:29	21° <del>11</del> 39'00	-14°56'54
retrograde	15944 Jan 29 03:36	15° <del>11</del> 16'32		minimum elong	15951 Oct 27 22:39	21° <del>11</del> 39'01	14°56'19
	15944 Mar 09 14:19	15° <del>11</del> 16		morning rise	15951 Oct 29 08:29	21° <del>11</del> 40'59	
opposition	15944 Apr 21 21:01	14° <del>11</del> 16'17	-16°01'08	max. Earth dist.	15951 Oct 28 20:24	21° <del>11</del> 40'17	49.57394 AU
min. Earth dist.	15944 Apr 20 17:08	14° <del>11</del> 17'36	47.16460 AU	retrograde	15952 Feb 06 05:26	23° <del>11</del> 08'51	
direct	15944 Jul 13 14:13	13° <del>11</del> 16'23		opposition	15952 Apr 29 20:45	22° <del>11</del> 09'15	-15°31'49
				min. Earth dist.	15952 Apr 28 23:25	22° <del>11</del> 10'15	47.66675 AU
conjunction	15944 Oct 20 07:45	14° <del>11</del> 45'05	-15°21'14	direct	15952 Jul 21 13:01	21° <del>11</del> 10'03	
minimum elong	15944 Oct 20 07:54	14° <del>11</del> 45'05	15°20'45	evening set	15952 Oct 26 01:54	22° <del>11</del> 34'34	
max. Earth dist.	15944 Oct 21 11:31	14° <del>11</del> 46'43	49.12918 AU				
	15944 Oct 30 22:09	15° <del>11</del>		conjunction	15952 Oct 28 03:42	22° <del>11</del> 37'28	-14°52'32
retrograde	15945 Jan 29 10:18	16° <del>11</del> 15'56		minimum elong	15952 Oct 28 03:52	22° <del>11</del> 37'28	14°51'58
min. Earth dist.	15945 Apr 21 23:17	15° <del>11</del> 17'06	47.24168 AU	max. Earth dist.	15952 Oct 29 00:19	22° <del>11</del> 38'39	49.61824 AU
opposition	15945 Apr 23 03:15	15° <del>11</del> 15'47	-15°58'21	morning rise	15952 Oct 30 05:53	22° <del>11</del> 40'22	
	15945 May 07 06:23	15° <del>11</del> 16		retrograde	15953 Feb 06 12:14	24° <del>11</del> 07'08	
direct	15945 Jul 14 21:17	14° <del>11</del> 16'00		min. Earth dist.	15953 Apr 30 06:42	23° <del>11</del> 08'30	47.70840 AU
	15945 Sep 18 11:43	15° <del>11</del>		opposition	15953 May 01 02:30	23° <del>11</del> 07'35	-15°27'07
				direct	15953 Jul 22 15:35	22° <del>11</del> 08'25	
conjunction	15945 Oct 21 13:19	15° <del>11</del> 44'30	-15°18'29	evening set	15953 Oct 26 18:25	23° <del>11</del> 32'02	
minimum elong	15945 Oct 21 13:27	15° <del>11</del> 44'31	15°17'59				
max. Earth dist.	15945 Oct 22 17:18	15° <del>11</del> 46'09	49.20511 AU	conjunction	15953 Oct 29 08:52	23° <del>11</del> 35'39	-14°47'56
retrograde	15946 Jan 30 18:49	17° <del>11</del> 15'13		minimum elong	15953 Oct 29 09:02	23° <del>11</del> 35'40	14°47'20
min. Earth dist.	15946 Apr 23 07:09	16° <del>11</del> 16'24	47.31558 AU	max. Earth dist.	15953 Oct 30 05:41	23° <del>11</del> 36'52	49.65868 AU
opposition	15946 Apr 24 09:30	16° <del>11</del> 15'10	-15°55'17	morning rise	15953 Oct 31 23:42	23° <del>11</del> 39'18	
direct	15946 Jul 16 03:46	15° <del>11</del> 15'30		retrograde	15954 Feb 07 13:47	25° <del>11</del> 05'11	
				opposition	15954 May 02 08:04	24° <del>11</del> 05'38	-15°22'10
conjunction	15946 Oct 22 18:57	16° <del>11</del> 43'50	-15°15'28	min. Earth dist.	15954 May 01 12:41	24° <del>11</del> 06'32	47.74629 AU

direct	15954 Jul 23 23:14	23° $\mathbb{M}$ 06'30		minimum elong	15960 Nov 04 20:02	0° $\mathbb{A}$ 18'45	14°08'21
evening set	15954 Oct 27 12:36	24° $\mathbb{M}$ 29'21		max. Earth dist.	15960 Nov 05 11:06	0° $\mathbb{A}$ 19'37	49.84961 AU
				morning rise	15960 Nov 10 01:23	0° $\mathbb{A}$ 25'57	
conjunction	15954 Oct 30 13:56	24° $\mathbb{M}$ 33'36	-14°43'05	retrograde	15961 Feb 14 01:35	1° $\mathbb{A}$ 47'39	
minimum elong	15954 Oct 30 14:05	24° $\mathbb{M}$ 33'36	14°42'30	opposition	15961 May 08 21:18	0° $\mathbb{A}$ 48'28	-14°40'41
max. Earth dist.	15954 Oct 31 09:03	24° $\mathbb{M}$ 34'42	49.69571 AU	min. Earth dist.	15961 May 08 07:48	0° $\mathbb{A}$ 49'05	47.91849 AU
morning rise	15954 Nov 02 15:42	24° $\mathbb{M}$ 37'52			15961 Jun 29 01:03	30° $\mathbb{R}$ $\mathbb{M}$	
retrograde	15955 Feb 08 17:16	26° $\mathbb{M}$ 02'59		direct	15961 Jul 30 13:54	29° $\mathbb{M}$ 49'42	
opposition	15955 May 03 13:22	25° $\mathbb{M}$ 03'28	-15°16'58		15961 Aug 30 11:53	0° $\mathbb{A}$	
min. Earth dist.	15955 May 02 18:16	25° $\mathbb{M}$ 04'22	47.78104 AU	evening set	15961 Oct 31 12:35	1° $\mathbb{A}$ 08'36	
direct	15955 Jul 25 05:52	24° $\mathbb{M}$ 04'22					
evening set	15955 Oct 28 07:46	25° $\mathbb{M}$ 26'31		conjunction	15961 Nov 06 00:50	1° $\mathbb{A}$ 16'11	-14°02'33
				minimum elong	15961 Nov 06 01:00	1° $\mathbb{A}$ 16'12	14°01'55
conjunction	15955 Oct 31 19:03	25° $\mathbb{M}$ 31'20	-14°38'00	max. Earth dist.	15961 Nov 06 14:48	1° $\mathbb{A}$ 16'59	49.86061 AU
minimum elong	15955 Oct 31 19:14	25° $\mathbb{M}$ 31'21	14°37'24	morning rise	15961 Nov 11 13:40	1° $\mathbb{A}$ 23'50	
max. Earth dist.	15955 Nov 01 14:19	25° $\mathbb{M}$ 32'27	49.72961 AU	retrograde	15962 Feb 15 08:50	2° $\mathbb{A}$ 45'04	
morning rise	15955 Nov 04 06:48	25° $\mathbb{M}$ 36'11		opposition	15962 May 10 02:32	1° $\mathbb{A}$ 45'55	-14°33'52
retrograde	15956 Feb 09 23:17	27° $\mathbb{M}$ 00'37		min. Earth dist.	15962 May 09 13:17	1° $\mathbb{A}$ 46'31	47.92572 AU
opposition	15956 May 03 18:50	26° $\mathbb{M}$ 01'08	-15°11'32	direct	15962 Jul 31 17:48	0° $\mathbb{A}$ 47'12	
min. Earth dist.	15956 May 03 01:12	26° $\mathbb{M}$ 01'58	47.81267 AU	evening set	15962 Nov 01 10:29	2° $\mathbb{A}$ 05'37	
direct	15956 Jul 25 13:07	25° $\mathbb{M}$ 02'05					
evening set	15956 Oct 28 03:30	26° $\mathbb{M}$ 23'36		conjunction	15962 Nov 07 05:53	2° $\mathbb{A}$ 13'37	-13°55'55
				minimum elong	15962 Nov 07 06:04	2° $\mathbb{A}$ 13'38	13°55'15
conjunction	15956 Oct 31 23:58	26° $\mathbb{M}$ 28'56	-14°32'40	max. Earth dist.	15962 Nov 07 18:04	2° $\mathbb{A}$ 14'19	49.86597 AU
minimum elong	15956 Nov 01 00:07	26° $\mathbb{M}$ 28'56	14°32'03	morning rise	15962 Nov 13 01:57	2° $\mathbb{A}$ 21'39	
max. Earth dist.	15956 Nov 01 18:24	26° $\mathbb{M}$ 30'00	49.76062 AU	retrograde	15963 Feb 16 16:17	3° $\mathbb{A}$ 42'26	
morning rise	15956 Nov 04 20:51	26° $\mathbb{M}$ 34'18		opposition	15963 May 11 07:43	2° $\mathbb{A}$ 43'19	-14°26'52
retrograde	15957 Feb 10 05:34	27° $\mathbb{M}$ 58'06		min. Earth dist.	15963 May 10 20:28	2° $\mathbb{A}$ 43'50	47.92739 AU
min. Earth dist.	15957 May 04 06:01	26° $\mathbb{M}$ 59'31	47.84127 AU	direct	15963 Aug 01 19:23	1° $\mathbb{A}$ 44'37	
opposition	15957 May 05 00:08	26° $\mathbb{M}$ 58'41	-15°05'50	evening set	15963 Nov 02 08:38	3° $\mathbb{A}$ 02'35	
direct	15957 Jul 26 17:29	25° $\mathbb{M}$ 59'41					
evening set	15957 Oct 28 23:44	27° $\mathbb{M}$ 20'36		conjunction	15963 Nov 08 10:58	3° $\mathbb{A}$ 10'59	-13°49'05
				minimum elong	15963 Nov 08 11:09	3° $\mathbb{A}$ 11'00	13°48'26
conjunction	15957 Nov 02 04:52	27° $\mathbb{M}$ 26'25	-14°27'05	max. Earth dist.	15963 Nov 08 22:50	3° $\mathbb{A}$ 11'40	49.86596 AU
minimum elong	15957 Nov 02 05:03	27° $\mathbb{M}$ 26'26	14°26'29	morning rise	15963 Nov 14 13:54	3° $\mathbb{A}$ 19'24	
max. Earth dist.	15957 Nov 02 22:12	27° $\mathbb{M}$ 27'25	49.78846 AU	retrograde	15964 Feb 17 18:47	4° $\mathbb{A}$ 39'44	
morning rise	15957 Nov 06 10:32	27° $\mathbb{M}$ 32'17		opposition	15964 May 11 12:51	3° $\mathbb{A}$ 40'37	-14°19'39
retrograde	15958 Feb 11 12:09	28° $\mathbb{M}$ 55'31		min. Earth dist.	15964 May 11 02:19	3° $\mathbb{A}$ 41'06	47.92371 AU
opposition	15958 May 06 05:29	27° $\mathbb{M}$ 56'08	-14°59'53	direct	15964 Aug 02 01:52	2° $\mathbb{A}$ 41'56	
min. Earth dist.	15958 May 05 12:51	27° $\mathbb{M}$ 56'55	47.86669 AU	evening set	15964 Nov 02 06:41	3° $\mathbb{A}$ 59'28	
direct	15958 Jul 27 20:15	26° $\mathbb{M}$ 57'12					
evening set	15958 Oct 29 20:27	28° $\mathbb{M}$ 17'33		conjunction	15964 Nov 08 15:40	4° $\mathbb{A}$ 08'14	-13°42'04
				minimum elong	15964 Nov 08 15:51	4° $\mathbb{A}$ 08'15	13°41'23
conjunction	15958 Nov 03 09:54	28° $\mathbb{M}$ 23'52	-14°21'17	max. Earth dist.	15964 Nov 09 01:37	4° $\mathbb{A}$ 08'48	49.86098 AU
minimum elong	15958 Nov 03 10:04	28° $\mathbb{M}$ 23'52	14°20'39	morning rise	15964 Nov 15 01:23	4° $\mathbb{A}$ 17'02	
max. Earth dist.	15958 Nov 04 03:25	28° $\mathbb{M}$ 24'52	49.81301 AU	retrograde	15965 Feb 17 21:40	5° $\mathbb{A}$ 36'56	
morning rise	15958 Nov 07 23:48	28° $\mathbb{M}$ 30'11		opposition	15965 May 12 18:00	4° $\mathbb{A}$ 37'49	-14°12'14
retrograde	15959 Feb 12 14:54	29° $\mathbb{M}$ 52'53		min. Earth dist.	15965 May 12 08:06	4° $\mathbb{A}$ 38'16	47.91554 AU
opposition	15959 May 07 10:44	28° $\mathbb{M}$ 53'34	-14°53'42	direct	15965 Aug 03 08:09	3° $\mathbb{A}$ 39'08	
min. Earth dist.	15959 May 06 18:43	28° $\mathbb{M}$ 54'18	47.88835 AU	evening set	15965 Nov 03 04:51	4° $\mathbb{A}$ 56'14	
direct	15959 Jul 29 01:28	27° $\mathbb{M}$ 54'42					
evening set	15959 Oct 30 17:30	29° $\mathbb{M}$ 14'32		conjunction	15965 Nov 09 20:32	5° $\mathbb{A}$ 05'23	-13°34'49
				minimum elong	15965 Nov 09 20:43	5° $\mathbb{A}$ 05'23	13°34'09
conjunction	15959 Nov 04 14:47	29° $\mathbb{M}$ 21'18	-14°15'15	max. Earth dist.	15965 Nov 10 06:25	5° $\mathbb{A}$ 05'57	49.85173 AU
minimum elong	15959 Nov 04 14:58	29° $\mathbb{M}$ 21'18	14°14'37	morning rise	15965 Nov 16 12:53	5° $\mathbb{A}$ 14'34	
max. Earth dist.	15959 Nov 05 06:23	29° $\mathbb{M}$ 22'12	49.83358 AU	retrograde	15966 Feb 19 02:53	6° $\mathbb{A}$ 34'02	
morning rise	15959 Nov 09 12:40	29° $\mathbb{M}$ 28'04		opposition	15966 May 13 23:03	5° $\mathbb{A}$ 34'54	-14°04'36
	15959 Dec 03 13:36	0° $\mathbb{A}$		min. Earth dist.	15966 May 13 14:44	5° $\mathbb{A}$ 35'18	47.90340 AU
retrograde	15960 Feb 13 20:03	0° $\mathbb{A}$ 50'15		direct	15966 Aug 04 15:48	4° $\mathbb{A}$ 36'13	
	15960 Apr 29 12:57	30° $\mathbb{R}$ $\mathbb{M}$		evening set	15966 Nov 04 03:16	5° $\mathbb{A}$ 52'56	
opposition	15960 May 07 15:55	29° $\mathbb{M}$ 51'00	-14°47'18				
min. Earth dist.	15960 May 07 00:31	29° $\mathbb{M}$ 51'43	47.90587 AU	conjunction	15966 Nov 11 01:19	6° $\mathbb{A}$ 02'25	-13°27'22
direct	15960 Jul 29 06:21	28° $\mathbb{M}$ 52'11		minimum elong	15966 Nov 11 01:30	6° $\mathbb{A}$ 02'26	13°26'40
	15960 Oct 22 03:40	0° $\mathbb{A}$		max. Earth dist.	15966 Nov 11 10:17	6° $\mathbb{A}$ 02'56	49.83898 AU
evening set	15960 Oct 30 14:52	0° $\mathbb{A}$ 11'33		morning rise	15966 Nov 18 00:05	6° $\mathbb{A}$ 11'58	
				retrograde	15967 Feb 20 09:50	7° $\mathbb{A}$ 31'02	
conjunction	15960 Nov 04 19:51	0° $\mathbb{A}$ 18'44	-14°09'00	opposition	15967 May 15 03:58	6° $\mathbb{A}$ 31'55	-13°56'43

min. Earth dist.	15967 May 14 19:15	6°♂32'19	47.88787 AU	morning rise	15973 Nov 26 04:04	12°♂53'26	
direct	15967 Aug 05 20:15	5°♂33'14		retrograde	15974 Feb 26 22:53	14°♂10'09	
evening set	15967 Nov 05 01:35	6°♂49'32		opposition	15974 May 21 14:47	13°♂11'04	-12°55'12
				min. Earth dist.	15974 May 21 12:21	13°♂11'11	47.68362 AU
conjunction	15967 Nov 12 06:00	6°♂59'23	-13°19'40	direct	15974 Aug 12 01:42	12°♂12'24	
minimum elong	15967 Nov 12 06:10	6°♂59'24	13°18'59	evening set	15974 Nov 09 17:57	13°♂26'25	
max. Earth dist.	15967 Nov 12 13:46	6°♂59'50	49.82287 AU				
morning rise	15967 Nov 19 11:14	7°♂09'18		conjunction	15974 Nov 18 15:50	13°♂38'38	-12°19'41
retrograde	15968 Feb 21 16:19	8°♂27'59		minimum elong	15974 Nov 18 16:00	13°♂38'39	12°18'58
opposition	15968 May 15 08:58	7°♂28'52	-13°48'37	max. Earth dist.	15974 Nov 18 17:13	13°♂38'43	49.61281 AU
min. Earth dist.	15968 May 15 01:46	7°♂29'12	47.86922 AU	morning rise	15974 Nov 27 14:46	13°♂50'55	
direct	15968 Aug 05 22:36	6°♂30'12		retrograde	15975 Feb 28 02:19	15°♂07'19	
evening set	15968 Nov 05 00:09	7°♂46'07		opposition	15975 May 22 19:50	14°♂08'12	-12°45'34
				min. Earth dist.	15975 May 22 18:31	14°♂08'16	47.63631 AU
conjunction	15968 Nov 12 10:50	7°♂56'20	-13°11'45	direct	15975 Aug 13 06:35	13°♂09'31	
minimum elong	15968 Nov 12 11:02	7°♂56'21	13°11'04	evening set	15975 Nov 10 17:19	14°♂23'13	
max. Earth dist.	15968 Nov 12 18:58	7°♂56'48	49.80385 AU				
morning rise	15968 Nov 19 22:13	8°♂06'36		conjunction	15975 Nov 19 20:50	14°♂35'45	-12°10'19
retrograde	15969 Feb 21 19:02	9°♂24'55		minimum elong	15975 Nov 19 21:01	14°♂35'46	12°09'35
opposition	15969 May 16 13:58	8°♂25'48	-13°40'16	max. Earth dist.	15975 Nov 19 21:43	14°♂35'48	49.56399 AU
min. Earth dist.	15969 May 16 06:56	8°♂26'07	47.84753 AU	morning rise	15975 Nov 29 01:19	14°♂48'21	
direct	15969 Aug 07 02:08	7°♂27'08		retrograde	15976 Feb 29 05:39	16°♂04'28	
evening set	15969 Nov 05 22:41	8°♂42'42		opposition	15976 May 23 00:53	15°♂05'18	-12°35'45
				min. Earth dist.	15976 May 23 01:15	15°♂05'17	47.58374 AU
conjunction	15969 Nov 13 15:24	8°♂53'16	-13°03'37	direct	15976 Aug 13 14:29	14°♂06'33	
minimum elong	15969 Nov 13 15:35	8°♂53'17	13°02'54	evening set	15976 Nov 10 16:53	15°♂19'59	
max. Earth dist.	15969 Nov 13 21:50	8°♂53'38	49.78183 AU				
morning rise	15969 Nov 21 09:01	9°♂03'52		conjunction	15976 Nov 20 01:46	15°♂32'49	-12°00'45
retrograde	15970 Feb 22 23:18	10°♂21'51		minimum elong	15976 Nov 20 01:57	15°♂32'49	12°00'01
opposition	15970 May 17 18:56	9°♂22'45	-13°31'42	max. Earth dist.	15976 Nov 20 01:31	15°♂32'48	49.51047 AU
min. Earth dist.	15970 May 17 12:20	9°♂23'03	47.82281 AU	morning rise	15976 Nov 29 11:40	15°♂45'43	
direct	15970 Aug 08 06:23	8°♂24'05		retrograde	15977 Mar 01 11:54	17°♂01'33	
evening set	15970 Nov 06 21:24	9°♂39'20		opposition	15977 May 24 05:51	16°♂02'20	-12°25'43
				min. Earth dist.	15977 May 24 06:07	16°♂02'19	47.52679 AU
conjunction	15970 Nov 14 20:17	9°♂50'14	-12°55'15	direct	15977 Aug 14 19:40	15°♂03'32	
minimum elong	15970 Nov 14 20:28	9°♂50'15	12°54'33	evening set	15977 Nov 11 16:19	16°♂16'41	
max. Earth dist.	15970 Nov 15 02:38	9°♂50'36	49.75651 AU				
morning rise	15970 Nov 22 19:59	10°♂01'11		conjunction	15977 Nov 21 06:34	16°♂29'49	-11°50'59
retrograde	15971 Feb 24 03:09	11°♂18'50		minimum elong	15977 Nov 21 06:46	16°♂29'50	11°50'14
opposition	15971 May 18 23:50	10°♂19'44	-13°22'53	max. Earth dist.	15977 Nov 21 05:02	16°♂29'44	49.45272 AU
min. Earth dist.	15971 May 18 18:49	10°♂19'58	47.79454 AU	morning rise	15977 Nov 30 22:00	16°♂43'03	
direct	15971 Aug 09 14:03	9°♂21'06		retrograde	15978 Mar 02 18:46	17°♂58'36	
evening set	15971 Nov 07 20:23	10°♂36'01		opposition	15978 May 25 10:58	16°♂59'20	-12°15'27
				min. Earth dist.	15978 May 25 12:57	16°♂59'14	47.46601 AU
conjunction	15971 Nov 16 01:07	10°♂47'15	-12°46'39	direct	15978 Aug 15 23:06	16°♂00'29	
minimum elong	15971 Nov 16 01:17	10°♂47'16	12°45'56	evening set	15978 Nov 12 16:00	17°♂13'22	
max. Earth dist.	15971 Nov 16 06:32	10°♂47'34	49.72761 AU				
morning rise	15971 Nov 24 06:41	10°♂58'33		conjunction	15978 Nov 22 11:37	17°♂26'49	-11°40'59
retrograde	15972 Feb 25 09:55	12°♂15'52		minimum elong	15978 Nov 22 11:48	17°♂26'50	11°40'15
opposition	15972 May 19 04:43	11°♂16'48	-13°13'52	max. Earth dist.	15978 Nov 22 10:15	17°♂26'44	49.39147 AU
min. Earth dist.	15972 May 18 23:42	11°♂17'02	47.76237 AU	morning rise	15978 Dec 02 08:12	17°♂40'21	
direct	15972 Aug 09 19:20	10°♂18'10		retrograde	15979 Mar 03 22:38	18°♂55'38	
evening set	15972 Nov 07 19:15	11°♂32'46		opposition	15979 May 26 15:47	17°♂56'19	-12°04'58
				min. Earth dist.	15979 May 26 17:57	17°♂56'13	47.40187 AU
conjunction	15972 Nov 16 05:48	11°♂44'20	-12°37'52	direct	15979 Aug 17 03:00	16°♂57'26	
minimum elong	15972 Nov 16 05:59	11°♂44'21	12°37'09	evening set	15979 Nov 13 15:50	18°♂10'05	
max. Earth dist.	15972 Nov 16 09:43	11°♂44'34	49.69432 AU				
morning rise	15972 Nov 24 17:22	11°♂55'58		conjunction	15979 Nov 23 16:29	18°♂23'50	-11°30'46
retrograde	15973 Feb 25 18:49	13°♂12'59		minimum elong	15979 Nov 23 16:41	18°♂23'51	11°30'01
opposition	15973 May 20 09:51	12°♂13'55	-13°04'38	max. Earth dist.	15979 Nov 23 13:25	18°♂23'40	49.32713 AU
min. Earth dist.	15973 May 20 06:45	12°♂14'03	47.72561 AU	morning rise	15979 Dec 03 18:24	18°♂37'40	
direct	15973 Aug 10 21:06	11°♂15'17		retrograde	15980 Mar 04 03:12	19°♂52'43	
evening set	15973 Nov 08 18:32	12°♂29'35		opposition	15980 May 26 20:49	18°♂53'22	-11°54'15
				min. Earth dist.	15980 May 26 23:28	18°♂53'15	47.33488 AU
conjunction	15973 Nov 17 10:53	12°♂41'29	-12°28'52	direct	15980 Aug 17 06:57	17°♂54'27	
minimum elong	15973 Nov 17 11:04	12°♂41'29	12°28'09	evening set	15980 Nov 13 15:27	19°♂06'53	
max. Earth dist.	15973 Nov 17 14:31	12°♂41'41	49.65623 AU				

conjunction	15980 Nov 23 21:23	19°♂20'57	-11°20'20	direct	15987 Aug 24 18:58	24°♂38'57	
minimum elong	15980 Nov 23 21:33	19°♂20'57	11°19'35	evening set	15987 Nov 19 18:49	25°♂50'16	
max. Earth dist.	15980 Nov 23 18:23	19°♂20'46	49.25989 AU				
morning rise	15980 Dec 04 04:24	19°♂35'04		conjunction	15987 Dec 01 10:23	26°♂06'22	-10°01'09
retrograde	15981 Mar 05 07:10	20°♂49'56		minimum elong	15987 Dec 01 10:32	26°♂06'22	10°00'24
opposition	15981 May 28 01:59	19°♂50'33	-11°43'18	max. Earth dist.	15987 Nov 30 23:50	26°♂05'45	48.68826 AU
min. Earth dist.	15981 May 28 05:48	19°♂50'22	47.26497 AU	morning rise	15987 Dec 13 03:24	26°♂22'33	
direct	15981 Aug 18 13:46	18°♂51'36		retrograde	15988 Mar 12 03:38	27°♂36'18	
evening set	15981 Nov 14 15:29	20°♂03'50		opposition	15988 Jun 03 14:55	26°♂36'41	-10°20'24
				min. Earth dist.	15988 Jun 04 01:39	26°♂36'11	46.66904 AU
conjunction	15981 Nov 25 02:24	20°♂18'11	-11°09'39	direct	15988 Aug 24 23:08	25°♂37'27	
minimum elong	15981 Nov 25 02:35	20°♂18'12	11°08'55	evening set	15988 Nov 19 19:46	26°♂48'37	
max. Earth dist.	15981 Nov 24 22:44	20°♂17'59	49.18996 AU				
morning rise	15981 Dec 05 14:29	20°♂32'37		conjunction	15988 Dec 01 15:55	27°♂04'59	-9°49'02
retrograde	15982 Mar 06 13:43	21°♂47'17		minimum elong	15988 Dec 01 16:05	27°♂05'00	9°48'16
opposition	15982 May 29 06:56	20°♂47'54	-11°32'07	max. Earth dist.	15988 Dec 01 05:17	27°♂04'22	48.58741 AU
min. Earth dist.	15982 May 29 10:30	20°♂47'44	47.19226 AU	morning rise	15988 Dec 13 13:18	27°♂21'27	
direct	15982 Aug 19 19:08	19°♂48'56		retrograde	15989 Mar 13 09:38	28°♂35'03	
evening set	15982 Nov 15 15:33	21°♂00'59		opposition	15989 Jun 04 20:24	27°♂35'20	-10°07'43
				min. Earth dist.	15989 Jun 05 07:22	27°♂34'49	46.56457 AU
conjunction	15982 Nov 26 07:27	21°♂15'38	-10°58'46	direct	15989 Aug 26 03:06	26°♂36'00	
minimum elong	15982 Nov 26 07:37	21°♂15'39	10°58'00	evening set	15989 Nov 20 21:02	27°♂47'02	
max. Earth dist.	15982 Nov 26 02:25	21°♂15'21	49.11693 AU				
morning rise	15982 Dec 07 00:40	21°♂30'22		conjunction	15989 Dec 02 21:27	28°♂03'41	-9°36'43
retrograde	15983 Mar 07 23:10	22°♂44'51		minimum elong	15989 Dec 02 21:36	28°♂03'41	9°35'57
opposition	15983 May 30 12:10	21°♂45'27	-11°20'41	max. Earth dist.	15989 Dec 02 08:51	28°♂02'57	48.48221 AU
min. Earth dist.	15983 May 30 17:23	21°♂45'13	47.11633 AU	morning rise	15989 Dec 14 23:24	28°♂20'25	
direct	15983 Aug 20 20:58	20°♂46'29		retrograde	15990 Mar 14 15:20	29°♂33'52	
evening set	15983 Nov 16 15:44	21°♂58'22		opposition	15990 Jun 06 01:50	28°♂34'03	-9°54'48
				min. Earth dist.	15990 Jun 06 13:48	28°♂33'30	46.45622 AU
conjunction	15983 Nov 27 12:38	22°♂13'19	-10°47'39	direct	15990 Aug 27 06:21	27°♂34'37	
minimum elong	15983 Nov 27 12:48	22°♂13'20	10°46'53	evening set	15990 Nov 21 22:19	28°♂45'32	
max. Earth dist.	15983 Nov 27 07:46	22°♂13'02	49.04050 AU				
morning rise	15983 Dec 08 10:38	22°♂28'21		conjunction	15990 Dec 04 03:12	29°♂02'27	-9°24'10
retrograde	15984 Mar 08 04:50	23°♂42'41		minimum elong	15990 Dec 04 03:22	29°♂02'27	9°23'23
opposition	15984 May 30 17:19	22°♂43'16	-11°09'03	max. Earth dist.	15990 Dec 03 14:29	29°♂01'43	48.37322 AU
min. Earth dist.	15984 May 30 22:50	22°♂43'01	47.03658 AU	morning rise	15990 Dec 16 09:26	29°♂19'28	
direct	15984 Aug 21 00:04	21°♂44'16			15991 Jan 17 19:24	0°♂	
evening set	15984 Nov 16 16:17	22°♂56'01		retrograde	15991 Mar 15 18:58	0°♂32'47	
					15991 May 13 09:14	30°♂	
conjunction	15984 Nov 27 17:50	23°♂11'16	-10°36'19	opposition	15991 Jun 07 07:28	29°♂32'52	-9°41'40
minimum elong	15984 Nov 27 18:00	23°♂11'16	10°35'33	min. Earth dist.	15991 Jun 07 20:37	29°♂32'15	46.34425 AU
max. Earth dist.	15984 Nov 27 11:02	23°♂10'52	48.96002 AU	direct	15991 Aug 28 13:21	28°♂33'19	
morning rise	15984 Dec 08 20:48	23°♂26'35		evening set	15991 Nov 22 23:48	29°♂44'07	
retrograde	15985 Mar 09 09:44	24°♂40'46			15991 Dec 04 10:26	0°♂	
opposition	15985 May 31 22:39	23°♂41'20	-10°57'11				
min. Earth dist.	15985 Jun 01 05:17	23°♂41'01	46.95258 AU	conjunction	15991 Dec 05 08:49	0°♂01'18	-9°11'24
direct	15985 Aug 22 04:28	22°♂42'18		minimum elong	15991 Dec 05 08:58	0°♂01'19	9°10'37
evening set	15985 Nov 17 16:50	23°♂53'55		max. Earth dist.	15991 Dec 04 19:18	0°♂00'31	48.26102 AU
				morning rise	15991 Dec 17 19:17	0°♂18'36	
conjunction	15985 Nov 28 23:16	24°♂09'27	-10°24'48	retrograde	15992 Mar 15 23:56	1°♂31'49	
minimum elong	15985 Nov 28 23:26	24°♂09'27	10°24'02	opposition	15992 Jun 07 13:03	0°♂31'48	-9°28'18
max. Earth dist.	15985 Nov 28 15:55	24°♂09'01	48.87473 AU	min. Earth dist.	15992 Jun 08 01:58	0°♂31'11	46.22926 AU
morning rise	15985 Dec 10 06:57	24°♂25'04			15992 Jul 07 02:04	30°♂	
retrograde	15986 Mar 10 12:42	25°♂39'06		direct	15992 Aug 28 20:46	29°♂32'08	
opposition	15986 Jun 02 04:07	24°♂39'38	-10°45'08		15992 Oct 19 04:54	0°♂	
min. Earth dist.	15986 Jun 02 12:26	24°♂39'14	46.86337 AU	evening set	15992 Nov 23 01:26	0°♂42'51	
direct	15986 Aug 23 12:58	23°♂40'33					
evening set	15986 Nov 18 17:50	24°♂52'01		conjunction	15992 Dec 05 14:35	1°♂00'18	-8°58'24
				minimum elong	15992 Dec 05 14:45	1°♂00'19	8°57'38
conjunction	15986 Nov 30 04:50	25°♂07'50	-10°13'04	max. Earth dist.	15992 Dec 04 23:47	0°♂59'27	48.14579 AU
minimum elong	15986 Nov 30 05:01	25°♂07'51	10°12'18	morning rise	15992 Dec 18 05:20	1°♂17'52	
max. Earth dist.	15986 Nov 29 20:04	25°♂07'20	48.78422 AU	retrograde	15993 Mar 17 08:47	2°♂31'00	
morning rise	15986 Dec 11 17:09	25°♂23'44		opposition	15993 Jun 08 18:54	1°♂30'53	-9°14'41
retrograde	15987 Mar 11 19:27	26°♂37'38		min. Earth dist.	15993 Jun 09 09:20	1°♂30'12	46.11142 AU
opposition	15987 Jun 03 09:21	25°♂38'06	-10°32'52	direct	15993 Aug 30 01:37	0°♂31'09	
min. Earth dist.	15987 Jun 03 17:56	25°♂37'42	46.76881 AU	evening set	15993 Nov 24 03:08	1°♂41'46	

conjunction	15993 Dec 06 20:31	1°35'30" -8°45'11"	direct	16000 Sep 05 13:12	7°33'21"
minimum elong	15993 Dec 06 20:39	1°35'31" 8°44'24"	evening set	16000 Nov 29 22:13	8°34'25"
max. Earth dist.	15993 Dec 06 06:01	1°35'39" 48.02781 AU			
morning rise	15993 Dec 19 15:14	2°31'20"	conjunction	16000 Dec 13 17:39	9°30'29" -7°06'27"
retrograde	15994 Mar 18 16:13	3°33'02"	minimum elong	16000 Dec 13 17:47	9°30'23" 7°05'41"
opposition	15994 Jun 10 00:42	2°33'01" -9°00'50"	max. Earth dist.	16000 Dec 12 19:28	9°30'11" 47.09220 AU
min. Earth dist.	15994 Jun 10 15:02	2°32'31" 45.99064 AU	morning rise	16000 Dec 27 14:37	9°32'20"
direct	15994 Aug 31 05:18	1°33'02"	retrograde	16001 Mar 25 16:49	10°33'51"
evening set	15994 Nov 25 05:16	2°34'05"	opposition	16001 Jun 16 20:44	9°33'16" -7°17'26"
max. Earth dist.	15994 Dec 07 10:14	2°35'59" 47.90681 AU	min. Earth dist.	16001 Jun 17 18:43	9°33'13" 45.03103 AU
			direct	16001 Sep 06 20:39	8°33'40"
			evening set	16001 Dec 01 01:46	9°34'20"
			max. Earth dist.	16001 Dec 14 01:12	10°30'24" 46.93996 AU
conjunction	15994 Dec 08 02:29	2°35'56" -8°31'44"			
minimum elong	15994 Dec 08 02:38	2°35'57" 8°30'57"			
morning rise	15994 Dec 21 01:22	3°31'02"			
retrograde	15995 Mar 19 23:37	4°33'03"	conjunction	16001 Dec 15 00:30	10°30'48" -6°51'29"
opposition	15995 Jun 11 06:32	3°32'47" -8°46'44"	minimum elong	16001 Dec 15 00:38	10°30'48" 6°50'42"
min. Earth dist.	15995 Jun 11 21:57	3°32'03" 45.86682 AU	morning rise	16001 Dec 29 00:54	10°32'40"
direct	15995 Sep 01 09:05	2°32'51"	retrograde	16002 Mar 26 22:28	11°33'05"
evening set	15995 Nov 26 07:27	3°34'02"	opposition	16002 Jun 18 03:22	10°33'03" -7°01'46"
			min. Earth dist.	16002 Jun 19 01:28	10°33'59" 44.87575 AU
			direct	16002 Sep 08 04:38	9°33'17"
			evening set	16002 Dec 02 05:35	10°34'00"
			max. Earth dist.	16002 Dec 15 06:52	11°30'43" 46.78396 AU
conjunction	15995 Dec 09 08:42	3°35'41" -8°18'03"			
minimum elong	15995 Dec 09 08:50	3°35'41" 8°17'16"			
max. Earth dist.	15995 Dec 08 16:15	3°35'43" 47.78246 AU			
morning rise	15995 Dec 22 11:24	4°31'03"			
retrograde	15996 Mar 20 03:33	5°33'02"	conjunction	16002 Dec 16 07:32	11°30'02" -6°36'18"
opposition	15996 Jun 11 12:40	4°32'41" -8°32'25"	minimum elong	16002 Dec 16 07:39	11°30'02" 6°35'32"
min. Earth dist.	15996 Jun 12 05:15	4°32'54" 45.73935 AU	morning rise	16002 Dec 30 11:14	11°32'12"
direct	15996 Sep 01 16:41	3°32'41"	retrograde	16003 Mar 28 07:03	12°33'18"
evening set	15996 Nov 26 09:51	4°34'01"	opposition	16003 Jun 19 10:08	11°33'07" -6°45'50"
			min. Earth dist.	16003 Jun 20 09:55	11°33'57" 44.71712 AU
			direct	16003 Sep 09 11:45	10°33'12"
			evening set	16003 Dec 03 09:32	11°34'58"
conjunction	15996 Dec 09 14:51	4°35'46" -8°04'09"			
minimum elong	15996 Dec 09 15:00	4°35'46" 8°03'23"			
max. Earth dist.	15996 Dec 08 21:23	4°35'44" 47.65430 AU			
morning rise	15996 Dec 22 21:25	5°31'24"	conjunction	16003 Dec 17 14:44	12°30'15" -6°20'53"
retrograde	15997 Mar 21 10:07	6°33'02"	minimum elong	16003 Dec 17 14:51	12°30'15" 6°20'06"
opposition	15997 Jun 12 18:48	5°32'57" -8°17'51"	max. Earth dist.	16003 Dec 16 14:20	12°30'47" 46.62499 AU
min. Earth dist.	15997 Jun 13 11:37	5°32'09" 45.60774 AU	morning rise	16003 Dec 31 21:26	12°32'39"
direct	15997 Sep 02 23:08	4°32'51"	retrograde	16004 Mar 28 16:47	13°34'19"
evening set	15997 Nov 27 12:41	5°34'02"	opposition	16004 Jun 19 17:01	12°34'02" -6°29'40"
			min. Earth dist.	16004 Jun 20 16:28	12°33'21" 44.55568 AU
			direct	16004 Sep 09 16:06	11°33'25"
			evening set	16004 Dec 03 13:41	12°35'01"
conjunction	15997 Dec 10 21:22	5°35'13" -7°50'02"			
minimum elong	15997 Dec 10 21:31	5°35'13" 7°49'15"			
max. Earth dist.	15997 Dec 10 02:13	5°35'05" 47.52144 AU			
morning rise	15997 Dec 24 07:46	6°31'06"	conjunction	16004 Dec 17 21:47	13°31'04" -6°05'13"
retrograde	15998 Mar 22 19:12	7°33'06"	minimum elong	16004 Dec 17 21:53	13°31'04" 6°04'27"
opposition	15998 Jun 14 01:07	6°33'35" -8°03'05"	max. Earth dist.	16004 Dec 16 19:44	13°30'14" 46.46337 AU
min. Earth dist.	15998 Jun 14 20:09	6°32'40" 45.47121 AU	morning rise	16005 Jan 01 07:44	13°31'26"
direct	15998 Sep 04 04:23	5°33'02"	retrograde	16005 Mar 30 02:40	14°34'42"
evening set	15998 Nov 28 15:41	6°34'05"	opposition	16005 Jun 21 00:08	13°34'13" -6°13'15"
max. Earth dist.	15998 Dec 11 08:33	6°35'51" 47.38351 AU	min. Earth dist.	16005 Jun 22 00:41	13°34'01" 44.39183 AU
			direct	16005 Sep 10 20:08	12°34'59"
			evening set	16005 Dec 04 18:08	13°35'25"
			max. Earth dist.	16005 Dec 18 03:23	14°31'20" 46.29926 AU
conjunction	15998 Dec 12 04:09	7°30'00" -7°35'43"			
minimum elong	15998 Dec 12 04:17	7°30'01" 7°34'57"			
morning rise	15998 Dec 25 18:03	7°31'09"			
retrograde	15999 Mar 24 02:54	8°33'20"	conjunction	16005 Dec 19 05:21	14°31'43" -5°49'19"
opposition	15999 Jun 15 07:31	7°33'12" -7°48'06"	minimum elong	16005 Dec 19 05:27	14°31'43" 5°48'34"
min. Earth dist.	15999 Jun 16 02:52	7°33'03" 45.32937 AU	morning rise	16006 Jan 02 18:06	14°33'37"
direct	15999 Sep 05 09:32	6°33'11"	retrograde	16006 Mar 31 08:14	15°34'58"
evening set	15999 Nov 29 18:55	7°34'19"	opposition	16006 Jun 22 07:16	14°34'20" -5°56'34"
			min. Earth dist.	16006 Jun 23 08:25	14°34'50" 44.22549 AU
			direct	16006 Sep 12 04:03	13°34'45"
			evening set	16006 Dec 05 22:58	14°35'03"
			max. Earth dist.	16006 Dec 19 10:04	15°31'52" 46.13281 AU
conjunction	15999 Dec 13 10:44	8°30'07" -7°21'12"			
minimum elong	15999 Dec 13 10:53	8°30'07" 7°20'24"			
max. Earth dist.	15999 Dec 12 12:53	7°35'49" 47.24030 AU			
morning rise	15999 Dec 27 04:21	8°32'31"			
retrograde	16000 Mar 24 11:19	9°33'31"	conjunction	16006 Dec 20 12:57	15°31'04" -5°33'11"
opposition	16000 Jun 15 14:05	8°33'24" -7°32'53"	minimum elong	16006 Dec 20 13:03	15°31'04" 5°32'25"
min. Earth dist.	16000 Jun 16 10:50	8°33'14" 45.18250 AU	morning rise	16007 Jan 04 04:38	15°33'12"

retrograde	16007 Apr 01 14:50	16°35'14.0		conjunction	16013 Dec 28 00:24	22°35'58	-3°33'45
opposition	16007 Jun 23 14:35	15°34'54	-5°39'38	minimum elong	16013 Dec 28 00:28	22°35'58	3°33'01
min. Earth dist.	16007 Jun 24 15:46	15°34'40	44.05672 AU	morning rise	16014 Jan 12 08:41	23°31'6.41	
direct	16007 Sep 13 12:05	14°34'23		retrograde	16014 Apr 09 08:04	24°31'27	
evening set	16007 Dec 07 03:58	15°35'37		opposition	16014 Jun 30 23:36	23°32'26	-3°34'14
				min. Earth dist.	16014 Jul 02 07:22	23°32'50	42.76769 AU
conjunction	16007 Dec 21 20:39	16°32'05.2	-5°16'48	direct	16014 Sep 20 17:06	22°32'53.3	
minimum elong	16007 Dec 21 20:45	16°32'05.3	5°16'03	evening set	16014 Dec 14 01:09	23°33'13	
max. Earth dist.	16007 Dec 20 16:43	16°31'11	45.96351 AU	max. Earth dist.	16014 Dec 27 22:12	23°35'49	44.66641 AU
morning rise	16008 Jan 05 15:06	16°34'21.5					
retrograde	16008 Apr 01 23:22	17°35'53		conjunction	16014 Dec 29 09:38	24°30'10.2	-3°15'46
opposition	16008 Jun 23 22:16	16°35'58	-5°22'27	minimum elong	16014 Dec 29 09:42	24°30'10.2	3°15'02
min. Earth dist.	16008 Jun 25 01:11	16°35'23.9	43.88495 AU	morning rise	16015 Jan 13 19:55	24°32'35.7	
direct	16008 Sep 13 19:57	15°35'21.8		retrograde	16015 Apr 10 20:09	25°33'8.58	
evening set	16008 Dec 07 09:22	17°30'43		opposition	16015 Jul 02 08:33	24°33'54.4	-3°15'20
max. Earth dist.	16008 Dec 21 00:46	17°32'29	45.79107 AU	min. Earth dist.	16015 Jul 03 17:50	24°34'03	42.56833 AU
				direct	16015 Sep 21 22:54	23°32'37	
conjunction	16008 Dec 22 04:46	17°32'51.1	-5°00'12	evening set	16015 Dec 15 08:43	24°34'53.3	
minimum elong	16008 Dec 22 04:52	17°32'51.2	4°59'26	max. Earth dist.	16015 Dec 29 07:54	25°30'6.22	44.46632 AU
morning rise	16009 Jan 06 01:43	17°34'6.48					
retrograde	16009 Apr 03 08:43	19°30'03.6		conjunction	16015 Dec 30 19:05	25°30'8.34	-2°57'33
opposition	16009 Jun 25 05:57	17°35'8.33	-5°05'01	minimum elong	16015 Dec 30 19:08	25°30'8.34	2°56'49
min. Earth dist.	16009 Jun 26 08:50	17°35'71.4	43.70969 AU	morning rise	16016 Jan 15 06:55	25°31'43	
direct	16009 Sep 15 02:57	16°35'6.44		retrograde	16016 Apr 11 06:16	26°34'7.00	
evening set	16009 Dec 08 15:15	18°30'8.19		opposition	16016 Jul 02 17:41	25°34'32	-2°56'10
max. Earth dist.	16009 Dec 22 06:51	18°32'8.11	45.61466 AU	min. Earth dist.	16016 Jul 04 03:07	25°34'15.1	42.36644 AU
				direct	16016 Sep 22 07:30	24°34'01.2	
conjunction	16009 Dec 23 13:01	18°33'00.2	-4°43'22	evening set	16016 Dec 15 16:54	25°35'32.7	
minimum elong	16009 Dec 23 13:06	18°33'00.2	4°42'37	max. Earth dist.	16016 Dec 29 16:26	26°31'42.3	44.26405 AU
morning rise	16010 Jan 07 12:39	18°35'15.2					
retrograde	16010 Apr 04 21:24	20°30'55.1		conjunction	16016 Dec 31 04:44	26°31'6.40	-2°39'06
opposition	16010 Jun 26 13:59	19°30'33.9	-4°47'21	minimum elong	16016 Dec 31 04:47	26°31'6.40	2°38'22
min. Earth dist.	16010 Jun 27 18:34	19°30'21.4	43.53019 AU	morning rise	16017 Jan 15 18:17	26°34'00.0	
direct	16010 Sep 16 06:49	18°30'13.8		retrograde	16017 Apr 12 17:08	27°35'53.35	
evening set	16010 Dec 09 21:24	19°31'32.5		opposition	16017 Jul 04 02:57	26°35'15.55	-2°36'45
				min. Earth dist.	16017 Jul 05 12:38	26°35'01.3	42.16263 AU
conjunction	16010 Dec 24 21:42	19°33'52.2	-4°26'18	direct	16017 Sep 23 15:47	25°34'8.22	
minimum elong	16010 Dec 24 21:47	19°33'52.2	4°25'32	evening set	16017 Dec 17 01:22	27°30'15.7	
max. Earth dist.	16010 Dec 23 15:12	19°33'33.0	45.43361 AU	max. Earth dist.	16017 Dec 31 01:47	27°32'30.2	44.05968 AU
morning rise	16011 Jan 08 23:32	19°35'7.26					
retrograde	16011 Apr 06 06:44	21°31'13.5		conjunction	16018 Jan 01 14:45	27°32'52.2	-2°20'24
opposition	16011 Jun 27 22:06	20°30'9.12	-4°29'26	minimum elong	16018 Jan 01 14:47	27°32'52.3	2°19'41
min. Earth dist.	16011 Jun 29 03:41	20°30'7.44	43.34589 AU	morning rise	16018 Jan 17 05:42	27°34'8.55	
direct	16011 Sep 17 14:13	19°30'7.00		retrograde	16018 Apr 14 02:45	29°30'45.0	
evening set	16011 Dec 11 03:57	20°31'8.59		opposition	16018 Jul 05 12:38	28°30'05.8	-2°17'04
max. Earth dist.	16011 Dec 24 22:17	20°33'9.10	45.24794 AU	min. Earth dist.	16018 Jul 06 23:35	27°35'9.11	41.95680 AU
				direct	16018 Sep 25 01:39	26°35'7.12	
conjunction	16011 Dec 26 06:25	20°34'10.9	-4°09'01	evening set	16018 Dec 18 10:17	28°31'10.8	
minimum elong	16011 Dec 26 06:30	20°34'10.9	4°08'16	max. Earth dist.	16019 Jan 01 12:00	28°33'25.2	43.85342 AU
morning rise	16012 Jan 10 10:37	21°30'32.6					
retrograde	16012 Apr 06 15:09	22°31'7.46		conjunction	16019 Jan 03 01:00	28°33'44.6	-2°01'28
opposition	16012 Jun 28 06:27	21°31'51.2	-4°11'17	minimum elong	16019 Jan 03 01:03	28°33'44.6	2°00'46
min. Earth dist.	16012 Jun 29 12:37	21°31'34.2	43.15713 AU	morning rise	16019 Jan 18 17:11	28°35'8.31	
direct	16012 Sep 17 22:14	20°31'24.7			16019 Mar 10 15:53	0°	
evening set	16012 Dec 11 10:35	21°32'45.8		retrograde	16019 Apr 15 12:53	0°	14'48
max. Earth dist.	16012 Dec 25 05:47	21°34'51.7	45.05775 AU		16019 May 22 00:51	30°	
				opposition	16019 Jul 06 22:19	29°31'04.4	-1°57'09
conjunction	16012 Dec 26 15:14	21°34'7.21	-3°51'30	min. Earth dist.	16019 Jul 08 08:51	29°30'8.58	41.74904 AU
minimum elong	16012 Dec 26 15:18	21°34'7.21	3°50'45	direct	16019 Sep 26 11:27	28°30'6.46	
morning rise	16013 Jan 10 21:34	22°30'9.52		evening set	16019 Dec 19 19:44	29°32'10.6	
retrograde	16013 Apr 07 22:33	23°32'42.4		max. Earth dist.	16020 Jan 02 20:48	29°34'22.7	43.64498 AU
opposition	16013 Jun 29 15:06	22°32'13.6	-3°52'53				
min. Earth dist.	16013 Jun 30 22:59	22°32'00.0	42.96415 AU	conjunction	16020 Jan 04 11:28	29°34'44.56	-1°42'18
direct	16013 Sep 19 08:37	21°31'8.58		minimum elong	16020 Jan 04 11:30	29°34'44.56	1°41'35
evening set	16013 Dec 12 17:39	22°33'12.2			16020 Jan 14 07:41	0°	
max. Earth dist.	16013 Dec 26 14:51	22°35'15.3	44.86375 AU	morning rise	16020 Jan 20 04:54	0°	08'52
				retrograde	16020 Apr 16 03:00	1°	25'34

opposition	16020 Jul 07 08:31	0°21'19" -1°36'58"	direct	16026 Oct 04 08:19	6°35'56"	
min. Earth dist.	16020 Jul 08 20:36	0°19'27" 41.53903 AU	evening set	16026 Dec 28 03:40	7°53'40"	
	16020 Jul 24 22:38	30°R 3	max. Earth dist.	16027 Jan 11 01:08	8°15'38"	42.08888 AU
direct	16020 Sep 26 18:04	29°317'08"				
	16020 Nov 27 11:31	0°	conjunction	16027 Jan 12 22:43	8°18'40"	0°38'09"
evening set	16020 Dec 20 05:27	0°31'54"	minimum elong	16027 Jan 12 22:42	8°18'40"	0°38'48"
max. Earth dist.	16021 Jan 03 07:59	0°53'27" 43.43393 AU	morning rise	16027 Jan 28 19:13	8°43'46"	
			retrograde	16027 Apr 25 23:37	10°03'47"	
conjunction	16021 Jan 04 22:21	0°55'55" -1°22'55"	opposition	16027 Jul 16 15:40	8°57'44"	0°51'08"
minimum elong	16021 Jan 04 22:23	0°55'55" 1°22'13"	min. Earth dist.	16027 Jul 18 09:43	8°55'30"	39.96993 AU
morning rise	16021 Jan 20 16:36	1°20'03"	direct	16027 Oct 05 16:33	7°51'37"	
retrograde	16021 Apr 17 16:29	2°37'10"	evening set	16027 Dec 29 17:02	9°09'55"	
opposition	16021 Jul 08 18:56	1°32'43" -1°16'32"	max. Earth dist.	16028 Jan 12 14:15	9°32'00"	41.85364 AU
min. Earth dist.	16021 Jul 10 07:19	1°30'51" 41.32603 AU				
direct	16021 Sep 28 01:43	0°28'20"	conjunction	16028 Jan 14 11:55	9°35'03"	0°59'05"
evening set	16021 Dec 21 16:01	1°43'34"	minimum elong	16028 Jan 14 11:54	9°35'03"	0°59'44"
max. Earth dist.	16022 Jan 04 17:23	2°05'10" 43.21956 AU	morning rise	16028 Jan 30 07:56	10°00'18"	
			retrograde	16028 Apr 26 14:05	11°20'52"	
conjunction	16022 Jan 06 09:35	2°07'45" -1°03'17"	opposition	16028 Jul 17 04:17	10°14'30"	1°13'15"
minimum elong	16022 Jan 06 09:36	2°07'45" 1°02'36"	min. Earth dist.	16028 Jul 18 22:56	10°12'14"	39.73401 AU
morning rise	16022 Jan 22 04:47	2°32'04"	direct	16028 Oct 06 03:59	9°08'04"	
retrograde	16022 Apr 19 06:40	3°49'38"	evening set	16028 Dec 30 06:56	10°26'58"	
opposition	16022 Jul 10 05:31	2°44'58" -0°55'52"	max. Earth dist.	16029 Jan 13 03:06	10°49'07"	41.61684 AU
min. Earth dist.	16022 Jul 11 19:04	2°43'02" 41.10950 AU				
direct	16022 Sep 29 09:47	1°40'21"	conjunction	16029 Jan 15 01:17	10°52'14"	1°20'14"
evening set	16022 Dec 23 03:00	2°56'03"	minimum elong	16029 Jan 15 01:16	10°52'14"	1°20'51"
max. Earth dist.	16023 Jan 06 04:04	3°17'45" 43.00109 AU	morning rise	16029 Jan 30 20:53	11°17'36"	
			retrograde	16029 Apr 28 03:51	12°38'45"	
conjunction	16023 Jan 07 21:19	3°20'26" -0°43'27"	opposition	16029 Jul 18 17:07	11°32'05"	1°35'35"
minimum elong	16023 Jan 07 21:20	3°20'26" 0°42'47"	min. Earth dist.	16029 Jul 20 11:37	11°29'48"	39.49680 AU
morning rise	16023 Jan 23 17:01	3°44'55"	direct	16029 Oct 07 17:16	10°25'18"	
retrograde	16023 Apr 20 17:08	5°02'56"	evening set	16029 Dec 31 21:34	11°44'52"	
opposition	16023 Jul 11 16:40	3°58'02" -0°34'57"	max. Earth dist.	16030 Jan 14 15:48	12°07'02"	41.37863 AU
min. Earth dist.	16023 Jul 13 07:40	3°56'01" 40.88874 AU				
direct	16023 Sep 30 22:39	2°53'09"	conjunction	16030 Jan 16 15:12	12°10'15"	1°41'35"
evening set	16023 Dec 24 14:21	4°09'21"	minimum elong	16030 Jan 16 15:09	12°10'14"	1°42'12"
max. Earth dist.	16024 Jan 07 15:12	4°31'09" 42.77852 AU	morning rise	16030 Feb 01 10:02	12°35'44"	
			retrograde	16030 Apr 29 17:04	13°57'31"	
conjunction	16024 Jan 09 09:08	4°33'54" -0°23'23"	opposition	16030 Jul 20 06:21	12°50'32"	1°58'09"
minimum elong	16024 Jan 09 09:09	4°33'54" 0°22'42"	min. Earth dist.	16030 Jul 22 02:10	12°48'10"	39.25847 AU
morning rise	16024 Jan 25 05:18	4°58'33"	direct	16030 Oct 09 06:47	11°43'27"	
retrograde	16024 Apr 21 04:17	6°17'02"	evening set	16031 Jan 02 12:44	13°03'41"	
opposition	16024 Jul 12 04:00	5°11'52" -0°13'47"	max. Earth dist.	16031 Jan 16 06:40	13°25'58"	41.13945 AU
min. Earth dist.	16024 Jul 13 19:04	5°09'50" 40.66395 AU				
direct	16024 Oct 01 11:02	4°06'42"	conjunction	16031 Jan 18 05:32	13°29'11"	2°03'07"
evening set	16024 Dec 25 02:21	5°23'23"	minimum elong	16031 Jan 18 05:30	13°29'10"	2°03'43"
max. Earth dist.	16025 Jan 08 01:28	5°45'12" 42.55188 AU	morning rise	16031 Feb 02 23:17	13°54'46"	
				16031 Mar 24 20:09	15°	
conjunction	16025 Jan 09 21:20	5°48'06" -0°03'09"	retrograde	16031 May 01 07:13	15°17'14"	
minimum elong	16025 Jan 09 21:22	5°48'06" 0°02'30"		16031 Jun 08 10:15	15°R	
behind sun begin	16025 Jan 09 14:54	5°47'42"	opposition	16031 Jul 21 19:58	14°09'58"	2°20'56"
behind sun end	16025 Jan 10 03:49	5°48'29"	min. Earth dist.	16031 Jul 23 15:09	14°07'37"	39.01920 AU
morning rise	16025 Jan 25 17:52	6°12'55"	direct	16031 Oct 10 19:43	13°02'34"	
asc. node	16025 Mar 06 00:25	7°05'26"	evening set	16032 Jan 04 04:32	14°23'32"	
retrograde	16025 Apr 22 17:21	7°31'53"	max. Earth dist.	16032 Jan 17 19:37	14°45'47"	40.89920 AU
opposition	16025 Jul 13 15:39	6°26'27" 0°07'37"				
min. Earth dist.	16025 Jul 15 08:42	6°24'17" 40.43550 AU	conjunction	16032 Jan 19 20:01	14°49'07"	2°24'50"
direct	16025 Oct 02 21:14	5°20'59"	minimum elong	16032 Jan 19 19:57	14°49'07"	2°25'26"
evening set	16025 Dec 26 14:40	6°38'10"		16032 Jan 26 10:24	15°	
max. Earth dist.	16026 Jan 09 14:09	7°00'07" 42.32183 AU	morning rise	16032 Feb 04 12:42	15°14'48"	
			retrograde	16032 May 02 00:47	16°38'01"	
conjunction	16026 Jan 11 09:59	7°03'01" 0°17'27"	opposition	16032 Jul 22 10:06	15°30'27"	2°43'54"
minimum elong	16026 Jan 11 09:59	7°03'01" 0°18'07"	min. Earth dist.	16032 Jul 24 06:34	15°28'01"	38.77887 AU
morning rise	16026 Jan 27 06:28	7°28'00"		16032 Aug 15 11:35	15°R	
retrograde	16026 Apr 24 06:36	8°47'28"	direct	16032 Oct 11 06:21	14°22'44"	
opposition	16026 Jul 15 03:31	7°41'44" 0°29'15"		16032 Dec 05 12:34	15°	
min. Earth dist.	16026 Jul 16 20:31	7°39'33" 40.20391 AU	evening set	16033 Jan 04 21:02	15°44'29"	



max. Earth dist.	16033 Jan 18 11:05	16°06'49"	40.65750 AU	min. Earth dist.	16039 Aug 04 01:52	25°23'32"	37.03612 AU
				direct	16039 Oct 21 10:16	24°16'05"	
conjunction	16033 Jan 20 11:17	16°10'10"	2°46'45"	evening set	16040 Jan 16 14:09	25°44'22"	
minimum elong	16033 Jan 20 11:14	16°10'09"	2°47'20"	max. Earth dist.	16040 Jan 29 05:07	26°06'16"	38.90115 AU
morning rise	16033 Feb 05 02:21	16°35'55"					
retrograde	16033 May 03 18:01	17°59'55"		conjunction	16040 Jan 31 11:04	26°10'12"	5°24'25"
opposition	16033 Jul 24 00:32	16°52'04"	3°07'05"	minimum elong	16040 Jan 31 10:56	26°10'11"	5°24'54"
min. Earth dist.	16033 Jul 25 21:22	16°49'36"	38.53689 AU	morning rise	16040 Feb 15 08:22	26°36'06"	
direct	16033 Oct 12 19:11	15°44'02"		retrograde	16040 May 14 04:45	28°06'29"	
evening set	16034 Jan 06 14:28	17°06'37"		opposition	16040 Aug 02 18:33	26°56'11"	5°54'13"
max. Earth dist.	16034 Jan 20 01:29	17°28'55"	40.41388 AU	min. Earth dist.	16040 Aug 04 20:05	26°53'21"	36.78108 AU
				direct	16040 Oct 22 03:34	25°45'32"	
conjunction	16034 Jan 22 02:57	17°32'22"	3°08'49"	evening set	16041 Jan 17 12:56	27°14'55"	
minimum elong	16034 Jan 22 02:52	17°32'22"	3°09'24"	max. Earth dist.	16041 Jan 29 23:58	27°36'43"	38.64488 AU
morning rise	16034 Feb 06 16:26	17°58'12"					
retrograde	16034 May 05 13:40	19°23'00"		conjunction	16041 Feb 01 06:06	27°40'42"	5°47'24"
opposition	16034 Jul 25 15:25	18°14'51"	3°30'28"	minimum elong	16041 Feb 01 05:58	27°40'42"	5°47'53"
min. Earth dist.	16034 Jul 27 12:48	18°12'20"	38.29274 AU	morning rise	16041 Feb 15 23:45	28°06'33"	
direct	16034 Oct 14 08:10	17°06'29"		retrograde	16041 May 16 03:02	29°38'01"	
evening set	16035 Jan 08 08:34	18°29'57"		opposition	16041 Aug 04 12:33	28°27'20"	6°18'37"
max. Earth dist.	16035 Jan 21 16:36	18°52'12"	40.16748 AU	min. Earth dist.	16041 Aug 06 13:40	28°24'30"	36.52641 AU
				direct	16041 Oct 23 21:00	27°16'15"	
conjunction	16035 Jan 23 19:09	18°55'45"	3°31'04"	evening set	16042 Jan 19 12:35	28°46'49"	
minimum elong	16035 Jan 23 19:04	18°55'45"	3°31'37"	max. Earth dist.	16042 Jan 31 18:44	29°08'26"	38.38891 AU
morning rise	16035 Feb 08 06:34	19°21'38"					
retrograde	16035 May 07 06:23	20°47'17"		conjunction	16042 Feb 03 01:46	29°12'32"	6°10'27"
opposition	16035 Jul 27 06:53	19°38'49"	3°54'01"	minimum elong	16042 Feb 03 01:37	29°12'31"	6°10'54"
min. Earth dist.	16035 Jul 29 05:47	19°36'12"	38.04578 AU	morning rise	16042 Feb 17 15:21	29°38'18"	
direct	16035 Oct 15 23:02	18°30'07"			16042 Mar 02 10:50	0°	
evening set	16036 Jan 10 03:25	19°54'28"		retrograde	16042 May 17 22:11	1°10'53"	
max. Earth dist.	16036 Jan 23 08:59	20°16'42"	39.91840 AU	opposition	16042 Aug 06 07:23	29°59'49"	6°43'05"
					16042 Aug 06 04:21	30°	
conjunction	16036 Jan 25 11:51	20°20'18"	3°53'28"	min. Earth dist.	16042 Aug 08 09:30	29°56'55"	36.27239 AU
minimum elong	16036 Jan 25 11:45	20°20'18"	3°54'00"	direct	16042 Oct 25 15:04	28°48'21"	
morning rise	16036 Feb 09 21:00	20°46'14"			16043 Jan 09 18:26	0°	
retrograde	16036 May 07 22:36	22°12'45"		evening set	16043 Jan 21 13:02	0°20'08"	
opposition	16036 Jul 27 22:40	21°03'57"	4°17'45"	max. Earth dist.	16043 Feb 02 15:44	0°41'40"	38.13381 AU
min. Earth dist.	16036 Jul 29 21:25	21°01'20"	37.79624 AU				
direct	16036 Oct 16 15:21	19°54'53"		conjunction	16043 Feb 04 21:56	0°45'44"	6°33'32"
evening set	16037 Jan 10 22:57	21°20'09"		minimum elong	16043 Feb 04 21:47	0°45'43"	6°33'59"
max. Earth dist.	16037 Jan 24 00:03	21°42'15"	39.66665 AU	morning rise	16043 Feb 19 07:00	1°11'24"	
				retrograde	16043 May 19 17:54	2°45'11"	
conjunction	16037 Jan 26 04:52	21°46'01"	4°16'01"	opposition	16043 Aug 08 02:37	1°33'45"	7°07'36"
minimum elong	16037 Jan 26 04:46	21°46'01"	4°16'33"	min. Earth dist.	16043 Aug 10 03:50	1°30'52"	36.01941 AU
morning rise	16037 Feb 10 11:38	22°11'59"		direct	16043 Oct 27 10:14	0°21'53"	
retrograde	16037 May 09 16:35	23°39'24"		evening set	16044 Jan 23 14:35	1°54'56"	
opposition	16037 Jul 29 15:01	22°30'14"	4°41'40"	max. Earth dist.	16044 Feb 04 11:09	2°16'14"	37.87974 AU
min. Earth dist.	16037 Jul 31 15:27	22°27'31"	37.54436 AU				
direct	16037 Oct 18 05:01	21°20'47"		conjunction	16044 Feb 06 18:39	2°20'25"	6°56'38"
evening set	16038 Jan 12 19:16	22°47'01"		minimum elong	16044 Feb 06 18:29	2°20'25"	6°57'03"
max. Earth dist.	16038 Jan 25 18:06	23°09'07"	39.41274 AU	morning rise	16044 Feb 20 23:06	2°45'57"	
				retrograde	16044 May 20 16:36	4°21'01"	
conjunction	16038 Jan 27 22:37	23°12'54"	4°38'42"	opposition	16044 Aug 08 22:32	3°09'13"	7°32'07"
minimum elong	16038 Jan 27 22:30	23°12'53"	4°39'12"	min. Earth dist.	16044 Aug 11 00:42	3°06'16"	35.76758 AU
morning rise	16038 Feb 12 02:25	23°38'51"		direct	16044 Oct 28 01:47	1°56'57"	
retrograde	16038 May 11 10:27	25°07'13"		evening set	16045 Jan 24 16:56	3°31'21"	
opposition	16038 Jul 31 07:35	23°57'41"	5°05'43"	max. Earth dist.	16045 Feb 05 09:23	3°52'31"	37.62649 AU
min. Earth dist.	16038 Aug 02 07:52	23°54'57"	37.29070 AU				
direct	16038 Oct 19 20:08	22°47'51"		conjunction	16045 Feb 07 16:09	3°56'41"	7°19'43"
evening set	16039 Jan 14 16:28	24°15'05"		minimum elong	16045 Feb 07 15:58	3°56'40"	7°20'08"
max. Earth dist.	16039 Jan 27 10:40	24°37'02"	39.15738 AU	morning rise	16045 Feb 21 15:21	4°22'03"	
				retrograde	16045 May 22 14:44	5°58'26"	
conjunction	16039 Jan 29 16:36	24°40'56"	5°01'30"	opposition	16045 Aug 10 19:02	4°46'17"	7°56'39"
minimum elong	16039 Jan 29 16:29	24°40'56"	5°02'01"	min. Earth dist.	16045 Aug 12 20:59	4°43'19"	35.51634 AU
morning rise	16039 Feb 13 17:27	25°06'53"		direct	16045 Oct 29 20:45	3°33'38"	
retrograde	16039 May 13 08:00	26°36'14"		evening set	16046 Jan 26 20:41	5°09'26"	
opposition	16039 Aug 02 00:46	25°26'20"	5°29'55"	max. Earth dist.	16046 Feb 07 06:31	5°30'18"	37.37358 AU

conjunction	16046 Feb 09 14:17	5° $\mathbf{\text{H}}$ 34'35	7°42'46	evening set	16053 Feb 10 04:56	17° $\mathbf{\text{H}}$ 22'58	
minimum elong	16046 Feb 09 14:06	5° $\mathbf{\text{H}}$ 34'34	7°43'08	max. Earth dist.	16053 Feb 19 10:44	17° $\mathbf{\text{H}}$ 41'00	35.60442 AU
morning rise	16046 Feb 23 08:06	5° $\mathbf{\text{H}}$ 59'46					
retrograde	16046 May 24 16:55	7° $\mathbf{\text{H}}$ 37'31		conjunction	16053 Feb 21 20:42	17° $\mathbf{\text{H}}$ 45'45	10°21'04
opposition	16046 Aug 12 16:02	6° $\mathbf{\text{H}}$ 25'00	8°21'09	minimum elong	16053 Feb 21 20:28	17° $\mathbf{\text{H}}$ 45'44	10°21'18
min. Earth dist.	16046 Aug 14 18:28	6° $\mathbf{\text{H}}$ 21'59	35.26533 AU	morning rise	16053 Mar 05 12:17	18° $\mathbf{\text{H}}$ 08'32	
direct	16046 Oct 31 14:49	5° $\mathbf{\text{H}}$ 11'56		retrograde	16053 Jun 06 09:28	19° $\mathbf{\text{H}}$ 57'22	
evening set	16047 Jan 29 01:21	6° $\mathbf{\text{H}}$ 49'12		opposition	16053 Aug 24 14:35	18° $\mathbf{\text{H}}$ 41'51	11°09'29
max. Earth dist.	16047 Feb 09 05:03	7° $\mathbf{\text{H}}$ 09'47	37.12036 AU	min. Earth dist.	16053 Aug 26 18:19	18° $\mathbf{\text{H}}$ 38'36	33.51475 AU
				direct	16053 Nov 12 03:17	17° $\mathbf{\text{H}}$ 25'33	
conjunction	16047 Feb 11 13:14	7° $\mathbf{\text{H}}$ 14'08	8°05'46	evening set	16054 Feb 12 17:36	19° $\mathbf{\text{H}}$ 14'40	
minimum elong	16047 Feb 11 13:03	7° $\mathbf{\text{H}}$ 14'07	8°06'08	max. Earth dist.	16054 Feb 21 15:00	19° $\mathbf{\text{H}}$ 32'11	35.35759 AU
morning rise	16047 Feb 25 01:03	7° $\mathbf{\text{H}}$ 39'06					
retrograde	16047 May 26 17:55	9° $\mathbf{\text{H}}$ 18'17		conjunction	16054 Feb 24 00:31	19° $\mathbf{\text{H}}$ 36'56	10°42'46
opposition	16047 Aug 14 13:58	8° $\mathbf{\text{H}}$ 05'21	8°45'36	minimum elong	16054 Feb 24 00:18	19° $\mathbf{\text{H}}$ 36'55	10°42'58
min. Earth dist.	16047 Aug 16 17:19	8° $\mathbf{\text{H}}$ 02'17	35.01393 AU	morning rise	16054 Mar 07 07:00	19° $\mathbf{\text{H}}$ 59'11	
direct	16047 Nov 02 11:04	6° $\mathbf{\text{H}}$ 51'53		retrograde	16054 Jun 08 14:01	21° $\mathbf{\text{H}}$ 49'53	
evening set	16048 Jan 31 07:06	8° $\mathbf{\text{H}}$ 30'40		opposition	16054 Aug 26 17:07	20° $\mathbf{\text{H}}$ 33'55	11°32'33
max. Earth dist.	16048 Feb 11 04:18	8° $\mathbf{\text{H}}$ 50'56	36.86681 AU	min. Earth dist.	16054 Aug 28 20:59	20° $\mathbf{\text{H}}$ 30'39	33.27216 AU
				direct	16054 Nov 14 03:40	19° $\mathbf{\text{H}}$ 17'10	
conjunction	16048 Feb 13 12:40	8° $\mathbf{\text{H}}$ 55'20	8°28'42	evening set	16055 Feb 15 07:39	21° $\mathbf{\text{H}}$ 08'16	
minimum elong	16048 Feb 13 12:29	8° $\mathbf{\text{H}}$ 55'19	8°29'02	max. Earth dist.	16055 Feb 23 20:08	21° $\mathbf{\text{H}}$ 25'14	35.11439 AU
morning rise	16048 Feb 26 18:13	9° $\mathbf{\text{H}}$ 20'02					
retrograde	16048 May 27 20:03	11° $\mathbf{\text{H}}$ 00'41		conjunction	16055 Feb 26 05:00	21° $\mathbf{\text{H}}$ 29'58	11°04'06
opposition	16048 Aug 15 12:26	9° $\mathbf{\text{H}}$ 47'21	9°09'59	minimum elong	16055 Feb 26 04:46	21° $\mathbf{\text{H}}$ 29'57	11°04'17
min. Earth dist.	16048 Aug 17 15:21	9° $\mathbf{\text{H}}$ 44'17	34.76223 AU	morning rise	16055 Mar 09 01:58	21° $\mathbf{\text{H}}$ 51'39	
direct	16048 Nov 03 09:16	8° $\mathbf{\text{H}}$ 33'26		retrograde	16055 Jun 10 22:01	23° $\mathbf{\text{H}}$ 44'16	
evening set	16049 Feb 01 14:01	10° $\mathbf{\text{H}}$ 13'47		opposition	16055 Aug 28 20:24	22° $\mathbf{\text{H}}$ 27'54	11°55'12
max. Earth dist.	16049 Feb 12 03:15	10° $\mathbf{\text{H}}$ 33'36	36.61281 AU	min. Earth dist.	16055 Aug 30 23:03	22° $\mathbf{\text{H}}$ 24'42	33.03346 AU
				direct	16055 Nov 16 06:59	21° $\mathbf{\text{H}}$ 10'43	
conjunction	16049 Feb 14 12:57	10° $\mathbf{\text{H}}$ 38'09	8°51'32	evening set	16056 Feb 17 22:44	23° $\mathbf{\text{H}}$ 03'53	
minimum elong	16049 Feb 14 12:45	10° $\mathbf{\text{H}}$ 38'08	8°51'52	max. Earth dist.	16056 Feb 26 01:03	23° $\mathbf{\text{H}}$ 20'10	34.87503 AU
morning rise	16049 Feb 27 11:52	11° $\mathbf{\text{H}}$ 02'33					
retrograde	16049 May 29 21:28	12° $\mathbf{\text{H}}$ 44'43		conjunction	16056 Feb 28 10:10	23° $\mathbf{\text{H}}$ 24'58	11°24'59
opposition	16049 Aug 17 11:33	11° $\mathbf{\text{H}}$ 30'58	9°34'16	minimum elong	16056 Feb 28 09:57	23° $\mathbf{\text{H}}$ 24'57	11°25'08
min. Earth dist.	16049 Aug 19 15:50	11° $\mathbf{\text{H}}$ 27'47	34.51041 AU	morning rise	16056 Mar 09 21:13	23° $\mathbf{\text{H}}$ 46'01	
direct	16049 Nov 05 07:26	10° $\mathbf{\text{H}}$ 16'35		retrograde	16056 Jun 12 06:07	25° $\mathbf{\text{H}}$ 40'39	
evening set	16050 Feb 03 22:05	11° $\mathbf{\text{H}}$ 58'32		opposition	16056 Aug 30 00:37	24° $\mathbf{\text{H}}$ 23'54	12°17'22
max. Earth dist.	16050 Feb 14 04:59	12° $\mathbf{\text{H}}$ 18'03	36.35894 AU	min. Earth dist.	16056 Sep 01 03:46	24° $\mathbf{\text{H}}$ 20'38	32.79872 AU
				direct	16056 Nov 17 09:34	23° $\mathbf{\text{H}}$ 06'18	
conjunction	16050 Feb 16 14:00	12° $\mathbf{\text{H}}$ 22'35	9°14'13	evening set	16057 Feb 19 15:26	25° $\mathbf{\text{H}}$ 01'38	
minimum elong	16050 Feb 16 13:48	12° $\mathbf{\text{H}}$ 22'34	9°14'31	max. Earth dist.	16057 Feb 27 08:39	25° $\mathbf{\text{H}}$ 17'17	34.63973 AU
morning rise	16050 Mar 01 05:38	12° $\mathbf{\text{H}}$ 46'39					
retrograde	16050 May 31 23:01	14° $\mathbf{\text{H}}$ 30'22		conjunction	16057 Mar 01 16:23	25° $\mathbf{\text{H}}$ 22'01	11°45'24
opposition	16050 Aug 19 11:18	13° $\mathbf{\text{H}}$ 16'11	9°58'25	minimum elong	16057 Mar 01 16:09	25° $\mathbf{\text{H}}$ 22'00	11°45'32
min. Earth dist.	16050 Aug 21 14:51	13° $\mathbf{\text{H}}$ 13'01	34.25902 AU	morning rise	16057 Mar 11 16:48	25° $\mathbf{\text{H}}$ 42'23	
direct	16050 Nov 07 07:03	12° $\mathbf{\text{H}}$ 01'20		retrograde	16057 Jun 14 13:40	27° $\mathbf{\text{H}}$ 39'06	
evening set	16051 Feb 06 07:12	13° $\mathbf{\text{H}}$ 44'58		opposition	16057 Sep 01 05:20	26° $\mathbf{\text{H}}$ 21'59	12°39'01
max. Earth dist.	16051 Feb 16 05:06	14° $\mathbf{\text{H}}$ 03'57	36.10573 AU	min. Earth dist.	16057 Sep 03 07:12	26° $\mathbf{\text{H}}$ 18'47	32.56787 AU
				direct	16057 Nov 19 13:53	25° $\mathbf{\text{H}}$ 03'59	
conjunction	16051 Feb 18 15:26	14° $\mathbf{\text{H}}$ 08'38	9°36'44	evening set	16058 Feb 22 09:33	27° $\mathbf{\text{H}}$ 01'33	
minimum elong	16051 Feb 18 15:13	14° $\mathbf{\text{H}}$ 08'37	9°37'02	max. Earth dist.	16058 Mar 01 14:54	27° $\mathbf{\text{H}}$ 16'21	34.40808 AU
morning rise	16051 Mar 02 23:36	14° $\mathbf{\text{H}}$ 32'19					
retrograde	16051 Jun 03 01:43	16° $\mathbf{\text{H}}$ 17'41		conjunction	16058 Mar 03 23:23	27° $\mathbf{\text{H}}$ 21'12	12°05'16
opposition	16051 Aug 21 11:45	15° $\mathbf{\text{H}}$ 03'03	10°22'22	minimum elong	16058 Mar 03 23:10	27° $\mathbf{\text{H}}$ 21'11	12°05'23
min. Earth dist.	16051 Aug 23 16:12	14° $\mathbf{\text{H}}$ 59'48	34.00882 AU	morning rise	16058 Mar 13 12:52	27° $\mathbf{\text{H}}$ 40'50	
direct	16051 Nov 09 04:24	13° $\mathbf{\text{H}}$ 47'42		retrograde	16058 Jun 16 21:57	29° $\mathbf{\text{H}}$ 39'43	
evening set	16052 Feb 08 17:24	15° $\mathbf{\text{H}}$ 33'06		opposition	16058 Sep 03 11:05	28° $\mathbf{\text{H}}$ 22'14	13°00'06
max. Earth dist.	16052 Feb 18 08:20	15° $\mathbf{\text{H}}$ 51'41	35.85395 AU	min. Earth dist.	16058 Sep 05 13:35	28° $\mathbf{\text{H}}$ 18'58	32.34057 AU
				direct	16058 Nov 21 16:21	27° $\mathbf{\text{H}}$ 03'49	
conjunction	16052 Feb 20 17:47	15° $\mathbf{\text{H}}$ 56'20	9°59'02	evening set	16059 Feb 25 04:56	29° $\mathbf{\text{H}}$ 03'42	
minimum elong	16052 Feb 20 17:34	15° $\mathbf{\text{H}}$ 56'19	9°59'18	max. Earth dist.	16059 Mar 04 00:06	29° $\mathbf{\text{H}}$ 17'46	34.17971 AU
morning rise	16052 Mar 03 17:45	16° $\mathbf{\text{H}}$ 19'35					
retrograde	16052 Jun 04 03:35	18° $\mathbf{\text{H}}$ 06'40		conjunction	16059 Mar 06 07:14	29° $\mathbf{\text{H}}$ 22'33	12°24'35
opposition	16052 Aug 22 12:49	16° $\mathbf{\text{H}}$ 51'35	10°46'04	minimum elong	16059 Mar 06 07:01	29° $\mathbf{\text{H}}$ 22'31	12°24'40
min. Earth dist.	16052 Aug 24 16:48	16° $\mathbf{\text{H}}$ 48'21	33.76045 AU	morning rise	16059 Mar 15 08:57	29° $\mathbf{\text{H}}$ 41'21	
direct	16052 Nov 10 04:07	15° $\mathbf{\text{H}}$ 35'46			16059 Mar 24 12:36	0° $\mathbf{\text{Y}}$	

retrograde	16059 Jun 19 05:57	1°♈42'28		max. Earth dist.	16066 Mar 19 10:14	14°♈23'03	32.68905 AU
opposition	16059 Sep 05 17:40	0°♈24'37	13°20'34				
min. Earth dist.	16059 Sep 07 19:27	0°♈21'22	32.11633 AU	conjunction	16066 Mar 21 13:13	14°♈27'44	14°18'45
	16059 Sep 21 17:40	30°♏		minimum elong	16066 Mar 21 13:04	14°♈27'43	14°18'37
direct	16059 Nov 23 20:47	29°♏05'47		morning rise	16066 Mar 26 09:48	14°♈38'27	
	16060 Jan 23 12:54	0°♈		retrograde	16066 Jul 04 21:06	16°♈56'56	
evening set	16060 Feb 28 01:58	1°♈08'03		opposition	16066 Sep 20 13:32	15°♈36'15	15°20'55
max. Earth dist.	16060 Mar 05 08:03	1°♈21'06	33.95449 AU	min. Earth dist.	16066 Sep 22 10:49	15°♈33'10	30.65943 AU
				direct	16066 Dec 08 09:32	14°♈14'19	
conjunction	16060 Mar 07 15:56	1°♈26'00	12°43'16	evening set	16067 Mar 20 00:55	16°♈35'19	
minimum elong	16060 Mar 07 15:43	1°♈25'58	12°43'19	max. Earth dist.	16067 Mar 22 00:30	16°♈39'43	32.49921 AU
morning rise	16060 Mar 16 05:30	1°♈43'55					
retrograde	16060 Jun 20 17:02	3°♈47'19		conjunction	16067 Mar 24 03:09	16°♈44'25	14°31'11
opposition	16060 Sep 07 00:59	2°♈29'05	13°40'22	minimum elong	16067 Mar 24 03:01	16°♈44'24	14°31'03
min. Earth dist.	16060 Sep 09 02:43	2°♈25'49	31.89528 AU	morning rise	16067 Mar 28 05:06	16°♈53'30	
direct	16060 Nov 25 00:26	1°♈09'48		retrograde	16067 Jul 07 12:31	19°♈14'52	
evening set	16061 Mar 02 00:22	3°♈14'31		opposition	16067 Sep 23 02:25	17°♈53'48	15°33'50
max. Earth dist.	16061 Mar 07 18:30	3°♈26'38	33.73236 AU	min. Earth dist.	16067 Sep 24 23:04	17°♈50'45	30.47557 AU
				direct	16067 Dec 10 20:08	16°♈31'29	
conjunction	16061 Mar 10 01:38	3°♈31'30	13°01'16	evening set	16068 Mar 22 12:57	18°♈55'42	
minimum elong	16061 Mar 10 01:24	3°♈31'29	13°01'18	max. Earth dist.	16068 Mar 23 18:09	18°♈58'26	32.31746 AU
morning rise	16061 Mar 18 02:18	3°♈48'28					
retrograde	16061 Jun 23 02:06	5°♈54'12		conjunction	16068 Mar 25 18:09	19°♈02'55	14°42'24
opposition	16061 Sep 09 09:14	4°♈35'34	13°59'25	minimum elong	16068 Mar 25 18:03	19°♈02'54	14°42'13
min. Earth dist.	16061 Sep 11 10:53	4°♈32'17	31.67736 AU	morning rise	16068 Mar 28 23:07	19°♈10'06	
direct	16061 Nov 27 07:25	3°♈15'51		retrograde	16068 Jul 09 03:42	21°♈34'33	
evening set	16062 Mar 05 00:26	5°♈23'03		opposition	16068 Sep 24 15:53	20°♈13'11	15°45'26
max. Earth dist.	16062 Mar 10 05:02	5°♈34'07	33.51385 AU	min. Earth dist.	16068 Sep 26 10:48	20°♈10'14	30.29977 AU
				direct	16068 Dec 12 08:34	18°♈50'31	
conjunction	16062 Mar 12 11:59	5°♈39'00	13°18'32	evening set	16069 Mar 26 06:17	21°♈18'23	
minimum elong	16062 Mar 12 11:47	5°♈38'59	13°18'32	max. Earth dist.	16069 Mar 26 10:15	21°♈18'45	32.14423 AU
morning rise	16062 Mar 19 23:07	5°♈54'55					
retrograde	16062 Jun 25 14:47	8°♈03'03		conjunction	16069 Mar 28 09:46	21°♈23'14	14°52'20
opposition	16062 Sep 11 18:04	6°♈44'00	14°17'40	minimum elong	16069 Mar 28 09:40	21°♈23'13	14°52'09
min. Earth dist.	16062 Sep 13 18:44	6°♈40'46	31.46331 AU	morning rise	16069 Mar 30 13:04	21°♈28'04	
direct	16062 Nov 29 15:42	5°♈23'50		retrograde	16069 Jul 11 20:35	23°♈56'03	
evening set	16063 Mar 08 01:48	7°♈33'37		opposition	16069 Sep 27 06:08	22°♈34'24	15°55'38
max. Earth dist.	16063 Mar 12 16:37	7°♈43'32	33.29942 AU	min. Earth dist.	16069 Sep 28 23:45	22°♈31'31	30.13233 AU
				direct	16069 Dec 14 20:26	21°♈11'24	
conjunction	16063 Mar 14 23:11	7°♈48'25	13°35'00	max. Earth dist.	16070 Mar 29 05:02	23°♈41'07	31.97929 AU
minimum elong	16063 Mar 14 22:59	7°♈48'24	13°34'59				
morning rise	16063 Mar 21 20:05	8°♈03'12		conjunction	16070 Mar 31 02:14	23°♈45'24	15°00'57
retrograde	16063 Jun 28 02:16	10°♈13'49		minimum elong	16070 Mar 31 02:10	23°♈45'24	15°00'42
opposition	16063 Sep 14 03:54	8°♈54'20	14°35'02	retrograde	16070 Jul 14 11:47	26°♈19'22	
min. Earth dist.	16063 Sep 16 04:52	8°♈51'04	31.25369 AU	opposition	16070 Sep 29 21:10	24°♈57'27	16°04'22
direct	16063 Dec 01 23:30	7°♈33'42		min. Earth dist.	16070 Oct 01 13:46	24°♈54'38	29.97284 AU
evening set	16064 Mar 10 04:50	9°♈46'08		direct	16070 Dec 17 10:11	23°♈34'11	
max. Earth dist.	16064 Mar 14 05:47	9°♈54'54	33.09003 AU	max. Earth dist.	16071 Mar 31 23:04	26°♈05'10	31.82260 AU
conjunction	16064 Mar 16 11:01	9°♈59'43	13°50'34	conjunction	16071 Apr 02 19:18	26°♈09'24	15°08'09
minimum elong	16064 Mar 16 10:50	9°♈59'42	13°50'30	minimum elong	16071 Apr 02 19:15	26°♈09'23	15°07'54
morning rise	16064 Mar 22 16:46	10°♈13'15		retrograde	16071 Jul 17 06:39	28°♈44'26	
retrograde	16064 Jun 29 16:41	12°♈26'24		opposition	16071 Oct 02 12:48	27°♈22'18	16°11'35
opposition	16064 Sep 15 14:20	11°♈06'30	14°51'25	min. Earth dist.	16071 Oct 04 03:34	27°♈19'36	29.82129 AU
min. Earth dist.	16064 Sep 17 13:35	11°♈03'20	31.04932 AU	direct	16071 Dec 20 00:50	25°♈58'44	
direct	16064 Dec 03 10:50	9°♈45'26		max. Earth dist.	16072 Apr 02 18:37	28°♈31'02	31.67371 AU
evening set	16065 Mar 13 09:32	12°♈00'36					
max. Earth dist.	16065 Mar 16 18:31	12°♈07'58	32.88624 AU	conjunction	16072 Apr 04 13:09	28°♈35'07	15°13'56
				minimum elong	16072 Apr 04 13:08	28°♈35'07	15°13'37
conjunction	16065 Mar 18 23:44	12°♈12'50	14°05'11		16072 May 13 08:34	0°♏	
minimum elong	16065 Mar 18 23:33	12°♈12'49	14°05'06	retrograde	16072 Jul 18 23:40	1°♏11'11	
morning rise	16065 Mar 24 13:33	12°♈25'01			16072 Sep 27 12:32	30°♏	
retrograde	16065 Jul 02 07:11	14°♈40'47		opposition	16072 Oct 04 05:21	29°♈48'49	16°17'15
opposition	16065 Sep 18 01:33	13°♈20'29	15°06'44	min. Earth dist.	16072 Oct 05 19:42	29°♈46'08	29.67721 AU
min. Earth dist.	16065 Sep 20 00:55	13°♈17'17	30.85097 AU	direct	16072 Dec 21 15:14	28°♈25'00	
direct	16065 Dec 05 21:09	11°♈58'58			16073 Mar 10 14:51	0°♏	
evening set	16066 Mar 16 16:17	14°♈16'59		max. Earth dist.	16073 Apr 05 14:39	0°♏58'30	31.53271 AU

conjunction	16073 Apr 07 07:41	1°♄02'28	15°18'13	conjunction	16081 Apr 28 02:01	21°♄20'41	14°53'43
minimum elong	16073 Apr 07 07:41	1°♄02'28	15°17'54	minimum elong	16081 Apr 28 02:16	21°♄20'43	14°53'11
retrograde	16073 Jul 21 19:18	3°♄39'27		morning rise	16081 Apr 30 01:57	21°♄25'27	
opposition	16073 Oct 06 22:14	2°♄16'52	16°21'18	retrograde	16081 Aug 11 10:37	24°♄01'55	
min. Earth dist.	16073 Oct 08 10:25	2°♄14'20	29.54079 AU	opposition	16081 Oct 27 06:24	22°♄38'11	15°49'33
direct	16073 Dec 24 09:24	0°♄52'48		min. Earth dist.	16081 Oct 28 03:57	22°♄36'39	28.78286 AU
max. Earth dist.	16074 Apr 08 10:51	3°♄27'23	31.39962 AU	direct	16082 Jan 13 18:26	21°♄12'50	
				evening set	16082 Apr 27 18:49	23°♄48'16	
conjunction	16074 Apr 10 02:46	3°♄31'16	15°20'59				
minimum elong	16074 Apr 10 02:48	3°♄31'16	15°20'38	conjunction	16082 Apr 30 23:15	23°♄55'53	14°42'48
retrograde	16074 Jul 24 13:52	6°♄09'07		minimum elong	16082 Apr 30 23:30	23°♄55'55	14°42'14
opposition	16074 Oct 09 15:59	4°♄46'18	16°23'41	max. Earth dist.	16082 Apr 30 01:16	23°♄53'41	30.68889 AU
min. Earth dist.	16074 Oct 11 03:43	4°♄43'47	29.41230 AU	morning rise	16082 May 04 04:10	24°♄03'33	
direct	16074 Dec 27 02:27	3°♄21'59		retrograde	16082 Aug 14 07:56	26°♄37'14	
max. Earth dist.	16075 Apr 11 08:38	5°♄57'42	31.27504 AU	opposition	16082 Oct 30 02:39	25°♄13'32	15°37'04
				min. Earth dist.	16082 Oct 30 21:05	25°♄12'13	28.73791 AU
conjunction	16075 Apr 12 22:11	6°♄01'22	15°22'11	direct	16083 Jan 16 15:09	23°♄48'10	
minimum elong	16075 Apr 12 22:15	6°♄01'22	15°21'48	evening set	16083 Apr 29 16:47	26°♄21'26	
retrograde	16075 Jul 27 09:59	8°♄39'58					
opposition	16075 Oct 12 10:05	7°♄16'58	16°24'21	conjunction	16083 May 03 20:32	26°♄31'23	14°30'08
min. Earth dist.	16075 Oct 13 19:17	7°♄14'37	29.29217 AU	minimum elong	16083 May 03 20:50	26°♄31'25	14°29'33
direct	16075 Dec 29 21:45	5°♄52'25		max. Earth dist.	16083 May 03 01:46	26°♄29'31	30.65152 AU
max. Earth dist.	16076 Apr 13 05:30	8°♄29'01	31.15932 AU	morning rise	16083 May 08 00:45	26°♄41'22	
				retrograde	16083 Aug 17 03:22	29°♄12'46	
conjunction	16076 Apr 14 18:07	8°♄32'36	15°21'44	opposition	16083 Nov 01 23:07	27°♄49'07	15°22'42
minimum elong	16076 Apr 14 18:12	8°♄32'37	15°21'20	min. Earth dist.	16083 Nov 02 16:22	27°♄47'53	28.70412 AU
retrograde	16076 Jul 29 06:26	11°♄11'53		direct	16084 Jan 19 10:08	26°♄23'47	
opposition	16076 Oct 14 04:35	9°♄48'41	16°23'14	evening set	16084 Apr 30 17:30	28°♄55'01	
min. Earth dist.	16076 Oct 15 12:57	9°♄46'24	29.18106 AU				
direct	16076 Dec 31 15:35	8°♄23'55		conjunction	16084 May 05 17:56	29°♄07'02	14°15'46
max. Earth dist.	16077 Apr 16 04:57	11°♄01'32	31.05319 AU	minimum elong	16084 May 05 18:13	29°♄07'03	14°15'09
				max. Earth dist.	16084 May 05 01:12	29°♄05'22	30.62543 AU
conjunction	16077 Apr 17 14:32	11°♄04'50	15°19'37	morning rise	16084 May 10 18:48	29°♄19'05	
minimum elong	16077 Apr 17 14:39	11°♄04'51	15°19'12		16084 May 28 06:23	0°♄	
retrograde	16077 Aug 01 02:37	13°♄44'41		retrograde	16084 Aug 18 23:28	1°♄48'21	
opposition	16077 Oct 16 23:32	12°♄21'18	16°20'18	opposition	16084 Nov 03 19:23	0°♄24'45	15°06'32
min. Earth dist.	16077 Oct 18 05:32	12°♄19'11	29.07944 AU	min. Earth dist.	16084 Nov 04 09:33	0°♄23'45	28.68107 AU
direct	16078 Jan 03 12:11	10°♄56'21			16084 Nov 18 13:01	30°♄	
max. Earth dist.	16078 Apr 19 02:34	13°♄34'41	30.95723 AU	direct	16085 Jan 21 08:25	28°♄59'28	
					16085 Mar 23 05:27	0°♄	
conjunction	16078 Apr 20 10:58	13°♄37'53	15°15'48	evening set	16085 May 02 19:45	1°♄28'45	
minimum elong	16078 Apr 20 11:06	13°♄37'53	15°15'19				
	16078 May 26 17:23	15°♄		conjunction	16085 May 08 15:23	1°♄42'39	13°59'44
retrograde	16078 Aug 03 22:39	16°♄18'13		minimum elong	16085 May 08 15:43	1°♄42'41	13°59'07
	16078 Oct 16 15:51	15°♄		max. Earth dist.	16085 May 08 01:01	1°♄41'13	30.60994 AU
opposition	16078 Oct 19 18:50	14°♄54'41	16°15'30	morning rise	16085 May 14 11:28	1°♄56'37	
min. Earth dist.	16078 Oct 20 23:06	14°♄52'40	28.98825 AU	retrograde	16085 Aug 21 18:29	4°♄23'48	
direct	16079 Jan 06 07:00	13°♄29'33		opposition	16085 Nov 06 15:58	3°♄00'16	14°48'35
	16079 Mar 23 03:08	15°♄		min. Earth dist.	16085 Nov 07 05:02	2°♄59'21	28.66837 AU
max. Earth dist.	16079 Apr 22 03:00	16°♄08'45	30.87229 AU	direct	16086 Jan 24 05:11	1°♄35'03	
				evening set	16086 May 04 22:59	4°♄02'22	
conjunction	16079 Apr 23 07:50	16°♄11'36	15°10'13				
minimum elong	16079 Apr 23 08:01	16°♄11'37	15°09'44	conjunction	16086 May 11 12:33	4°♄18'02	13°42'06
retrograde	16079 Aug 06 18:47	18°♄52'19		minimum elong	16086 May 11 12:52	4°♄18'04	13°41'28
opposition	16079 Oct 22 14:27	17°♄28'41	16°08'47	max. Earth dist.	16086 May 11 00:38	4°♄16'51	30.60502 AU
min. Earth dist.	16079 Oct 23 16:27	17°♄26'50	28.90806 AU	morning rise	16086 May 18 02:28	4°♄33'46	
direct	16080 Jan 09 03:15	16°♄03'26		retrograde	16086 Aug 24 14:40	6°♄58'54	
max. Earth dist.	16080 Apr 24 01:21	18°♄43'11	30.79909 AU	opposition	16086 Nov 09 12:21	5°♄35'28	14°28'56
				min. Earth dist.	16086 Nov 09 22:22	5°♄34'45	28.66581 AU
conjunction	16080 Apr 25 04:44	18°♄45'54	15°02'52	direct	16087 Jan 27 03:49	4°♄10'19	
minimum elong	16080 Apr 25 04:55	18°♄45'55	15°02'20	evening set	16087 May 07 02:56	6°♄35'41	
retrograde	16080 Aug 08 16:08	21°♄26'55					
opposition	16080 Oct 24 10:18	20°♄03'12	16°00'08	conjunction	16087 May 14 09:35	6°♄53'00	13°22'55
min. Earth dist.	16080 Oct 25 09:36	20°♄01'33	28.83959 AU	minimum elong	16087 May 14 09:57	6°♄53'03	13°22'16
direct	16081 Jan 10 22:28	18°♄37'52		max. Earth dist.	16087 May 13 23:31	6°♄52'00	30.61033 AU
evening set	16081 Apr 26 02:33	21°♄15'58		morning rise	16087 May 21 16:38	7°♄10'24	
max. Earth dist.	16081 Apr 27 02:11	21°♄18'19	30.73789 AU	retrograde	16087 Aug 27 09:44	9°♄33'29	

opposition	16087 Nov 12 08:35	8°II10'08	14°07'39	max. Earth dist.	16094 Jun 01 09:56	24°II33'43	30.95023 AU
min. Earth dist.	16087 Nov 12 17:17	8°II09'31	28.67348 AU	morning rise	16094 Jun 12 10:13	24°II59'17	
direct	16088 Jan 30 00:27	6°II45'05		retrograde	16094 Sep 13 12:47	27°II08'27	
evening set	16088 May 08 07:32	9°II08'28		opposition	16094 Nov 29 21:07	25°II46'20	10°58'14
				min. Earth dist.	16094 Nov 29 13:18	25°II46'53	29.02969 AU
conjunction	16088 May 16 06:25	9°II27'22	13°02'15	direct	16095 Feb 17 02:06	24°II22'33	
minimum elong	16088 May 16 06:46	9°II27'24	13°01'34	evening set	16095 May 22 22:29	26°II32'25	
max. Earth dist.	16088 May 15 23:19	9°II26'40	30.62607 AU				
morning rise	16088 May 24 05:30	9°II46'19		conjunction	16095 Jun 03 18:44	26°II59'45	10°01'10
retrograde	16088 Aug 29 04:56	12°II07'21		minimum elong	16095 Jun 03 19:06	26°II59'47	10°00'26
opposition	16088 Nov 14 04:34	10°II44'07	13°44'46	max. Earth dist.	16095 Jun 04 05:04	27°II00'45	31.04441 AU
min. Earth dist.	16088 Nov 14 10:42	10°II43'41	28.69124 AU	morning rise	16095 Jun 15 14:42	27°II27'04	
direct	16089 Feb 01 00:04	9°II19'10		retrograde	16095 Sep 16 04:23	29°II34'24	
evening set	16089 May 10 12:29	11°II40'34		opposition	16095 Dec 02 14:05	28°II12'35	10°26'25
				min. Earth dist.	16095 Dec 02 02:57	28°II13'21	29.12583 AU
conjunction	16089 May 19 02:47	12°II00'57	12°40'08	direct	16096 Feb 19 20:42	26°II49'07	
minimum elong	16089 May 19 03:10	12°II00'59	12°39'27	evening set	16096 May 24 04:39	28°II57'10	
max. Earth dist.	16089 May 18 21:12	12°II00'23	30.65211 AU				
morning rise	16089 May 27 17:24	12°II21'21		conjunction	16096 Jun 05 11:33	29°II25'22	9°31'05
retrograde	16089 Aug 31 23:45	14°II40'22		minimum elong	16096 Jun 05 11:53	29°II25'24	9°30'20
opposition	16089 Nov 17 00:16	13°II17'14	13°20'22	max. Earth dist.	16096 Jun 06 00:34	29°II26'37	31.14889 AU
min. Earth dist.	16089 Nov 17 04:23	13°II16'57	28.71950 AU	morning rise	16096 Jun 17 18:00	29°II53'33	
direct	16090 Feb 03 20:55	11°II52'24			16096 Jun 20 14:27	0°☾	
evening set	16090 May 12 17:44	14°II11'50		retrograde	16096 Sep 17 17:32	1°☾59'04	
				opposition	16096 Dec 04 06:51	0°☾37'34	9°53'44
conjunction	16090 May 21 22:51	14°II33'35	12°16'39	min. Earth dist.	16096 Dec 03 18:32	0°☾38'25	29.23205 AU
minimum elong	16090 May 21 23:13	14°II33'37	12°15'57		16096 Dec 27 23:36	30°☿II	
max. Earth dist.	16090 May 21 20:43	14°II33'23	30.68891 AU	direct	16097 Feb 21 14:16	29°II14'25	
morning rise	16090 May 31 03:58	14°II55'22			16097 Apr 16 01:59	0°☾	
retrograde	16090 Sep 03 17:40	17°II12'20		evening set	16097 May 26 11:02	1°☾20'41	
opposition	16090 Nov 19 19:42	15°II49'21	12°54'32				
min. Earth dist.	16090 Nov 19 21:33	15°II49'13	28.75849 AU	conjunction	16097 Jun 08 03:42	1°☾49'40	9°00'14
direct	16091 Feb 06 19:05	14°II24'40		minimum elong	16097 Jun 08 04:03	1°☾49'42	8°59'28
evening set	16091 May 14 23:04	16°II42'06		max. Earth dist.	16097 Jun 08 18:46	1°☾51'06	31.26302 AU
				morning rise	16097 Jun 20 19:49	2°☾18'35	
conjunction	16091 May 24 18:07	17°II05'09	11°51'52	retrograde	16097 Sep 20 07:43	4°☾22'21	
minimum elong	16091 May 24 18:30	17°II05'12	11°51'09	opposition	16097 Dec 06 22:56	3°☾01'11	9°20'17
max. Earth dist.	16091 May 24 17:33	17°II05'06	30.73678 AU	min. Earth dist.	16097 Dec 06 07:55	3°☾02'12	29.34749 AU
morning rise	16091 Jun 03 13:21	17°II28'13		direct	16098 Feb 24 08:19	1°☾38'21	
retrograde	16091 Sep 06 12:45	19°II43'11		evening set	16098 May 28 17:27	3°☾42'53	
opposition	16091 Nov 22 14:40	18°II20'22	12°27'18				
min. Earth dist.	16091 Nov 22 13:38	18°II20'26	28.80881 AU	conjunction	16098 Jun 10 19:14	4°☾12'32	8°28'43
direct	16092 Feb 09 15:50	16°II55'50		minimum elong	16098 Jun 10 19:33	4°☾12'34	8°27'58
evening set	16092 May 16 04:41	19°II11'20		max. Earth dist.	16098 Jun 11 12:07	4°☾14'09	31.38592 AU
				morning rise	16098 Jun 23 20:28	4°☾42'09	
conjunction	16092 May 26 13:12	19°II35'35	11°25'51	retrograde	16098 Sep 22 21:05	6°☾44'12	
minimum elong	16092 May 26 13:35	19°II35'37	11°25'08	opposition	16098 Dec 09 14:33	5°☾23'19	8°46'12
max. Earth dist.	16092 May 26 16:21	19°II35'54	30.79615 AU	min. Earth dist.	16098 Dec 08 22:04	5°☾24'26	29.47176 AU
morning rise	16092 Jun 05 21:33	19°II59'51		direct	16099 Feb 27 00:01	4°☾00'49	
retrograde	16092 Sep 08 04:12	22°II12'50		evening set	16099 May 30 23:48	6°☾03'38	
opposition	16092 Nov 24 09:13	20°II50'12	11°58'47				
min. Earth dist.	16092 Nov 24 06:24	20°II50'24	28.87069 AU	conjunction	16099 Jun 13 10:07	6°☾33'53	7°56'39
direct	16093 Feb 11 12:22	19°II25'53		minimum elong	16099 Jun 13 10:26	6°☾33'55	7°55'53
evening set	16093 May 18 10:37	21°II39'28		max. Earth dist.	16099 Jun 14 05:28	6°☾35'43	31.51723 AU
				morning rise	16099 Jun 26 19:36	7°☾04'06	
conjunction	16093 May 29 07:36	22°II04'50	10°58'39	retrograde	16099 Sep 25 09:50	9°☾04'28	
minimum elong	16093 May 29 08:00	22°II04'52	10°57'55	min. Earth dist.	16099 Dec 11 11:05	7°☾45'08	29.60402 AU
max. Earth dist.	16093 May 29 12:28	22°II05'19	30.86735 AU	opposition	16099 Dec 12 05:33	7°☾43'53	8°11'34
morning rise	16093 Jun 09 04:36	22°II30'12		direct	16100 Mar 01 19:01	6°☾21'42	
retrograde	16093 Sep 10 21:33	24°II41'15		evening set	16100 Jun 02 06:24	8°☾22'50	
opposition	16093 Nov 27 03:20	23°II18'52	11°29'03				
min. Earth dist.	16093 Nov 26 21:02	23°II19'18	28.94444 AU	conjunction	16100 Jun 16 00:19	8°☾53'38	7°24'06
direct	16094 Feb 14 08:06	21°II54'47		minimum elong	16100 Jun 16 00:36	8°☾53'39	7°23'22
evening set	16094 May 20 16:20	24°II06'29		max. Earth dist.	16100 Jun 16 20:38	8°☾55'32	31.65618 AU
				morning rise	16100 Jun 29 17:36	9°☾24'20	
conjunction	16094 Jun 01 01:27	24°II32'54	10°30'24	retrograde	16100 Sep 27 23:04	11°☾23'04	
minimum elong	16094 Jun 01 01:48	24°II32'56	10°29'40	opposition	16100 Dec 14 19:47	10°☾02'47	7°36'30

min. Earth dist.	16100 Dec 13 23:20	10°04'10	29.74414 AU
direct	16101 Mar 04 11:15	8°40'54	
evening set	16101 Jun 04 12:48	10°40'25	
conjunction	16101 Jun 18 13:57	11°11'38	6°51'10
minimum elong	16101 Jun 18 14:13	11°11'40	6°50'25
max. Earth dist.	16101 Jun 19 12:58	11°13'47	31.80268 AU
morning rise	16101 Jul 02 14:02	11°42'47	
retrograde	16101 Sep 30 09:28	13°39'55	
min. Earth dist.	16101 Dec 16 11:55	12°21'22	29.89171 AU
opposition	16101 Dec 17 09:34	12°19'56	7°01'04