

evening set	13600 Jan 23 03:54	21° $\approx$ 58'27		conjunction	13606 Feb 13 23:51	4° $\times$ 54'16	14°02'09
max. Earth dist.	13600 Jan 30 01:13	22° $\approx$ 12'33	34.41498 AU	minimum elong	13606 Feb 13 23:40	4° $\times$ 54'15	14°02'43
				morning rise	13606 Feb 19 16:34	5° $\times$ 06'38	
conjunction	13600 Feb 01 12:21	22° $\approx$ 17'37	12°14'51	retrograde	13606 May 29 22:21	7° $\times$ 20'40	
minimum elong	13600 Feb 01 12:07	22° $\approx$ 17'36	12°15'34	opposition	13606 Aug 15 15:20	6° $\times$ 00'58	15°03'52
morning rise	13600 Feb 10 20:10	22° $\approx$ 36'45		min. Earth dist.	13606 Aug 17 17:51	5° $\times$ 57'34	31.06874 AU
retrograde	13600 May 16 05:25	24° $\approx$ 35'42		direct	13606 Nov 02 14:24	4° $\times$ 39'40	
opposition	13600 Aug 02 13:06	23° $\approx$ 18'13	13°10'29	evening set	13607 Feb 11 14:06	6° $\times$ 56'45	
min. Earth dist.	13600 Aug 04 17:28	23° $\approx$ 14'49	32.34809 AU	max. Earth dist.	13607 Feb 14 04:53	7° $\times$ 02'28	32.90428 AU
direct	13600 Oct 21 00:01	21° $\approx$ 59'25					
evening set	13601 Jan 25 00:05	24° $\approx$ 00'06		conjunction	13607 Feb 16 12:39	7° $\times$ 07'34	14°17'04
max. Earth dist.	13601 Jan 31 08:46	24° $\approx$ 13'15	34.18535 AU	minimum elong	13607 Feb 16 12:29	7° $\times$ 07'33	14°17'34
				morning rise	13607 Feb 21 10:50	7° $\times$ 18'21	
conjunction	13601 Feb 02 20:07	24° $\approx$ 18'23	12°34'34	retrograde	13607 Jun 01 13:16	9° $\times$ 35'15	
minimum elong	13601 Feb 02 19:53	24° $\approx$ 18'22	12°35'15	opposition	13607 Aug 18 02:29	8° $\times$ 15'10	15°19'31
morning rise	13601 Feb 11 15:33	24° $\approx$ 36'37		min. Earth dist.	13607 Aug 20 03:38	8° $\times$ 11'50	30.87137 AU
retrograde	13601 May 18 14:38	26° $\approx$ 37'52		direct	13607 Nov 05 01:53	6° $\times$ 53'26	
opposition	13601 Aug 04 19:28	25° $\approx$ 20'00	13°31'22	evening set	13608 Feb 15 00:33	9° $\times$ 13'45	
min. Earth dist.	13601 Aug 07 00:15	25° $\approx$ 16'33	32.12371 AU	max. Earth dist.	13608 Feb 16 19:13	9° $\times$ 17'40	32.70731 AU
direct	13601 Oct 23 02:37	24° $\approx$ 00'48					
evening set	13602 Jan 27 21:47	26° $\approx$ 03'58		conjunction	13608 Feb 19 02:21	9° $\times$ 22'44	14°30'57
max. Earth dist.	13602 Feb 02 18:56	26° $\approx$ 16'14	33.96078 AU	minimum elong	13608 Feb 19 02:11	9° $\times$ 22'43	14°31'25
				morning rise	13608 Feb 23 03:46	9° $\times$ 31'41	
conjunction	13602 Feb 05 04:38	26° $\approx$ 21'16	12°53'37	retrograde	13608 Jun 03 03:13	11° $\times$ 51'41	
minimum elong	13602 Feb 05 04:24	26° $\approx$ 21'15	12°54'18	opposition	13608 Aug 19 14:30	10° $\times$ 31'12	15°34'02
morning rise	13602 Feb 13 10:47	26° $\approx$ 38'32		min. Earth dist.	13608 Aug 21 15:51	10° $\times$ 27'51	30.67955 AU
retrograde	13602 May 20 23:07	28° $\approx$ 42'11		direct	13608 Nov 06 12:34	9° $\times$ 09'03	
opposition	13602 Aug 07 02:32	27° $\approx$ 23'57	13°51'32	evening set	13609 Feb 17 15:38	11° $\times$ 32'55	
min. Earth dist.	13602 Aug 09 05:56	27° $\approx$ 20'34	31.90411 AU	max. Earth dist.	13609 Feb 18 11:11	11° $\times$ 34'44	32.51659 AU
direct	13602 Oct 25 08:53	26° $\approx$ 04'21					
evening set	13603 Jan 30 21:15	28° $\approx$ 10'05		conjunction	13609 Feb 20 16:41	11° $\times$ 39'42	14°43'43
max. Earth dist.	13603 Feb 05 03:49	28° $\approx$ 21'12	33.74082 AU	minimum elong	13609 Feb 20 16:33	11° $\times$ 39'41	14°44'08
				morning rise	13609 Feb 23 17:28	11° $\times$ 46'27	
conjunction	13603 Feb 07 14:06	28° $\approx$ 26'20	13°11'58	retrograde	13609 Jun 05 19:43	14° $\times$ 09'51	
minimum elong	13603 Feb 07 13:53	28° $\approx$ 26'19	13°12'36	opposition	13609 Aug 22 03:11	12° $\times$ 49'00	15°47'20
morning rise	13603 Feb 15 06:27	28° $\approx$ 42'33		min. Earth dist.	13609 Aug 24 02:33	12° $\times$ 45'45	30.49418 AU
	13603 Mar 27 17:55	0° $\times$		direct	13609 Nov 09 02:05	11° $\times$ 26'26	
retrograde	13603 May 23 09:41	0° $\times$ 48'39		evening set	13610 Feb 21 17:19	13° $\times$ 54'49	
	13603 Jul 21 01:30	30° $\times$		max. Earth dist.	13610 Feb 21 02:34	13° $\times$ 53'26	32.33273 AU
opposition	13603 Aug 09 10:24	29° $\approx$ 30'05	14°10'56				
min. Earth dist.	13603 Aug 11 14:07	29° $\approx$ 26'39	31.68902 AU	conjunction	13610 Feb 23 07:35	13° $\times$ 58'23	14°55'18
direct	13603 Oct 27 13:06	28° $\approx$ 10'03		minimum elong	13610 Feb 23 07:28	13° $\times$ 58'23	14°55'42
	13604 Jan 25 03:29	0° $\times$		morning rise	13610 Feb 24 21:38	14° $\times$ 01'57	
evening set	13604 Feb 02 22:32	0° $\times$ 18'29		retrograde	13610 Jun 08 11:06	16° $\times$ 29'44	
max. Earth dist.	13604 Feb 07 15:48	0° $\times$ 28'31	33.52513 AU	opposition	13610 Aug 24 16:46	15° $\times$ 08'31	15°59'19
				min. Earth dist.	13610 Aug 26 15:59	15° $\times$ 05'16	30.31600 AU
conjunction	13604 Feb 10 00:38	0° $\times$ 33'34	13°29'32	direct	13610 Nov 11 13:36	13° $\times$ 45'33	
minimum elong	13604 Feb 10 00:25	0° $\times$ 33'33	13°30'09	max. Earth dist.	13611 Feb 23 20:49	16° $\times$ 14'01	32.15669 AU
morning rise	13604 Feb 17 02:05	0° $\times$ 48'38					
retrograde	13604 May 24 20:24	2° $\times$ 57'17		conjunction	13611 Feb 25 23:24	16° $\times$ 18'47	15°05'35
opposition	13604 Aug 10 19:14	1° $\times$ 38'20	14°29'30	minimum elong	13611 Feb 25 23:20	16° $\times$ 18'47	15°05'56
min. Earth dist.	13604 Aug 12 22:18	1° $\times$ 34'56	31.47795 AU	retrograde	13611 Jun 11 02:30	18° $\times$ 51'15	
direct	13604 Oct 28 20:06	0° $\times$ 17'54		opposition	13611 Aug 27 06:51	17° $\times$ 29'42	16°09'54
evening set	13605 Feb 05 01:31	2° $\times$ 29'05		min. Earth dist.	13611 Aug 29 03:50	17° $\times$ 26'36	30.14575 AU
max. Earth dist.	13605 Feb 09 02:30	2° $\times$ 37'46	33.31366 AU	direct	13611 Nov 14 04:05	16° $\times$ 06'23	
				max. Earth dist.	13612 Feb 26 13:43	18° $\times$ 36'06	31.98917 AU
conjunction	13605 Feb 11 11:42	2° $\times$ 42'54	13°46'17				
minimum elong	13605 Feb 11 11:31	2° $\times$ 42'53	13°46'51	conjunction	13612 Feb 28 15:48	18° $\times$ 40'51	15°14'32
morning rise	13605 Feb 17 21:26	2° $\times$ 56'41		minimum elong	13612 Feb 28 15:45	18° $\times$ 40'51	15°14'51
retrograde	13605 May 27 09:44	5° $\times$ 07'59		retrograde	13612 Jun 12 19:38	21° $\times$ 14'25	
opposition	13605 Aug 13 04:52	3° $\times$ 48'40	14°47'10	opposition	13612 Aug 28 21:52	19° $\times$ 52'35	16°18'59
min. Earth dist.	13605 Aug 15 07:29	3° $\times$ 45'17	31.27114 AU	min. Earth dist.	13612 Aug 30 17:57	19° $\times$ 49'31	29.98426 AU
direct	13605 Oct 31 03:41	2° $\times$ 27'48		direct	13612 Nov 15 16:29	18° $\times$ 28'55	
evening set	13606 Feb 08 06:37	4° $\times$ 41'52		max. Earth dist.	13613 Feb 28 09:46	21° $\times$ 00'06	31.83083 AU
max. Earth dist.	13606 Feb 11 15:40	4° $\times$ 49'11	33.10650 AU				

conjunction	13613 Mar 02 08:52	21° <del>✕</del> 04'36	15°22'02	minimum elong	13621 Mar 22 21:52	11° <del>°</del> 08'10	15°24'54
minimum elong	13613 Mar 02 08:50	21° <del>✕</del> 04'36	15°22'18	max. Earth dist.	13621 Mar 21 12:08	11° <del>°</del> 04'49	30.88886 AU
retrograde	13613 Jun 15 12:08	23° <del>✕</del> 39'15		retrograde	13621 Jul 06 02:01	13° <del>°</del> 48'41	
opposition	13613 Aug 31 13:35	22° <del>✕</del> 17'09	16°26'30	opposition	13621 Sep 20 16:05	12° <del>°</del> 25'17	16°24'36
min. Earth dist.	13613 Sep 02 07:42	22° <del>✕</del> 14'13	29.83176 AU	min. Earth dist.	13621 Sep 21 22:02	12° <del>°</del> 23'09	28.92602 AU
direct	13613 Nov 18 06:58	20° <del>✕</del> 53'13		direct	13621 Dec 08 08:44	10° <del>°</del> 59'52	
max. Earth dist.	13614 Mar 03 04:14	23° <del>✕</del> 25'36	31.68193 AU				
conjunction	13614 Mar 05 02:31	23° <del>✕</del> 30'03	15°28'03	conjunction	13622 Mar 25 18:50	13° <del>°</del> 42'59	15°17'45
minimum elong	13614 Mar 05 02:31	23° <del>✕</del> 30'03	15°28'17	minimum elong	13622 Mar 25 19:06	13° <del>°</del> 43'00	15°17'37
retrograde	13614 Jun 18 06:27	26° <del>✕</del> 05'43		max. Earth dist.	13622 Mar 24 12:28	13° <del>°</del> 39'57	30.81290 AU
opposition	13614 Sep 03 05:48	24° <del>✕</del> 43'25	16°32'23	retrograde	13622 Jul 08 21:35	16° <del>°</del> 23'48	
min. Earth dist.	13614 Sep 04 22:28	24° <del>✕</del> 40'34	29.68849 AU	opposition	13622 Sep 23 12:03	15° <del>°</del> 00'17	16°16'04
direct	13614 Nov 20 21:33	23° <del>✕</del> 19'14		min. Earth dist.	13622 Sep 24 15:20	14° <del>°</del> 58'21	28.85399 AU
max. Earth dist.	13615 Mar 06 01:24	25° <del>✕</del> 52'58	31.54220 AU	direct	13622 Dec 11 06:28	13° <del>°</del> 34'45	
conjunction	13615 Mar 07 21:01	25° <del>✕</del> 57'11	15°32'31	max. Earth dist.	13623 Mar 27 11:06	16° <del>°</del> 15'17	30.74770 AU
minimum elong	13615 Mar 07 21:03	25° <del>✕</del> 57'11	15°32'41	conjunction	13623 Mar 28 16:03	16° <del>°</del> 18'10	15°08'43
retrograde	13615 Jun 20 23:51	28° <del>✕</del> 33'49		minimum elong	13623 Mar 28 16:19	16° <del>°</del> 18'12	15°08'32
opposition	13615 Sep 05 22:52	27° <del>✕</del> 11'19	16°36'36	retrograde	13623 Jul 11 18:19	18° <del>°</del> 59'11	
min. Earth dist.	13615 Sep 07 14:24	27° <del>✕</del> 08'33	29.55389 AU	opposition	13623 Sep 26 08:21	17° <del>°</del> 35'34	16°05'37
direct	13615 Nov 23 14:17	25° <del>✕</del> 46'56		min. Earth dist.	13623 Sep 27 09:47	17° <del>°</del> 33'46	28.79293 AU
max. Earth dist.	13616 Mar 07 21:18	28° <del>✕</del> 21'46	31.41138 AU	direct	13623 Dec 14 02:26	16° <del>°</del> 09'57	
conjunction	13616 Mar 09 15:57	28° <del>✕</del> 25'55	15°35'24	evening set	13624 Mar 29 09:47	18° <del>°</del> 50'49	
minimum elong	13616 Mar 09 16:01	28° <del>✕</del> 25'55	15°35'33	conjunction	13624 Mar 30 13:20	18° <del>°</del> 53'34	14°57'54
retrograde	13616 Apr 21 17:36	0° <del>°</del>		minimum elong	13624 Mar 30 13:40	18° <del>°</del> 53'36	14°57'40
opposition	13616 Jun 22 20:16	1° <del>°</del> 03'27		max. Earth dist.	13624 Mar 29 12:13	18° <del>°</del> 51'03	30.69401 AU
min. Earth dist.	13616 Aug 27 04:44	30° <del>°</del> 8'8		morning rise	13624 Mar 31 17:34	18° <del>°</del> 56'23	
direct	13616 Sep 07 16:25	29° <del>✕</del> 40'46	16°39'05	retrograde	13624 Jul 13 14:09	21° <del>°</del> 34'39	
max. Earth dist.	13616 Sep 09 05:53	29° <del>✕</del> 38'08	29.42783 AU	opposition	13624 Sep 28 04:49	20° <del>°</del> 11'01	15°53'14
conjunction	13616 Nov 25 07:25	28° <del>✕</del> 16'11		min. Earth dist.	13624 Sep 29 03:43	20° <del>°</del> 09'23	28.74333 AU
minimum elong	13617 Feb 16 00:36	0° <del>°</del>		direct	13624 Dec 15 23:36	18° <del>°</del> 45'21	
retrograde	13617 Mar 10 19:02	0° <del>°</del> 52'10	31.28911 AU	evening set	13625 Mar 30 12:30	21° <del>°</del> 22'03	
opposition	13617 Mar 12 11:35	0° <del>°</del> 56'07	15°36'41	max. Earth dist.	13625 Apr 01 11:04	21° <del>°</del> 26'42	30.65249 AU
minimum elong	13617 Mar 12 11:40	0° <del>°</del> 56'08	15°36'45	conjunction	13625 Apr 02 10:31	21° <del>°</del> 29'02	14°45'17
retrograde	13617 Jun 25 15:02	3° <del>°</del> 34'28		minimum elong	13625 Apr 02 10:50	21° <del>°</del> 29'04	14°45'00
opposition	13617 Sep 10 10:45	2° <del>°</del> 11'38	16°39'50	morning rise	13625 Apr 05 09:09	21° <del>°</del> 36'05	
min. Earth dist.	13617 Sep 11 23:32	2° <del>°</del> 09'02	29.31005 AU	retrograde	13625 Jul 16 10:09	24° <del>°</del> 10'09	
direct	13617 Nov 28 00:54	0° <del>°</del> 46'51		opposition	13625 Oct 01 01:19	22° <del>°</del> 46'30	15°38'55
max. Earth dist.	13618 Mar 13 16:35	3° <del>°</del> 23'49	31.17561 AU	min. Earth dist.	13625 Oct 01 21:23	22° <del>°</del> 45'04	28.70596 AU
conjunction	13618 Mar 15 07:30	3° <del>°</del> 27'38	15°36'18	direct	13625 Dec 18 19:48	21° <del>°</del> 20'50	
minimum elong	13618 Mar 15 07:38	3° <del>°</del> 27'39	15°36'21	evening set	13626 Apr 01 06:04	23° <del>°</del> 54'46	
retrograde	13618 Jun 28 12:18	6° <del>°</del> 06'41		conjunction	13626 Apr 05 07:47	24° <del>°</del> 04'32	14°30'54
opposition	13618 Sep 13 05:26	4° <del>°</del> 43'41	16°38'47	minimum elong	13626 Apr 05 08:10	24° <del>°</del> 04'34	14°30'35
min. Earth dist.	13618 Sep 14 15:47	4° <del>°</del> 41'16	29.20069 AU	max. Earth dist.	13626 Apr 04 12:13	24° <del>°</del> 02'35	30.62341 AU
direct	13618 Nov 30 21:21	3° <del>°</del> 18'44		morning rise	13626 Apr 09 10:06	24° <del>°</del> 14'21	
max. Earth dist.	13619 Mar 16 14:43	5° <del>°</del> 56'36	31.07073 AU	retrograde	13626 Jul 19 04:25	26° <del>°</del> 45'34	
conjunction	13619 Mar 18 04:02	6° <del>°</del> 00'17	15°34'15	opposition	13626 Oct 03 21:56	25° <del>°</del> 21'57	15°22'42
minimum elong	13619 Mar 18 04:11	6° <del>°</del> 00'18	15°34'15	min. Earth dist.	13626 Oct 04 15:59	25° <del>°</del> 20'40	28.68056 AU
retrograde	13619 Jul 01 07:34	8° <del>°</del> 39'56		direct	13626 Dec 21 17:14	23° <del>°</del> 56'21	
opposition	13619 Sep 16 00:37	7° <del>°</del> 16'47	16°35'55	evening set	13627 Apr 03 03:56	26° <del>°</del> 27'53	
min. Earth dist.	13619 Sep 17 10:24	7° <del>°</del> 14'24	29.09992 AU	max. Earth dist.	13627 Apr 07 11:01	26° <del>°</del> 38'10	30.60656 AU
direct	13619 Dec 03 16:05	5° <del>°</del> 51'40		conjunction	13627 Apr 08 04:53	26° <del>°</del> 39'57	14°14'48
max. Earth dist.	13620 Mar 18 13:54	8° <del>°</del> 30'24	30.97506 AU	minimum elong	13627 Apr 08 05:15	26° <del>°</del> 40'00	14°14'26
conjunction	13620 Mar 20 00:50	8° <del>°</del> 33'51	15°30'30	morning rise	13627 Apr 13 06:25	26° <del>°</del> 52'05	
minimum elong	13620 Mar 20 01:03	8° <del>°</del> 33'52	15°30'27	retrograde	13627 Jul 22 01:37	29° <del>°</del> 20'49	
retrograde	13620 Jul 03 05:04	11° <del>°</del> 13'59		opposition	13627 Oct 06 18:20	27° <del>°</del> 57'18	15°04'39
opposition	13620 Sep 17 20:10	9° <del>°</del> 50'43	16°31'12	min. Earth dist.	13627 Oct 07 09:14	27° <del>°</del> 56'14	28.66701 AU
min. Earth dist.	13620 Sep 19 03:14	9° <del>°</del> 48'31	29.00816 AU	direct	13627 Dec 24 14:02	26° <del>°</del> 31'46	
direct	13620 Dec 05 13:08	8° <del>°</del> 25'27		evening set	13628 Apr 04 04:09	29° <del>°</del> 01'04	
conjunction	13621 Mar 22 21:39	11° <del>°</del> 08'09	15°25'00	max. Earth dist.	13628 Apr 09 11:39	29° <del>°</del> 13'46	30.60137 AU
minimum elong				conjunction	13628 Apr 10 02:01	29° <del>°</del> 15'12	13°57'01
				minimum elong	13628 Apr 10 02:26	29° <del>°</del> 15'14	13°56'36

morning rise	13628 Apr 16 00:21	29° $\Upsilon$ 29'23		min. Earth dist.	13634 Oct 24 12:58	15° $\mathcal{S}$ 48'33	28.86857 AU
	13628 Apr 29 00:33	0° $\mathcal{S}$			13634 Nov 24 11:36	15° $\mathcal{R}$ $\mathcal{S}$	
retrograde	13628 Jul 23 19:28	1° $\mathcal{S}$ 55'49		direct	13635 Jan 11 20:26	14° $\mathcal{S}$ 24'06	
opposition	13628 Oct 08 14:59	0° $\mathcal{S}$ 32'23	14°44'49		13635 Feb 27 14:55	15° $\mathcal{S}$	
min. Earth dist.	13628 Oct 09 04:29	0° $\mathcal{S}$ 31'26	28.66469 AU	evening set	13635 Apr 18 06:09	16° $\mathcal{S}$ 38'40	
	13628 Oct 28 03:33	30° $\mathcal{R}$ $\Upsilon$					
direct	13628 Dec 26 10:22	29° $\Upsilon$ 06'59		conjunction	13635 Apr 28 20:19	17° $\mathcal{S}$ 03'25	11°11'47
	13629 Feb 21 08:31	0° $\mathcal{S}$		minimum elong	13635 Apr 28 20:44	17° $\mathcal{S}$ 03'28	11°11'05
evening set	13629 Apr 06 05:42	1° $\mathcal{S}$ 34'05		max. Earth dist.	13635 Apr 28 23:11	17° $\mathcal{S}$ 03'42	30.86183 AU
				morning rise	13635 May 09 10:14	17° $\mathcal{S}$ 28'10	
conjunction	13629 Apr 12 22:40	1° $\mathcal{S}$ 50'06	13°37'38	retrograde	13635 Aug 11 02:43	19° $\mathcal{S}$ 39'44	
minimum elong	13629 Apr 12 23:05	1° $\mathcal{S}$ 50'08	13°37'11	opposition	13635 Oct 27 07:43	18° $\mathcal{S}$ 17'23	11°42'58
max. Earth dist.	13629 Apr 12 10:16	1° $\mathcal{S}$ 48'52	30.60747 AU	min. Earth dist.	13635 Oct 27 04:59	18° $\mathcal{S}$ 17'34	28.93843 AU
morning rise	13629 Apr 19 16:08	2° $\mathcal{S}$ 06'10		direct	13636 Jan 14 18:05	16° $\mathcal{S}$ 53'10	
retrograde	13629 Jul 26 15:26	4° $\mathcal{S}$ 30'22		evening set	13636 Apr 19 11:21	19° $\mathcal{S}$ 05'43	
opposition	13629 Oct 11 11:20	3° $\mathcal{S}$ 07'04	14°23'17				
min. Earth dist.	13629 Oct 11 21:35	3° $\mathcal{S}$ 06'21	28.67319 AU	conjunction	13636 Apr 30 13:55	19° $\mathcal{S}$ 31'34	10°43'15
direct	13629 Dec 29 09:27	1° $\mathcal{S}$ 41'47		minimum elong	13636 Apr 30 14:21	19° $\mathcal{S}$ 31'36	10°42'31
evening set	13630 Apr 08 08:23	4° $\mathcal{S}$ 06'46		max. Earth dist.	13636 Apr 30 18:29	19° $\mathcal{S}$ 32'00	30.94066 AU
				morning rise	13636 May 11 16:25	19° $\mathcal{S}$ 57'23	
conjunction	13630 Apr 15 19:21	4° $\mathcal{S}$ 24'31	13°16'44	retrograde	13636 Aug 12 19:06	22° $\mathcal{S}$ 06'59	
minimum elong	13630 Apr 15 19:48	4° $\mathcal{S}$ 24'34	13°16'14	opposition	13636 Oct 29 01:36	20° $\mathcal{S}$ 44'49	11°11'50
max. Earth dist.	13630 Apr 15 09:49	4° $\mathcal{S}$ 23'34	30.62419 AU	min. Earth dist.	13636 Oct 28 19:47	20° $\mathcal{S}$ 45'14	29.01949 AU
morning rise	13630 Apr 23 06:42	4° $\mathcal{S}$ 42'20		direct	13637 Jan 16 13:04	19° $\mathcal{S}$ 20'51	
retrograde	13630 Jul 29 09:31	7° $\mathcal{S}$ 04'21		evening set	13637 Apr 21 16:24	21° $\mathcal{S}$ 31'26	
opposition	13630 Oct 14 07:32	5° $\mathcal{S}$ 41'10	14°00'08				
min. Earth dist.	13630 Oct 14 16:38	5° $\mathcal{S}$ 40'32	28.69206 AU	conjunction	13637 May 03 06:55	21° $\mathcal{S}$ 58'16	10°13'44
direct	13631 Jan 01 06:08	4° $\mathcal{S}$ 16'02		minimum elong	13637 May 03 07:20	21° $\mathcal{S}$ 58'19	10°12'59
evening set	13631 Apr 10 12:00	6° $\mathcal{S}$ 38'54		max. Earth dist.	13637 May 03 15:20	21° $\mathcal{S}$ 59'05	31.03075 AU
				morning rise	13637 May 14 20:58	22° $\mathcal{S}$ 25'06	
conjunction	13631 Apr 18 15:43	6° $\mathcal{S}$ 58'16	12°54'21	retrograde	13637 Aug 15 08:19	24° $\mathcal{S}$ 32'46	
minimum elong	13631 Apr 18 16:08	6° $\mathcal{S}$ 58'19	12°53'49	opposition	13637 Oct 31 19:04	23° $\mathcal{S}$ 10'51	10°39'41
max. Earth dist.	13631 Apr 18 08:21	6° $\mathcal{S}$ 57'33	30.65139 AU	min. Earth dist.	13637 Oct 31 11:15	23° $\mathcal{S}$ 11'23	29.11184 AU
morning rise	13631 Apr 26 19:43	7° $\mathcal{S}$ 17'41		direct	13638 Jan 19 08:37	21° $\mathcal{S}$ 47'09	
retrograde	13631 Aug 01 04:57	9° $\mathcal{S}$ 37'34		evening set	13638 Apr 23 21:55	23° $\mathcal{S}$ 55'49	
opposition	13631 Oct 17 03:30	8° $\mathcal{S}$ 14'32	13°35'27				
min. Earth dist.	13631 Oct 17 09:25	8° $\mathcal{S}$ 14'07	28.72103 AU	conjunction	13638 May 05 23:18	24° $\mathcal{S}$ 23'34	9°43'18
direct	13632 Jan 04 04:51	6° $\mathcal{S}$ 49'33		minimum elong	13638 May 05 23:43	24° $\mathcal{S}$ 23'36	9°42'30
evening set	13632 Apr 11 15:55	9° $\mathcal{S}$ 10'19		max. Earth dist.	13638 May 06 09:18	24° $\mathcal{S}$ 24'31	31.13224 AU
				morning rise	13638 May 18 00:24	24° $\mathcal{S}$ 51'16	
conjunction	13632 Apr 20 11:33	9° $\mathcal{S}$ 31'11	12°30'36	retrograde	13638 Aug 17 23:25	26° $\mathcal{S}$ 57'04	
minimum elong	13632 Apr 20 12:00	9° $\mathcal{S}$ 31'14	12°30'01	opposition	13638 Nov 03 11:40	25° $\mathcal{S}$ 35'26	10°06'36
max. Earth dist.	13632 Apr 20 06:24	9° $\mathcal{S}$ 30'41	30.68864 AU	min. Earth dist.	13638 Nov 03 00:24	25° $\mathcal{S}$ 36'13	29.21561 AU
morning rise	13632 Apr 29 07:25	9° $\mathcal{S}$ 52'06		direct	13639 Jan 22 02:13	24° $\mathcal{S}$ 12'03	
retrograde	13632 Aug 02 23:18	12° $\mathcal{S}$ 09'52		evening set	13639 Apr 26 03:22	26° $\mathcal{S}$ 18'52	
opposition	13632 Oct 18 23:17	10° $\mathcal{S}$ 46'59	13°09'18				
min. Earth dist.	13632 Oct 19 03:42	10° $\mathcal{S}$ 46'40	28.76009 AU	conjunction	13639 May 08 15:13	26° $\mathcal{S}$ 47'26	9°12'03
direct	13633 Jan 06 01:54	9° $\mathcal{S}$ 22'10		minimum elong	13639 May 08 15:36	26° $\mathcal{S}$ 47'28	9°11'15
evening set	13633 Apr 13 20:26	11° $\mathcal{S}$ 40'51		max. Earth dist.	13639 May 09 04:50	26° $\mathcal{S}$ 48'44	31.24481 AU
				morning rise	13639 May 21 02:23	27° $\mathcal{S}$ 15'57	
conjunction	13633 Apr 23 07:02	12° $\mathcal{S}$ 03'07	12°05'32	retrograde	13639 Aug 20 12:10	29° $\mathcal{S}$ 19'57	
minimum elong	13633 Apr 23 07:28	12° $\mathcal{S}$ 03'10	12°04'55	opposition	13639 Nov 06 04:03	27° $\mathcal{S}$ 58'38	9°32'43
max. Earth dist.	13633 Apr 23 04:41	12° $\mathcal{S}$ 02'53	30.73615 AU	min. Earth dist.	13639 Nov 05 15:19	27° $\mathcal{S}$ 59'30	29.33027 AU
morning rise	13633 May 02 17:40	12° $\mathcal{S}$ 25'25		direct	13640 Jan 24 18:22	26° $\mathcal{S}$ 35'35	
retrograde	13633 Aug 05 17:02	14° $\mathcal{S}$ 41'05		evening set	13640 Apr 27 08:58	28° $\mathcal{S}$ 40'35	
opposition	13633 Oct 21 18:29	13° $\mathcal{S}$ 18'21	12°41'47				
min. Earth dist.	13633 Oct 21 20:09	13° $\mathcal{S}$ 18'14	28.80917 AU	conjunction	13640 May 10 06:13	29° $\mathcal{S}$ 09'52	8°40'06
direct	13634 Jan 09 00:42	11° $\mathcal{S}$ 53'44		minimum elong	13640 May 10 06:35	29° $\mathcal{S}$ 09'55	8°39'15
evening set	13634 Apr 16 01:09	14° $\mathcal{S}$ 10'20		max. Earth dist.	13640 May 10 21:36	29° $\mathcal{S}$ 11'21	31.36790 AU
				morning rise	13640 May 23 02:53	29° $\mathcal{S}$ 39'07	
conjunction	13634 Apr 26 01:54	14° $\mathcal{S}$ 33'54	11°39'14		13640 Jun 01 13:52	0° $\Pi$	
minimum elong	13634 Apr 26 02:20	14° $\mathcal{S}$ 33'57	11°38'34	retrograde	13640 Aug 22 01:19	1° $\Pi$ 41'22	
max. Earth dist.	13634 Apr 26 01:19	14° $\mathcal{S}$ 33'51	30.79377 AU	opposition	13640 Nov 07 19:41	0° $\Pi$ 20'23	8°58'08
morning rise	13634 May 06 02:44	14° $\mathcal{S}$ 57'29		min. Earth dist.	13640 Nov 07 03:33	0° $\Pi$ 21'29	29.45514 AU
	13634 May 07 04:40	15° $\mathcal{S}$			13640 Nov 20 11:23	30° $\mathcal{R}$ $\mathcal{S}$	
retrograde	13634 Aug 08 10:22	17° $\mathcal{S}$ 11'05		direct	13641 Jan 26 12:35	28° $\mathcal{S}$ 57'42	
opposition	13634 Oct 24 13:22	15° $\mathcal{S}$ 48'32	12°12'58		13641 Mar 31 00:49	0° $\Pi$	

evening set	13641 Apr 29 14:37	1°II00'56		min. Earth dist.	13647 Nov 23 10:49	16°II09'24	30.55581 AU
				opposition	13647 Nov 24 16:04	16°II07'30	4°45'28
conjunction	13641 May 12 20:45	1°II30'53	8°07'33	direct	13648 Feb 13 00:26	14°II47'15	
minimum elong	13641 May 12 21:06	1°II30'55	8°06'42	evening set	13648 May 13 06:47	16°II39'32	
max. Earth dist.	13641 May 13 15:02	1°II32'37	31.50056 AU				
morning rise	13641 May 26 02:07	2°II00'45		conjunction	13648 May 28 07:05	17°II11'46	4°10'43
retrograde	13641 Aug 24 13:15	4°II01'20		minimum elong	13648 May 28 07:15	17°II11'47	4°09'43
opposition	13641 Nov 10 10:46	2°II40'40	8°22'58	max. Earth dist.	13648 May 29 14:33	17°II14'37	32.64324 AU
min. Earth dist.	13641 Nov 09 17:24	2°II41'50	29.58943 AU	morning rise	13648 Jun 12 06:01	17°II43'55	
direct	13642 Jan 29 04:02	1°II18'20		retrograde	13648 Sep 08 11:16	19°II34'03	
evening set	13642 May 01 20:27	3°II19'53		min. Earth dist.	13648 Nov 24 20:33	18°II17'33	30.74114 AU
				opposition	13648 Nov 26 02:40	18°II15'35	4°08'56
conjunction	13642 May 15 10:39	3°II50'22	7°34'30	direct	13649 Feb 14 12:59	16°II55'41	
minimum elong	13642 May 15 10:59	3°II50'24	7°33'36	evening set	13649 May 15 12:09	18°II46'36	
max. Earth dist.	13642 May 16 06:45	3°II52'16	31.64214 AU				
morning rise	13642 May 28 24:00	4°II20'48		conjunction	13649 May 30 15:46	19°II18'54	3°36'33
retrograde	13642 Aug 27 01:45	6°II19'44		minimum elong	13649 May 30 15:55	19°II18'55	3°35'33
min. Earth dist.	13642 Nov 12 05:10	5°II00'45	29.73220 AU	max. Earth dist.	13649 Jun 01 00:16	19°II21'49	32.83374 AU
opposition	13642 Nov 13 01:14	4°II59'24	7°47'20	morning rise	13649 Jun 14 18:13	19°II51'06	
direct	13643 Jan 31 20:45	3°II37'27		retrograde	13649 Sep 10 17:27	21°II39'58	
evening set	13643 May 04 02:19	5°II37'20		min. Earth dist.	13649 Nov 27 03:10	20°II23'58	30.93380 AU
				opposition	13649 Nov 28 12:15	20°II21'50	3°32'30
conjunction	13643 May 17 23:50	6°II08'18	7°01'03	direct	13650 Feb 17 00:35	19°II02'17	
minimum elong	13643 May 18 00:08	6°II08'19	7°00'09	evening set	13650 May 17 17:21	20°II51'54	
max. Earth dist.	13643 May 18 21:45	6°II10'21	31.79159 AU				
morning rise	13643 May 31 20:30	6°II39'12		conjunction	13650 Jun 01 23:51	21°II24'13	3°02'29
retrograde	13643 Aug 29 13:51	8°II36'32		minimum elong	13650 Jun 01 23:59	21°II24'14	3°01'27
opposition	13643 Nov 15 15:12	7°II16'32	7°11'20	max. Earth dist.	13650 Jun 03 10:56	21°II27'20	33.03134 AU
min. Earth dist.	13643 Nov 14 17:39	7°II17'58	29.88293 AU	morning rise	13650 Jun 17 05:04	21°II56'25	
direct	13644 Feb 03 12:06	5°II54'56		retrograde	13650 Sep 12 22:54	23°II44'07	
evening set	13644 May 05 08:11	7°II53'12		min. Earth dist.	13650 Nov 29 11:11	22°II28'30	31.13385 AU
				opposition	13650 Nov 30 21:26	22°II26'19	2°56'14
conjunction	13644 May 19 12:26	8°II24'34	6°27'18	direct	13651 Feb 19 09:40	21°II07'09	
minimum elong	13644 May 19 12:43	8°II24'36	6°26'21	evening set	13651 May 19 22:19	22°II55'34	
max. Earth dist.	13644 May 20 12:39	8°II26'49	31.94860 AU				
morning rise	13644 Jun 02 15:34	8°II55'51		conjunction	13651 Jun 04 07:06	23°II27'50	2°28'35
retrograde	13644 Aug 31 01:20	10°II51'39		minimum elong	13651 Jun 04 07:12	23°II27'50	2°27'34
min. Earth dist.	13644 Nov 16 05:02	9°II33'32	30.04093 AU	max. Earth dist.	13651 Jun 05 19:41	23°II31'03	33.23606 AU
opposition	13644 Nov 17 04:29	9°II31'59	6°35'04	morning rise	13651 Jun 19 14:32	23°II59'59	
direct	13645 Feb 05 05:30	8°II10'44		retrograde	13651 Sep 15 04:38	25°II46'35	
evening set	13645 May 07 14:00	10°II07'26		min. Earth dist.	13651 Dec 01 17:10	24°II31'28	31.34081 AU
				opposition	13651 Dec 03 05:49	24°II29'08	2°20'13
conjunction	13645 May 22 00:07	10°II39'07	5°53'18	direct	13652 Feb 21 19:41	23°II10'22	
minimum elong	13645 May 22 00:22	10°II39'09	5°52'22	evening set	13652 May 21 03:15	24°II57'39	
max. Earth dist.	13645 May 23 01:24	10°II41'27	32.11245 AU				
morning rise	13645 Jun 05 09:20	11°II10'43		conjunction	13652 Jun 05 13:41	25°II29'49	1°54'56
retrograde	13645 Sep 02 11:50	13°II05'02		minimum elong	13652 Jun 05 13:45	25°II29'50	1°53'53
opposition	13645 Nov 19 17:05	11°II45'40	5°58'37	max. Earth dist.	13652 Jun 07 03:52	25°II33'10	33.44719 AU
min. Earth dist.	13645 Nov 18 15:31	11°II47'21	30.20593 AU	morning rise	13652 Jun 20 22:54	26°II01'54	
direct	13646 Feb 07 19:25	10°II24'46		retrograde	13652 Sep 16 11:03	27°II47'27	
evening set	13646 May 09 19:44	12°II19'56		min. Earth dist.	13652 Dec 02 23:28	26°II32'48	31.55430 AU
				opposition	13652 Dec 04 13:38	26°II30'23	1°44'31
conjunction	13646 May 24 11:20	12°II51'53	5°19'10	direct	13653 Feb 23 04:02	25°II12'02	
minimum elong	13646 May 24 11:34	12°II51'54	5°18'12	evening set	13653 May 23 07:50	26°II58'15	
max. Earth dist.	13646 May 25 15:13	12°II54'26	32.28289 AU				
morning rise	13646 Jun 08 01:38	13°II23'43		conjunction	13653 Jun 07 19:37	27°II30'17	1°21'33
retrograde	13646 Sep 04 20:00	15°II16'35		minimum elong	13653 Jun 07 19:40	27°II30'18	1°20'31
min. Earth dist.	13646 Nov 21 02:18	13°II59'16	30.37746 AU	max. Earth dist.	13653 Jun 09 11:52	27°II33'47	33.66417 AU
opposition	13646 Nov 22 04:54	13°II57'31	5°22'03	morning rise	13653 Jun 23 05:56	28°II02'13	
direct	13647 Feb 10 10:54	12°II36'57		retrograde	13653 Sep 18 16:22	29°II46'48	
evening set	13647 May 12 01:30	14°II30'39		min. Earth dist.	13653 Dec 05 05:23	28°II32'36	31.77313 AU
				opposition	13653 Dec 06 20:45	28°II30'07	1°09'09
conjunction	13647 May 26 21:36	15°II02'46	4°44'57	direct	13654 Feb 25 14:11	27°II12'12	
minimum elong	13647 May 26 21:49	15°II02'47	4°43'59	evening set	13654 May 25 12:35	28°II57'24	
max. Earth dist.	13647 May 28 02:08	15°II05'22	32.45975 AU				
morning rise	13647 Jun 10 16:42	15°II34'48		conjunction	13654 Jun 10 00:52	29°II29'15	0°48'31
retrograde	13647 Sep 07 05:26	17°II26'15		minimum elong	13654 Jun 10 00:53	29°II29'16	0°47'28

max. Earth dist.	13654 Jun 11 17:40	29°13'24" 33.88584 AU	morning rise	13660 Jul 06 01:21	11°02'21"	
	13654 Jun 24 24:00	0°00'	retrograde	13660 Oct 01 05:21	13°00'02"	
morning rise	13654 Jun 25 12:00	0°00'01"	min. Earth dist.	13660 Dec 18 06:43	11°04'48" 33.40037 AU	
retrograde	13654 Sep 20 21:41	1°04'44"	opposition	13660 Dec 20 05:28	11°04'46" -2°44'47"	
min. Earth dist.	13654 Dec 07 09:50	0°03'05" 31.99667 AU	direct	13661 Mar 11 08:15	10°03'30"	
opposition	13654 Dec 09 03:11	0°02'28" 0°34'13"	evening set	13661 Jun 07 16:02	12°01'00"	
	13654 Dec 28 11:03	30°08'11"				
direct	13655 Feb 27 21:15	29°11'10" 52	conjunction	13661 Jun 22 20:27	12°03'39" -2°50'18"	
	13655 Apr 27 10:53	0°00'	minimum elong	13661 Jun 22 20:22	12°03'39" 2°51'21"	
evening set	13655 May 27 17:04	0°05'55" 07	max. Earth dist.	13661 Jun 24 20:04	12°04'33" 35.52066 AU	
			morning rise	13661 Jul 07 23:57	13°09'08"	
conjunction	13655 Jun 12 05:41	1°02'26" 45 0°15'53"	retrograde	13661 Oct 03 06:40	14°04'47" 30	
minimum elong	13655 Jun 12 05:41	1°02'26" 45 0°14'51"	min. Earth dist.	13661 Dec 20 07:15	13°03'36" 23 33.64337 AU	
behind sun begin	13655 Jun 12 03:05	1°02'26" 32	opposition	13661 Dec 22 07:39	13°03'33" 29 -3°15'55"	
behind sun end	13655 Jun 12 08:17	1°02'26" 58	direct	13662 Mar 13 11:19	12°01'18" 29	
max. Earth dist.	13655 Jun 14 00:41	1°03'30" 26 34.11160 AU	evening set	13662 Jun 09 18:55	13°05'57" 04	
morning rise	13655 Jun 27 16:50	1°05'58" 17				
retrograde	13655 Sep 22 23:45	3°04'41" 04	conjunction	13662 Jun 24 20:47	14°02'26" 14 -3°19'28"	
desc. node	13655 Dec 08 11:00	2°02'29" 31	minimum elong	13662 Jun 24 20:40	14°02'26" 14 3°20'31"	
min. Earth dist.	13655 Dec 09 15:37	2°02'27" 44 32.22401 AU	max. Earth dist.	13662 Jun 26 22:28	14°03'30" 17 35.76425 AU	
opposition	13655 Dec 11 09:14	2°02'25" 09 -0°00'16"	morning rise	13662 Jul 09 21:26	14°05'55" 20	
direct	13656 Mar 01 06:16	1°02'08" 03	retrograde	13662 Oct 05 05:30	16°02'33" 06	
evening set	13656 May 28 21:24	2°02'51" 22	min. Earth dist.	13662 Dec 22 08:27	15°02'22" 18 33.88951 AU	
			opposition	13662 Dec 24 09:13	15°01'19" 23 -3°46'25"	
conjunction	13656 Jun 13 09:35	3°02'22" 45 -0°16'25"	direct	13663 Mar 15 16:16	14°02'04" 43	
minimum elong	13656 Jun 13 09:34	3°02'22" 45 0°17'28"	evening set	13663 Jun 11 21:42	15°04'42" 40	
max. Earth dist.	13656 Jun 15 04:33	3°02'26" 24 34.34064 AU				
morning rise	13656 Jun 28 20:37	3°05'54" 02	conjunction	13663 Jun 26 20:23	16°01'11" 24 -3°48'02"	
retrograde	13656 Sep 24 02:57	5°03'35" 59	minimum elong	13663 Jun 26 20:16	16°01'11" 23 3°49'03"	
min. Earth dist.	13656 Dec 10 18:51	4°02'23" 08 32.45454 AU	max. Earth dist.	13663 Jun 28 22:06	16°01'15" 24 36.01100 AU	
opposition	13656 Dec 12 14:31	4°02'20" 26 -0°34'16"	morning rise	13663 Jul 11 18:11	16°02'40" 03	
direct	13657 Mar 03 13:39	3°02'03" 44	retrograde	13663 Oct 07 05:32	18°01'17" 15	
evening set	13657 May 31 01:36	4°02'46" 10	min. Earth dist.	13663 Dec 24 07:14	17°02'06" 53 34.13893 AU	
			opposition	13663 Dec 26 10:14	17°02'03" 51 -4°16'15"	
conjunction	13657 Jun 15 13:08	5°02'17" 16 -0°48'11"	direct	13664 Mar 16 18:27	15°02'49" 33	
minimum elong	13657 Jun 15 13:07	5°02'17" 16 0°49'13"	evening set	13664 Jun 12 23:59	17°02'26" 54	
max. Earth dist.	13657 Jun 17 09:56	5°02'21" 02 34.57230 AU				
morning rise	13657 Jun 30 23:22	5°02'48" 15	conjunction	13664 Jun 27 19:26	17°02'55" 10 -4°16'00"	
retrograde	13657 Sep 26 03:42	7°02'29" 25	minimum elong	13664 Jun 27 19:18	17°02'55" 09 4°17'02"	
min. Earth dist.	13657 Dec 12 23:36	6°02'16" 53 32.68765 AU	max. Earth dist.	13664 Jun 29 23:09	17°02'59" 18 36.26068 AU	
opposition	13657 Dec 14 19:11	6°02'14" 12 -1°07'45"	morning rise	13664 Jul 12 13:50	18°02'23" 21	
direct	13658 Mar 05 19:32	4°02'57" 52	retrograde	13664 Oct 08 01:07	20°02'00" 04	
evening set	13658 Jun 02 05:40	6°02'39" 28	min. Earth dist.	13664 Dec 25 07:49	18°02'50" 00 34.39115 AU	
			opposition	13664 Dec 27 10:47	18°02'46" 59 -4°45'24"	
conjunction	13658 Jun 17 16:02	7°02'10" 14 -1°19'30"	direct	13665 Mar 18 21:05	17°02'33" 03	
minimum elong	13658 Jun 17 16:00	7°02'10" 14 1°20'33"	evening set	13665 Jun 15 02:16	19°02'09" 51	
max. Earth dist.	13658 Jun 19 12:58	7°02'14" 00 34.80622 AU				
morning rise	13658 Jul 03 01:11	7°02'40" 54	conjunction	13665 Jun 29 18:01	19°02'37" 38 -4°43'20"	
retrograde	13658 Sep 28 04:09	9°02'21" 19	minimum elong	13665 Jun 29 17:53	19°02'37" 37 4°44'21"	
min. Earth dist.	13658 Dec 15 01:55	8°02'09" 12 32.92289 AU	max. Earth dist.	13665 Jul 01 21:53	19°02'41" 46 36.51278 AU	
opposition	13658 Dec 16 23:11	8°02'06" 25 -1°40'41"	morning rise	13665 Jul 14 08:51	20°02'05" 20	
direct	13659 Mar 08 01:25	6°02'50" 27	retrograde	13665 Oct 09 21:30	21°02'41" 34	
evening set	13659 Jun 04 09:25	8°02'31" 13	min. Earth dist.	13665 Dec 27 05:58	20°02'31" 56 34.64545 AU	
			opposition	13665 Dec 29 10:29	20°02'28" 50 -5°13'53"	
conjunction	13659 Jun 19 18:09	9°02'01" 38 -1°50'18"	direct	13666 Mar 20 22:45	19°02'15" 16	
minimum elong	13659 Jun 19 18:05	9°02'01" 37 1°51'21"	evening set	13666 Jun 17 04:21	20°02'51" 33	
max. Earth dist.	13659 Jun 21 16:13	9°02'05" 28 35.04201 AU				
morning rise	13659 Jul 05 01:47	9°02'31" 57	conjunction	13666 Jul 01 16:06	21°02'18" 51 -5°10'04"	
retrograde	13659 Sep 30 05:31	11°02'11" 39	minimum elong	13666 Jul 01 15:57	21°02'18" 50 5°11'05"	
min. Earth dist.	13659 Dec 17 04:54	9°02'59" 50 33.16041 AU	max. Earth dist.	13666 Jul 03 21:01	21°02'23" 02 36.76647 AU	
opposition	13659 Dec 19 02:44	9°02'57" 03 -2°13'02"	morning rise	13666 Jul 16 03:05	21°02'46" 04	
direct	13660 Mar 09 04:06	8°02'41" 24	retrograde	13666 Oct 11 19:13	23°02'21" 53	
evening set	13660 Jun 05 12:50	10°02'21" 24	min. Earth dist.	13666 Dec 29 05:08	22°02'12" 34 34.90129 AU	
			opposition	13666 Dec 31 10:01	22°02'09" 29 -5°41'41"	
conjunction	13660 Jun 20 19:44	10°02'51" 25 -2°20'34"	direct	13667 Mar 22 21:16	20°02'56" 16	
minimum elong	13660 Jun 20 19:39	10°02'51" 25 2°21'38"	evening set	13667 Jun 19 06:05	22°02'32" 05	
max. Earth dist.	13660 Jun 22 18:54	10°02'55" 19 35.28009 AU				

conjunction	13667 Jul 03 13:42	22°☿58'51 -5°36'09	retrograde	13673 Oct 22 10:50	4°♄31'20
minimum elong	13667 Jul 03 13:33	22°☿58'50 5°37'10	min. Earth dist.	13674 Jan 09 09:10	3°♄24'04 36.68625 AU
max. Earth dist.	13667 Jul 05 19:26	23°☿03'04 37.02122 AU	opposition	13674 Jan 11 16:36	3°♄20'57 -8°37'13
morning rise	13667 Jul 17 20:21	23°☿25'34	direct	13674 Apr 03 11:27	2°♄09'58
retrograde	13667 Oct 13 15:42	25°☿01'00	evening set	13674 Jul 01 12:33	3°♄43'12
min. Earth dist.	13667 Dec 31 03:40	23°☿52'02 35.15774 AU			
opposition	13668 Jan 02 08:59	23°☿48'55 -6°08'48	conjunction	13674 Jul 14 07:52	4°♄06'05 -8°21'19
direct	13668 Mar 23 21:54	22°☿36'04	minimum elong	13674 Jul 14 07:41	4°♄06'04 8°22'14
evening set	13668 Jun 20 07:48	24°☿11'27	max. Earth dist.	13674 Jul 16 15:57	4°♄10'17 38.79224 AU
			morning rise	13674 Jul 27 02:33	4°♄28'56
conjunction	13668 Jul 04 10:46	24°☿37'41 -6°01'38	retrograde	13674 Oct 24 04:43	6°♄02'19
minimum elong	13668 Jul 04 10:36	24°☿37'41 6°02'38	min. Earth dist.	13675 Jan 11 04:30	4°♄55'20 36.93983 AU
max. Earth dist.	13668 Jul 06 16:13	24°☿41'52 37.27619 AU	opposition	13675 Jan 13 12:14	4°♄52'12 -8°59'35
morning rise	13668 Jul 18 13:09	25°☿03'53	direct	13675 Apr 05 07:57	3°♄41'32
retrograde	13668 Oct 14 14:34	26°☿38'58	evening set	13675 Jul 03 12:24	5°♄14'30
min. Earth dist.	13669 Jan 01 01:10	25°☿30'20 35.41440 AU			
opposition	13669 Jan 03 07:24	25°☿27'12 -6°35'13	conjunction	13675 Jul 16 01:32	5°♄36'48 -8°42'23
direct	13669 Mar 25 19:23	24°☿14'41	minimum elong	13675 Jul 16 01:22	5°♄36'47 8°43'18
evening set	13669 Jun 22 09:09	25°☿49'40	max. Earth dist.	13675 Jul 18 09:19	5°♄40'57 39.04417 AU
			morning rise	13675 Jul 28 14:24	5°♄59'04
conjunction	13669 Jul 06 07:33	26°☿15'22 -6°26'28	retrograde	13675 Oct 26 00:50	7°♄32'16
minimum elong	13669 Jul 06 07:24	26°☿15'22 6°27'27	min. Earth dist.	13676 Jan 12 22:22	6°♄25'37 37.19404 AU
max. Earth dist.	13669 Jul 08 14:14	26°☿19'36 37.53091 AU	opposition	13676 Jan 15 07:27	6°♄22'25 -9°21'15
morning rise	13669 Jul 20 05:06	26°☿41'02	direct	13676 Apr 06 01:27	5°♄12'03
retrograde	13669 Oct 16 10:29	28°☿15'46	evening set	13676 Jul 04 11:56	6°♄44'48
min. Earth dist.	13670 Jan 02 23:52	27°☿07'24 35.67039 AU			
opposition	13670 Jan 05 05:29	27°☿04'19 -7°00'58	conjunction	13676 Jul 16 19:03	7°♄06'31 -9°02'50
direct	13670 Mar 27 19:14	25°☿52'08	minimum elong	13676 Jul 16 18:53	7°♄06'30 9°03'43
evening set	13670 Jun 24 10:29	27°☿26'44	max. Earth dist.	13676 Jul 19 04:19	7°♄10'45 39.29663 AU
			morning rise	13676 Jul 29 01:40	7°♄28'13
conjunction	13670 Jul 08 03:45	27°☿51'53 -6°50'41	retrograde	13676 Oct 26 17:36	9°♄01'15
minimum elong	13670 Jul 08 03:34	27°☿51'52 6°51'40	min. Earth dist.	13677 Jan 13 17:40	7°♄54'50 37.44855 AU
max. Earth dist.	13670 Jul 10 09:34	27°☿56'02 37.78472 AU	opposition	13677 Jan 16 02:11	7°♄51'41 -9°42'15
morning rise	13670 Jul 21 20:27	28°☿17'00	direct	13677 Apr 07 20:51	6°♄41'39
retrograde	13670 Oct 18 06:05	29°☿51'25	evening set	13677 Jul 06 11:24	8°♄14'12
min. Earth dist.	13671 Jan 04 19:59	28°☿43'24 35.92545 AU			
opposition	13671 Jan 07 02:56	28°☿40'15 -7°26'03	conjunction	13677 Jul 18 12:04	8°♄35'19 -9°22'38
direct	13671 Mar 29 17:50	27°☿28'24	minimum elong	13677 Jul 18 11:54	8°♄35'19 9°23'32
evening set	13671 Jun 26 11:25	29°☿02'37	max. Earth dist.	13677 Jul 20 20:47	8°♄39'29 39.54924 AU
			morning rise	13677 Jul 30 12:27	8°♄56'26
conjunction	13671 Jul 09 23:34	29°☿27'13 -7°14'17	retrograde	13677 Oct 28 08:35	10°♄29'19
minimum elong	13671 Jul 09 23:25	29°☿27'13 7°15'15	min. Earth dist.	13678 Jan 15 10:35	9°♄23'16 37.70291 AU
max. Earth dist.	13671 Jul 12 06:29	29°☿31'25 38.03746 AU	opposition	13678 Jan 17 20:27	9°♄20'04 -10°02'34
morning rise	13671 Jul 23 11:04	29°☿51'47	direct	13678 Apr 09 17:30	8°♄10'20
	13671 Jul 28 01:51	0°♄	evening set	13678 Jul 08 10:31	9°♄42'43
retrograde	13671 Oct 19 22:54	1°♄25'55			
min. Earth dist.	13672 Jan 06 17:52	0°♄18'06 36.17956 AU	conjunction	13678 Jul 20 04:43	10°♄03'15 -9°41'50
opposition	13672 Jan 09 00:08	0°♄15'01 -7°50'27	minimum elong	13678 Jul 20 04:33	10°♄03'14 9°42'42
	13672 Jan 20 01:09	30°♄☿	max. Earth dist.	13678 Jul 22 14:21	10°♄07'28 39.80130 AU
direct	13672 Mar 30 17:38	29°☿03'27	morning rise	13678 Jul 31 22:39	10°♄23'45
	13672 Jun 05 08:52	0°♄	retrograde	13678 Oct 29 23:22	11°♄56'33
evening set	13672 Jun 27 12:01	0°♄37'19	min. Earth dist.	13679 Jan 17 05:09	10°♄50'45 37.95659 AU
			opposition	13679 Jan 19 14:31	10°♄47'35 -10°22'15
conjunction	13672 Jul 10 18:45	1°♄01'21 -7°37'15	direct	13679 Apr 11 13:24	9°♄38'11
minimum elong	13672 Jul 10 18:34	1°♄01'21 7°38'12	evening set	13679 Jul 10 09:33	11°♄10'24
max. Earth dist.	13672 Jul 13 01:22	1°♄05'30 38.28938 AU			
morning rise	13672 Jul 24 00:52	1°♄25'21	conjunction	13679 Jul 21 21:07	11°♄30'20 -10°00'25
retrograde	13672 Oct 20 16:05	2°♄59'12	minimum elong	13679 Jul 21 20:57	11°♄30'19 10°01'17
min. Earth dist.	13673 Jan 07 13:26	1°♄51'42 36.43292 AU	max. Earth dist.	13679 Jul 24 06:42	11°♄34'31 40.05246 AU
opposition	13673 Jan 09 20:36	1°♄48'34 -8°14'10	morning rise	13679 Aug 02 08:20	11°♄50'14
direct	13673 Apr 01 16:02	0°♄37'18	retrograde	13679 Oct 31 14:26	13°♄22'57
evening set	13673 Jun 29 12:26	2°♄10'50	min. Earth dist.	13680 Jan 18 22:29	12°♄17'26 38.20888 AU
			opposition	13680 Jan 21 08:08	12°♄14'16 -10°41'16
conjunction	13673 Jul 12 13:29	2°♄34'18 -7°59'36	direct	13680 Apr 12 08:25	11°♄05'11
minimum elong	13673 Jul 12 13:19	2°♄34'17 8°00'32	evening set	13680 Jul 11 08:20	12°♄37'15
max. Earth dist.	13673 Jul 14 20:34	2°♄38'27 38.54070 AU			
morning rise	13673 Jul 25 14:08	2°♄57'43	conjunction	13680 Jul 22 13:01	12°♄56'35 -10°18'25

minimum elong	13680 Jul 22 12:51	12°Ω56'34	10°19'14	min. Earth dist.	13687 Jan 28 17:30	21°Ω59'24	39.90242 AU
max. Earth dist.	13680 Jul 24 22:10	13°Ω00'43	40.30186 AU	opposition	13687 Jan 31 01:37	21°Ω56'25	-12°37'43
morning rise	13680 Aug 02 17:37	13°Ω15'54		direct	13687 Apr 23 06:24	20°Ω49'04	
retrograde	13680 Nov 01 07:55	14°Ω48'32		evening set	13687 Jul 23 18:51	22°Ω20'27	
min. Earth dist.	13681 Jan 19 15:41	13°Ω43'17	38.45928 AU				
opposition	13681 Jan 22 01:27	13°Ω40'07	-10°59'40	conjunction	13687 Aug 01 19:56	22°Ω35'29	-12°08'44
direct	13681 Apr 14 00:26	12°Ω31'20		minimum elong	13687 Aug 01 19:49	22°Ω35'28	12°09'28
evening set	13681 Jul 13 07:00	14°Ω03'16		max. Earth dist.	13687 Aug 04 03:42	22°Ω39'21	41.97333 AU
				morning rise	13687 Aug 10 21:04	22°Ω50'31	
conjunction	13681 Jul 24 04:52	14°Ω22'00	-10°35'49	retrograde	13687 Nov 11 12:12	24°Ω22'52	
minimum elong	13681 Jul 24 04:43	14°Ω21'59	10°36'39	min. Earth dist.	13688 Jan 30 07:31	23°Ω18'59	40.13569 AU
max. Earth dist.	13681 Jul 26 14:40	14°Ω26'09	40.54899 AU	opposition	13688 Feb 01 16:26	23°Ω15'58	-12°52'02
morning rise	13681 Aug 04 02:24	14°Ω40'43		direct	13688 Apr 23 19:15	22°Ω08'53	
	13681 Aug 15 16:15	15°Ω		evening set	13688 Jul 24 15:57	23°Ω40'14	
retrograde	13681 Nov 03 00:12	16°Ω13'17					
min. Earth dist.	13682 Jan 21 09:30	15°Ω08'13	38.70694 AU	conjunction	13688 Aug 02 09:16	23°Ω54'39	-12°22'19
opposition	13682 Jan 23 18:18	15°Ω05'08	-11°17'28	minimum elong	13688 Aug 02 09:11	23°Ω54'39	12°23'01
	13682 Jan 27 16:37	15°Ω		max. Earth dist.	13688 Aug 04 18:13	23°Ω58'35	42.20412 AU
direct	13682 Apr 15 17:07	13°Ω56'37		morning rise	13688 Aug 11 02:29	24°Ω09'04	
	13682 Jun 27 19:25	15°Ω		retrograde	13688 Nov 12 01:34	25°Ω41'27	
evening set	13682 Jul 15 05:41	15°Ω28'26		min. Earth dist.	13689 Jan 30 22:58	24°Ω37'44	40.36752 AU
				opposition	13689 Feb 02 06:59	24°Ω34'47	-13°05'46
conjunction	13682 Jul 25 20:18	15°Ω46'34	-10°52'41	direct	13689 Apr 25 09:44	23°Ω27'57	
minimum elong	13682 Jul 25 20:09	15°Ω46'33	10°53'29	evening set	13689 Jul 26 13:07	24°Ω59'19	
max. Earth dist.	13682 Jul 28 04:41	15°Ω50'35	40.79324 AU				
morning rise	13682 Aug 05 10:51	16°Ω04'41		conjunction	13689 Aug 03 22:18	25°Ω13'07	-12°35'21
retrograde	13682 Nov 04 17:36	17°Ω37'10		minimum elong	13689 Aug 03 22:11	25°Ω13'06	12°36'02
min. Earth dist.	13683 Jan 23 01:23	16°Ω32'22	38.95161 AU	max. Earth dist.	13689 Aug 06 06:16	25°Ω16'58	42.43349 AU
opposition	13683 Jan 25 10:53	16°Ω29'15	-11°34'41	morning rise	13689 Aug 12 07:28	25°Ω26'54	
direct	13683 Apr 17 08:19	15°Ω21'00		retrograde	13689 Nov 13 14:13	26°Ω59'21	
evening set	13683 Jul 17 03:49	16°Ω52'43		min. Earth dist.	13690 Feb 01 12:01	25°Ω55'55	40.59771 AU
				opposition	13690 Feb 03 20:58	25°Ω52'55	-13°18'57
conjunction	13683 Jul 27 11:20	17°Ω10'14	-11°08'59	direct	13690 Apr 26 23:34	24°Ω46'21	
minimum elong	13683 Jul 27 11:12	17°Ω10'13	11°09'47	evening set	13690 Jul 28 10:01	26°Ω17'46	
max. Earth dist.	13683 Jul 29 20:21	17°Ω14'16	41.03433 AU				
morning rise	13683 Aug 06 18:40	17°Ω27'44		conjunction	13690 Aug 05 11:04	26°Ω30'56	-12°47'52
retrograde	13683 Nov 06 06:27	19°Ω00'10		minimum elong	13690 Aug 05 10:59	26°Ω30'56	12°48'32
min. Earth dist.	13684 Jan 24 19:07	17°Ω55'30	39.19309 AU	max. Earth dist.	13690 Aug 07 19:26	26°Ω34'47	42.66101 AU
opposition	13684 Jan 27 03:16	17°Ω52'28	-11°51'18	morning rise	13690 Aug 13 12:12	26°Ω44'06	
direct	13684 Apr 18 02:32	16°Ω44'27		retrograde	13690 Nov 15 01:20	28°Ω16'39	
evening set	13684 Jul 18 02:02	18°Ω16'03		min. Earth dist.	13691 Feb 03 02:59	27°Ω13'24	40.82594 AU
				opposition	13691 Feb 05 11:01	27°Ω10'28	-13°31'35
conjunction	13684 Jul 28 02:06	18°Ω32'57	-11°24'44	direct	13691 Apr 28 15:30	26°Ω04'09	
minimum elong	13684 Jul 28 01:59	18°Ω32'56	11°25'31	evening set	13691 Jul 30 06:47	27°Ω35'37	
max. Earth dist.	13684 Jul 30 10:14	18°Ω36'55	41.27244 AU				
morning rise	13684 Aug 07 02:02	18°Ω49'50		conjunction	13691 Aug 06 23:32	27°Ω48'10	-12°59'52
retrograde	13684 Nov 06 18:11	20°Ω22'13		minimum elong	13691 Aug 06 23:27	27°Ω48'10	13°00'31
min. Earth dist.	13685 Jan 25 10:15	19°Ω17'46	39.43164 AU	max. Earth dist.	13691 Aug 09 07:50	27°Ω52'00	42.88641 AU
opposition	13685 Jan 27 18:55	19°Ω14'43	-12°07'21	morning rise	13691 Aug 14 16:14	28°Ω00'43	
direct	13685 Apr 19 21:21	18°Ω06'55		retrograde	13691 Nov 16 12:36	29°Ω33'23	
evening set	13685 Jul 19 23:49	19°Ω38'26		min. Earth dist.	13692 Feb 04 16:38	28°Ω30'21	41.05155 AU
				opposition	13692 Feb 07 00:38	28°Ω27'26	-13°43'41
conjunction	13685 Jul 29 16:24	19°Ω54'43	-11°39'57	direct	13692 Apr 29 07:03	27°Ω21'23	
minimum elong	13685 Jul 29 16:16	19°Ω54'42	11°40'44	evening set	13692 Jul 31 03:34	28°Ω52'56	
max. Earth dist.	13685 Aug 01 00:31	19°Ω58'39	41.50783 AU				
morning rise	13685 Aug 08 08:59	20°Ω10'59		conjunction	13692 Aug 07 11:48	29°Ω04'51	-13°11'23
retrograde	13685 Nov 08 07:53	21°Ω43'19		minimum elong	13692 Aug 07 11:44	29°Ω04'50	13°12'01
min. Earth dist.	13686 Jan 27 02:12	20°Ω39'02	39.66794 AU	max. Earth dist.	13692 Aug 09 19:10	29°Ω08'36	43.10890 AU
opposition	13686 Jan 29 10:28	20°Ω36'01	-12°22'50	morning rise	13692 Aug 14 20:09	29°Ω16'46	
direct	13686 Apr 21 13:48	19°Ω28'27			13692 Sep 12 05:30	0°Ω	
evening set	13686 Jul 21 21:24	20°Ω59'53		retrograde	13692 Nov 17 03:14	0°Ω49'33	
					13693 Jan 25 12:07	30°Ω	
conjunction	13686 Jul 31 06:22	21°Ω15'32	-11°54'37	min. Earth dist.	13693 Feb 05 06:05	29°Ω46'44	41.27414 AU
minimum elong	13686 Jul 31 06:15	21°Ω15'31	11°55'21	opposition	13693 Feb 07 13:55	29°Ω43'50	-13°55'17
max. Earth dist.	13686 Aug 02 14:57	21°Ω19'29	41.74133 AU	direct	13693 Apr 30 18:27	28°Ω38'03	
morning rise	13686 Aug 09 15:10	21°Ω31'11			13693 Jul 26 22:46	0°Ω	
retrograde	13686 Nov 09 20:29	23°Ω03'31		evening set	13693 Aug 02 00:20	0°Ω09'42	

conjunction	13693 Aug 09 00:01	0° $\mathbb{N}$ 20'58	-13°22'25	min. Earth dist.	13700 Feb 14 23:17	8° $\mathbb{N}$ 23'46	42.72528 AU
minimum elong	13693 Aug 08 23:56	0° $\mathbb{N}$ 20'58	13°23'02	opposition	13700 Feb 17 04:03	8° $\mathbb{N}$ 21'05	-15°03'22
max. Earth dist.	13693 Aug 11 07:44	0° $\mathbb{N}$ 24'43	43.32808 AU	direct	13700 May 10 10:39	7° $\mathbb{N}$ 16'41	
morning rise	13693 Aug 15 23:38	0° $\mathbb{N}$ 32'15		evening set	13700 Aug 14 02:39	8° $\mathbb{N}$ 49'25	
retrograde	13693 Nov 18 15:39	2° $\mathbb{N}$ 05'11					
min. Earth dist.	13694 Feb 06 20:37	1° $\mathbb{N}$ 02'31	41.49293 AU	conjunction	13700 Aug 18 05:23	8° $\mathbb{N}$ 55'51	-14°27'14
opposition	13694 Feb 09 03:04	0° $\mathbb{N}$ 59'42	-14°06'24	minimum elong	13700 Aug 18 05:22	8° $\mathbb{N}$ 55'51	14°27'44
	13694 Apr 10 04:54	30° $\mathbb{R}$ 8 $\mathbb{L}$		max. Earth dist.	13700 Aug 20 09:57	8° $\mathbb{N}$ 59'16	44.75781 AU
direct	13694 May 02 07:51	29° $\mathbb{Q}$ 54'09		morning rise	13700 Aug 22 08:11	9° $\mathbb{N}$ 02'17	
	13694 May 24 03:11	0° $\mathbb{N}$		retrograde	13700 Nov 27 19:23	10° $\mathbb{N}$ 36'37	
evening set	13694 Aug 03 21:07	1° $\mathbb{N}$ 25'54		min. Earth dist.	13701 Feb 16 11:44	9° $\mathbb{N}$ 34'55	42.92118 AU
				opposition	13701 Feb 18 15:11	9° $\mathbb{N}$ 32'19	-15°11'14
conjunction	13694 Aug 10 11:47	1° $\mathbb{N}$ 36'32	-13°33'00	direct	13701 May 11 21:42	8° $\mathbb{N}$ 28'06	
minimum elong	13694 Aug 10 11:44	1° $\mathbb{N}$ 36'31	13°33'36	evening set	13701 Aug 16 00:47	10° $\mathbb{N}$ 01'10	
max. Earth dist.	13694 Aug 12 17:52	1° $\mathbb{N}$ 40'09	43.54331 AU				
morning rise	13694 Aug 17 02:33	1° $\mathbb{N}$ 47'10		conjunction	13701 Aug 19 15:29	10° $\mathbb{N}$ 06'48	-14°34'44
retrograde	13694 Nov 20 04:25	3° $\mathbb{N}$ 20'14		minimum elong	13701 Aug 19 15:30	10° $\mathbb{N}$ 06'48	14°35'11
min. Earth dist.	13695 Feb 08 09:08	2° $\mathbb{N}$ 17'47	41.70759 AU	max. Earth dist.	13701 Aug 21 19:18	10° $\mathbb{N}$ 10'10	44.95155 AU
opposition	13695 Feb 10 15:56	2° $\mathbb{N}$ 14'57	-14°17'02	morning rise	13701 Aug 23 06:16	10° $\mathbb{N}$ 12'26	
direct	13695 May 03 19:06	1° $\mathbb{N}$ 09'38		retrograde	13701 Nov 29 03:20	11° $\mathbb{N}$ 47'07	
evening set	13695 Aug 05 17:49	2° $\mathbb{N}$ 41'30		min. Earth dist.	13702 Feb 17 22:04	10° $\mathbb{N}$ 45'37	43.11485 AU
				opposition	13702 Feb 20 02:07	10° $\mathbb{N}$ 42'59	-15°18'39
conjunction	13695 Aug 11 23:30	2° $\mathbb{N}$ 51'29	-13°43'08	direct	13702 May 13 09:24	9° $\mathbb{N}$ 38'58	
minimum elong	13695 Aug 11 23:26	2° $\mathbb{N}$ 51'29	13°43'43	evening set	13702 Aug 17 23:38	11° $\mathbb{N}$ 12'27	
max. Earth dist.	13695 Aug 14 05:40	2° $\mathbb{N}$ 55'06	43.75429 AU				
morning rise	13695 Aug 18 05:12	3° $\mathbb{N}$ 01'27		conjunction	13702 Aug 21 01:12	11° $\mathbb{N}$ 17'13	-14°41'47
retrograde	13695 Nov 21 15:08	4° $\mathbb{N}$ 34'41		minimum elong	13702 Aug 21 01:12	11° $\mathbb{N}$ 17'13	14°42'14
min. Earth dist.	13696 Feb 09 23:23	3° $\mathbb{N}$ 32'19	41.91798 AU	max. Earth dist.	13702 Aug 23 04:44	11° $\mathbb{N}$ 20'32	45.14289 AU
opposition	13696 Feb 12 04:38	3° $\mathbb{N}$ 29'35	-14°27'13	morning rise	13702 Aug 24 02:50	11° $\mathbb{N}$ 21'58	
direct	13696 May 04 08:09	2° $\mathbb{N}$ 24'28		retrograde	13702 Nov 30 12:43	12° $\mathbb{N}$ 57'07	
evening set	13696 Aug 06 14:38	3° $\mathbb{N}$ 56'26		min. Earth dist.	13703 Feb 19 09:40	11° $\mathbb{N}$ 55'45	43.30612 AU
				opposition	13703 Feb 21 13:01	11° $\mathbb{N}$ 53'10	-15°25'38
conjunction	13696 Aug 12 10:51	4° $\mathbb{N}$ 05'45	-13°52'50	direct	13703 May 14 21:01	10° $\mathbb{N}$ 49'21	
minimum elong	13696 Aug 12 10:49	4° $\mathbb{N}$ 05'45	13°53'24	evening set	13703 Aug 20 00:36	12° $\mathbb{N}$ 23'22	
max. Earth dist.	13696 Aug 14 16:10	4° $\mathbb{N}$ 09'18	43.96121 AU				
morning rise	13696 Aug 18 07:07	4° $\mathbb{N}$ 15'04		conjunction	13703 Aug 22 10:58	12° $\mathbb{N}$ 27'08	-14°48'26
retrograde	13696 Nov 21 23:29	5° $\mathbb{N}$ 48'27		minimum elong	13703 Aug 22 10:59	12° $\mathbb{N}$ 27'08	14°48'51
min. Earth dist.	13697 Feb 10 11:35	4° $\mathbb{N}$ 46'15	42.12424 AU	morning rise	13703 Aug 24 21:25	12° $\mathbb{N}$ 30'54	
opposition	13697 Feb 12 16:51	4° $\mathbb{N}$ 43'31	-14°36'57	max. Earth dist.	13703 Aug 24 14:46	12° $\mathbb{N}$ 30'28	45.33175 AU
direct	13697 May 05 23:14	3° $\mathbb{N}$ 38'35		retrograde	13703 Dec 01 21:15	14° $\mathbb{N}$ 06'39	
evening set	13697 Aug 08 11:20	5° $\mathbb{N}$ 10'41		min. Earth dist.	13704 Feb 20 20:49	13° $\mathbb{N}$ 05'26	43.49442 AU
				opposition	13704 Feb 22 23:33	13° $\mathbb{N}$ 02'52	-15°32'11
conjunction	13697 Aug 13 21:51	5° $\mathbb{N}$ 19'19	-14°02'06	direct	13704 May 15 09:34	11° $\mathbb{N}$ 59'16	
minimum elong	13697 Aug 13 21:49	5° $\mathbb{N}$ 19'19	14°02'38	evening set	13704 Aug 21 05:30	13° $\mathbb{N}$ 34'07	
max. Earth dist.	13697 Aug 16 02:17	5° $\mathbb{N}$ 22'47	44.16425 AU				
morning rise	13697 Aug 19 08:29	5° $\mathbb{N}$ 27'57		conjunction	13704 Aug 22 20:23	13° $\mathbb{N}$ 36'37	-14°54'40
retrograde	13697 Nov 23 10:07	7° $\mathbb{N}$ 01'31		minimum elong	13704 Aug 22 20:23	13° $\mathbb{N}$ 36'37	14°55'04
min. Earth dist.	13698 Feb 12 00:07	5° $\mathbb{N}$ 59'26	42.32715 AU	morning rise	13704 Aug 24 11:19	13° $\mathbb{N}$ 39'07	
opposition	13698 Feb 14 04:48	5° $\mathbb{N}$ 56'44	-14°46'13	max. Earth dist.	13704 Aug 24 22:39	13° $\mathbb{N}$ 39'50	45.51744 AU
direct	13698 May 07 12:47	4° $\mathbb{N}$ 51'58		retrograde	13704 Dec 02 09:30	15° $\mathbb{N}$ 15'44	
evening set	13698 Aug 10 08:15	6° $\mathbb{N}$ 24'15		min. Earth dist.	13705 Feb 21 07:13	14° $\mathbb{N}$ 14'41	43.67935 AU
				opposition	13705 Feb 23 09:56	14° $\mathbb{N}$ 12'09	-15°38'19
conjunction	13698 Aug 15 08:42	6° $\mathbb{N}$ 32'10	-14°10'56	direct	13705 May 16 18:13	13° $\mathbb{N}$ 08'44	
minimum elong	13698 Aug 15 08:40	6° $\mathbb{N}$ 32'10	14°11'27				
max. Earth dist.	13698 Aug 17 13:44	6° $\mathbb{N}$ 35'40	44.36439 AU	conjunction	13705 Aug 24 05:49	14° $\mathbb{N}$ 45'40	-15°00'32
morning rise	13698 Aug 20 09:10	6° $\mathbb{N}$ 40'06		minimum elong	13705 Aug 24 05:52	14° $\mathbb{N}$ 45'40	15°00'54
retrograde	13698 Nov 24 21:16	8° $\mathbb{N}$ 13'53		max. Earth dist.	13705 Aug 26 08:29	14° $\mathbb{N}$ 48'54	45.69938 AU
min. Earth dist.	13699 Feb 13 12:36	7° $\mathbb{N}$ 11'54	42.52729 AU	retrograde	13705 Dec 03 20:17	16° $\mathbb{N}$ 24'24	
opposition	13699 Feb 15 16:35	7° $\mathbb{N}$ 09'15	-14°55'02	min. Earth dist.	13706 Feb 22 19:11	15° $\mathbb{N}$ 23'26	43.86015 AU
direct	13699 May 09 01:15	6° $\mathbb{N}$ 04'39		opposition	13706 Feb 24 20:09	15° $\mathbb{N}$ 21'00	-15°44'04
evening set	13699 Aug 12 05:14	7° $\mathbb{N}$ 37'08		direct	13706 May 18 03:20	14° $\mathbb{N}$ 17'47	
conjunction	13699 Aug 16 19:03	7° $\mathbb{N}$ 44'19	-14°19'18	conjunction	13706 Aug 25 15:05	15° $\mathbb{N}$ 54'18	-15°06'01
minimum elong	13699 Aug 16 19:02	7° $\mathbb{N}$ 44'19	14°19'48	minimum elong	13706 Aug 25 15:07	15° $\mathbb{N}$ 54'18	15°06'22
max. Earth dist.	13699 Aug 18 22:56	7° $\mathbb{N}$ 47'43	44.56213 AU	max. Earth dist.	13706 Aug 27 16:14	15° $\mathbb{N}$ 57'26	45.87713 AU
morning rise	13699 Aug 21 08:59	7° $\mathbb{N}$ 51'32		retrograde	13706 Dec 05 04:44	17° $\mathbb{N}$ 32'39	
retrograde	13699 Nov 26 10:04	9° $\mathbb{N}$ 25'34		min. Earth dist.	13707 Feb 24 04:58	16° $\mathbb{N}$ 31'52	44.03644 AU



opposition	13707 Feb 26 06:12	16° $\mathring{\mu}$ 29'25	-15°49'27	conjunction	13715 Sep 04 17:42	25° $\mathring{\mu}$ 51'32	-15°39'32
direct	13707 May 19 12:40	15° $\mathring{\mu}$ 26'23		minimum elong	13715 Sep 04 17:48	25° $\mathring{\mu}$ 51'32	15°39'44
				max. Earth dist.	13715 Sep 06 14:36	25° $\mathring{\mu}$ 54'18	47.30322 AU
conjunction	13707 Aug 27 00:05	17° $\mathring{\mu}$ 02'30	-15°11'09	retrograde	13715 Dec 15 06:46	27° $\mathring{\mu}$ 26'48	
minimum elong	13707 Aug 27 00:09	17° $\mathring{\mu}$ 02'30	15°11'30	min. Earth dist.	13716 Mar 05 20:36	26° $\mathring{\mu}$ 26'56	45.45268 AU
max. Earth dist.	13707 Aug 29 00:29	17° $\mathring{\mu}$ 05'34	46.05013 AU	opposition	13716 Mar 07 15:39	26° $\mathring{\mu}$ 24'51	-16°21'27
retrograde	13707 Dec 06 12:13	18° $\mathring{\mu}$ 40'28		direct	13716 May 29 02:08	25° $\mathring{\mu}$ 23'15	
min. Earth dist.	13708 Feb 25 16:34	17° $\mathring{\mu}$ 39'44	44.20796 AU				
opposition	13708 Feb 27 16:11	17° $\mathring{\mu}$ 37'23	-15°54'28	conjunction	13716 Sep 05 01:16	26° $\mathring{\mu}$ 56'04	-15°41'31
direct	13708 May 20 00:26	16° $\mathring{\mu}$ 34'31		minimum elong	13716 Sep 05 01:24	26° $\mathring{\mu}$ 56'05	15°41'41
				max. Earth dist.	13716 Sep 06 20:36	26° $\mathring{\mu}$ 58'44	47.44629 AU
conjunction	13708 Aug 27 09:07	18° $\mathring{\mu}$ 10'13	-15°15'56	retrograde	13716 Dec 15 16:36	28° $\mathring{\mu}$ 31'03	
minimum elong	13708 Aug 27 09:10	18° $\mathring{\mu}$ 10'13	15°16'15	min. Earth dist.	13717 Mar 07 04:24	27° $\mathring{\mu}$ 31'21	45.59409 AU
max. Earth dist.	13708 Aug 29 09:07	18° $\mathring{\mu}$ 13'15	46.21852 AU	opposition	13717 Mar 08 23:41	27° $\mathring{\mu}$ 29'15	-16°23'14
retrograde	13708 Dec 06 19:14	19° $\mathring{\mu}$ 47'48		direct	13717 May 30 07:31	26° $\mathring{\mu}$ 27'50	
min. Earth dist.	13709 Feb 26 02:42	18° $\mathring{\mu}$ 47'10	44.37474 AU				
opposition	13709 Feb 28 01:38	18° $\mathring{\mu}$ 44'51	-15°59'08	conjunction	13717 Sep 06 08:46	28° $\mathring{\mu}$ 00'21	-15°43'11
direct	13709 May 21 12:47	17° $\mathring{\mu}$ 42'08		minimum elong	13717 Sep 06 08:53	28° $\mathring{\mu}$ 00'21	15°43'20
				max. Earth dist.	13717 Sep 08 03:37	28° $\mathring{\mu}$ 02'58	47.58520 AU
conjunction	13709 Aug 28 17:44	19° $\mathring{\mu}$ 17'25	-15°20'23	retrograde	13717 Dec 16 22:54	29° $\mathring{\mu}$ 35'02	
minimum elong	13709 Aug 28 17:48	19° $\mathring{\mu}$ 17'25	15°20'42	min. Earth dist.	13718 Mar 08 14:32	28° $\mathring{\mu}$ 35'23	45.73109 AU
max. Earth dist.	13709 Aug 30 16:11	19° $\mathring{\mu}$ 20'20	46.38250 AU	opposition	13718 Mar 10 07:54	28° $\mathring{\mu}$ 33'23	-16°24'41
retrograde	13709 Dec 08 05:45	20° $\mathring{\mu}$ 54'38		direct	13718 May 31 15:11	27° $\mathring{\mu}$ 32'07	
min. Earth dist.	13710 Feb 27 12:22	19° $\mathring{\mu}$ 54'07	44.53758 AU				
opposition	13710 Mar 01 11:04	19° $\mathring{\mu}$ 51'49	-16°03'26	conjunction	13718 Sep 07 16:08	29° $\mathring{\mu}$ 04'20	-15°44'34
direct	13710 May 22 21:24	18° $\mathring{\mu}$ 49'14		minimum elong	13718 Sep 07 16:17	29° $\mathring{\mu}$ 04'20	15°44'41
				max. Earth dist.	13718 Sep 09 10:18	29° $\mathring{\mu}$ 06'54	47.71955 AU
conjunction	13710 Aug 30 02:08	20° $\mathring{\mu}$ 24'07	-15°24'28		13718 Oct 18 06:49	0° $\mathring{\mu}$	
minimum elong	13710 Aug 30 02:12	20° $\mathring{\mu}$ 24'07	15°24'45	retrograde	13718 Dec 18 02:57	0° $\mathring{\mu}$ 38'44	
max. Earth dist.	13710 Sep 01 01:05	20° $\mathring{\mu}$ 27'04	46.54284 AU		13719 Feb 19 11:58	30° $\mathring{\mu}$	
retrograde	13710 Dec 09 14:45	22° $\mathring{\mu}$ 00'59		min. Earth dist.	13719 Mar 09 22:58	29° $\mathring{\mu}$ 39'11	45.86305 AU
min. Earth dist.	13711 Feb 28 22:57	21° $\mathring{\mu}$ 00'31	44.69700 AU	opposition	13719 Mar 11 15:54	29° $\mathring{\mu}$ 37'12	-16°25'51
opposition	13711 Mar 02 20:22	20° $\mathring{\mu}$ 58'17	-16°07'22	direct	13719 Jun 02 00:53	28° $\mathring{\mu}$ 36'04	
direct	13711 May 24 06:29	19° $\mathring{\mu}$ 55'52			13719 Sep 03 12:20	0° $\mathring{\mu}$	
conjunction	13711 Aug 31 10:22	21° $\mathring{\mu}$ 30'21	-15°28'12	conjunction	13719 Sep 08 23:25	0° $\mathring{\mu}$ 07'59	-15°45'39
minimum elong	13711 Aug 31 10:27	21° $\mathring{\mu}$ 30'22	15°28'29	minimum elong	13719 Sep 08 23:32	0° $\mathring{\mu}$ 07'59	15°45'46
max. Earth dist.	13711 Sep 02 08:08	21° $\mathring{\mu}$ 33'13	46.70025 AU	max. Earth dist.	13719 Sep 10 15:45	0° $\mathring{\mu}$ 10'26	47.84868 AU
retrograde	13711 Dec 10 23:13	23° $\mathring{\mu}$ 06'51		retrograde	13719 Dec 19 10:41	1° $\mathring{\mu}$ 42'06	
min. Earth dist.	13712 Mar 01 07:19	22° $\mathring{\mu}$ 06'33	44.85365 AU	min. Earth dist.	13720 Mar 10 07:53	0° $\mathring{\mu}$ 42'36	45.98982 AU
opposition	13712 Mar 03 05:16	22° $\mathring{\mu}$ 04'18	-16°10'55	opposition	13720 Mar 11 23:46	0° $\mathring{\mu}$ 40'41	-16°26'44
direct	13712 May 24 13:08	21° $\mathring{\mu}$ 02'02			13720 Apr 19 10:14	30° $\mathring{\mu}$	
				direct	13720 Jun 02 09:35	29° $\mathring{\mu}$ 39'39	
conjunction	13712 Aug 31 18:25	22° $\mathring{\mu}$ 36'10	-15°31'34		13720 Jul 15 06:17	0° $\mathring{\mu}$	
minimum elong	13712 Aug 31 18:30	22° $\mathring{\mu}$ 36'11	15°31'48				
max. Earth dist.	13712 Sep 02 16:07	22° $\mathring{\mu}$ 39'01	46.85496 AU	conjunction	13720 Sep 09 06:41	1° $\mathring{\mu}$ 11'14	-15°46'29
retrograde	13712 Dec 11 06:21	24° $\mathring{\mu}$ 12'20		minimum elong	13720 Sep 09 06:50	1° $\mathring{\mu}$ 11'15	15°46'34
min. Earth dist.	13713 Mar 02 17:24	23° $\mathring{\mu}$ 12'06	45.00769 AU	max. Earth dist.	13720 Sep 10 22:56	1° $\mathring{\mu}$ 13'41	47.97262 AU
opposition	13713 Mar 04 14:09	23° $\mathring{\mu}$ 09'55	-16°14'06	retrograde	13720 Dec 19 17:34	2° $\mathring{\mu}$ 45'05	
direct	13713 May 25 21:20	22° $\mathring{\mu}$ 07'49		min. Earth dist.	13721 Mar 11 17:08	1° $\mathring{\mu}$ 45'35	46.11126 AU
				opposition	13721 Mar 13 07:28	1° $\mathring{\mu}$ 43'44	-16°27'20
conjunction	13713 Sep 02 02:22	23° $\mathring{\mu}$ 41'37	-15°34'34	direct	13721 Jun 03 19:30	0° $\mathring{\mu}$ 42'48	
minimum elong	13713 Sep 02 02:28	23° $\mathring{\mu}$ 41'37	15°34'48				
max. Earth dist.	13713 Sep 03 23:58	23° $\mathring{\mu}$ 44'26	47.00719 AU	conjunction	13721 Sep 10 13:35	2° $\mathring{\mu}$ 14'04	-15°47'01
retrograde	13713 Dec 12 11:40	25° $\mathring{\mu}$ 17'27		minimum elong	13721 Sep 10 13:43	2° $\mathring{\mu}$ 14'04	15°47'05
min. Earth dist.	13714 Mar 04 01:57	24° $\mathring{\mu}$ 17'23	45.15897 AU	max. Earth dist.	13721 Sep 12 03:59	2° $\mathring{\mu}$ 16'23	48.09163 AU
opposition	13714 Mar 05 22:41	24° $\mathring{\mu}$ 15'12	-16°16'54	retrograde	13721 Dec 21 02:33	3° $\mathring{\mu}$ 47'36	
direct	13714 May 27 08:57	23° $\mathring{\mu}$ 13'15		min. Earth dist.	13722 Mar 13 00:32	2° $\mathring{\mu}$ 48'11	46.22813 AU
				opposition	13722 Mar 14 14:55	2° $\mathring{\mu}$ 46'20	-16°27'39
conjunction	13714 Sep 03 10:05	24° $\mathring{\mu}$ 46'43	-15°37'14	direct	13722 Jun 05 01:03	1° $\mathring{\mu}$ 45'29	
minimum elong	13714 Sep 03 10:11	24° $\mathring{\mu}$ 46'43	15°37'25				
max. Earth dist.	13714 Sep 05 06:23	24° $\mathring{\mu}$ 49'27	47.15668 AU	conjunction	13722 Sep 11 20:24	3° $\mathring{\mu}$ 16'27	-15°47'17
retrograde	13714 Dec 13 20:57	26° $\mathring{\mu}$ 22'16		minimum elong	13722 Sep 11 20:33	3° $\mathring{\mu}$ 16'28	15°47'20
min. Earth dist.	13715 Mar 05 10:49	25° $\mathring{\mu}$ 22'20	45.30751 AU	max. Earth dist.	13722 Sep 13 10:39	3° $\mathring{\mu}$ 18'45	48.20635 AU
opposition	13715 Mar 07 07:15	25° $\mathring{\mu}$ 20'10	-16°19'21	retrograde	13722 Dec 22 10:16	4° $\mathring{\mu}$ 49'41	
direct	13715 May 28 18:07	24° $\mathring{\mu}$ 18'24		min. Earth dist.	13723 Mar 14 09:41	3° $\mathring{\mu}$ 50'15	46.34112 AU
				opposition	13723 Mar 15 22:24	3° $\mathring{\mu}$ 48'30	-16°27'40

direct	13723 Jun 06 06:42	2° <u>♂</u> 47'45		minimum elong	13731 Sep 21 04:56	12° <u>♂</u> 25'01	15°36'28
				max. Earth dist.	13731 Sep 22 11:52	12° <u>♂</u> 26'50	49.08907 AU
conjunction	13723 Sep 13 03:01	4° <u>♂</u> 18'24 -15°47'15		retrograde	13731 Dec 31 18:26	13° <u>♂</u> 56'22	
minimum elong	13723 Sep 13 03:10	4° <u>♂</u> 18'25 15°47'16		min. Earth dist.	13732 Mar 23 04:26	12° <u>♂</u> 57'33	47.20481 AU
max. Earth dist.	13723 Sep 14 16:48	4° <u>♂</u> 20'41 48.31766 AU		opposition	13732 Mar 24 11:10	12° <u>♂</u> 56'06	-16°14'30
retrograde	13723 Dec 23 14:02	5° <u>♂</u> 51'22		direct	13732 Jun 14 21:34	11° <u>♂</u> 56'23	
min. Earth dist.	13724 Mar 14 16:37	4° <u>♂</u> 52'02 46.45073 AU					
opposition	13724 Mar 16 05:34	4° <u>♂</u> 50'16 -16°27'23		conjunction	13732 Sep 21 10:44	13° <u>♂</u> 25'03	-15°34'07
direct	13724 Jun 06 15:11	3° <u>♂</u> 49'36		minimum elong	13732 Sep 21 10:55	13° <u>♂</u> 25'04	15°33'58
				max. Earth dist.	13732 Sep 22 17:15	13° <u>♂</u> 26'51	49.16562 AU
conjunction	13724 Sep 13 09:31	5° <u>♂</u> 19'59 -15°46'55		retrograde	13733 Jan 01 02:42	14° <u>♂</u> 56'13	
minimum elong	13724 Sep 13 09:40	5° <u>♂</u> 20'00 15°46'56		opposition	13733 Mar 25 17:23	13° <u>♂</u> 56'02	-16°11'44
max. Earth dist.	13724 Sep 14 22:00	5° <u>♂</u> 22'11 48.42576 AU		min. Earth dist.	13733 Mar 24 12:44	13° <u>♂</u> 57'22	47.27839 AU
retrograde	13724 Dec 23 19:45	6° <u>♂</u> 52'42		direct	13733 Jun 16 01:24	12° <u>♂</u> 56'22	
min. Earth dist.	13725 Mar 16 00:28	5° <u>♂</u> 53'24 46.55740 AU					
opposition	13725 Mar 17 12:33	5° <u>♂</u> 51'41 -16°26'47		conjunction	13733 Sep 22 16:35	14° <u>♂</u> 24'50	-15°31'24
direct	13725 Jun 07 23:35	4° <u>♂</u> 51'08		minimum elong	13733 Sep 22 16:48	14° <u>♂</u> 24'51	15°31'15
				max. Earth dist.	13733 Sep 23 22:09	14° <u>♂</u> 26'34	49.23730 AU
conjunction	13725 Sep 14 16:01	6° <u>♂</u> 21'15 -15°46'17		retrograde	13734 Jan 02 06:32	15° <u>♂</u> 55'47	
minimum elong	13725 Sep 14 16:12	6° <u>♂</u> 21'16 15°46'16		opposition	13734 Mar 26 23:30	14° <u>♂</u> 55'39	-16°08'44
max. Earth dist.	13725 Sep 16 05:02	6° <u>♂</u> 23'28 48.53104 AU		min. Earth dist.	13734 Mar 25 18:50	14° <u>♂</u> 57'00	47.34726 AU
retrograde	13725 Dec 25 02:22	7° <u>♂</u> 53'45		direct	13734 Jun 17 06:38	13° <u>♂</u> 56'04	
min. Earth dist.	13726 Mar 17 08:20	6° <u>♂</u> 54'30 46.66104 AU					
opposition	13726 Mar 18 19:32	6° <u>♂</u> 52'50 -16°25'52		conjunction	13734 Sep 23 22:04	15° <u>♂</u> 24'19	-15°28'26
direct	13726 Jun 09 08:18	5° <u>♂</u> 52'24		minimum elong	13734 Sep 23 22:16	15° <u>♂</u> 24'20	15°28'15
				max. Earth dist.	13734 Sep 25 02:14	15° <u>♂</u> 25'58	49.30455 AU
conjunction	13726 Sep 15 22:09	7° <u>♂</u> 22'16 -15°45'21		retrograde	13735 Jan 03 10:03	16° <u>♂</u> 55'05	
minimum elong	13726 Sep 15 22:19	7° <u>♂</u> 22'17 15°45'20		min. Earth dist.	13735 Mar 27 02:14	15° <u>♂</u> 56'16	47.41221 AU
max. Earth dist.	13726 Sep 17 09:42	7° <u>♂</u> 24'24 48.63342 AU		opposition	13735 Mar 28 05:39	15° <u>♂</u> 54'59	-16°05'27
retrograde	13726 Dec 26 11:28	8° <u>♂</u> 54'33		direct	13735 Jun 18 14:35	14° <u>♂</u> 55'27	
min. Earth dist.	13727 Mar 18 14:52	7° <u>♂</u> 55'26 46.76173 AU					
opposition	13727 Mar 20 02:24	7° <u>♂</u> 53'45 -16°24'40		conjunction	13735 Sep 25 03:44	16° <u>♂</u> 23'30	-15°25'13
direct	13727 Jun 10 13:05	6° <u>♂</u> 53'27		minimum elong	13735 Sep 25 03:57	16° <u>♂</u> 23'31	15°25'03
				max. Earth dist.	13735 Sep 26 08:18	16° <u>♂</u> 25'10	49.36822 AU
conjunction	13727 Sep 17 04:24	8° <u>♂</u> 23'06 -15°44'07		retrograde	13736 Jan 04 13:40	17° <u>♂</u> 54'05	
minimum elong	13727 Sep 17 04:35	8° <u>♂</u> 23'07 15°44'05		min. Earth dist.	13736 Mar 27 08:51	16° <u>♂</u> 55'17	47.47370 AU
max. Earth dist.	13727 Sep 18 15:52	8° <u>♂</u> 25'12 48.73263 AU		opposition	13736 Mar 28 11:29	16° <u>♂</u> 54'02	-16°01'56
retrograde	13727 Dec 27 17:54	9° <u>♂</u> 55'11		direct	13736 Jun 19 00:03	15° <u>♂</u> 54'32	
min. Earth dist.	13728 Mar 18 23:21	8° <u>♂</u> 56'06 46.85908 AU					
opposition	13728 Mar 20 09:08	8° <u>♂</u> 54'30 -16°23'09		conjunction	13736 Sep 25 09:09	17° <u>♂</u> 22'24	-15°21'45
direct	13728 Jun 10 18:13	7° <u>♂</u> 54'19		minimum elong	13736 Sep 25 09:21	17° <u>♂</u> 22'25	15°21'32
				max. Earth dist.	13736 Sep 26 12:04	17° <u>♂</u> 23'59	49.42878 AU
conjunction	13728 Sep 17 10:36	9° <u>♂</u> 23'47 -15°42'37		retrograde	13737 Jan 04 21:46	18° <u>♂</u> 52'50	
minimum elong	13728 Sep 17 10:46	9° <u>♂</u> 23'47 15°42'34		opposition	13737 Mar 29 17:16	17° <u>♂</u> 52'50	-15°58'07
max. Earth dist.	13728 Sep 18 21:25	9° <u>♂</u> 25'51 48.82844 AU		min. Earth dist.	13737 Mar 28 14:28	17° <u>♂</u> 54'05	47.53224 AU
retrograde	13728 Dec 27 21:48	10° <u>♂</u> 55'39		direct	13737 Jun 20 05:11	16° <u>♂</u> 53'24	
min. Earth dist.	13729 Mar 20 05:59	9° <u>♂</u> 56'42 46.95257 AU					
opposition	13729 Mar 21 15:42	9° <u>♂</u> 55'06 -16°21'23		conjunction	13737 Sep 26 14:29	18° <u>♂</u> 21'05	-15°18'00
direct	13729 Jun 12 00:39	8° <u>♂</u> 55'03		minimum elong	13737 Sep 26 14:42	18° <u>♂</u> 21'06	15°17'47
				max. Earth dist.	13737 Sep 27 17:25	18° <u>♂</u> 22'39	49.48638 AU
conjunction	13729 Sep 18 16:35	10° <u>♂</u> 24'19 -15°40'52		retrograde	13738 Jan 06 04:31	19° <u>♂</u> 51'21	
minimum elong	13729 Sep 18 16:47	10° <u>♂</u> 24'20 15°40'46		opposition	13738 Mar 30 23:05	18° <u>♂</u> 51'25	-15°54'03
max. Earth dist.	13729 Sep 20 01:54	10° <u>♂</u> 26'18 48.92005 AU		min. Earth dist.	13738 Mar 29 21:51	18° <u>♂</u> 52'35	47.58785 AU
retrograde	13729 Dec 29 03:51	11° <u>♂</u> 56'02		direct	13738 Jun 21 10:03	17° <u>♂</u> 52'03	
opposition	13730 Mar 22 22:17	10° <u>♂</u> 55'35 -16°19'20					
min. Earth dist.	13730 Mar 21 13:51	10° <u>♂</u> 57'07 47.04174 AU		conjunction	13738 Sep 27 19:50	19° <u>♂</u> 19'34	-15°14'00
direct	13730 Jun 13 07:45	9° <u>♂</u> 55'40		minimum elong	13738 Sep 27 20:03	19° <u>♂</u> 19'35	15°13'45
				max. Earth dist.	13738 Sep 28 22:17	19° <u>♂</u> 21'07	49.54130 AU
conjunction	13730 Sep 19 22:45	11° <u>♂</u> 24'44 -15°38'51		retrograde	13739 Jan 07 09:06	20° <u>♂</u> 49'41	
minimum elong	13730 Sep 19 22:56	11° <u>♂</u> 24'45 15°38'45		min. Earth dist.	13739 Mar 31 03:07	19° <u>♂</u> 51'00	47.64058 AU
max. Earth dist.	13730 Sep 21 07:57	11° <u>♂</u> 26'42 49.00711 AU		opposition	13739 Apr 01 04:43	19° <u>♂</u> 49'49	-15°49'42
retrograde	13730 Dec 30 09:23	12° <u>♂</u> 56'17		direct	13739 Jun 22 13:34	18° <u>♂</u> 50'32	
min. Earth dist.	13731 Mar 22 21:39	11° <u>♂</u> 57'25 47.12590 AU					
opposition	13731 Mar 24 04:47	11° <u>♂</u> 55'56 -16°17'02		conjunction	13739 Sep 29 00:59	20° <u>♂</u> 17'55	-15°09'45
direct	13731 Jun 14 16:34	10° <u>♂</u> 56'08		minimum elong	13739 Sep 29 01:12	20° <u>♂</u> 17'56	15°09'29
				max. Earth dist.	13739 Sep 30 02:10	20° <u>♂</u> 19'23	49.59315 AU
conjunction	13731 Sep 21 04:43	12° <u>♂</u> 25'00 -15°36'36		retrograde	13740 Jan 08 13:40	21° <u>♂</u> 47'53	

min. Earth dist.	13740 Mar 31 10:05	20° <u>♁</u> 49'13	47.69018 AU	opposition	13747 Apr 09 00:22	27° <u>♁</u> 33'20	-15°06'27
opposition	13740 Apr 01 10:25	20° <u>♁</u> 48'05	-15°45'06	direct	13747 Jun 30 10:58	26° <u>♁</u> 34'30	
direct	13740 Jun 22 18:15	19° <u>♁</u> 48'53		evening set	13747 Oct 02 14:00	27° <u>♁</u> 55'12	
conjunction	13740 Sep 29 06:21	21° <u>♁</u> 16'08	-15°05'14	conjunction	13747 Oct 06 18:26	28° <u>♁</u> 00'58	-14°27'30
minimum elong	13740 Sep 29 06:36	21° <u>♁</u> 16'09	15°04'57	minimum elong	13747 Oct 06 18:40	28° <u>♁</u> 00'59	14°27'06
max. Earth dist.	13740 Sep 30 07:43	21° <u>♁</u> 17'37	49.64168 AU	max. Earth dist.	13747 Oct 07 12:15	28° <u>♁</u> 01'59	49.85041 AU
retrograde	13741 Jan 08 17:08	22° <u>♁</u> 46'00		morning rise	13747 Oct 10 23:30	28° <u>♁</u> 06'47	
opposition	13741 Apr 02 15:51	21° <u>♁</u> 46'16	-15°40'14	retrograde	13748 Jan 16 10:06	29° <u>♁</u> 30'08	
min. Earth dist.	13741 Apr 01 16:23	21° <u>♁</u> 47'22	47.73600 AU	opposition	13748 Apr 09 05:36	28° <u>♁</u> 30'42	-15°00'02
direct	13741 Jun 24 02:16	20° <u>♁</u> 47'09		min. Earth dist.	13748 Apr 08 13:32	28° <u>♁</u> 31'27	47.92253 AU
conjunction	13741 Sep 30 11:34	22° <u>♁</u> 14'17	-15°00'29	direct	13748 Jun 30 15:49	27° <u>♁</u> 31'53	
minimum elong	13741 Sep 30 11:47	22° <u>♁</u> 14'17	15°00'11	evening set	13748 Oct 02 10:04	28° <u>♁</u> 51'59	
max. Earth dist.	13741 Oct 01 11:05	22° <u>♁</u> 15'38	49.68630 AU	conjunction	13748 Oct 06 23:26	28° <u>♁</u> 58'16	-14°21'14
retrograde	13742 Jan 10 00:23	23° <u>♁</u> 44'03		minimum elong	13748 Oct 06 23:41	28° <u>♁</u> 58'17	14°20'50
opposition	13742 Apr 03 21:25	22° <u>♁</u> 44'23	-15°35'09	max. Earth dist.	13748 Oct 07 16:36	28° <u>♁</u> 59'15	49.86273 AU
min. Earth dist.	13742 Apr 02 22:24	22° <u>♁</u> 45'28	47.77771 AU	morning rise	13748 Oct 11 13:28	29° <u>♁</u> 04'35	
direct	13742 Jun 25 07:52	21° <u>♁</u> 45'20			13748 Nov 25 09:25	0° <u>♁</u>	
evening set	13742 Sep 30 02:15	23° <u>♁</u> 10'08		retrograde	13749 Jan 16 14:28	0° <u>♁</u> 27'21	
conjunction	13742 Oct 01 16:45	23° <u>♁</u> 12'21	-14°55'31		13749 Mar 11 00:46	30° <u>♁</u>	
minimum elong	13742 Oct 01 17:00	23° <u>♁</u> 12'22	14°55'12	opposition	13749 Apr 10 10:32	29° <u>♁</u> 27'57	-14°53'23
morning rise	13742 Oct 03 07:47	23° <u>♁</u> 14'37		min. Earth dist.	13749 Apr 09 18:13	29° <u>♁</u> 28'42	47.93223 AU
max. Earth dist.	13742 Oct 02 15:53	23° <u>♁</u> 13'42	49.72631 AU	direct	13749 Jul 01 18:30	28° <u>♁</u> 29'10	
retrograde	13743 Jan 11 08:10	24° <u>♁</u> 42'02		evening set	13749 Oct 03 06:20	29° <u>♁</u> 48'43	
min. Earth dist.	13743 Apr 04 06:03	23° <u>♁</u> 43'24	47.81445 AU	conjunction	13749 Oct 08 04:17	29° <u>♁</u> 55'30	-14°14'44
opposition	13743 Apr 05 03:04	23° <u>♁</u> 42'26	-15°29'50	minimum elong	13749 Oct 08 04:31	29° <u>♁</u> 55'31	14°14'18
direct	13743 Jun 26 12:15	22° <u>♁</u> 43'27		max. Earth dist.	13749 Oct 08 20:04	29° <u>♁</u> 56'24	49.87184 AU
evening set	13743 Sep 30 14:33	24° <u>♁</u> 07'09			13749 Oct 11 10:48	0° <u>♁</u>	
conjunction	13743 Oct 02 22:07	24° <u>♁</u> 10'21	-14°50'20	morning rise	13749 Oct 13 02:58	0° <u>♁</u> 02'18	
minimum elong	13743 Oct 02 22:20	24° <u>♁</u> 10'22	14°50'00	retrograde	13750 Jan 17 18:25	1° <u>♁</u> 24'31	
max. Earth dist.	13743 Oct 03 19:58	24° <u>♁</u> 11'37	49.76128 AU	opposition	13750 Apr 11 15:44	0° <u>♁</u> 25'09	-14°46'29
morning rise	13743 Oct 05 06:11	24° <u>♁</u> 13'36		min. Earth dist.	13750 Apr 11 00:39	0° <u>♁</u> 25'50	47.93892 AU
retrograde	13744 Jan 12 13:27	25° <u>♁</u> 39'55			13750 May 04 22:46	30° <u>♁</u>	
min. Earth dist.	13744 Apr 04 11:34	24° <u>♁</u> 41'21	47.84583 AU	direct	13750 Jul 02 22:08	29° <u>♁</u> 26'24	
opposition	13744 Apr 05 08:23	24° <u>♁</u> 40'23	-15°24'18		13750 Aug 29 05:47	0° <u>♁</u>	
direct	13744 Jun 26 15:28	23° <u>♁</u> 41'27		evening set	13750 Oct 04 02:56	0° <u>♁</u> 45'26	
evening set	13744 Sep 30 06:25	25° <u>♁</u> 04'16		conjunction	13750 Oct 09 09:07	0° <u>♁</u> 52'41	-14°07'59
conjunction	13744 Oct 03 03:20	25° <u>♁</u> 08'15	-14°44'56	minimum elong	13750 Oct 09 09:22	0° <u>♁</u> 52'42	14°07'33
minimum elong	13744 Oct 03 03:35	25° <u>♁</u> 08'16	14°44'36	max. Earth dist.	13750 Oct 10 01:17	0° <u>♁</u> 53'36	49.87800 AU
max. Earth dist.	13744 Oct 03 23:20	25° <u>♁</u> 09'24	49.79074 AU	morning rise	13750 Oct 14 16:00	0° <u>♁</u> 59'57	
morning rise	13744 Oct 06 00:50	25° <u>♁</u> 12'15		retrograde	13751 Jan 18 21:11	2° <u>♁</u> 21'40	
retrograde	13745 Jan 12 17:43	26° <u>♁</u> 37'42		opposition	13751 Apr 12 20:50	1° <u>♁</u> 22'19	-14°39'20
opposition	13745 Apr 06 13:51	25° <u>♁</u> 38'11	-15°18'34	min. Earth dist.	13751 Apr 12 06:16	1° <u>♁</u> 23'00	47.94243 AU
min. Earth dist.	13745 Apr 05 18:54	25° <u>♁</u> 39'04	47.87182 AU	direct	13751 Jul 04 05:33	0° <u>♁</u> 23'38	
direct	13745 Jun 27 21:28	24° <u>♁</u> 39'18		evening set	13751 Oct 04 23:56	1° <u>♁</u> 42'11	
evening set	13745 Sep 30 23:59	26° <u>♁</u> 01'20		conjunction	13751 Oct 10 13:58	1° <u>♁</u> 49'51	-14°01'01
conjunction	13745 Oct 04 08:28	26° <u>♁</u> 05'59	-14°39'21	minimum elong	13751 Oct 10 14:13	1° <u>♁</u> 49'52	14°00'33
minimum elong	13745 Oct 04 08:42	26° <u>♁</u> 05'59	14°38'59	max. Earth dist.	13751 Oct 11 04:30	1° <u>♁</u> 50'41	49.88103 AU
max. Earth dist.	13745 Oct 05 04:24	26° <u>♁</u> 07'08	49.81502 AU	morning rise	13751 Oct 16 04:48	1° <u>♁</u> 57'35	
morning rise	13745 Oct 07 17:30	26° <u>♁</u> 10'39		retrograde	13752 Jan 20 03:38	3° <u>♁</u> 18'49	
retrograde	13746 Jan 13 20:08	27° <u>♁</u> 35'20		min. Earth dist.	13752 Apr 12 11:33	2° <u>♁</u> 20'11	47.94276 AU
opposition	13746 Apr 07 19:10	26° <u>♁</u> 35'50	-15°12'37	opposition	13752 Apr 13 01:44	2° <u>♁</u> 19'31	-14°31'57
min. Earth dist.	13746 Apr 07 01:06	26° <u>♁</u> 36'41	47.89274 AU	direct	13752 Jul 04 11:09	1° <u>♁</u> 20'52	
direct	13746 Jun 29 06:01	25° <u>♁</u> 36'59		evening set	13752 Oct 04 21:07	2° <u>♁</u> 38'57	
evening set	13746 Oct 01 18:43	26° <u>♁</u> 58'19		conjunction	13752 Oct 10 18:53	2° <u>♁</u> 47'04	-13°53'48
conjunction	13746 Oct 05 13:28	27° <u>♁</u> 03'33	-14°33'32	minimum elong	13752 Oct 10 19:07	2° <u>♁</u> 47'04	13°53'20
minimum elong	13746 Oct 05 13:43	27° <u>♁</u> 03'34	14°33'10	max. Earth dist.	13752 Oct 11 09:06	2° <u>♁</u> 47'52	49.88052 AU
max. Earth dist.	13746 Oct 06 07:29	27° <u>♁</u> 04'35	49.83471 AU	morning rise	13752 Oct 16 17:27	2° <u>♁</u> 55'14	
morning rise	13746 Oct 09 08:52	27° <u>♁</u> 08'49		retrograde	13753 Jan 20 11:34	4° <u>♁</u> 16'00	
retrograde	13747 Jan 15 03:20	28° <u>♁</u> 32'48		opposition	13753 Apr 14 06:51	3° <u>♁</u> 16'45	-14°24'21
min. Earth dist.	13747 Apr 08 06:38	27° <u>♁</u> 34'10	47.90953 AU	min. Earth dist.	13753 Apr 13 18:23	3° <u>♁</u> 17'20	47.93927 AU
				direct	13753 Jul 05 15:32	2° <u>♁</u> 18'09	

evening set	13753 Oct 05 18:38	3° <i>ℳ</i> 35'47	opposition	13760 Apr 20 17:43	9° <i>ℳ</i> 56'42	-13°25'15
			min. Earth dist.	13760 Apr 20 12:28	9° <i>ℳ</i> 56'56	47.77763 AU
conjunction	13753 Oct 11 23:43	3° <i>ℳ</i> 44'19 -13°46'23	direct	13760 Jul 11 22:58	8° <i>ℳ</i> 58'02	
minimum elong	13753 Oct 11 23:58	3° <i>ℳ</i> 44'20 13°45'53	evening set	13760 Oct 10 06:33	10° <i>ℳ</i> 12'52	
max. Earth dist.	13753 Oct 12 13:04	3° <i>ℳ</i> 45'05 49.87613 AU				
morning rise	13753 Oct 18 05:37	3° <i>ℳ</i> 52'54	conjunction	13760 Oct 18 10:21	10° <i>ℳ</i> 24'02	-12°48'47
retrograde	13754 Jan 21 18:45	5° <i>ℳ</i> 13'14	minimum elong	13760 Oct 18 10:35	10° <i>ℳ</i> 24'02	12°48'11
opposition	13754 Apr 15 11:49	4° <i>ℳ</i> 14'02 -14°16'31	max. Earth dist.	13760 Oct 18 16:32	10° <i>ℳ</i> 24'23	49.70607 AU
min. Earth dist.	13754 Apr 14 23:21	4° <i>ℳ</i> 14'36 47.93149 AU	morning rise	13760 Oct 26 15:08	10° <i>ℳ</i> 35'15	
direct	13754 Jul 06 16:47	3° <i>ℳ</i> 15'28	retrograde	13761 Jan 28 01:03	11° <i>ℳ</i> 52'46	
evening set	13754 Oct 06 16:21	4° <i>ℳ</i> 32'40	opposition	13761 Apr 21 22:34	10° <i>ℳ</i> 53'27	-13°15'57
			min. Earth dist.	13761 Apr 21 17:40	10° <i>ℳ</i> 53'40	47.73715 AU
conjunction	13754 Oct 13 04:38	4° <i>ℳ</i> 41'37 -13°38'45	direct	13761 Jul 13 05:38	9° <i>ℳ</i> 54'46	
minimum elong	13754 Oct 13 04:52	4° <i>ℳ</i> 41'38 13°38'14	evening set	13761 Oct 11 05:13	11° <i>ℳ</i> 09'15	
max. Earth dist.	13754 Oct 13 16:14	4° <i>ℳ</i> 42'17 49.86703 AU				
morning rise	13754 Oct 19 17:51	4° <i>ℳ</i> 50'36	conjunction	13761 Oct 19 15:00	11° <i>ℳ</i> 20'45	-12°39'43
retrograde	13755 Jan 22 23:27	6° <i>ℳ</i> 10'31	minimum elong	13761 Oct 19 15:14	11° <i>ℳ</i> 20'46	12°39'07
opposition	13755 Apr 16 16:56	5° <i>ℳ</i> 11'20 -14°08'28	max. Earth dist.	13761 Oct 19 19:36	11° <i>ℳ</i> 21'01	49.66533 AU
min. Earth dist.	13755 Apr 16 06:28	5° <i>ℳ</i> 11'49 47.91884 AU	morning rise	13761 Oct 28 01:57	11° <i>ℳ</i> 32'19	
direct	13755 Jul 07 20:58	4° <i>ℳ</i> 12'47	retrograde	13762 Jan 29 06:11	12° <i>ℳ</i> 49'31	
evening set	13755 Oct 07 14:25	5° <i>ℳ</i> 29'35	opposition	13762 Apr 23 03:27	11° <i>ℳ</i> 50'10	-13°06'24
			min. Earth dist.	13762 Apr 22 22:55	11° <i>ℳ</i> 50'23	47.69375 AU
conjunction	13755 Oct 14 09:44	5° <i>ℳ</i> 38'55 -13°30'55	direct	13762 Jul 14 10:54	10° <i>ℳ</i> 51'28	
minimum elong	13755 Oct 14 09:59	5° <i>ℳ</i> 38'56 13°30'24	evening set	13762 Oct 12 03:58	12° <i>ℳ</i> 05'38	
max. Earth dist.	13755 Oct 14 21:03	5° <i>ℳ</i> 39'34 49.85277 AU				
morning rise	13755 Oct 21 05:54	5° <i>ℳ</i> 48'18	conjunction	13762 Oct 20 19:52	12° <i>ℳ</i> 17'29	-12°30'24
retrograde	13756 Jan 24 00:24	7° <i>ℳ</i> 07'48	minimum elong	13762 Oct 20 20:07	12° <i>ℳ</i> 17'30	12°29'47
opposition	13756 Apr 16 21:58	6° <i>ℳ</i> 08'37 -14°00'14	max. Earth dist.	13762 Oct 21 00:18	12° <i>ℳ</i> 17'44	49.62164 AU
min. Earth dist.	13756 Apr 16 12:26	6° <i>ℳ</i> 09'03 47.90059 AU	morning rise	13762 Oct 29 12:55	12° <i>ℳ</i> 29'24	
direct	13756 Jul 08 04:59	5° <i>ℳ</i> 10'04	retrograde	13763 Jan 30 12:37	13° <i>ℳ</i> 46'17	
evening set	13756 Oct 07 12:42	6° <i>ℳ</i> 26'28	opposition	13763 Apr 24 08:21	12° <i>ℳ</i> 46'56	-12°56'38
			min. Earth dist.	13763 Apr 24 05:09	12° <i>ℳ</i> 47'05	47.64738 AU
conjunction	13756 Oct 14 14:43	6° <i>ℳ</i> 36'11 -13°22'54	direct	13763 Jul 15 16:21	11° <i>ℳ</i> 48'13	
minimum elong	13756 Oct 14 14:56	6° <i>ℳ</i> 36'11 13°22'21	evening set	13763 Oct 13 03:00	13° <i>ℳ</i> 02'05	
max. Earth dist.	13756 Oct 14 23:40	6° <i>ℳ</i> 36'41 49.83294 AU				
morning rise	13756 Oct 21 17:43	6° <i>ℳ</i> 45'57	conjunction	13763 Oct 22 00:47	13° <i>ℳ</i> 14'16	-12°20'52
retrograde	13757 Jan 24 05:57	8° <i>ℳ</i> 05'01	minimum elong	13763 Oct 22 01:01	13° <i>ℳ</i> 14'17	12°20'14
opposition	13757 Apr 18 02:53	7° <i>ℳ</i> 05'50 -13°51'48	max. Earth dist.	13763 Oct 22 04:35	13° <i>ℳ</i> 14'29	49.57513 AU
min. Earth dist.	13757 Apr 17 18:11	7° <i>ℳ</i> 06'14 47.87687 AU	morning rise	13763 Oct 30 23:41	13° <i>ℳ</i> 26'32	
direct	13757 Jul 09 11:05	6° <i>ℳ</i> 07'16	retrograde	13764 Jan 31 19:43	14° <i>ℳ</i> 43'08	
evening set	13757 Oct 08 10:59	7° <i>ℳ</i> 23'15	opposition	13764 Apr 24 13:09	13° <i>ℳ</i> 43'46	-12°46'37
			min. Earth dist.	13764 Apr 24 09:43	13° <i>ℳ</i> 43'56	47.59797 AU
conjunction	13757 Oct 15 19:43	7° <i>ℳ</i> 33'20 -13°14'41	direct	13764 Jul 15 18:11	12° <i>ℳ</i> 45'04	
minimum elong	13757 Oct 15 19:59	7° <i>ℳ</i> 33'21 13°14'08	evening set	13764 Oct 13 02:05	13° <i>ℳ</i> 58'40	
max. Earth dist.	13757 Oct 16 04:06	7° <i>ℳ</i> 33'48 49.80769 AU				
morning rise	13757 Oct 23 05:26	7° <i>ℳ</i> 43'29	conjunction	13764 Oct 22 05:38	14° <i>ℳ</i> 11'11	-12°11'07
retrograde	13758 Jan 25 12:35	9° <i>ℳ</i> 02'09	minimum elong	13764 Oct 22 05:53	14° <i>ℳ</i> 11'12	12°10'27
opposition	13758 Apr 19 07:59	8° <i>ℳ</i> 02'55 -13°43'10	max. Earth dist.	13764 Oct 22 08:00	14° <i>ℳ</i> 11'20	49.52530 AU
min. Earth dist.	13758 Apr 19 01:11	8° <i>ℳ</i> 03'14 47.84798 AU	morning rise	13764 Oct 31 10:31	14° <i>ℳ</i> 23'47	
direct	13758 Jul 10 17:00	7° <i>ℳ</i> 04'20		13764 Nov 28 19:58	15° <i>ℳ</i>	
evening set	13758 Oct 09 09:23	8° <i>ℳ</i> 19'54	retrograde	13765 Feb 01 01:37	15° <i>ℳ</i> 40'07	
				13765 Apr 08 04:27	15° <i>ℳ</i>	
conjunction	13758 Oct 17 00:33	8° <i>ℳ</i> 30'21 -13°06'16	opposition	13765 Apr 25 18:03	14° <i>ℳ</i> 40'46	-12°36'22
minimum elong	13758 Oct 17 00:47	8° <i>ℳ</i> 30'22 13°05'41	min. Earth dist.	13765 Apr 25 16:21	14° <i>ℳ</i> 40'51	47.54518 AU
max. Earth dist.	13758 Oct 17 08:04	8° <i>ℳ</i> 30'47 49.77779 AU	direct	13765 Jul 16 20:56	13° <i>ℳ</i> 42'04	
morning rise	13758 Oct 24 16:40	8° <i>ℳ</i> 40'52	evening set	13765 Oct 14 01:21	14° <i>ℳ</i> 55'25	
retrograde	13759 Jan 26 17:56	9° <i>ℳ</i> 59'08		13765 Oct 17 10:04	15° <i>ℳ</i>	
opposition	13759 Apr 20 12:53	8° <i>ℳ</i> 59'52 -13°34'19				
min. Earth dist.	13759 Apr 20 06:00	9° <i>ℳ</i> 00'12 47.81469 AU	conjunction	13765 Oct 23 10:43	15° <i>ℳ</i> 08'16	-12°01'08
direct	13759 Jul 11 20:09	8° <i>ℳ</i> 01'15	minimum elong	13765 Oct 23 10:57	15° <i>ℳ</i> 08'17	12°00'28
evening set	13759 Oct 10 07:54	9° <i>ℳ</i> 16'26	max. Earth dist.	13765 Oct 23 13:08	15° <i>ℳ</i> 08'25	49.47192 AU
			morning rise	13765 Nov 01 21:13	15° <i>ℳ</i> 21'12	
conjunction	13759 Oct 18 05:23	9° <i>ℳ</i> 27'14 -12°57'38	retrograde	13766 Feb 02 03:36	16° <i>ℳ</i> 37'17	
minimum elong	13759 Oct 18 05:38	9° <i>ℳ</i> 27'15 12°57'04	opposition	13766 Apr 26 23:01	15° <i>ℳ</i> 37'56	-12°25'54
max. Earth dist.	13759 Oct 18 11:19	9° <i>ℳ</i> 27'35 49.74367 AU	min. Earth dist.	13766 Apr 26 21:50	15° <i>ℳ</i> 38'00	47.48840 AU
morning rise	13759 Oct 26 04:01	9° <i>ℳ</i> 38'07		13766 Jun 02 20:20	15° <i>ℳ</i>	
retrograde	13760 Jan 27 22:57	10° <i>ℳ</i> 55'59	direct	13766 Jul 18 04:02	14° <i>ℳ</i> 39'14	

	13766 Aug 31 13:21	15° <del>ML</del>	retrograde	13773 Feb 08 18:05	23° <del>ML</del> 21'03	
evening set	13766 Oct 15 00:49	15° <del>ML</del> 52'22	opposition	13773 May 03 10:32	22° <del>ML</del> 21'23	-11°06'47
			min. Earth dist.	13773 May 03 16:49	22° <del>ML</del> 21'06	46.95745 AU
conjunction	13766 Oct 24 15:39	16° <del>ML</del> 05'32 -11°50'57	direct	13773 Jul 24 16:18	21° <del>ML</del> 22'20	
minimum elong	13766 Oct 24 15:54	16° <del>ML</del> 05'33 11°50'16	evening set	13773 Oct 20 00:55	22° <del>ML</del> 33'56	
max. Earth dist.	13766 Oct 24 16:06	16° <del>ML</del> 05'34 49.41429 AU				
morning rise	13766 Nov 03 07:54	16° <del>ML</del> 18'48	conjunction	13773 Oct 31 04:24	22° <del>ML</del> 49'16	-10°33'57
retrograde	13767 Feb 03 09:25	17° <del>ML</del> 34'39	minimum elong	13773 Oct 31 04:38	22° <del>ML</del> 49'16	10°33'10
opposition	13767 Apr 28 04:03	16° <del>ML</del> 35'18 -12°15'13	max. Earth dist.	13773 Oct 30 22:21	22° <del>ML</del> 48'55	48.87745 AU
min. Earth dist.	13767 Apr 28 03:46	16° <del>ML</del> 35'19 47.42711 AU	morning rise	13773 Nov 11 09:21	23° <del>ML</del> 04'42	
direct	13767 Jul 19 09:50	15° <del>ML</del> 36'35	retrograde	13774 Feb 10 02:27	24° <del>ML</del> 19'00	
evening set	13767 Oct 16 00:29	16° <del>ML</del> 49'29	opposition	13774 May 04 15:40	23° <del>ML</del> 19'17	-10°54'35
			min. Earth dist.	13774 May 04 21:36	23° <del>ML</del> 19'00	46.86640 AU
conjunction	13767 Oct 25 20:58	17° <del>ML</del> 02'59 -11°40'33	direct	13774 Jul 25 19:05	22° <del>ML</del> 20'09	
minimum elong	13767 Oct 25 21:11	17° <del>ML</del> 03'00 11°39'52	evening set	13774 Oct 21 01:18	23° <del>ML</del> 31'34	
max. Earth dist.	13767 Oct 25 20:39	17° <del>ML</del> 02'58 49.35163 AU				
morning rise	13767 Nov 04 18:45	17° <del>ML</del> 16'34	conjunction	13774 Nov 01 09:38	23° <del>ML</del> 47'12	-10°22'05
retrograde	13768 Feb 04 16:51	18° <del>ML</del> 32'12	minimum elong	13774 Nov 01 09:51	23° <del>ML</del> 47'13	10°21'18
opposition	13768 Apr 28 09:04	17° <del>ML</del> 32'50 -12°04'21	max. Earth dist.	13774 Nov 01 02:12	23° <del>ML</del> 46'47	48.78627 AU
min. Earth dist.	13768 Apr 28 10:48	17° <del>ML</del> 32'45 47.36051 AU	morning rise	13774 Nov 12 19:38	24° <del>ML</del> 02'56	
direct	13768 Jul 19 15:24	16° <del>ML</del> 34'05	retrograde	13775 Feb 11 10:18	25° <del>ML</del> 17'04	
evening set	13768 Oct 16 00:26	17° <del>ML</del> 46'45	opposition	13775 May 05 21:01	24° <del>ML</del> 17'17	-10°42'08
			min. Earth dist.	13775 May 06 04:33	24° <del>ML</del> 16'56	46.77256 AU
conjunction	13768 Oct 26 02:16	18° <del>ML</del> 00'34 -11°29'58	direct	13775 Jul 26 20:42	23° <del>ML</del> 18'05	
minimum elong	13768 Oct 26 02:30	18° <del>ML</del> 00'35 11°29'16	evening set	13775 Oct 22 01:58	24° <del>ML</del> 29'22	
max. Earth dist.	13768 Oct 26 00:44	18° <del>ML</del> 00'29 49.28376 AU				
morning rise	13768 Nov 05 05:24	18° <del>ML</del> 14'29	conjunction	13775 Nov 02 15:13	24° <del>ML</del> 45'18	-10°09'58
retrograde	13769 Feb 04 23:20	19° <del>ML</del> 29'51	minimum elong	13775 Nov 02 15:26	24° <del>ML</del> 45'18	10°09'10
opposition	13769 Apr 29 14:06	18° <del>ML</del> 30'27 -11°53'16	max. Earth dist.	13775 Nov 02 08:01	24° <del>ML</del> 44'53	48.69234 AU
min. Earth dist.	13769 Apr 29 15:59	18° <del>ML</del> 30'22 47.28862 AU	morning rise	13775 Nov 14 05:53	25° <del>ML</del> 01'19	
direct	13769 Jul 20 18:12	17° <del>ML</del> 31'40	retrograde	13776 Feb 12 13:05	26° <del>ML</del> 15'18	
evening set	13769 Oct 17 00:12	18° <del>ML</del> 44'06	opposition	13776 May 06 02:10	25° <del>ML</del> 15'27	-10°29'27
			min. Earth dist.	13776 May 06 09:49	25° <del>ML</del> 15'05	46.67576 AU
conjunction	13769 Oct 27 07:19	18° <del>ML</del> 58'14 -11°19'12	direct	13776 Jul 27 03:21	24° <del>ML</del> 16'12	
minimum elong	13769 Oct 27 07:32	18° <del>ML</del> 58'14 11°18'28	evening set	13776 Oct 22 02:52	25° <del>ML</del> 27'21	
max. Earth dist.	13769 Oct 27 03:54	18° <del>ML</del> 58'02 49.21061 AU				
morning rise	13769 Nov 06 15:56	19° <del>ML</del> 12'27	conjunction	13776 Nov 02 20:41	25° <del>ML</del> 43'34	-9°57'38
retrograde	13770 Feb 06 05:29	20° <del>ML</del> 27'35	minimum elong	13776 Nov 02 20:53	25° <del>ML</del> 43'35	9°56'50
opposition	13770 Apr 30 19:19	19° <del>ML</del> 28'08 -11°41'59	max. Earth dist.	13776 Nov 02 11:45	25° <del>ML</del> 43'03	48.59540 AU
min. Earth dist.	13770 Apr 30 23:04	19° <del>ML</del> 27'57 47.21178 AU	morning rise	13776 Nov 14 16:13	25° <del>ML</del> 59'53	
direct	13770 Jul 21 20:48	18° <del>ML</del> 29'17	retrograde	13777 Feb 12 17:34	27° <del>ML</del> 13'43	
evening set	13770 Oct 18 00:11	19° <del>ML</del> 41'30	opposition	13777 May 07 07:32	26° <del>ML</del> 13'50	-10°16'32
			min. Earth dist.	13777 May 07 15:58	26° <del>ML</del> 13'26	46.57584 AU
conjunction	13770 Oct 28 12:38	19° <del>ML</del> 55'56 -11°08'13	direct	13777 Jul 28 09:20	25° <del>ML</del> 14'31	
minimum elong	13770 Oct 28 12:52	19° <del>ML</del> 55'57 11°07'29	evening set	13777 Oct 23 03:42	26° <del>ML</del> 25'34	
max. Earth dist.	13770 Oct 28 09:18	19° <del>ML</del> 55'44 49.13285 AU				
morning rise	13770 Nov 08 02:22	20° <del>ML</del> 10'27	conjunction	13777 Nov 04 02:14	26° <del>ML</del> 42'04	-9°45'05
retrograde	13771 Feb 07 07:34	21° <del>ML</del> 25'22	minimum elong	13777 Nov 04 02:27	26° <del>ML</del> 42'05	9°44'15
opposition	13771 May 02 00:19	20° <del>ML</del> 25'50 -11°30'29	max. Earth dist.	13777 Nov 03 17:01	26° <del>ML</del> 41'32	48.49490 AU
min. Earth dist.	13771 May 02 04:35	20° <del>ML</del> 25'38 47.13056 AU	morning rise	13777 Nov 16 02:21	26° <del>ML</del> 58'40	
direct	13771 Jul 23 03:10	19° <del>ML</del> 26'55	retrograde	13778 Feb 13 23:48	28° <del>ML</del> 12'25	
evening set	13771 Oct 19 00:22	20° <del>ML</del> 38'56	opposition	13778 May 08 13:07	27° <del>ML</del> 12'28	-10°03'23
			min. Earth dist.	13778 May 08 23:06	27° <del>ML</del> 12'00	46.47204 AU
conjunction	13771 Oct 29 17:48	20° <del>ML</del> 53'40 -10°57'01	direct	13778 Jul 29 16:02	26° <del>ML</del> 13'06	
minimum elong	13771 Oct 29 18:02	20° <del>ML</del> 53'40 10°56'15	evening set	13778 Oct 24 05:04	27° <del>ML</del> 24'03	
max. Earth dist.	13771 Oct 29 12:37	20° <del>ML</del> 53'22 49.05109 AU				
morning rise	13771 Nov 09 12:49	21° <del>ML</del> 08'29	conjunction	13778 Nov 05 08:05	27° <del>ML</del> 40'50	-9°32'18
retrograde	13772 Feb 08 12:30	22° <del>ML</del> 23'11	minimum elong	13778 Nov 05 08:16	27° <del>ML</del> 40'50	9°31'28
opposition	13772 May 02 05:24	21° <del>ML</del> 23'35 -11°18'45	max. Earth dist.	13778 Nov 04 21:49	27° <del>ML</del> 40'14	48.39037 AU
min. Earth dist.	13772 May 02 10:22	21° <del>ML</del> 23'21 47.04569 AU	morning rise	13778 Nov 17 12:42	27° <del>ML</del> 57'44	
direct	13772 Jul 23 08:45	20° <del>ML</del> 24'36	retrograde	13779 Feb 15 07:30	29° <del>ML</del> 11'22	
evening set	13772 Oct 19 00:30	21° <del>ML</del> 36'24	opposition	13779 May 09 18:31	28° <del>ML</del> 11'22	-9°50'01
			min. Earth dist.	13779 May 10 04:43	28° <del>ML</del> 10'53	46.36382 AU
conjunction	13772 Oct 29 23:05	21° <del>ML</del> 51'25 -10°45'36	direct	13779 Jul 30 20:04	27° <del>ML</del> 11'56	
minimum elong	13772 Oct 29 23:19	21° <del>ML</del> 51'26 10°44'51	evening set	13779 Oct 25 06:37	28° <del>ML</del> 22'47	
max. Earth dist.	13772 Oct 29 17:34	21° <del>ML</del> 51'06 48.96572 AU				
morning rise	13772 Nov 09 23:07	22° <del>ML</del> 06'34	conjunction	13779 Nov 06 14:01	28° <del>ML</del> 39'51	-9°19'19

minimum elong	13779 Nov 06 14:14	28° $\mathbb{M}$ 39'52	9°18'29	morning rise	13785 Nov 25 13:12	4° $\mathbb{J}$ 57'01	
max. Earth dist.	13779 Nov 06 01:45	28° $\mathbb{M}$ 39'08	48.28087 AU	retrograde	13786 Feb 22 06:35	6° $\mathbb{J}$ 10'09	
morning rise	13779 Nov 18 23:14	28° $\mathbb{M}$ 57'02		opposition	13786 May 16 11:41	5° $\mathbb{J}$ 09'27	-8°10'15
	13780 Jan 15 21:39	0° $\mathbb{J}$		min. Earth dist.	13786 May 17 04:55	5° $\mathbb{J}$ 08'38	45.47282 AU
retrograde	13780 Feb 16 15:47	0° $\mathbb{J}$ 10'34		direct	13786 Aug 06 08:19	4° $\mathbb{J}$ 09'15	
	13780 Mar 19 14:59	30° $\mathbb{K}$ $\mathbb{M}$		evening set	13786 Oct 30 22:01	5° $\mathbb{J}$ 19'45	
opposition	13780 May 10 00:16	29° $\mathbb{M}$ 10'30	-9°36'26				
min. Earth dist.	13780 May 10 12:36	29° $\mathbb{M}$ 09'55	46.25041 AU	conjunction	13786 Nov 13 09:50	5° $\mathbb{J}$ 38'43	-7°42'30
direct	13780 Jul 30 23:15	28° $\mathbb{M}$ 10'59		minimum elong	13786 Nov 13 10:01	5° $\mathbb{J}$ 38'43	7°41'35
evening set	13780 Oct 25 08:18	29° $\mathbb{M}$ 21'45		max. Earth dist.	13786 Nov 12 14:36	5° $\mathbb{J}$ 37'35	47.38458 AU
				morning rise	13786 Nov 26 23:37	5° $\mathbb{J}$ 57'49	
conjunction	13780 Nov 06 20:10	29° $\mathbb{M}$ 39'06	-9°06'08	retrograde	13787 Feb 23 11:52	7° $\mathbb{J}$ 10'56	
minimum elong	13780 Nov 06 20:22	29° $\mathbb{M}$ 39'07	9°05'16	opposition	13787 May 17 17:50	6° $\mathbb{J}$ 10'07	-7°55'03
max. Earth dist.	13780 Nov 06 07:35	29° $\mathbb{M}$ 38'22	48.16606 AU	min. Earth dist.	13787 May 18 11:55	6° $\mathbb{J}$ 09'15	45.33155 AU
morning rise	13780 Nov 19 09:34	29° $\mathbb{M}$ 56'34		direct	13787 Aug 07 14:54	5° $\mathbb{J}$ 09'48	
	13780 Nov 21 21:46	0° $\mathbb{J}$		evening set	13787 Nov 01 00:55	6° $\mathbb{J}$ 20'19	
retrograde	13781 Feb 16 20:11	1° $\mathbb{J}$ 10'00					
opposition	13781 May 11 05:57	0° $\mathbb{J}$ 09'51	-9°22'38	conjunction	13787 Nov 14 16:35	6° $\mathbb{J}$ 39'34	-7°27'45
min. Earth dist.	13781 May 11 18:54	0° $\mathbb{J}$ 09'14	46.13154 AU	minimum elong	13787 Nov 14 16:45	6° $\mathbb{J}$ 39'34	7°26'51
	13781 May 19 22:34	30° $\mathbb{K}$ $\mathbb{M}$		max. Earth dist.	13787 Nov 13 21:08	6° $\mathbb{J}$ 38'25	47.24304 AU
direct	13781 Aug 01 05:14	29° $\mathbb{M}$ 10'14		morning rise	13787 Nov 28 09:59	6° $\mathbb{J}$ 58'55	
	13781 Oct 10 14:53	0° $\mathbb{J}$		retrograde	13788 Feb 24 17:46	8° $\mathbb{J}$ 12'04	
evening set	13781 Oct 26 10:17	0° $\mathbb{J}$ 20'55		opposition	13788 May 18 00:14	7° $\mathbb{J}$ 11'09	-7°39'36
max. Earth dist.	13781 Nov 07 11:25	0° $\mathbb{J}$ 37'41	48.04602 AU	min. Earth dist.	13788 May 18 19:27	7° $\mathbb{J}$ 10'14	45.18739 AU
				direct	13788 Aug 07 23:08	6° $\mathbb{J}$ 10'44	
conjunction	13781 Nov 08 02:14	0° $\mathbb{J}$ 38'33	-8°52'45	evening set	13788 Nov 01 04:07	7° $\mathbb{J}$ 21'17	
minimum elong	13781 Nov 08 02:26	0° $\mathbb{J}$ 38'34	8°51'53				
morning rise	13781 Nov 20 20:03	0° $\mathbb{J}$ 56'17		conjunction	13788 Nov 14 23:19	7° $\mathbb{J}$ 40'47	-7°12'46
retrograde	13782 Feb 18 02:28	2° $\mathbb{J}$ 09'38		minimum elong	13788 Nov 14 23:29	7° $\mathbb{J}$ 40'48	7°11'50
opposition	13782 May 12 11:48	1° $\mathbb{J}$ 09'22	-9°08'37	max. Earth dist.	13788 Nov 14 03:05	7° $\mathbb{J}$ 39'35	47.09873 AU
min. Earth dist.	13782 May 13 01:54	1° $\mathbb{J}$ 08'42	46.00775 AU	morning rise	13788 Nov 28 20:18	8° $\mathbb{J}$ 00'24	
direct	13782 Aug 02 10:44	0° $\mathbb{J}$ 09'39		retrograde	13789 Feb 25 02:34	9° $\mathbb{J}$ 13'36	
evening set	13782 Oct 27 12:09	1° $\mathbb{J}$ 20'16		opposition	13789 May 19 06:37	8° $\mathbb{J}$ 12'36	-7°23'53
				min. Earth dist.	13789 May 20 01:42	8° $\mathbb{J}$ 11'40	45.04032 AU
conjunction	13782 Nov 09 08:25	1° $\mathbb{J}$ 38'09	-8°39'09	direct	13789 Aug 09 04:26	7° $\mathbb{J}$ 12'04	
minimum elong	13782 Nov 09 08:36	1° $\mathbb{J}$ 38'10	8°38'16	evening set	13789 Nov 02 07:37	8° $\mathbb{J}$ 22'40	
max. Earth dist.	13782 Nov 08 17:00	1° $\mathbb{J}$ 37'15	47.92111 AU	max. Earth dist.	13789 Nov 15 08:31	8° $\mathbb{J}$ 41'08	46.95113 AU
morning rise	13782 Nov 22 06:22	1° $\mathbb{J}$ 56'11					
retrograde	13783 Feb 19 07:44	3° $\mathbb{J}$ 09'27		conjunction	13789 Nov 16 06:15	8° $\mathbb{J}$ 42'25	-6°57'33
opposition	13783 May 13 17:44	2° $\mathbb{J}$ 09'05	-8°54'23	minimum elong	13789 Nov 16 06:24	8° $\mathbb{J}$ 42'26	6°56'37
min. Earth dist.	13783 May 14 09:18	2° $\mathbb{J}$ 08'20	45.87933 AU	morning rise	13789 Nov 30 06:49	9° $\mathbb{J}$ 02'19	
direct	13783 Aug 03 18:55	1° $\mathbb{J}$ 09'14		retrograde	13790 Feb 26 12:44	10° $\mathbb{J}$ 15'34	
evening set	13783 Oct 28 14:26	2° $\mathbb{J}$ 19'47		opposition	13790 May 20 13:20	9° $\mathbb{J}$ 14'27	-7°07'57
				min. Earth dist.	13790 May 21 10:18	9° $\mathbb{J}$ 13'26	44.88979 AU
conjunction	13783 Nov 10 14:44	2° $\mathbb{J}$ 37'57	-8°25'20	direct	13790 Aug 10 07:59	8° $\mathbb{J}$ 13'49	
minimum elong	13783 Nov 10 14:55	2° $\mathbb{J}$ 37'58	8°24'27	evening set	13790 Nov 03 11:18	9° $\mathbb{J}$ 24'30	
max. Earth dist.	13783 Nov 09 22:28	2° $\mathbb{J}$ 37'00	47.79204 AU				
morning rise	13783 Nov 23 16:44	2° $\mathbb{J}$ 56'15		conjunction	13790 Nov 17 13:28	9° $\mathbb{J}$ 44'31	-6°42'07
retrograde	13784 Feb 20 16:05	4° $\mathbb{J}$ 09'27		minimum elong	13790 Nov 17 13:37	9° $\mathbb{J}$ 44'31	6°41'10
opposition	13784 May 13 23:27	3° $\mathbb{J}$ 08'58	-8°39'55	max. Earth dist.	13790 Nov 16 15:44	9° $\mathbb{J}$ 43'13	46.79977 AU
min. Earth dist.	13784 May 14 15:05	3° $\mathbb{J}$ 08'13	45.74708 AU	morning rise	13790 Dec 01 17:17	10° $\mathbb{J}$ 04'39	
direct	13784 Aug 03 23:16	2° $\mathbb{J}$ 09'00		retrograde	13791 Feb 27 20:54	11° $\mathbb{J}$ 17'57	
evening set	13784 Oct 28 16:50	3° $\mathbb{J}$ 19'31		opposition	13791 May 21 20:04	10° $\mathbb{J}$ 16'45	-6°51'46
				min. Earth dist.	13791 May 22 17:24	10° $\mathbb{J}$ 15'43	44.73503 AU
conjunction	13784 Nov 10 21:01	3° $\mathbb{J}$ 37'57	-8°11'17	direct	13791 Aug 11 12:55	9° $\mathbb{J}$ 15'58	
minimum elong	13784 Nov 10 21:12	3° $\mathbb{J}$ 37'58	8°10'23	evening set	13791 Nov 04 15:35	10° $\mathbb{J}$ 26'45	
max. Earth dist.	13784 Nov 10 03:11	3° $\mathbb{J}$ 36'54	47.65923 AU				
morning rise	13784 Nov 24 03:07	3° $\mathbb{J}$ 56'31		conjunction	13791 Nov 18 20:51	10° $\mathbb{J}$ 47'01	-6°26'27
retrograde	13785 Feb 21 01:44	5° $\mathbb{J}$ 09'41		minimum elong	13791 Nov 18 20:59	10° $\mathbb{J}$ 47'02	6°25'29
opposition	13785 May 15 05:34	4° $\mathbb{J}$ 09'05	-8°25'12	max. Earth dist.	13791 Nov 17 20:44	10° $\mathbb{J}$ 45'35	46.64381 AU
min. Earth dist.	13785 May 15 22:55	4° $\mathbb{J}$ 08'15	45.61146 AU	morning rise	13791 Dec 03 04:06	11° $\mathbb{J}$ 07'25	
direct	13785 Aug 05 01:23	3° $\mathbb{J}$ 09'00		retrograde	13792 Feb 29 05:27	12° $\mathbb{J}$ 20'47	
evening set	13785 Oct 29 19:11	4° $\mathbb{J}$ 19'29		opposition	13792 May 22 02:54	11° $\mathbb{J}$ 19'27	-6°35'20
max. Earth dist.	13785 Nov 11 09:47	4° $\mathbb{J}$ 37'09	47.52332 AU	min. Earth dist.	13792 May 23 01:46	11° $\mathbb{J}$ 18'20	44.57553 AU
				direct	13792 Aug 11 18:39	10° $\mathbb{J}$ 18'31	
conjunction	13785 Nov 12 03:23	4° $\mathbb{J}$ 38'12	-7°57'01	evening set	13792 Nov 04 19:57	11° $\mathbb{J}$ 29'23	
minimum elong	13785 Nov 12 03:33	4° $\mathbb{J}$ 38'12	7°56'07	max. Earth dist.	13792 Nov 18 03:43	11° $\mathbb{J}$ 48'25	46.48278 AU

conjunction	13792 Nov 19 04:31	11° $\nearrow$ 49'54	-6°10'34	evening set	13799 Nov 12 09:49	18° $\nearrow$ 56'50	
minimum elong	13792 Nov 19 04:40	11° $\nearrow$ 49'55	6°09'36	max. Earth dist.	13799 Nov 26 05:39	19° $\nearrow$ 17'03	45.24515 AU
morning rise	13792 Dec 03 14:49	12° $\nearrow$ 10'34					
retrograde	13793 Mar 01 09:59	13° $\nearrow$ 24'00		conjunction	13799 Nov 27 13:17	19° $\nearrow$ 19'00	-4°12'54
opposition	13793 May 23 10:05	12° $\nearrow$ 22'30	-6°18'42	minimum elong	13799 Nov 27 13:24	19° $\nearrow$ 19'00	4°11'53
min. Earth dist.	13793 May 24 10:17	12° $\nearrow$ 21'19	44.41087 AU	morning rise	13799 Dec 12 18:37	19° $\nearrow$ 41'19	
direct	13793 Aug 13 04:23	11° $\nearrow$ 21'25		retrograde	13800 Mar 09 22:58	20° $\nearrow$ 55'38	
evening set	13793 Nov 06 00:30	12° $\nearrow$ 32'21		opposition	13800 May 31 15:19	19° $\nearrow$ 52'51	-4°15'12
max. Earth dist.	13793 Nov 19 10:04	12° $\nearrow$ 51'33	46.31688 AU	min. Earth dist.	13800 Jun 01 21:09	19° $\nearrow$ 51'22	43.15567 AU
				direct	13800 Aug 21 06:18	18° $\nearrow$ 50'24	
				evening set	13800 Nov 13 16:25	20° $\nearrow$ 02'26	
conjunction	13793 Nov 20 12:04	12° $\nearrow$ 53'07	-5°54'27				
minimum elong	13793 Nov 20 12:12	12° $\nearrow$ 53'07	5°53'29				
morning rise	13793 Dec 05 01:29	13° $\nearrow$ 14'01		conjunction	13800 Nov 28 22:14	20° $\nearrow$ 24'50	-3°55'08
retrograde	13794 Mar 02 17:51	14° $\nearrow$ 27'32		minimum elong	13800 Nov 28 22:19	20° $\nearrow$ 24'50	3°54'07
opposition	13794 May 24 17:15	13° $\nearrow$ 25'52	-6°01'48	max. Earth dist.	13800 Nov 27 14:49	20° $\nearrow$ 22'53	45.05779 AU
min. Earth dist.	13794 May 25 17:48	13° $\nearrow$ 24'39	44.24152 AU	morning rise	13800 Dec 14 05:39	20° $\nearrow$ 47'22	
direct	13794 Aug 14 12:15	12° $\nearrow$ 24'35		retrograde	13801 Mar 11 10:04	22° $\nearrow$ 01'54	
evening set	13794 Nov 07 05:24	13° $\nearrow$ 35'37		opposition	13801 Jun 01 23:38	20° $\nearrow$ 58'59	-3°56'32
				min. Earth dist.	13801 Jun 03 05:11	20° $\nearrow$ 57'30	42.96630 AU
conjunction	13794 Nov 21 19:53	13° $\nearrow$ 56'37	-5°38'07	direct	13801 Aug 22 12:21	19° $\nearrow$ 56'21	
minimum elong	13794 Nov 21 20:02	13° $\nearrow$ 56'38	5°37'09	evening set	13801 Nov 14 23:23	21° $\nearrow$ 08'39	
max. Earth dist.	13794 Nov 20 16:09	13° $\nearrow$ 54'56	46.14631 AU	max. Earth dist.	13801 Nov 28 21:53	21° $\nearrow$ 29'13	44.86792 AU
morning rise	13794 Dec 06 12:19	14° $\nearrow$ 17'45					
retrograde	13795 Mar 04 04:49	15° $\nearrow$ 31'21		conjunction	13801 Nov 30 07:08	21° $\nearrow$ 31'17	-3°37'07
opposition	13795 May 26 00:33	14° $\nearrow$ 29'30	-5°44'41	minimum elong	13801 Nov 30 07:13	21° $\nearrow$ 31'17	3°36'05
min. Earth dist.	13795 May 27 03:07	14° $\nearrow$ 28'12	44.06792 AU	morning rise	13801 Dec 15 16:48	21° $\nearrow$ 54'02	
direct	13795 Aug 15 17:05	13° $\nearrow$ 28'02		retrograde	13802 Mar 12 22:14	23° $\nearrow$ 08'51	
evening set	13795 Nov 08 10:30	14° $\nearrow$ 39'10		opposition	13802 Jun 03 08:16	22° $\nearrow$ 05'46	-3°37'35
max. Earth dist.	13795 Nov 22 00:10	14° $\nearrow$ 58'43	45.97186 AU	min. Earth dist.	13802 Jun 04 15:17	22° $\nearrow$ 04'12	42.77428 AU
				direct	13802 Aug 23 18:06	21° $\nearrow$ 02'57	
conjunction	13795 Nov 23 03:58	15° $\nearrow$ 00'24	-5°21'34	evening set	13802 Nov 16 06:49	22° $\nearrow$ 15'34	
minimum elong	13795 Nov 23 04:05	15° $\nearrow$ 00'25	5°20'34	max. Earth dist.	13802 Nov 30 07:17	22° $\nearrow$ 36'19	44.67492 AU
morning rise	13795 Dec 07 23:06	15° $\nearrow$ 21'47					
retrograde	13796 Mar 04 12:48	16° $\nearrow$ 35'28		conjunction	13802 Dec 01 16:40	22° $\nearrow$ 38'24	-3°18'52
opposition	13796 May 26 07:55	15° $\nearrow$ 33'26	-5°27'18	minimum elong	13802 Dec 01 16:45	22° $\nearrow$ 38'25	3°17'50
min. Earth dist.	13796 May 27 10:24	15° $\nearrow$ 32'08	43.89068 AU	morning rise	13802 Dec 17 04:06	23° $\nearrow$ 01'23	
direct	13796 Aug 15 23:54	14° $\nearrow$ 31'45		retrograde	13803 Mar 14 06:17	24° $\nearrow$ 16'28	
evening set	13796 Nov 08 15:54	15° $\nearrow$ 43'01		opposition	13803 Jun 04 17:00	23° $\nearrow$ 13'14	-3°18'24
max. Earth dist.	13796 Nov 22 06:18	16° $\nearrow$ 02'41	45.79401 AU	min. Earth dist.	13803 Jun 06 00:52	23° $\nearrow$ 11'37	42.57876 AU
				direct	13803 Aug 25 03:59	22° $\nearrow$ 10'15	
conjunction	13796 Nov 23 11:54	16° $\nearrow$ 04'29	-5°04'46	evening set	13803 Nov 17 14:51	23° $\nearrow$ 23'10	
minimum elong	13796 Nov 23 12:01	16° $\nearrow$ 04'30	5°03'46	max. Earth dist.	13803 Dec 01 15:32	23° $\nearrow$ 44'02	44.47816 AU
morning rise	13796 Dec 08 09:53	16° $\nearrow$ 26'06					
retrograde	13797 Mar 05 21:41	17° $\nearrow$ 39'54		conjunction	13803 Dec 03 02:24	23° $\nearrow$ 46'14	-3°00'22
opposition	13797 May 27 15:31	16° $\nearrow$ 37'40	-5°09'40	minimum elong	13803 Dec 03 02:29	23° $\nearrow$ 46'14	2°59'20
min. Earth dist.	13797 May 28 19:11	16° $\nearrow$ 36'18	43.71049 AU	morning rise	13803 Dec 18 15:43	24° $\nearrow$ 09'26	
direct	13797 Aug 17 06:20	15° $\nearrow$ 35'47		retrograde	13804 Mar 14 15:35	25° $\nearrow$ 24'49	
evening set	13797 Nov 09 21:30	16° $\nearrow$ 47'12		opposition	13804 Jun 05 02:02	24° $\nearrow$ 21'24	-2°58'58
				min. Earth dist.	13804 Jun 06 10:35	24° $\nearrow$ 19'45	42.37923 AU
conjunction	13797 Nov 24 20:14	17° $\nearrow$ 08'55	-4°47'43	direct	13804 Aug 25 13:42	23° $\nearrow$ 18'13	
minimum elong	13797 Nov 24 20:21	17° $\nearrow$ 08'55	4°46'42	evening set	13804 Nov 17 23:09	24° $\nearrow$ 31'27	
max. Earth dist.	13797 Nov 23 14:38	17° $\nearrow$ 07'06	45.61335 AU	max. Earth dist.	13804 Dec 01 23:53	24° $\nearrow$ 52'26	44.27690 AU
morning rise	13797 Dec 09 20:39	17° $\nearrow$ 30'45					
retrograde	13798 Mar 07 03:51	18° $\nearrow$ 44'42		conjunction	13804 Dec 03 12:21	24° $\nearrow$ 54'44	-2°41'39
opposition	13798 May 28 23:18	17° $\nearrow$ 42'16	-4°51'46	minimum elong	13804 Dec 03 12:24	24° $\nearrow$ 54'44	2°40'37
min. Earth dist.	13798 May 30 03:41	17° $\nearrow$ 40'52	43.52772 AU	morning rise	13804 Dec 19 03:14	25° $\nearrow$ 18'09	
direct	13798 Aug 18 16:03	16° $\nearrow$ 40'11		retrograde	13805 Mar 16 02:49	26° $\nearrow$ 33'51	
evening set	13798 Nov 11 03:27	17° $\nearrow$ 51'47		opposition	13805 Jun 06 11:28	25° $\nearrow$ 30'14	-2°39'17
max. Earth dist.	13798 Nov 24 22:06	18° $\nearrow$ 11'51	45.43041 AU	min. Earth dist.	13805 Jun 07 21:57	25° $\nearrow$ 28'29	42.17518 AU
				direct	13805 Aug 26 21:52	24° $\nearrow$ 26'50	
conjunction	13798 Nov 26 04:36	18° $\nearrow$ 13'43	-4°30'26	evening set	13805 Nov 19 07:51	25° $\nearrow$ 40'24	
minimum elong	13798 Nov 26 04:43	18° $\nearrow$ 13'44	4°29'26	max. Earth dist.	13805 Dec 03 09:46	26° $\nearrow$ 01'33	44.07133 AU
morning rise	13798 Dec 11 07:36	18° $\nearrow$ 35'48					
retrograde	13799 Mar 08 12:36	19° $\nearrow$ 49'55		conjunction	13805 Dec 04 22:39	26° $\nearrow$ 03'53	-2°22'42
opposition	13799 May 30 07:12	18° $\nearrow$ 47'19	-4°33'37	minimum elong	13805 Dec 04 22:42	26° $\nearrow$ 03'53	2°21'40
min. Earth dist.	13799 May 31 11:30	18° $\nearrow$ 45'54	43.34280 AU	morning rise	13805 Dec 20 14:58	26° $\nearrow$ 27'30	
direct	13799 Aug 19 23:39	17° $\nearrow$ 45'02		retrograde	13806 Mar 17 14:33	27° $\nearrow$ 43'31	

opposition	13806 Jun 07 20:57	26° $\mathring{A}$ 39'41	-2°19'20	direct	13812 Sep 03 13:10	2° $\mathring{B}$ 44'06	
min. Earth dist.	13806 Jun 09 07:24	26° $\mathring{A}$ 37'56	41.96693 AU	evening set	13812 Nov 27 08:35	4° $\mathring{B}$ 00'38	
direct	13806 Aug 28 05:26	25° $\mathring{A}$ 36'02		max. Earth dist.	13812 Dec 11 10:52	4° $\mathring{B}$ 22'36	42.54649 AU
evening set	13806 Nov 20 17:00	26° $\mathring{A}$ 49'58					
max. Earth dist.	13806 Dec 04 18:02	27° $\mathring{A}$ 11'10	43.86162 AU	conjunction	13812 Dec 13 05:22	4° $\mathring{B}$ 25'22	-0°03'35
				minimum elong	13812 Dec 13 05:21	4° $\mathring{B}$ 25'22	0°02'31
conjunction	13806 Dec 06 09:02	27° $\mathring{A}$ 13'38	-2°03'31	behind sun begin	13812 Dec 12 22:53	4° $\mathring{B}$ 24'59	
minimum elong	13806 Dec 06 09:05	27° $\mathring{A}$ 13'38	2°02'28	behind sun end	13812 Dec 13 11:49	4° $\mathring{B}$ 25'46	
morning rise	13806 Dec 22 02:51	27° $\mathring{A}$ 37'27		morning rise	13812 Dec 29 03:16	4° $\mathring{B}$ 50'15	
retrograde	13807 Mar 19 04:06	28° $\mathring{A}$ 53'48		asc. node	13813 Feb 13 05:54	5° $\mathring{B}$ 49'28	
opposition	13807 Jun 09 06:46	27° $\mathring{A}$ 49'44	-1°59'09	retrograde	13813 Mar 26 03:55	6° $\mathring{B}$ 09'06	
min. Earth dist.	13807 Jun 10 19:00	27° $\mathring{A}$ 47'52	41.75491 AU	opposition	13813 Jun 15 22:36	5° $\mathring{B}$ 03'31	0°07'20
direct	13807 Aug 29 12:44	26° $\mathring{A}$ 45'49		min. Earth dist.	13813 Jun 17 13:58	5° $\mathring{B}$ 01'27	40.43220 AU
evening set	13807 Nov 22 02:29	28° $\mathring{A}$ 00'07		direct	13813 Sep 05 00:25	3° $\mathring{B}$ 57'59	
max. Earth dist.	13807 Dec 06 04:50	28° $\mathring{A}$ 21'30	43.64827 AU	evening set	13813 Nov 28 21:04	5° $\mathring{B}$ 15'03	
				max. Earth dist.	13813 Dec 12 21:53	5° $\mathring{B}$ 37'03	42.32090 AU
conjunction	13807 Dec 07 19:52	28° $\mathring{A}$ 23'59	-1°44'06				
minimum elong	13807 Dec 07 19:55	28° $\mathring{A}$ 23'59	1°43'04	conjunction	13813 Dec 14 17:48	5° $\mathring{B}$ 39'57	0°17'18
morning rise	13807 Dec 23 14:39	28° $\mathring{A}$ 47'59		minimum elong	13813 Dec 14 17:48	5° $\mathring{B}$ 39'57	0°18'22
	13808 Feb 28 13:50	0° $\mathring{B}$		morning rise	13813 Dec 30 15:58	6° $\mathring{B}$ 04'58	
retrograde	13808 Mar 19 14:29	0° $\mathring{B}$ 04'40		retrograde	13814 Mar 27 18:42	7° $\mathring{B}$ 24'21	
	13808 Apr 08 16:18	30° $\mathring{R}$ $\mathring{A}$		opposition	13814 Jun 17 10:18	6° $\mathring{B}$ 18'32	0°29'17
opposition	13808 Jun 09 16:39	29° $\mathring{A}$ 00'22	-1°38'42	min. Earth dist.	13814 Jun 19 02:34	6° $\mathring{B}$ 16'24	40.20561 AU
min. Earth dist.	13808 Jun 11 05:23	28° $\mathring{A}$ 58'28	41.53959 AU	direct	13814 Sep 06 11:10	5° $\mathring{B}$ 12'43	
direct	13808 Aug 29 23:39	27° $\mathring{A}$ 56'11		evening set	13814 Nov 30 10:04	6° $\mathring{B}$ 30'23	
evening set	13808 Nov 22 12:27	29° $\mathring{A}$ 10'52		max. Earth dist.	13814 Dec 14 10:17	6° $\mathring{B}$ 52'29	42.09292 AU
max. Earth dist.	13808 Dec 06 14:16	29° $\mathring{A}$ 32'20	43.43204 AU				
conjunction	13808 Dec 08 06:44	29° $\mathring{A}$ 34'56	-1°24'27	conjunction	13814 Dec 16 06:49	6° $\mathring{B}$ 55'26	0°38'19
minimum elong	13808 Dec 08 06:46	29° $\mathring{A}$ 34'56	1°23'24	minimum elong	13814 Dec 16 06:48	6° $\mathring{B}$ 55'26	0°39'23
morning rise	13808 Dec 24 02:39	29° $\mathring{A}$ 59'07		morning rise	13815 Jan 01 04:44	7° $\mathring{B}$ 20'37	
	13808 Dec 24 16:47	0° $\mathring{B}$		retrograde	13815 Mar 29 07:22	8° $\mathring{B}$ 40'33	
retrograde	13809 Mar 21 02:22	1° $\mathring{B}$ 16'10		opposition	13815 Jun 18 22:29	7° $\mathring{B}$ 34'29	0°51'28
opposition	13809 Jun 11 02:51	0° $\mathring{B}$ 11'36	-1°18'00	min. Earth dist.	13815 Jun 20 16:05	7° $\mathring{B}$ 32'16	39.97631 AU
min. Earth dist.	13809 Jun 12 16:03	0° $\mathring{B}$ 09'41	41.32181 AU	direct	13815 Sep 08 00:08	6° $\mathring{B}$ 28'24	
	13809 Jun 20 12:29	30° $\mathring{R}$ $\mathring{A}$		evening set	13815 Dec 01 23:49	7° $\mathring{B}$ 46'40	
direct	13809 Aug 31 09:21	29° $\mathring{A}$ 07'09		max. Earth dist.	13815 Dec 15 22:51	8° $\mathring{B}$ 08'50	41.86196 AU
	13809 Nov 08 13:02	0° $\mathring{B}$		conjunction	13815 Dec 17 20:14	8° $\mathring{B}$ 11'52	0°59'32
evening set	13809 Nov 23 22:39	0° $\mathring{B}$ 22'15		minimum elong	13815 Dec 17 20:12	8° $\mathring{B}$ 11'52	1°00'35
max. Earth dist.	13809 Dec 08 00:40	0° $\mathring{B}$ 43'50	43.21332 AU	morning rise	13816 Jan 02 17:48	8° $\mathring{B}$ 37'11	
				retrograde	13816 Mar 29 20:54	9° $\mathring{B}$ 57'42	
conjunction	13809 Dec 09 17:50	0° $\mathring{B}$ 46'29	-1°04'34	opposition	13816 Jun 19 10:49	8° $\mathring{B}$ 51'23	1°13'54
minimum elong	13809 Dec 09 17:52	0° $\mathring{B}$ 46'30	1°03'32	min. Earth dist.	13816 Jun 21 04:37	8° $\mathring{B}$ 49'09	39.74382 AU
morning rise	13809 Dec 25 14:30	1° $\mathring{B}$ 10'52		direct	13816 Sep 08 12:05	7° $\mathring{B}$ 45'00	
retrograde	13810 Mar 22 11:20	2° $\mathring{B}$ 28'19		evening set	13816 Dec 02 14:12	9° $\mathring{B}$ 03'55	
opposition	13810 Jun 12 13:27	1° $\mathring{B}$ 23'30	-0°57'03	max. Earth dist.	13816 Dec 16 10:39	9° $\mathring{B}$ 26'03	41.62738 AU
min. Earth dist.	13810 Jun 14 03:51	1° $\mathring{B}$ 21'30	41.10182 AU				
direct	13810 Sep 01 21:07	0° $\mathring{B}$ 18'46		conjunction	13816 Dec 18 10:01	9° $\mathring{B}$ 29'14	1°20'58
evening set	13810 Nov 25 09:29	1° $\mathring{B}$ 34'18		minimum elong	13816 Dec 18 09:59	9° $\mathring{B}$ 29'14	1°22'02
max. Earth dist.	13810 Dec 09 12:13	1° $\mathring{B}$ 56'02	42.99272 AU	morning rise	13817 Jan 03 07:03	9° $\mathring{B}$ 54'41	
				retrograde	13817 Mar 31 11:58	11° $\mathring{B}$ 15'50	
conjunction	13810 Dec 11 05:25	1° $\mathring{B}$ 58'43	-0°44'27	opposition	13817 Jun 20 23:49	10° $\mathring{B}$ 09'13	1°36'33
minimum elong	13810 Dec 11 05:26	1° $\mathring{B}$ 58'43	0°43'24	min. Earth dist.	13817 Jun 22 19:32	10° $\mathring{B}$ 06'52	39.50771 AU
morning rise	13810 Dec 27 02:42	2° $\mathring{B}$ 23'16		direct	13817 Sep 09 22:35	9° $\mathring{B}$ 02'31	
retrograde	13811 Mar 23 23:38	3° $\mathring{B}$ 41'09		evening set	13817 Dec 04 04:55	10° $\mathring{B}$ 22'06	
opposition	13811 Jun 14 00:02	2° $\mathring{B}$ 36'04	-0°35'50	max. Earth dist.	13817 Dec 18 00:46	10° $\mathring{B}$ 44'20	41.38919 AU
min. Earth dist.	13811 Jun 15 14:06	2° $\mathring{B}$ 34'05	40.88018 AU				
direct	13811 Sep 03 06:40	1° $\mathring{B}$ 31'04		conjunction	13817 Dec 20 00:10	10° $\mathring{B}$ 47'32	1°42'37
evening set	13811 Nov 26 20:54	2° $\mathring{B}$ 47'04		minimum elong	13817 Dec 20 00:08	10° $\mathring{B}$ 47'32	1°43'40
max. Earth dist.	13811 Dec 10 22:18	3° $\mathring{B}$ 08'51	42.77039 AU	morning rise	13818 Jan 04 20:18	11° $\mathring{B}$ 13'05	
				retrograde	13818 Apr 02 04:01	12° $\mathring{B}$ 34'53	
conjunction	13811 Dec 12 17:12	3° $\mathring{B}$ 11'39	-0°24'07	opposition	13818 Jun 22 13:03	11° $\mathring{B}$ 27'58	1°59'26
minimum elong	13811 Dec 12 17:13	3° $\mathring{B}$ 11'39	0°23'04	min. Earth dist.	13818 Jun 24 08:51	11° $\mathring{B}$ 25'36	39.26807 AU
morning rise	13811 Dec 28 15:02	3° $\mathring{B}$ 36'22		direct	13818 Sep 11 10:12	10° $\mathring{B}$ 20'56	
retrograde	13812 Mar 24 15:10	4° $\mathring{B}$ 54'43		evening set	13818 Dec 05 20:34	11° $\mathring{B}$ 41'12	
opposition	13812 Jun 14 11:11	3° $\mathring{B}$ 49'23	-0°14'22	max. Earth dist.	13818 Dec 19 13:09	12° $\mathring{B}$ 03'22	41.14760 AU
min. Earth dist.	13812 Jun 16 02:44	3° $\mathring{B}$ 47'19	40.65701 AU				



conjunction	13818 Dec 21 14:42	12°30'6"45	2°04'28"	evening set	13825 Dec 16 03:42	21°32'33"00	
minimum elong	13818 Dec 21 14:39	12°30'6"45	2°05'31"	max. Earth dist.	13825 Dec 29 02:20	21°34'53"34	39.40876 AU
morning rise	13819 Jan 06 09:59	12°32'32"24					
retrograde	13819 Apr 03 21:24	13°35'54"51		conjunction	13825 Dec 31 07:49	21°34'49"24	4°42'18"
opposition	13819 Jun 24 02:31	12°34'47"37	2°22'32"	minimum elong	13825 Dec 31 07:42	21°34'49"24	4°43'19"
min. Earth dist.	13819 Jun 25 23:50	12°34'51"10	39.02546 AU	morning rise	13826 Jan 15 12:33	22°31'52"23	
direct	13819 Sep 12 21:12	11°34'40"14		retrograde	13826 Apr 13 23:29	23°34'43"39	
evening set	13819 Dec 07 12:40	13°30'01"14		opposition	13826 Jul 03 12:47	22°34'07"00	5°09'41"
max. Earth dist.	13819 Dec 21 03:53	13°32'23"27	40.90308 AU	min. Earth dist.	13826 Jul 05 13:06	22°31'23"13	37.28930 AU
				direct	13826 Sep 21 23:28	21°32'24"13	
conjunction	13819 Dec 23 05:45	13°32'26"52	2°26'31"	evening set	13826 Dec 18 01:01	22°35'13"34	
minimum elong	13819 Dec 23 05:41	13°32'26"52	2°27'33"	max. Earth dist.	13826 Dec 30 20:03	23°31'13"33	39.15784 AU
morning rise	13820 Jan 07 23:35	13°35'52"37					
retrograde	13820 Apr 04 11:50	15°31'54"45		conjunction	13827 Jan 02 02:05	23°31'17"28	5°05'24"
opposition	13820 Jun 24 16:30	14°30'08"12	2°45'51"	minimum elong	13827 Jan 02 01:56	23°31'17"27	5°06'24"
min. Earth dist.	13820 Jun 26 14:27	14°30'05"41	38.78028 AU	morning rise	13827 Jan 17 03:28	23°34'43"25	
direct	13820 Sep 13 12:18	13°30'00"27		retrograde	13827 Apr 15 17:11	25°31'12"43	
evening set	13820 Dec 08 05:21	14°32'22"13		opposition	13827 Jul 05 05:47	24°30'02"52	5°34'11"
max. Earth dist.	13820 Dec 21 18:13	14°34'44"26	40.65642 AU	min. Earth dist.	13827 Jul 07 07:13	24°30'00"03	37.03914 AU
				direct	13827 Sep 23 17:37	22°35'52"36	
conjunction	13820 Dec 23 20:52	14°34'47"56	2°48'44"	evening set	13827 Dec 19 23:21	24°32'21"03	
minimum elong	13820 Dec 23 20:47	14°34'47"56	2°49'47"	max. Earth dist.	13828 Jan 01 14:34	24°34'42"57	38.90584 AU
morning rise	13821 Jan 08 13:17	15°31'13"45					
retrograde	13821 Apr 06 03:22	16°33'37"38		conjunction	13828 Jan 03 20:53	24°34'46"55	5°28'37"
opposition	13821 Jun 26 06:46	15°32'29"44	3°09'23"	minimum elong	13828 Jan 03 20:45	24°34'46"55	5°29'37"
min. Earth dist.	13821 Jun 28 04:50	15°32'27"12	38.53342 AU	morning rise	13828 Jan 18 18:44	25°31'12"50	
direct	13821 Sep 15 03:04	14°32'21"38		retrograde	13828 Apr 16 12:52	26°34'43"12	
evening set	13821 Dec 09 22:47	15°34'44"11		opposition	13828 Jul 05 23:21	25°33'33"01	5°58'49"
max. Earth dist.	13821 Dec 23 08:50	16°30'06"23	40.40808 AU	min. Earth dist.	13828 Jul 08 00:38	25°33'30"11	36.78770 AU
				direct	13828 Sep 24 10:46	24°32'22"22	
conjunction	13821 Dec 25 12:35	16°30'09"59	3°11'09"	evening set	13828 Dec 20 22:29	25°35'51"58	
minimum elong	13821 Dec 25 12:30	16°30'09"59	3°12'11"	max. Earth dist.	13829 Jan 02 08:05	26°31'13"39	38.65206 AU
morning rise	13822 Jan 10 03:11	16°33'35"52					
retrograde	13822 Apr 07 18:55	18°30'00"32		conjunction	13829 Jan 04 16:07	26°31'17"47	5°51'54"
opposition	13822 Jun 27 21:31	16°35'52"18	3°33'06"	minimum elong	13829 Jan 04 15:57	26°31'17"46	5°52'53"
min. Earth dist.	13822 Jun 29 20:58	16°34'49"40	38.28535 AU	morning rise	13829 Jan 19 10:05	26°34'43"38	
direct	13822 Sep 16 16:17	15°34'43"50		retrograde	13829 Apr 18 08:42	28°31'55"06	
evening set	13822 Dec 11 16:51	17°30'07"14		opposition	13829 Jul 07 17:39	27°30'04"33	6°23'33"
max. Earth dist.	13822 Dec 25 01:18	17°32'29"28	40.15886 AU	min. Earth dist.	13829 Jul 09 20:40	27°30'01"37	36.53453 AU
				direct	13829 Sep 26 01:52	25°35'53"31	
conjunction	13822 Dec 27 04:46	17°33'33"05	3°33'43"	evening set	13829 Dec 22 22:33	27°32'24"17	
minimum elong	13822 Dec 27 04:40	17°33'33"05	3°34'45"	max. Earth dist.	13830 Jan 04 04:17	27°34'45"51	38.39655 AU
morning rise	13823 Jan 11 17:16	17°35'59"01					
retrograde	13823 Apr 09 11:43	19°32'24"30		conjunction	13830 Jan 06 12:10	27°35'50"00	6°15'17"
opposition	13823 Jun 29 12:36	18°31'55"57	3°57'00"	minimum elong	13830 Jan 06 12:01	27°34'49"59	6°16'16"
min. Earth dist.	13823 Jul 01 11:26	18°31'13"20	38.03664 AU	morning rise	13830 Jan 21 01:47	28°31'15"46	
direct	13823 Sep 18 06:10	17°30'07"06		retrograde	13830 Apr 20 05:07	29°34'48"23	
evening set	13823 Dec 13 11:47	18°33'31"25		opposition	13830 Jul 09 12:16	28°33'37"27	6°48'22"
max. Earth dist.	13823 Dec 26 16:16	18°35'53"33	39.90901 AU	min. Earth dist.	13830 Jul 11 15:05	28°33'34"30	36.27973 AU
				direct	13830 Sep 27 19:35	27°32'25"58	
conjunction	13823 Dec 28 21:16	18°35'57"18	3°56'27"	evening set	13830 Dec 24 23:43	28°35'57"59	
minimum elong	13823 Dec 28 21:10	18°35'57"17	3°57'29"	max. Earth dist.	13831 Jan 05 22:54	29°31'19"16	38.13950 AU
morning rise	13824 Jan 13 07:33	19°32'23"15					
retrograde	13824 Apr 10 07:50	20°34'49"38		conjunction	13831 Jan 08 08:40	29°32'23"35	6°38'43"
opposition	13824 Jun 30 04:10	19°34'40"44	4°21'05"	minimum elong	13831 Jan 08 08:29	29°32'23"34	6°39'41"
min. Earth dist.	13824 Jul 02 04:10	19°33'38"03	37.78767 AU	morning rise	13831 Jan 22 17:52	29°34'49"13	
direct	13824 Sep 18 17:51	18°33'31"32			13831 Jan 28 22:44	0°00'00"00	
evening set	13824 Dec 14 07:19	19°35'56"48		retrograde	13831 Apr 22 05:16	1°00'23"01	
max. Earth dist.	13824 Dec 27 10:01	20°31'18"59	39.65894 AU	opposition	13831 Jul 11 07:32	0°00'11"41	7°13'16"
				min. Earth dist.	13831 Jul 13 11:33	0°00'08"38	36.02376 AU
conjunction	13824 Dec 29 14:25	20°32'22"42	4°19'19"		13831 Jul 19 15:46	30°00'00"00	
minimum elong	13824 Dec 29 14:18	20°32'22"42	4°20'20"	direct	13831 Sep 29 11:35	28°35'59"45	
morning rise	13825 Jan 13 21:53	20°34'48"41			13831 Dec 07 11:12	0°00'00"00	
retrograde	13825 Apr 12 03:03	22°30'15"59		evening set	13831 Dec 27 01:36	0°00'33"02	
opposition	13825 Jul 01 20:16	21°30'06"46	4°45'19"	max. Earth dist.	13832 Jan 07 20:11	0°00'54"09	37.88131 AU
min. Earth dist.	13825 Jul 03 20:04	21°30'04"05	37.53857 AU				
direct	13825 Sep 20 08:50	19°35'57"13		conjunction	13832 Jan 10 05:48	0°00'58"30	7°02'11"

minimum elong	13832 Jan 10 05:37	0°58'29"	7°03'09"	max. Earth dist.	13839 Jan 19 15:53	12°39'29"	36.09855 AU
morning rise	13832 Jan 24 09:51	1°23'59"					
retrograde	13832 Apr 23 02:44	2°59'00"		conjunction	13839 Jan 22 02:38	12°44'12"	9°44'44"
opposition	13832 Jul 12 03:18	1°47'15"	7°38'12"	minimum elong	13839 Jan 22 02:25	12°44'11"	9°45'35"
min. Earth dist.	13832 Jul 14 07:39	1°44'10"	35.76706 AU	morning rise	13839 Feb 03 08:26	13°07'42"	
direct	13832 Sep 30 06:40	0°34'51"		retrograde	13839 May 06 09:11	14°53'07"	
evening set	13832 Dec 28 04:35	2°09'28"		opposition	13839 Jul 24 15:00	13°38'32"	10°30'58"
max. Earth dist.	13833 Jan 08 17:00	2°30'19"	37.62286 AU	min. Earth dist.	13839 Jul 26 19:58	13°35'15"	34.00500 AU
				direct	13839 Oct 12 08:22	12°23'02"	
conjunction	13833 Jan 11 03:22	2°34'45"	7°25'39"	evening set	13840 Jan 12 07:11	14°08'57"	
minimum elong	13833 Jan 11 03:11	2°34'44"	7°26'35"	max. Earth dist.	13840 Jan 21 17:52	14°27'13"	35.85135 AU
morning rise	13833 Jan 25 02:11	3°00'04"					
retrograde	13833 Apr 25 02:58	4°36'21"		conjunction	13840 Jan 24 05:00	14°32'01"	10°07'18"
opposition	13833 Jul 13 23:35	3°24'11"	8°03'08"	minimum elong	13840 Jan 24 04:45	14°32'00"	10°08'08"
min. Earth dist.	13833 Jul 16 03:57	3°21'04"	35.51062 AU	morning rise	13840 Feb 05 02:25	14°55'03"	
direct	13833 Oct 02 02:59	2°11'19"			13840 Feb 07 16:38	15°	
evening set	13833 Dec 30 08:20	3°47'19"		retrograde	13840 May 07 15:30	16°42'15"	
max. Earth dist.	13834 Jan 10 14:34	4°07'53"	37.36466 AU	opposition	13840 Jul 25 15:59	15°27'18"	10°54'58"
				min. Earth dist.	13840 Jul 27 20:46	15°24'01"	33.76098 AU
conjunction	13834 Jan 13 01:33	4°12'24"	7°49'06"		13840 Aug 13 08:17	15°	
minimum elong	13834 Jan 13 01:21	4°12'23"	7°50'02"	direct	13840 Oct 13 09:15	14°11'22"	
morning rise	13834 Jan 26 18:35	4°37'30"			13840 Dec 11 08:46	15°	
retrograde	13834 Apr 27 01:39	6°15'08"		evening set	13841 Jan 13 19:17	15°59'14"	
opposition	13834 Jul 15 20:37	5°02'31"	8°28'04"	max. Earth dist.	13841 Jan 22 20:38	16°16'55"	35.60532 AU
min. Earth dist.	13834 Jul 18 01:54	4°59'20"	35.25484 AU				
direct	13834 Oct 03 23:53	3°49'12"		conjunction	13841 Jan 25 08:18	16°21'48"	10°29'35"
evening set	13835 Jan 01 13:21	5°26'39"		minimum elong	13841 Jan 25 08:04	16°21'47"	10°30'24"
max. Earth dist.	13835 Jan 12 13:59	5°46'58"	37.10753 AU	morning rise	13841 Feb 05 20:46	16°44'20"	
				retrograde	13841 May 09 20:33	18°33'23"	
conjunction	13835 Jan 15 00:27	5°51'30"	8°12'29"	opposition	13841 Jul 27 17:52	17°18'02"	11°18'40"
minimum elong	13835 Jan 15 00:14	5°51'29"	8°13'23"	min. Earth dist.	13841 Jul 29 23:41	17°14'40"	33.51810 AU
morning rise	13835 Jan 28 11:17	6°16'20"		direct	13841 Oct 15 09:43	16°01'41"	
retrograde	13835 Apr 29 01:15	7°55'22"		evening set	13842 Jan 16 08:47	17°51'32"	
opposition	13835 Jul 17 17:59	6°42'20"	8°52'55"	max. Earth dist.	13842 Jan 25 00:58	18°08'37"	35.36054 AU
min. Earth dist.	13835 Jul 19 22:22	6°39'11"	35.00052 AU				
direct	13835 Oct 05 20:46	5°28'33"		conjunction	13842 Jan 27 12:20	18°13'32"	10°51'35"
evening set	13836 Jan 03 19:25	7°07'33"		minimum elong	13842 Jan 27 12:05	18°13'31"	10°52'22"
max. Earth dist.	13836 Jan 14 12:23	7°27'27"	36.85194 AU	morning rise	13842 Feb 07 15:18	18°35'31"	
				retrograde	13842 May 12 01:17	20°26'27"	
conjunction	13836 Jan 16 23:54	7°32'06"	8°35'47"	opposition	13842 Jul 29 20:24	19°10'44"	11°42'03"
minimum elong	13836 Jan 16 23:42	7°32'05"	8°36'41"	min. Earth dist.	13842 Aug 01 01:28	19°07'23"	33.27643 AU
morning rise	13836 Jan 30 04:15	7°56'40"		direct	13842 Oct 17 11:41	17°53'55"	
retrograde	13836 Apr 30 01:04	9°37'11"		evening set	13843 Jan 18 23:39	19°45'49"	
opposition	13836 Jul 18 16:17	8°23'45"	9°17'41"	max. Earth dist.	13843 Jan 27 04:37	20°02'09"	35.11691 AU
min. Earth dist.	13836 Jul 20 21:36	8°20'31"	34.74820 AU				
direct	13836 Oct 06 15:51	7°09'30"		conjunction	13843 Jan 29 17:13	20°07'12"	11°13'14"
evening set	13837 Jan 05 02:22	8°50'06"		minimum elong	13843 Jan 29 16:59	20°07'11"	11°13'59"
max. Earth dist.	13837 Jan 15 13:40	9°09'45"	36.59853 AU	morning rise	13843 Feb 09 10:17	20°28'34"	
				retrograde	13843 May 14 06:18	22°21'28"	
conjunction	13837 Jan 18 00:00	9°14'21"	8°58'57"	opposition	13843 Jul 31 23:42	21°05'20"	12°05'04"
minimum elong	13837 Jan 17 23:47	9°14'20"	8°59'49"	min. Earth dist.	13843 Aug 03 05:52	21°01'53"	33.03627 AU
morning rise	13837 Jan 30 21:10	9°38'35"		direct	13843 Oct 19 11:47	19°48'03"	
retrograde	13837 May 02 01:55	11°20'40"		evening set	13844 Jan 21 15:51	21°42'04"	
opposition	13837 Jul 20 15:11	10°06'50"	9°42'18"	max. Earth dist.	13844 Jan 29 11:21	21°57'45"	34.87508 AU
min. Earth dist.	13837 Jul 22 19:36	10°03'38"	34.49819 AU				
direct	13837 Oct 08 13:02	8°52'10"		conjunction	13844 Jan 31 22:54	22°02'47"	11°34'29"
evening set	13838 Jan 07 10:46	10°34'27"		minimum elong	13844 Jan 31 22:40	22°02'45"	11°35'13"
max. Earth dist.	13838 Jan 17 13:29	10°53'37"	36.34749 AU	morning rise	13844 Feb 11 05:14	22°23'27"	
				retrograde	13844 May 15 11:59	24°18'23"	
conjunction	13838 Jan 20 00:50	10°58'20"	9°21'57"	opposition	13844 Aug 02 03:46	23°01'49"	12°27'38"
minimum elong	13838 Jan 20 00:37	10°58'19"	9°22'49"	min. Earth dist.	13844 Aug 04 09:05	22°58'24"	32.79818 AU
morning rise	13838 Feb 01 14:43	11°22'14"		direct	13844 Oct 20 13:49	21°44'03"	
retrograde	13838 May 04 06:00	13°05'56"		evening set	13845 Jan 23 09:18	23°40'16"	
opposition	13838 Jul 22 14:40	11°51'44"	10°06'45"	max. Earth dist.	13845 Jan 30 16:36	23°55'05"	34.63567 AU
min. Earth dist.	13838 Jul 24 19:34	11°48'29"	34.25065 AU				
direct	13838 Oct 10 09:09	10°36'38"		conjunction	13845 Feb 02 05:04	24°00'13"	11°55'16"
evening set	13839 Jan 09 20:17	12°20'42"		minimum elong	13845 Feb 02 04:50	24°00'12"	11°55'58"

morning rise	13845 Feb 12 00:22	24° $\approx$ 20'10		opposition	13851 Aug 17 05:57	7° $\times$ 30'45	14°47'32
retrograde	13845 May 17 20:00	26° $\approx$ 17'12		min. Earth dist.	13851 Aug 19 07:24	7° $\times$ 27'26	31.24885 AU
opposition	13845 Aug 04 08:37	25° $\approx$ 00'11	12°49'43	direct	13851 Nov 04 08:41	6° $\times$ 09'49	
min. Earth dist.	13845 Aug 06 14:22	24° $\approx$ 56'43	32.56296 AU	evening set	13852 Feb 12 06:53	8° $\times$ 23'54	
direct	13845 Oct 22 15:36	23° $\approx$ 41'56		max. Earth dist.	13852 Feb 15 15:56	8° $\times$ 31'14	33.08565 AU
evening set	13846 Jan 26 04:13	25° $\approx$ 40'24					
max. Earth dist.	13846 Feb 02 00:55	25° $\approx$ 54'28	34.39934 AU	conjunction	13852 Feb 17 23:53	8° $\times$ 36'18	14°02'23
				minimum elong	13852 Feb 17 23:41	8° $\times$ 36'17	14°02'52
conjunction	13846 Feb 04 12:19	25° $\approx$ 59'33	12°15'33	morning rise	13852 Feb 23 16:27	8° $\times$ 48'39	
minimum elong	13846 Feb 04 12:05	25° $\approx$ 59'32	12°16'14	retrograde	13852 Jun 02 00:52	11° $\times$ 02'47	
morning rise	13846 Feb 13 19:42	26° $\approx$ 18'41		opposition	13852 Aug 18 16:31	9° $\times$ 43'00	15°04'02
retrograde	13846 May 20 03:36	28° $\approx$ 17'53		min. Earth dist.	13852 Aug 20 18:08	9° $\times$ 39'39	31.04946 AU
opposition	13846 Aug 06 14:07	27° $\approx$ 00'25	13°11'14	direct	13852 Nov 05 15:59	8° $\times$ 21'40	
min. Earth dist.	13846 Aug 08 19:28	26° $\approx$ 56'58	32.33118 AU	evening set	13853 Feb 14 14:08	10° $\times$ 38'47	
direct	13846 Oct 24 21:02	25° $\approx$ 41'41		max. Earth dist.	13853 Feb 17 06:46	10° $\times$ 44'41	32.88654 AU
evening set	13847 Jan 29 00:45	27° $\approx$ 42'30					
max. Earth dist.	13847 Feb 04 08:41	27° $\approx$ 55'37	34.16699 AU	conjunction	13853 Feb 19 12:45	10° $\times$ 49'36	14°17'06
				minimum elong	13853 Feb 19 12:36	10° $\times$ 49'36	14°17'32
conjunction	13847 Feb 06 20:13	28° $\approx$ 00'46	12°35'14	morning rise	13853 Feb 24 10:57	11° $\times$ 00'24	
minimum elong	13847 Feb 06 20:00	28° $\approx$ 00'45	12°35'53	retrograde	13853 Jun 04 13:59	13° $\times$ 17'25	
morning rise	13847 Feb 15 15:11	28° $\approx$ 18'59		opposition	13853 Aug 21 03:53	11° $\times$ 57'18	15°19'28
	13847 Apr 16 05:40	0° $\times$		min. Earth dist.	13853 Aug 23 04:20	11° $\times$ 54'01	30.85521 AU
retrograde	13847 May 22 14:12	0° $\times$ 20'27		direct	13853 Nov 08 01:49	10° $\times$ 35'35	
	13847 Jun 28 13:18	30° $\times$		evening set	13854 Feb 18 00:21	12° $\times$ 55'55	
opposition	13847 Aug 08 20:26	29° $\approx$ 02'32	13°32'06	max. Earth dist.	13854 Feb 19 20:07	12° $\times$ 59'57	32.69273 AU
min. Earth dist.	13847 Aug 11 00:59	28° $\approx$ 59'07	32.10379 AU				
direct	13847 Oct 27 02:32	27° $\approx$ 43'18		conjunction	13854 Feb 22 02:28	13° $\times$ 04'57	14°30'46
evening set	13848 Jan 31 22:28	29° $\approx$ 46'35		minimum elong	13854 Feb 22 02:19	13° $\times$ 04'56	14°31'12
max. Earth dist.	13848 Feb 06 18:11	29° $\approx$ 58'45	33.93920 AU	morning rise	13854 Feb 26 04:16	13° $\times$ 13'57	
	13848 Feb 07 08:33	0° $\times$		retrograde	13854 Jun 07 04:49	15° $\times$ 34'04	
conjunction	13848 Feb 09 04:53	0° $\times$ 03'52	12°54'16	opposition	13854 Aug 23 15:56	14° $\times$ 13'36	15°33'47
minimum elong	13848 Feb 09 04:39	0° $\times$ 03'51	12°54'54	min. Earth dist.	13854 Aug 25 16:06	14° $\times$ 10'19	30.66624 AU
morning rise	13848 Feb 17 10:38	0° $\times$ 21'07		direct	13854 Nov 10 11:28	12° $\times$ 51'30	
retrograde	13848 May 23 23:30	2° $\times$ 24'54		evening set	13855 Feb 21 15:09	15° $\times$ 15'23	
opposition	13848 Aug 10 03:42	1° $\times$ 06'35	13°52'14	max. Earth dist.	13855 Feb 22 12:26	15° $\times$ 17'21	32.50427 AU
min. Earth dist.	13848 Aug 12 08:12	1° $\times$ 03'08	31.88134 AU				
	13848 Sep 29 01:09	30° $\times$		conjunction	13855 Feb 24 17:11	15° $\times$ 22'15	14°43'21
direct	13848 Oct 28 08:25	29° $\approx$ 46'53		minimum elong	13855 Feb 24 17:04	15° $\times$ 22'14	14°43'43
	13848 Nov 26 08:14	0° $\times$		morning rise	13855 Feb 27 18:57	15° $\times$ 29'06	
evening set	13849 Feb 02 22:00	1° $\times$ 52'41		retrograde	13855 Jun 09 18:40	17° $\times$ 52'36	
max. Earth dist.	13849 Feb 08 04:45	2° $\times$ 03'50	33.71698 AU	opposition	13855 Aug 26 04:59	16° $\times$ 31'48	15°46'53
				min. Earth dist.	13855 Aug 28 04:28	16° $\times$ 28'33	30.48258 AU
conjunction	13849 Feb 10 14:20	2° $\times$ 08'55	13°12'34	direct	13855 Nov 13 00:10	15° $\times$ 09'19	
minimum elong	13849 Feb 10 14:08	2° $\times$ 08'54	13°13'09	evening set	13856 Feb 25 15:33	17° $\times$ 37'36	
morning rise	13849 Feb 18 06:07	2° $\times$ 25'06		max. Earth dist.	13856 Feb 25 03:50	17° $\times$ 36'30	32.32169 AU
retrograde	13849 May 26 12:05	4° $\times$ 31'18					
opposition	13849 Aug 12 11:34	3° $\times$ 12'35	14°11'34	conjunction	13856 Feb 27 08:16	17° $\times$ 41'25	14°54'46
min. Earth dist.	13849 Aug 14 14:26	3° $\times$ 09'13	31.66465 AU	minimum elong	13856 Feb 27 08:10	17° $\times$ 41'24	14°55'07
direct	13849 Oct 30 16:44	1° $\times$ 52'27		morning rise	13856 Feb 29 00:47	17° $\times$ 45'12	
evening set	13850 Feb 05 22:59	4° $\times$ 00'54		retrograde	13856 Jun 11 11:36	20° $\times$ 12'58	
max. Earth dist.	13850 Feb 10 15:13	4° $\times$ 10'51	33.50059 AU	opposition	13856 Aug 27 18:38	18° $\times$ 51'49	15°58'43
				min. Earth dist.	13856 Aug 29 16:45	18° $\times$ 48'39	30.30492 AU
conjunction	13850 Feb 13 00:39	4° $\times$ 15'58	13°30'03	direct	13856 Nov 14 13:26	17° $\times$ 28'57	
minimum elong	13850 Feb 13 00:26	4° $\times$ 15'57	13°30'37	max. Earth dist.	13857 Feb 26 21:19	19° $\times$ 57'33	32.14542 AU
morning rise	13850 Feb 20 01:46	4° $\times$ 30'59					
retrograde	13850 May 29 00:08	6° $\times$ 39'43		conjunction	13857 Mar 01 00:18	20° $\times$ 02'21	15°04'56
opposition	13850 Aug 14 20:28	5° $\times$ 20'37	14°30'01	minimum elong	13857 Mar 01 00:14	20° $\times$ 02'20	15°05'14
min. Earth dist.	13850 Aug 16 23:36	5° $\times$ 17'13	31.45385 AU	retrograde	13857 Jun 14 03:10	22° $\times$ 35'03	
direct	13850 Nov 01 23:34	4° $\times$ 00'05		opposition	13857 Aug 30 09:03	21° $\times$ 13'34	16°09'10
evening set	13851 Feb 09 02:02	6° $\times$ 11'17		min. Earth dist.	13857 Sep 01 06:53	21° $\times$ 10'24	30.13374 AU
max. Earth dist.	13851 Feb 13 04:13	6° $\times$ 20'05	33.29026 AU	direct	13857 Nov 17 02:43	19° $\times$ 50'20	
				max. Earth dist.	13858 Mar 01 15:14	22° $\times$ 20'15	31.97635 AU
conjunction	13851 Feb 15 11:53	6° $\times$ 25'05	13°46'41				
minimum elong	13851 Feb 15 11:43	6° $\times$ 25'04	13°47'12	conjunction	13858 Mar 03 16:53	22° $\times$ 24'58	15°13'47
morning rise	13851 Feb 21 21:13	6° $\times$ 38'49		minimum elong	13858 Mar 03 16:50	22° $\times$ 24'57	15°14'03
retrograde	13851 May 31 11:48	8° $\times$ 50'12		retrograde	13858 Jun 16 21:51	24° $\times$ 58'46	
				opposition	13858 Sep 02 00:02	23° $\times$ 36'57	16°18'11

min. Earth dist.	13858 Sep 03 19:50	23° $\text{H}$ 33'55	29.96984 AU	min. Earth dist.	13866 Sep 23 04:47	13° $\text{Y}$ 32'33	28.99351 AU
direct	13858 Nov 19 18:56	22° $\text{H}$ 13'22		direct	13866 Dec 09 11:10	12° $\text{Y}$ 09'28	
max. Earth dist.	13859 Mar 04 09:40	24° $\text{H}$ 44'33	31.81495 AU				
conjunction	13859 Mar 06 10:07	24° $\text{H}$ 49'11	15°21'14	conjunction	13867 Mar 26 22:23	14° $\text{Y}$ 52'11	15°23'00
minimum elong	13859 Mar 06 10:06	24° $\text{H}$ 49'10	15°21'26	minimum elong	13867 Mar 26 22:37	14° $\text{Y}$ 52'12	15°22'50
retrograde	13859 Jun 19 14:50	27° $\text{H}$ 24'01		max. Earth dist.	13867 Mar 25 14:09	14° $\text{Y}$ 48'58	30.87648 AU
opposition	13859 Sep 04 15:48	26° $\text{H}$ 01'54	16°25'40	retrograde	13867 Jul 10 01:52	17° $\text{Y}$ 32'49	
min. Earth dist.	13859 Sep 06 11:13	25° $\text{H}$ 58'52	29.81393 AU	opposition	13867 Sep 24 17:56	16° $\text{Y}$ 09'24	16°22'21
direct	13859 Nov 22 09:51	24° $\text{H}$ 37'58		min. Earth dist.	13867 Sep 25 22:03	16° $\text{Y}$ 07'25	28.91505 AU
max. Earth dist.	13860 Mar 06 05:51	27° $\text{H}$ 10'28	31.66237 AU	direct	13867 Dec 12 08:17	14° $\text{Y}$ 44'01	
conjunction	13860 Mar 08 03:55	27° $\text{H}$ 14'54	15°27'13	conjunction	13868 Mar 28 19:43	17° $\text{Y}$ 27'10	15°15'31
minimum elong	13860 Mar 08 03:55	27° $\text{H}$ 14'54	15°27'23	minimum elong	13868 Mar 28 19:59	17° $\text{Y}$ 27'12	15°15'19
retrograde	13860 Jun 21 09:23	29° $\text{H}$ 50'42		max. Earth dist.	13868 Mar 27 14:07	17° $\text{Y}$ 24'13	30.80387 AU
opposition	13860 Sep 06 08:07	28° $\text{H}$ 28'19	16°31'31	retrograde	13868 Jul 11 21:05	20° $\text{Y}$ 08'07	
min. Earth dist.	13860 Sep 08 00:53	28° $\text{H}$ 25'28	29.66695 AU	opposition	13868 Sep 26 14:12	18° $\text{Y}$ 44'37	16°13'35
direct	13860 Nov 24 02:56	27° $\text{H}$ 04'05		min. Earth dist.	13868 Sep 27 17:24	18° $\text{Y}$ 42'41	28.84606 AU
max. Earth dist.	13861 Mar 09 01:11	29° $\text{H}$ 37'44	31.51928 AU	direct	13868 Dec 14 03:45	17° $\text{Y}$ 19'09	
conjunction	13861 Mar 10 22:07	29° $\text{H}$ 42'04	15°31'38	conjunction	13869 Mar 31 17:00	20° $\text{Y}$ 02'35	15°06'16
minimum elong	13861 Mar 10 22:10	29° $\text{H}$ 42'05	15°31'45	minimum elong	13869 Mar 31 17:17	20° $\text{Y}$ 02'37	15°06'00
retrograde	13861 Mar 18 15:53	0° $\text{Y}$		max. Earth dist.	13869 Mar 30 13:19	19° $\text{Y}$ 59'49	30.74128 AU
opposition	13861 Jun 24 04:39	2° $\text{Y}$ 18'48		retrograde	13869 Jul 14 18:13	22° $\text{Y}$ 43'43	
min. Earth dist.	13861 Sep 09 01:11	0° $\text{Y}$ 56'10	16°35'40	opposition	13869 Sep 29 10:30	21° $\text{Y}$ 20'09	16°02'56
direct	13861 Sep 10 16:57	0° $\text{Y}$ 53'22	29.52964 AU	min. Earth dist.	13869 Sep 30 10:43	21° $\text{Y}$ 18'26	28.78681 AU
max. Earth dist.	13861 Oct 15 11:18	30° $\text{R}$ $\text{H}$		direct	13869 Dec 17 02:25	19° $\text{Y}$ 54'36	
conjunction	13861 Nov 26 18:11	29° $\text{H}$ 31'40		evening set	13870 Apr 01 22:00	22° $\text{Y}$ 34'11	
minimum elong	13862 Jan 07 00:19	0° $\text{Y}$		conjunction	13870 Apr 03 14:32	22° $\text{Y}$ 38'13	14°55'17
retrograde	13862 Mar 11 23:17	2° $\text{Y}$ 06'35	31.38645 AU	minimum elong	13870 Apr 03 14:51	22° $\text{Y}$ 38'15	14°54'59
opposition	13862 Mar 13 17:08	2° $\text{Y}$ 10'39	15°34'27	max. Earth dist.	13870 Apr 02 13:04	22° $\text{Y}$ 35'41	30.68872 AU
min. Earth dist.	13862 Mar 13 17:12	2° $\text{Y}$ 10'40	15°34'32	morning rise	13870 Apr 05 07:42	22° $\text{Y}$ 42'20	
direct	13862 Jun 26 23:27	4° $\text{Y}$ 48'14		retrograde	13870 Jul 17 13:42	25° $\text{Y}$ 19'26	
max. Earth dist.	13862 Sep 11 18:39	3° $\text{Y}$ 25'24	16°38'04	opposition	13870 Oct 02 07:00	23° $\text{Y}$ 55'48	15°50'24
conjunction	13862 Sep 13 07:56	3° $\text{Y}$ 22'46	29.40239 AU	min. Earth dist.	13870 Oct 03 06:11	23° $\text{Y}$ 54'09	28.73765 AU
minimum elong	13862 Nov 29 11:27	2° $\text{Y}$ 00'41		direct	13870 Dec 19 23:44	22° $\text{Y}$ 30'11	
retrograde	13863 Mar 14 19:46	4° $\text{Y}$ 36'37	31.26414 AU	evening set	13871 Apr 03 07:43	25° $\text{Y}$ 06'17	
opposition	13863 Mar 16 12:31	4° $\text{Y}$ 40'36	15°35'36	conjunction	13871 Apr 06 11:57	25° $\text{Y}$ 13'53	14°42'34
min. Earth dist.	13863 Mar 16 12:37	4° $\text{Y}$ 40'36	15°35'37	minimum elong	13871 Apr 06 12:17	25° $\text{Y}$ 13'55	14°42'12
direct	13863 Jun 29 18:32	7° $\text{Y}$ 18'58		max. Earth dist.	13871 Apr 05 13:09	25° $\text{Y}$ 11'37	30.64689 AU
max. Earth dist.	13863 Sep 14 12:49	5° $\text{Y}$ 55'59	16°38'38	morning rise	13871 Apr 09 16:47	25° $\text{Y}$ 21'34	
conjunction	13863 Sep 16 00:37	5° $\text{Y}$ 53'27	29.28550 AU	retrograde	13871 Jul 20 10:27	27° $\text{Y}$ 55'04	
minimum elong	13863 Dec 02 04:05	4° $\text{Y}$ 31'06		opposition	13871 Oct 05 03:31	26° $\text{Y}$ 31'24	15°35'59
retrograde	13864 Mar 16 18:57	7° $\text{Y}$ 08'11	31.15230 AU	min. Earth dist.	13871 Oct 05 23:29	26° $\text{Y}$ 29'59	28.69909 AU
opposition	13864 Mar 18 08:20	7° $\text{Y}$ 11'51	15°35'02	direct	13871 Dec 22 22:51	25° $\text{Y}$ 05'45	
min. Earth dist.	13864 Mar 18 08:29	7° $\text{Y}$ 11'52	15°35'02	evening set	13872 Apr 04 02:45	27° $\text{Y}$ 39'12	
direct	13864 Jul 01 13:25	9° $\text{Y}$ 50'56		conjunction	13872 Apr 08 09:04	27° $\text{Y}$ 49'24	14°28'06
max. Earth dist.	13864 Sep 16 07:30	8° $\text{Y}$ 27'50	16°37'22	minimum elong	13872 Apr 08 09:26	27° $\text{Y}$ 49'27	14°27'43
conjunction	13864 Sep 17 17:25	8° $\text{Y}$ 25'26	29.17854 AU	max. Earth dist.	13872 Apr 07 12:25	27° $\text{Y}$ 47'21	30.61612 AU
minimum elong	13864 Dec 03 22:17	7° $\text{Y}$ 02'48		morning rise	13872 Apr 12 16:00	27° $\text{Y}$ 59'41	
retrograde	13865 Mar 19 16:12	9° $\text{Y}$ 40'44	31.05062 AU		13872 Jun 10 14:55	0° $\text{B}$	
opposition	13865 Mar 21 04:36	9° $\text{Y}$ 44'19	15°32'46	retrograde	13872 Jul 22 06:37	0° $\text{B}$ 30'28	
min. Earth dist.	13865 Mar 21 04:45	9° $\text{Y}$ 44'20	15°32'41		13872 Sep 03 05:25	30° $\text{R}$ $\text{Y}$	
direct	13865 Jul 04 10:30	12° $\text{Y}$ 24'02		opposition	13872 Oct 07 00:10	29° $\text{Y}$ 06'47	15°19'42
max. Earth dist.	13865 Sep 19 02:28	11° $\text{Y}$ 00'48	16°34'14	min. Earth dist.	13872 Oct 07 18:31	29° $\text{Y}$ 05'28	28.67184 AU
conjunction	13865 Sep 20 10:23	10° $\text{Y}$ 58'33	29.08139 AU	direct	13872 Dec 24 19:37	27° $\text{Y}$ 41'08	
minimum elong	13865 Dec 06 15:41	9° $\text{Y}$ 35'39			13873 Mar 31 22:27	0° $\text{B}$	
retrograde	13866 Mar 22 15:56	12° $\text{Y}$ 14'30	30.95871 AU	evening set	13873 Apr 06 01:30	0° $\text{B}$ 12'12	
opposition	13866 Mar 24 01:27	12° $\text{Y}$ 17'49	15°28'45	conjunction	13873 Apr 11 06:13	0° $\text{B}$ 24'38	14°11'57
min. Earth dist.	13866 Mar 24 01:40	12° $\text{Y}$ 17'51	15°28'39	minimum elong	13873 Apr 11 06:35	0° $\text{B}$ 24'40	14°11'30
direct	13866 Jul 07 04:43	14° $\text{Y}$ 58'03		max. Earth dist.	13873 Apr 10 13:06	0° $\text{B}$ 22'56	30.59722 AU
max. Earth dist.	13866 Sep 21 22:06	13° $\text{Y}$ 34'44	16°29'14	morning rise	13873 Apr 16 11:26	0° $\text{B}$ 37'08	
conjunction				retrograde	13873 Jul 25 02:48	3° $\text{B}$ 05'28	
minimum elong				opposition	13873 Oct 09 20:30	1° $\text{B}$ 41'49	15°01'35

min. Earth dist.	13873 Oct 10 11:48	1° <del>8</del> 40'43	28.65636 AU	conjunction	13880 Apr 29 02:23	18° <del>8</del> 16'52	11°35'20
direct	13873 Dec 27 18:46	0° <del>8</del> 16'12		minimum elong	13880 Apr 29 02:50	18° <del>8</del> 16'55	11°34'37
evening set	13874 Apr 08 02:05	2° <del>8</del> 45'02		max. Earth dist.	13880 Apr 29 03:18	18° <del>8</del> 16'58	30.80156 AU
max. Earth dist.	13874 Apr 13 11:58	2° <del>8</del> 57'58	30.59058 AU	morning rise	13880 May 09 05:14	18° <del>8</del> 40'38	
				retrograde	13880 Aug 11 11:00	20° <del>8</del> 54'07	
conjunction	13874 Apr 14 03:07	2° <del>8</del> 59'29	13°54'06	opposition	13880 Oct 27 14:56	19° <del>8</del> 31'41	12°08'43
minimum elong	13874 Apr 14 03:32	2° <del>8</del> 59'32	13°53'37	min. Earth dist.	13880 Oct 27 12:49	19° <del>8</del> 31'50	28.87791 AU
morning rise	13874 Apr 20 04:43	3° <del>8</del> 13'59		direct	13881 Jan 14 18:53	18° <del>8</del> 07'25	
retrograde	13874 Jul 27 22:15	5° <del>8</del> 40'01		evening set	13881 Apr 21 04:47	20° <del>8</del> 21'49	
opposition	13874 Oct 12 16:58	4° <del>8</del> 16'27	14°41'39				
min. Earth dist.	13874 Oct 13 05:52	4° <del>8</del> 15'32	28.65328 AU	conjunction	13881 May 01 20:55	20° <del>8</del> 46'46	11°07'44
direct	13874 Dec 30 15:23	2° <del>8</del> 50'55		minimum elong	13881 May 01 21:20	20° <del>8</del> 46'48	11°07'00
evening set	13875 Apr 10 03:54	5° <del>8</del> 17'36		max. Earth dist.	13881 May 02 00:30	20° <del>8</del> 47'07	30.87353 AU
				morning rise	13881 May 12 12:54	21° <del>8</del> 11'42	
conjunction	13875 Apr 16 23:49	5° <del>8</del> 33'54	13°34'37	retrograde	13881 Aug 14 02:28	23° <del>8</del> 23'11	
minimum elong	13875 Apr 17 00:13	5° <del>8</del> 33'56	13°34'05	opposition	13881 Oct 30 09:22	22° <del>8</del> 00'59	11°38'34
max. Earth dist.	13875 Apr 16 12:37	5° <del>8</del> 32'47	30.59659 AU	min. Earth dist.	13881 Oct 30 06:06	22° <del>8</del> 01'12	28.95126 AU
morning rise	13875 Apr 23 20:05	5° <del>8</del> 50'14		direct	13882 Jan 17 14:56	20° <del>8</del> 36'57	
retrograde	13875 Jul 30 17:07	8° <del>8</del> 14'04		evening set	13882 Apr 23 10:24	22° <del>8</del> 49'23	
opposition	13875 Oct 15 13:16	6° <del>8</del> 50'37	14°20'00				
min. Earth dist.	13875 Oct 15 23:28	6° <del>8</del> 49'54	28.66247 AU	conjunction	13882 May 04 14:52	23° <del>8</del> 15'23	10°39'06
direct	13876 Jan 02 13:25	5° <del>8</del> 25'15		minimum elong	13882 May 04 15:18	23° <del>8</del> 15'26	10°38'20
evening set	13876 Apr 11 06:37	7° <del>8</del> 49'49		max. Earth dist.	13882 May 04 20:28	23° <del>8</del> 15'56	30.95507 AU
				morning rise	13882 May 15 19:07	23° <del>8</del> 41'24	
conjunction	13876 Apr 18 20:08	8° <del>8</del> 07'50	13°13'34	retrograde	13882 Aug 16 18:46	25° <del>8</del> 50'54	
minimum elong	13876 Apr 18 20:35	8° <del>8</del> 07'52	13°13'00	opposition	13882 Nov 02 03:19	24° <del>8</del> 28'56	11°07'21
max. Earth dist.	13876 Apr 18 10:42	8° <del>8</del> 06'53	30.61505 AU	min. Earth dist.	13882 Nov 01 21:05	24° <del>8</del> 29'22	29.03396 AU
morning rise	13876 Apr 26 10:08	8° <del>8</del> 25'53		direct	13883 Jan 20 11:58	23° <del>8</del> 05'09	
retrograde	13876 Aug 01 13:19	10° <del>8</del> 47'34		evening set	13883 Apr 25 15:53	25° <del>8</del> 15'37	
opposition	13876 Oct 17 09:15	9° <del>8</del> 24'17	13°56'40				
min. Earth dist.	13876 Oct 17 16:32	9° <del>8</del> 23'46	28.68389 AU	conjunction	13883 May 07 08:02	25° <del>8</del> 42'37	10°09'32
direct	13877 Jan 04 09:17	7° <del>8</del> 59'06		minimum elong	13883 May 07 08:26	25° <del>8</del> 42'39	10°08'44
evening set	13877 Apr 13 10:02	10° <del>8</del> 21'36		max. Earth dist.	13883 May 07 15:47	25° <del>8</del> 43'22	31.04586 AU
				morning rise	13883 May 18 23:54	26° <del>8</del> 09'36	
conjunction	13877 Apr 21 16:20	10° <del>8</del> 41'13	12°51'01	retrograde	13883 Aug 19 10:02	28° <del>8</del> 17'11	
minimum elong	13877 Apr 21 16:46	10° <del>8</del> 41'15	12°50'24	opposition	13883 Nov 04 20:49	26° <del>8</del> 55'25	10°35'10
max. Earth dist.	13877 Apr 21 10:39	10° <del>8</del> 40'39	30.64545 AU	min. Earth dist.	13883 Nov 04 13:01	26° <del>8</del> 55'57	29.12619 AU
morning rise	13877 Apr 29 22:49	11° <del>8</del> 00'51		direct	13884 Jan 23 06:17	25° <del>8</del> 31'53	
retrograde	13877 Aug 04 06:19	13° <del>8</del> 20'27		evening set	13884 Apr 26 21:34	27° <del>8</del> 40'24	
opposition	13877 Oct 20 05:10	11° <del>8</del> 57'22	13°31'47				
min. Earth dist.	13877 Oct 20 10:42	11° <del>8</del> 56'59	28.71663 AU	conjunction	13884 May 09 00:40	28° <del>8</del> 08'18	9°39'05
direct	13878 Jan 07 05:59	10° <del>8</del> 32'24		minimum elong	13884 May 09 01:04	28° <del>8</del> 08'20	9°38'15
evening set	13878 Apr 15 14:11	12° <del>8</del> 52'51		max. Earth dist.	13884 May 09 11:14	28° <del>8</del> 09'19	31.14625 AU
				morning rise	13884 May 21 03:12	28° <del>8</del> 36'09	
conjunction	13878 Apr 24 12:05	13° <del>8</del> 13'57	12°27'04		13884 Jul 01 23:34	0° <del>II</del>	
minimum elong	13878 Apr 24 12:32	13° <del>8</del> 13'59	12°26'25	retrograde	13884 Aug 21 01:19	0° <del>II</del> 41'50	
max. Earth dist.	13878 Apr 24 07:56	13° <del>8</del> 13'32	30.68705 AU		13884 Oct 12 08:15	30° <del>R</del> <del>8</del>	
morning rise	13878 May 03 10:17	13° <del>8</del> 35'04		opposition	13884 Nov 06 13:32	29° <del>8</del> 20'18	10°02'07
	13878 Jun 12 07:12	15° <del>8</del>		min. Earth dist.	13884 Nov 06 03:10	29° <del>8</del> 21'01	29.22801 AU
retrograde	13878 Aug 07 00:49	15° <del>8</del> 52'35		direct	13885 Jan 25 03:33	27° <del>8</del> 57'01	
	13878 Oct 04 14:41	15° <del>R</del> <del>8</del>			13885 Apr 27 12:29	0° <del>II</del>	
opposition	13878 Oct 23 00:39	14° <del>8</del> 29'43	13°05'25	evening set	13885 Apr 29 03:18	0° <del>II</del> 03'39	
min. Earth dist.	13878 Oct 23 03:05	14° <del>8</del> 29'33	28.76025 AU				
direct	13879 Jan 10 02:51	13° <del>8</del> 04'58		conjunction	13885 May 11 16:29	0° <del>II</del> 32'20	9°07'52
	13879 Apr 07 15:28	15° <del>8</del>		minimum elong	13885 May 11 16:51	0° <del>II</del> 32'22	9°07'01
evening set	13879 Apr 17 18:41	15° <del>8</del> 23'24		max. Earth dist.	13885 May 12 04:47	0° <del>II</del> 33'31	31.25628 AU
				morning rise	13885 May 24 05:14	1° <del>II</del> 00'59	
conjunction	13879 Apr 27 07:35	15° <del>8</del> 45'53	12°01'49	retrograde	13885 Aug 23 15:42	3° <del>II</del> 04'49	
minimum elong	13879 Apr 27 08:01	15° <del>8</del> 45'56	12°01'08	opposition	13885 Nov 09 05:47	1° <del>II</del> 43'31	9°28'16
max. Earth dist.	13879 Apr 27 06:48	15° <del>8</del> 45'48	30.73920 AU	min. Earth dist.	13885 Nov 08 16:58	1° <del>II</del> 44'23	29.33993 AU
morning rise	13879 May 06 20:29	16° <del>8</del> 08'23		direct	13886 Jan 27 21:38	0° <del>II</del> 20'29	
retrograde	13879 Aug 09 17:34	18° <del>8</del> 23'52		evening set	13886 May 01 09:00	2° <del>II</del> 25'17	
opposition	13879 Oct 25 20:05	17° <del>8</del> 01'13	12°37'42				
min. Earth dist.	13879 Oct 25 21:13	17° <del>8</del> 01'08	28.81414 AU	conjunction	13886 May 14 07:42	2° <del>II</del> 54'41	8°35'58
direct	13880 Jan 12 22:02	15° <del>8</del> 36'42		minimum elong	13886 May 14 08:04	2° <del>II</del> 54'43	8°35'04
evening set	13880 Apr 18 23:35	17° <del>8</del> 53'07		max. Earth dist.	13886 May 14 23:24	2° <del>II</del> 56'10	31.37642 AU
				morning rise	13886 May 27 05:34	3° <del>II</del> 24'01	

retrograde	13886 Aug 26 03:54	5°II26'04		minimum elong	13893 May 29 22:27	18°II45'00	4°39'52
opposition	13886 Nov 11 21:26	4°II05'02	8°53'44	max. Earth dist.	13893 May 31 04:12	18°II47'42	32.47600 AU
min. Earth dist.	13886 Nov 11 06:29	4°II06'03	29.46205 AU	morning rise	13893 Jun 13 17:55	19°II17'03	
direct	13887 Jan 30 16:14	2°II42'19		retrograde	13893 Sep 10 04:48	21°II08'26	
evening set	13887 May 03 14:52	4°II45'19		min. Earth dist.	13893 Nov 26 11:47	19°II51'41	30.57298 AU
				opposition	13893 Nov 27 17:06	19°II49'46	4°41'08
conjunction	13887 May 16 22:05	5°II15'20	8°03'27	direct	13894 Feb 15 23:21	18°II29'38	
minimum elong	13887 May 16 22:25	5°II15'22	8°02'33	evening set	13894 May 17 07:04	20°II21'51	
max. Earth dist.	13887 May 17 15:13	5°II16'57	31.50684 AU				
morning rise	13887 May 30 04:43	5°II45'18		conjunction	13894 Jun 01 07:49	20°II54'08	4°06'41
retrograde	13887 Aug 28 17:52	7°II45'37		minimum elong	13894 Jun 01 07:59	20°II54'09	4°05'39
opposition	13887 Nov 14 12:26	6°II24'52	8°18'36	max. Earth dist.	13894 Jun 02 14:51	20°II56'56	32.66146 AU
min. Earth dist.	13887 Nov 13 18:20	6°II26'06	29.59472 AU	morning rise	13894 Jun 16 07:29	21°II26'19	
direct	13888 Feb 02 09:04	5°II02'29		retrograde	13894 Sep 12 13:35	23°II16'25	
evening set	13888 May 04 20:24	7°II03'46		min. Earth dist.	13894 Nov 28 20:39	22°II00'05	30.75970 AU
				opposition	13894 Nov 30 03:40	21°II58'05	4°04'38
conjunction	13888 May 18 11:48	7°II34'20	7°30'25	direct	13895 Feb 18 10:50	20°II38'18	
minimum elong	13888 May 18 12:08	7°II34'21	7°29'29	evening set	13895 May 19 12:33	22°II29'12	
max. Earth dist.	13888 May 19 08:30	7°II36'16	31.64742 AU				
morning rise	13888 Jun 01 02:11	8°II04'50		conjunction	13895 Jun 03 16:49	23°II01'32	3°32'33
retrograde	13888 Aug 30 04:26	10°II03'30		minimum elong	13895 Jun 03 16:58	23°II01'33	3°31'31
min. Earth dist.	13888 Nov 15 07:21	8°II44'24	29.73729 AU	max. Earth dist.	13895 Jun 05 02:04	23°II04'31	32.85241 AU
opposition	13888 Nov 16 02:52	8°II43'05	7°42'59	morning rise	13895 Jun 18 19:39	23°II33'47	
direct	13889 Feb 04 01:21	7°II21'03		retrograde	13895 Sep 14 20:11	25°II22'39	
evening set	13889 May 07 02:17	9°II20'40		min. Earth dist.	13895 Dec 01 05:26	24°II06'42	30.95181 AU
				opposition	13895 Dec 02 13:31	24°II04'38	3°28'16
conjunction	13889 May 21 00:49	9°II51'42	6°56'59	direct	13896 Feb 21 00:06	22°II45'13	
minimum elong	13889 May 21 01:06	9°II51'44	6°56'02	evening set	13896 May 20 17:54	24°II34'50	
max. Earth dist.	13889 May 21 22:46	9°II53'45	31.79749 AU				
morning rise	13889 Jun 03 22:32	10°II22'40		conjunction	13896 Jun 05 00:49	25°II07'10	2°58'33
retrograde	13889 Sep 01 15:28	12°II19'45		minimum elong	13896 Jun 05 00:56	25°II07'11	2°57'30
opposition	13889 Nov 18 16:25	10°II59'41	7°06'59	max. Earth dist.	13896 Jun 06 10:31	25°II10'10	33.04853 AU
min. Earth dist.	13889 Nov 17 17:44	11°II01'12	29.88915 AU	morning rise	13896 Jun 20 06:36	25°II39'24	
direct	13890 Feb 06 16:40	9°II38'01		retrograde	13896 Sep 16 03:58	27°II27'05	
evening set	13890 May 09 08:04	11°II36'03		opposition	13896 Dec 03 22:34	26°II09'23	2°52'06
				min. Earth dist.	13896 Dec 02 12:14	26°II11'35	31.14945 AU
conjunction	13890 May 23 13:16	12°II07'28	6°23'13	direct	13897 Feb 22 11:47	24°II50'19	
minimum elong	13890 May 23 13:33	12°II07'30	6°22'14	evening set	13897 May 22 23:00	26°II38'43	
max. Earth dist.	13890 May 24 14:14	12°II09'47	31.95614 AU				
morning rise	13890 Jun 06 17:23	12°II38'49		conjunction	13897 Jun 07 08:17	27°II11'00	2°24'45
retrograde	13890 Sep 04 00:35	14°II34'23		minimum elong	13897 Jun 07 08:22	27°II11'01	2°23'42
min. Earth dist.	13890 Nov 20 05:58	13°II16'14	30.04944 AU	max. Earth dist.	13897 Jun 08 20:35	27°II14'12	33.24996 AU
opposition	13890 Nov 21 05:39	13°II14'40	6°30'42	morning rise	13897 Jun 22 16:05	27°II43'11	
direct	13891 Feb 09 06:20	11°II53'24		retrograde	13897 Sep 18 08:18	29°II29'44	
evening set	13891 May 11 13:47	13°II49'53		min. Earth dist.	13897 Dec 04 20:01	28°II14'34	31.35271 AU
				opposition	13897 Dec 06 06:56	28°II12'20	2°16'10
conjunction	13891 May 26 00:49	14°II21'37	5°49'13	direct	13898 Feb 24 22:57	26°II53'37	
minimum elong	13891 May 26 01:03	14°II21'38	5°48'14	evening set	13898 May 25 04:02	28°II40'51	
max. Earth dist.	13891 May 27 03:05	14°II24'02	32.12267 AU				
morning rise	13891 Jun 09 10:48	14°II53'16		conjunction	13898 Jun 09 14:49	29°II13'02	1°51'10
retrograde	13891 Sep 06 10:47	16°II47'24		minimum elong	13898 Jun 09 14:53	29°II13'02	1°50'06
opposition	13891 Nov 23 18:07	15°II28'02	5°54'15	max. Earth dist.	13898 Jun 11 03:50	29°II16'16	33.45709 AU
min. Earth dist.	13891 Nov 22 15:41	15°II29'47	30.21729 AU	morning rise	13898 Jun 25 00:24	29°II45'07	
direct	13892 Feb 11 20:15	14°II07'08			13898 Jul 02 09:52	0°☾	
evening set	13892 May 12 19:35	16°II02'09		retrograde	13898 Sep 20 12:21	1°☾30'35	
				min. Earth dist.	13898 Dec 07 00:51	0°☾15'55	31.56210 AU
conjunction	13892 May 27 11:51	16°II34'08	5°15'05	opposition	13898 Dec 08 14:37	0°☾13'31	1°40'33
minimum elong	13892 May 27 12:04	16°II34'09	5°14'05		13898 Dec 17 12:58	30°☾II	
max. Earth dist.	13892 May 28 16:09	16°II36'43	32.29612 AU	direct	13899 Feb 27 08:32	28°II55'09	
morning rise	13892 Jun 11 03:01	17°II06'02			13899 May 05 18:56	0°☾	
retrograde	13892 Sep 07 19:44	18°II58'46		evening set	13899 May 27 08:38	0°☾41'17	
min. Earth dist.	13892 Nov 24 02:30	17°II41'32	30.39209 AU				
opposition	13892 Nov 25 05:56	17°II39'45	5°17'41	conjunction	13899 Jun 11 20:36	1°☾13'19	1°17'53
direct	13893 Feb 13 08:59	16°II19'14		minimum elong	13899 Jun 11 20:39	1°☾13'19	1°16'50
evening set	13893 May 15 01:20	18°II12'49		max. Earth dist.	13899 Jun 13 12:14	1°☾16'46	33.67020 AU
				morning rise	13899 Jun 27 07:13	1°☾45'15	
conjunction	13893 May 29 22:16	18°II44'59	4°40'53	retrograde	13899 Sep 22 15:00	3°☾29'44	

min. Earth dist.	13899 Dec 09 07:05	2°☾15'26	31.77782 AU	conjunction	13906 Jun 25 19:49	14°☾32'12	-2°23'41
opposition	13899 Dec 10 21:46	2°☾13'00	1°05'17	minimum elong	13906 Jun 25 19:44	14°☾32'12	2°24'44
direct	13900 Mar 01 16:03	0°☾55'00		max. Earth dist.	13906 Jun 27 19:54	14°☾36'10	35.29641 AU
evening set	13900 May 29 13:12	2°☾40'06		morning rise	13906 Jul 11 01:23	15°☾02'07	
				retrograde	13906 Oct 06 07:14	16°☾41'05	
conjunction	13900 Jun 14 01:48	3°☾11'57	0°44'55	min. Earth dist.	13906 Dec 23 06:27	15°☾29'41	33.41830 AU
minimum elong	13900 Jun 14 01:49	3°☾11'57	0°43'51	opposition	13906 Dec 25 05:26	15°☾26'50	-2°48'01
max. Earth dist.	13900 Jun 15 18:31	3°☾15'28	33.88945 AU	direct	13907 Mar 16 10:22	14°☾11'34	
morning rise	13900 Jun 29 13:04	3°☾43'42		evening set	13907 Jun 12 16:17	15°☾50'51	
retrograde	13900 Sep 24 18:24	5°☾27'14					
min. Earth dist.	13900 Dec 11 10:57	4°☾13'26	31.99953 AU	conjunction	13907 Jun 27 20:41	16°☾20'26	-2°53'19
opposition	13900 Dec 13 03:54	4°☾10'52	0°30'26	minimum elong	13907 Jun 27 20:35	16°☾20'26	2°54'21
direct	13901 Mar 03 23:00	2°☾53'15		max. Earth dist.	13907 Jun 29 20:47	16°☾24'23	35.53956 AU
evening set	13901 May 31 17:39	4°☾37'23		morning rise	13907 Jul 12 23:57	16°☾49'57	
				retrograde	13907 Oct 08 05:30	18°☾28'17	
conjunction	13901 Jun 16 06:20	5°☾09'00	0°12'22	min. Earth dist.	13907 Dec 25 07:03	17°☾17'17	33.66286 AU
minimum elong	13901 Jun 16 06:20	5°☾09'00	0°11'19	opposition	13907 Dec 27 07:35	17°☾14'22	-3°19'03
behind sun begin	13901 Jun 16 01:36	5°☾08'37		direct	13908 Mar 17 14:34	15°☾59'25	
behind sun end	13901 Jun 16 11:04	5°☾09'23		evening set	13908 Jun 13 19:25	17°☾38'01	
max. Earth dist.	13901 Jun 18 00:37	5°☾12'37	34.11422 AU				
morning rise	13901 Jul 01 17:48	5°☾40'32		conjunction	13908 Jun 28 21:04	18°☾07'10	-3°22'23
retrograde	13901 Sep 26 22:18	7°☾23'12		minimum elong	13908 Jun 28 20:57	18°☾07'10	3°23'25
desc. node	13901 Nov 02 17:23	7°☾03'48		max. Earth dist.	13908 Jun 30 22:04	18°☾11'10	35.78377 AU
min. Earth dist.	13901 Dec 13 15:32	6°☾09'49	32.22683 AU	morning rise	13908 Jul 13 21:42	18°☾36'15	
opposition	13901 Dec 15 09:41	6°☾07'11	-0°03'59	retrograde	13908 Oct 09 04:20	20°☾14'00	
direct	13902 Mar 06 05:05	4°☾49'59		min. Earth dist.	13908 Dec 26 08:21	19°☾03'16	33.90879 AU
evening set	13902 Jun 02 21:46	6°☾33'12		opposition	13908 Dec 28 09:07	19°☾00'21	-3°49'27
				direct	13909 Mar 19 16:04	17°☾45'45	
conjunction	13902 Jun 18 10:13	7°☾04'33	-0°19'52	evening set	13909 Jun 15 22:13	19°☾23'41	
minimum elong	13902 Jun 18 10:12	7°☾04'33	0°20'56				
max. Earth dist.	13902 Jun 20 06:16	7°☾08'18	34.34399 AU	conjunction	13909 Jun 30 20:55	19°☾52'23	-3°50'52
morning rise	13902 Jul 03 21:14	7°☾35'49		minimum elong	13909 Jun 30 20:48	19°☾52'22	3°51'54
retrograde	13902 Sep 29 01:48	9°☾17'40		max. Earth dist.	13909 Jul 02 22:45	19°☾56'25	36.02933 AU
min. Earth dist.	13902 Dec 15 19:24	8°☾04'43	32.45872 AU	morning rise	13909 Jul 15 18:26	20°☾21'00	
opposition	13902 Dec 17 14:48	8°☾02'02	-0°37'54	retrograde	13909 Oct 11 02:31	21°☾58'11	
direct	13903 Mar 08 12:14	6°☾45'14		min. Earth dist.	13909 Dec 28 08:40	20°☾47'46	34.15614 AU
evening set	13903 Jun 05 01:54	8°☾27'35		opposition	13909 Dec 30 10:08	20°☾44'50	-4°19'12
				direct	13910 Mar 21 18:18	19°☾30'32	
conjunction	13903 Jun 20 13:24	8°☾58'39	-0°51'34	evening set	13910 Jun 18 00:44	21°☾07'51	
minimum elong	13903 Jun 20 13:22	8°☾58'39	0°52'37				
max. Earth dist.	13903 Jun 22 10:02	9°☾02'24	34.57781 AU	conjunction	13910 Jul 02 19:52	21°☾36'04	-4°18'45
morning rise	13903 Jul 05 23:50	9°☾29'37		minimum elong	13910 Jul 02 19:44	21°☾36'04	4°19'47
retrograde	13903 Oct 01 05:41	11°☾10'42		max. Earth dist.	13910 Jul 04 22:01	21°☾40'06	36.27640 AU
min. Earth dist.	13903 Dec 17 22:06	9°☾58'11	32.69470 AU	morning rise	13910 Jul 17 14:12	22°☾04'14	
opposition	13903 Dec 19 19:17	9°☾55'25	-1°11'17	retrograde	13910 Oct 13 01:57	23°☾40'53	
direct	13904 Mar 09 16:42	8°☾39'01		min. Earth dist.	13910 Dec 30 07:38	22°☾30'49	34.40562 AU
evening set	13904 Jun 06 05:40	10°☾20'33		opposition	13911 Jan 01 10:38	22°☾27'49	-4°48'17
				direct	13911 Mar 23 18:53	21°☾13'50	
conjunction	13904 Jun 21 16:09	10°☾51'17	-1°22'47	evening set	13911 Jun 20 02:54	22°☾50'35	
minimum elong	13904 Jun 21 16:06	10°☾51'17	1°23'51				
max. Earth dist.	13904 Jun 23 14:45	10°☾55'11	34.81505 AU	conjunction	13911 Jul 04 18:30	23°☾18'19	-4°46'02
morning rise	13904 Jul 07 01:15	11°☾21'56		minimum elong	13911 Jul 04 18:22	23°☾18'19	4°47'02
retrograde	13904 Oct 02 06:18	13°☾02'16		max. Earth dist.	13911 Jul 06 22:36	23°☾22'28	36.52570 AU
min. Earth dist.	13904 Dec 19 01:59	11°☾50'07	32.93368 AU	morning rise	13911 Jul 19 09:01	23°☾46'00	
opposition	13904 Dec 20 23:15	11°☾47'21	-1°44'07	retrograde	13911 Oct 14 23:08	25°☾22'10	
direct	13905 Mar 11 23:32	10°☾31'21		min. Earth dist.	13912 Jan 01 07:21	24°☾12'24	34.65744 AU
evening set	13905 Jun 08 09:30	12°☾12'05		opposition	13912 Jan 03 10:31	24°☾09'23	-5°16'41
				direct	13912 Mar 24 21:25	22°☾55'45	
conjunction	13905 Jun 23 18:12	12°☾42'28	-1°53'30	evening set	13912 Jun 21 04:57	24°☾31'59	
minimum elong	13905 Jun 23 18:08	12°☾42'28	1°54'33				
max. Earth dist.	13905 Jun 25 16:32	12°☾46'19	35.05477 AU	conjunction	13912 Jul 05 16:26	24°☾59'14	-5°12'40
morning rise	13905 Jul 09 01:51	13°☾12'46		minimum elong	13912 Jul 05 16:17	24°☾59'13	5°13'41
retrograde	13905 Oct 04 07:48	14°☾52'24		max. Earth dist.	13912 Jul 07 20:21	25°☾03'19	36.77735 AU
min. Earth dist.	13905 Dec 21 03:21	13°☾40'41	33.17507 AU	morning rise	13912 Jul 20 03:10	25°☾26'24	
opposition	13905 Dec 23 02:28	13°☾37'49	-2°16'22	retrograde	13912 Oct 15 21:34	27°☾02'08	
direct	13906 Mar 14 05:35	12°☾22'12		min. Earth dist.	13913 Jan 02 04:38	25°☾52'47	34.91168 AU
evening set	13906 Jun 10 13:02	14°☾02'12		opposition	13913 Jan 04 09:47	25°☾49'40	-5°44'24

direct	13913 Mar 26 22:01	24°☾36'23	conjunction	13919 Jul 17 13:33	6°♏14'22	-8°01'24
evening set	13913 Jun 23 06:39	26°☾12'10	minimum elong	13919 Jul 17 13:23	6°♏14'21	8°02'19
			max. Earth dist.	13919 Jul 19 20:34	6°♏18'30	38.56664 AU
conjunction	13913 Jul 07 13:58	26°☾38'53 -5°38'41	morning rise	13919 Jul 30 13:45	6°♏37'46	
minimum elong	13913 Jul 07 13:49	26°☾38'52 5°39'41	retrograde	13919 Oct 27 15:14	8°♏11'26	
max. Earth dist.	13913 Jul 09 19:39	26°☾43'06 37.03114 AU	min. Earth dist.	13920 Jan 14 08:03	7°♏04'23	36.71293 AU
morning rise	13913 Jul 21 20:24	27°☾05'33	opposition	13920 Jan 16 16:02	7°♏01'14	-8°39'02
retrograde	13913 Oct 17 16:26	28°☾40'54	direct	13920 Apr 07 08:18	5°♏50'24	
min. Earth dist.	13914 Jan 04 03:42	27°☾31'51 35.16797 AU	evening set	13920 Jul 05 13:09	7°♏23'46	
opposition	13914 Jan 06 08:41	27°☾28'46 -6°11'25				
direct	13914 Mar 28 22:31	26°☾15'51	conjunction	13920 Jul 18 08:04	7°♏46'37	-8°23'00
evening set	13914 Jun 25 08:13	27°☾51'12	minimum elong	13920 Jul 18 07:54	7°♏46'37	8°23'54
			max. Earth dist.	13920 Jul 20 15:46	7°♏50'48	38.81885 AU
conjunction	13914 Jul 09 10:59	28°☾17'24 -6°04'03	morning rise	13920 Jul 31 02:29	8°♏09'27	
minimum elong	13914 Jul 09 10:50	28°☾17'23 6°05'02	retrograde	13920 Oct 28 06:09	9°♏42'54	
max. Earth dist.	13914 Jul 11 16:46	28°☾21'36 37.28674 AU	min. Earth dist.	13921 Jan 15 04:43	8°♏36'03	36.96617 AU
morning rise	13914 Jul 23 12:58	28°☾43'33	opposition	13921 Jan 17 11:48	8°♏32'57	-9°01'18
	13914 Sep 12 21:37	0°♏	direct	13921 Apr 09 07:05	7°♏22'24	
retrograde	13914 Oct 19 11:30	0°♏18'33	evening set	13921 Jul 07 13:11	8°♏55'29	
	13914 Nov 26 04:32	30°♑☾				
min. Earth dist.	13915 Jan 06 00:31	29°☾09'55 35.42575 AU	conjunction	13921 Jul 20 02:05	9°♏17'46	-8°44'00
opposition	13915 Jan 08 07:01	29°☾06'46 -6°37'44	minimum elong	13921 Jul 20 01:55	9°♏17'45	8°44'54
direct	13915 Mar 30 22:27	27°☾54'13	max. Earth dist.	13921 Jul 22 09:26	9°♏21'53	39.06931 AU
evening set	13915 Jun 27 09:27	29°☾29'10	morning rise	13921 Aug 01 14:28	9°♏40'00	
			retrograde	13921 Oct 29 21:23	11°♏13'15	
conjunction	13915 Jul 11 07:25	29°☾54'50 -6°28'47	min. Earth dist.	13922 Jan 16 23:17	10°♏06'39	37.21772 AU
minimum elong	13915 Jul 11 07:15	29°☾54'49 6°29'46	opposition	13922 Jan 19 06:58	10°♏03'32	-9°22'54
max. Earth dist.	13915 Jul 13 14:06	29°☾59'04 37.54332 AU	direct	13922 Apr 11 04:54	8°♏53'15	
	13915 Jul 14 02:08	0°♏	evening set	13922 Jul 09 12:56	10°♏26'04	
morning rise	13915 Jul 25 04:46	0°♏20'27				
retrograde	13915 Oct 21 08:20	1°♏55'09	conjunction	13922 Jul 21 19:34	10°♏47'44	-9°04'23
min. Earth dist.	13916 Jan 07 22:14	0°♏46'51 35.68441 AU	minimum elong	13922 Jul 21 19:23	10°♏47'44	9°05'15
opposition	13916 Jan 10 04:59	0°♏43'42 -7°03'21	max. Earth dist.	13922 Jul 24 03:02	10°♏51'51	39.31832 AU
	13916 Feb 13 02:50	30°♑☾	morning rise	13922 Aug 03 01:55	11°♏09'23	
direct	13916 Mar 31 18:57	29°☾31'32	retrograde	13922 Oct 31 15:13	12°♏42'27	
	13916 May 16 21:41	0°♏	min. Earth dist.	13923 Jan 18 17:50	11°♏36'04	37.46839 AU
evening set	13916 Jun 28 10:33	1°♏06'07	opposition	13923 Jan 21 01:50	11°♏32'58	-9°43'51
			direct	13923 Apr 12 22:55	10°♏22'56	
conjunction	13916 Jul 12 03:38	1°♏31'14 -6°52'53	evening set	13923 Jul 11 12:13	11°♏55'30	
minimum elong	13916 Jul 12 03:28	1°♏31'13 6°53'50				
max. Earth dist.	13916 Jul 14 10:58	1°♏35'30 37.80036 AU	conjunction	13923 Jul 23 12:38	12°♏16'35	-9°24'09
morning rise	13916 Jul 25 19:54	1°♏56'19	minimum elong	13923 Jul 23 12:28	12°♏16'34	9°25'01
retrograde	13916 Oct 22 03:26	3°♏30'44	max. Earth dist.	13923 Jul 25 21:06	12°♏20'44	39.56670 AU
min. Earth dist.	13917 Jan 08 19:26	2°♏22'45 35.94300 AU	morning rise	13923 Aug 04 12:32	12°♏37'39	
opposition	13917 Jan 11 02:16	2°♏19'37 -7°28'17	retrograde	13923 Nov 02 07:22	14°♏10'32	
direct	13917 Apr 02 17:18	1°♏07'48	min. Earth dist.	13924 Jan 20 12:21	13°♏04'22	37.71846 AU
evening set	13917 Jun 30 11:38	2°♏42'04	opposition	13924 Jan 22 20:13	13°♏01'16	-10°04'08
			direct	13924 Apr 13 18:40	11°♏51'31	
conjunction	13917 Jul 13 23:20	3°♏06'38 -7°16'21	evening set	13924 Jul 12 11:33	13°♏23'52	
minimum elong	13917 Jul 13 23:10	3°♏06'37 7°17'18				
max. Earth dist.	13917 Jul 16 06:09	3°♏10'49 38.05693 AU	conjunction	13924 Jul 24 05:16	13°♏44'21	-9°43'19
morning rise	13917 Jul 27 10:35	3°♏31'10	minimum elong	13924 Jul 24 05:06	13°♏44'20	9°44'08
retrograde	13917 Oct 24 01:15	5°♏05'19	max. Earth dist.	13924 Jul 26 13:02	13°♏48'25	39.81469 AU
min. Earth dist.	13918 Jan 10 15:38	3°♏57'41 36.20107 AU	morning rise	13924 Aug 04 22:48	14°♏04'49	
opposition	13918 Jan 12 23:19	3°♏54'31 -7°52'32		13924 Sep 09 11:12	15°♏	
direct	13918 Apr 04 13:17	2°♏43'04	retrograde	13924 Nov 03 01:57	15°♏37'33	
evening set	13918 Jul 02 12:14	4°♏17'00		13924 Dec 29 21:53	15°♑♏	
			min. Earth dist.	13925 Jan 21 04:56	14°♏31'41	37.96837 AU
conjunction	13918 Jul 15 18:38	4°♏41'01 -7°39'11	opposition	13925 Jan 23 14:00	14°♏28'32	-10°23'46
minimum elong	13918 Jul 15 18:28	4°♏41'00 7°40'06	direct	13925 Apr 15 10:56	13°♏19'03	
max. Earth dist.	13918 Jul 18 02:40	4°♏45'16 38.31255 AU	evening set	13925 Jul 14 10:27	14°♏51'13	
morning rise	13918 Jul 29 00:20	5°♏04'59		13925 Jul 19 12:25	15°♏	
retrograde	13918 Oct 25 20:18	6°♏38'54				
min. Earth dist.	13919 Jan 12 13:07	5°♏31'31 36.45783 AU	conjunction	13925 Jul 25 21:39	15°♏11'07	-10°01'51
opposition	13919 Jan 14 20:02	5°♏28'24 -8°16'07	minimum elong	13925 Jul 25 21:30	15°♏11'06	10°02'41
direct	13919 Apr 06 11:36	4°♏17'16	max. Earth dist.	13925 Jul 28 06:49	15°♏15'16	40.06251 AU
evening set	13919 Jul 04 12:54	5°♏50'55	morning rise	13925 Aug 06 08:29	15°♏30'59	



retrograde	13925 Nov 04 18:07	17° $\Omega$ 03'36		conjunction	13932 Aug 04 06:32	24° $\Omega$ 54'55	-11°55'21
min. Earth dist.	13926 Jan 22 23:18	15° $\Omega$ 57'56	38.21797 AU	minimum elong	13932 Aug 04 06:25	24° $\Omega$ 54'54	11°56'02
opposition	13926 Jan 25 07:41	15° $\Omega$ 54'50	-10°42'44	max. Earth dist.	13932 Aug 06 14:39	24° $\Omega$ 58'49	41.75645 AU
	13926 Mar 14 05:34	15° $\mathbb{R}\Omega$		morning rise	13932 Aug 13 15:07	25° $\Omega$ 10'32	
direct	13926 Apr 17 05:05	14° $\Omega$ 45'39		retrograde	13932 Nov 13 23:16	26° $\Omega$ 42'55	
	13926 May 20 14:05	15° $\Omega$		min. Earth dist.	13933 Feb 01 17:32	25° $\Omega$ 38'52	39.91720 AU
evening set	13926 Jul 16 09:10	16° $\Omega$ 17'39		opposition	13933 Feb 04 00:52	25° $\Omega$ 35'55	-12°38'25
				direct	13933 Apr 27 02:33	24° $\Omega$ 28'39	
conjunction	13926 Jul 27 13:27	16° $\Omega$ 36'56	-10°19'47	evening set	13933 Jul 27 19:30	26° $\Omega$ 00'08	
minimum elong	13926 Jul 27 13:18	16° $\Omega$ 36'56	10°20'34				
max. Earth dist.	13926 Jul 29 22:06	16° $\Omega$ 41'02	40.30994 AU	conjunction	13933 Aug 05 20:21	26° $\Omega$ 15'09	-12°09'24
morning rise	13926 Aug 07 17:30	16° $\Omega$ 56'12		minimum elong	13933 Aug 05 20:14	26° $\Omega$ 15'09	12°10'05
retrograde	13926 Nov 06 08:06	18° $\Omega$ 28'44		max. Earth dist.	13933 Aug 08 03:46	26° $\Omega$ 19'00	41.98703 AU
min. Earth dist.	13927 Jan 24 15:12	17° $\Omega$ 23'23	38.46692 AU	morning rise	13933 Aug 14 21:05	26° $\Omega$ 30'10	
opposition	13927 Jan 27 00:51	17° $\Omega$ 20'14	-11°01'04	retrograde	13933 Nov 15 10:07	28° $\Omega$ 02'34	
direct	13927 Apr 18 23:58	16° $\Omega$ 11'20		min. Earth dist.	13934 Feb 03 08:01	26° $\Omega$ 58'43	40.14791 AU
evening set	13927 Jul 18 07:39	17° $\Omega$ 43'13		opposition	13934 Feb 05 15:41	26° $\Omega$ 55'45	-12°52'41
				direct	13934 Apr 28 20:26	25° $\Omega$ 48'43	
conjunction	13927 Jul 29 05:02	18° $\Omega$ 01'54	-10°37'07	evening set	13934 Jul 29 16:40	27° $\Omega$ 20'10	
minimum elong	13927 Jul 29 04:53	18° $\Omega$ 01'53	10°37'55				
max. Earth dist.	13927 Jul 31 14:16	18° $\Omega$ 06'01	40.55643 AU	conjunction	13934 Aug 07 09:35	27° $\Omega$ 34'33	-12°22'57
morning rise	13927 Aug 09 02:16	18° $\Omega$ 20'34		minimum elong	13934 Aug 07 09:29	27° $\Omega$ 34'33	12°23'36
retrograde	13927 Nov 07 22:04	19° $\Omega$ 53'02		max. Earth dist.	13934 Aug 09 16:37	27° $\Omega$ 38'22	42.21455 AU
min. Earth dist.	13928 Jan 26 08:36	18° $\Omega$ 47'54	38.71483 AU	morning rise	13934 Aug 16 02:34	27° $\Omega$ 48'57	
opposition	13928 Jan 28 17:39	18° $\Omega$ 44'48	-11°18'46	retrograde	13934 Nov 17 00:01	29° $\Omega$ 21'23	
direct	13928 Apr 19 18:25	17° $\Omega$ 36'12		min. Earth dist.	13935 Feb 04 22:51	28° $\Omega$ 17'41	40.37610 AU
evening set	13928 Jul 19 06:03	19° $\Omega$ 07'58		opposition	13935 Feb 07 06:15	28° $\Omega$ 14'46	-13°06'25
				direct	13935 Apr 30 11:11	27° $\Omega$ 07'57	
conjunction	13928 Jul 29 20:23	19° $\Omega$ 26'03	-10°53'52	evening set	13935 Jul 31 13:46	28° $\Omega$ 39'22	
minimum elong	13928 Jul 29 20:15	19° $\Omega$ 26'02	10°54'38				
max. Earth dist.	13928 Aug 01 05:40	19° $\Omega$ 30'08	40.80162 AU	conjunction	13935 Aug 08 22:43	28° $\Omega$ 53'08	-12°35'58
morning rise	13928 Aug 09 10:26	19° $\Omega$ 44'06		minimum elong	13935 Aug 08 22:37	28° $\Omega$ 53'08	12°36'37
retrograde	13928 Nov 08 12:09	21° $\Omega$ 16'32		max. Earth dist.	13935 Aug 11 06:22	28° $\Omega$ 56'58	42.43990 AU
min. Earth dist.	13929 Jan 27 01:04	20° $\Omega$ 11'39	38.96088 AU	morning rise	13935 Aug 17 07:33	29° $\Omega$ 06'55	
opposition	13929 Jan 29 10:06	20° $\Omega$ 08'34	-11°35'51		13935 Sep 21 19:11	0° $\mathbb{N}$	
direct	13929 Apr 21 12:15	19° $\Omega$ 00'15		retrograde	13935 Nov 18 12:41	0° $\mathbb{N}$ 39'23	
evening set	13929 Jul 21 04:13	20° $\Omega$ 31'56			13936 Jan 17 19:18	30° $\mathbb{R}\Omega$	
				min. Earth dist.	13936 Feb 06 13:27	29° $\Omega$ 35'50	40.60220 AU
conjunction	13929 Jul 31 11:14	20° $\Omega$ 49'24	-11°10'03	opposition	13936 Feb 08 20:16	29° $\Omega$ 32'57	-13°19'35
minimum elong	13929 Jul 31 11:05	20° $\Omega$ 49'23	11°10'49	direct	13936 May 01 01:44	28° $\Omega$ 26'22	
max. Earth dist.	13929 Aug 02 19:48	20° $\Omega$ 53'25	41.04465 AU	evening set	13936 Aug 01 10:46	29° $\Omega$ 57'48	
morning rise	13929 Aug 10 18:14	21° $\Omega$ 06'52			13936 Aug 02 19:12	0° $\mathbb{N}$	
retrograde	13929 Nov 10 04:38	22° $\Omega$ 39'16					
min. Earth dist.	13930 Jan 28 16:59	21° $\Omega$ 34'39	39.20471 AU	conjunction	13936 Aug 09 11:25	0° $\mathbb{N}$ 10'56	-12°48'28
opposition	13930 Jan 31 02:18	21° $\Omega$ 31'33	-11°52'21	minimum elong	13936 Aug 09 11:21	0° $\mathbb{N}$ 10'56	12°49'06
direct	13930 Apr 23 03:02	20° $\Omega$ 23'32		max. Earth dist.	13936 Aug 11 18:05	0° $\mathbb{N}$ 14'40	42.66351 AU
evening set	13930 Jul 23 02:15	21° $\Omega$ 55'09		morning rise	13936 Aug 17 12:10	0° $\mathbb{N}$ 24'05	
				retrograde	13936 Nov 19 03:15	1° $\mathbb{N}$ 56'37	
conjunction	13930 Aug 02 02:02	22° $\Omega$ 12'00	-11°25'41	min. Earth dist.	13937 Feb 07 02:19	0° $\mathbb{N}$ 53'19	40.82682 AU
minimum elong	13930 Aug 02 01:54	22° $\Omega$ 12'00	11°26'25	opposition	13937 Feb 09 10:03	0° $\mathbb{N}$ 50'24	-13°32'12
max. Earth dist.	13930 Aug 04 11:19	22° $\Omega$ 16'03	41.28516 AU		13937 Mar 26 17:27	30° $\mathbb{R}\Omega$	
morning rise	13930 Aug 12 01:34	22° $\Omega$ 28'52		direct	13937 May 02 13:41	29° $\Omega$ 44'02	
retrograde	13930 Nov 11 19:27	24° $\Omega$ 01'15			13937 Jun 07 16:20	0° $\mathbb{N}$	
min. Earth dist.	13931 Jan 30 10:03	22° $\Omega$ 56'48	39.44560 AU	evening set	13937 Aug 03 07:23	1° $\mathbb{N}$ 15'30	
opposition	13931 Feb 01 18:13	22° $\Omega$ 53'47	-12°08'16				
direct	13931 Apr 24 19:08	21° $\Omega$ 46'02		conjunction	13937 Aug 10 23:50	1° $\mathbb{N}$ 28'01	-13°00'27
evening set	13931 Jul 25 00:09	23° $\Omega$ 17'36		minimum elong	13937 Aug 10 23:44	1° $\mathbb{N}$ 28'01	13°01'03
				max. Earth dist.	13937 Aug 13 07:32	1° $\mathbb{N}$ 31'48	42.88569 AU
conjunction	13931 Aug 03 16:20	23° $\Omega$ 33'51	-11°40'46	morning rise	13937 Aug 18 16:15	1° $\mathbb{N}$ 40'32	
minimum elong	13931 Aug 03 16:12	23° $\Omega$ 33'50	11°41'30	retrograde	13937 Nov 20 14:59	3° $\mathbb{N}$ 13'09	
max. Earth dist.	13931 Aug 06 00:09	23° $\Omega$ 37'46	41.52257 AU	min. Earth dist.	13938 Feb 08 16:52	2° $\mathbb{N}$ 10'00	41.04994 AU
morning rise	13931 Aug 13 08:29	23° $\Omega$ 50'06		opposition	13938 Feb 10 23:40	2° $\mathbb{N}$ 07'09	-13°44'16
retrograde	13931 Nov 13 10:45	25° $\Omega$ 22'28		direct	13938 May 04 03:30	1° $\mathbb{N}$ 01'02	
min. Earth dist.	13932 Feb 01 00:57	24° $\Omega$ 18'17	39.68317 AU	evening set	13938 Aug 05 04:06	2° $\mathbb{N}$ 32'33	
opposition	13932 Feb 03 09:42	24° $\Omega$ 15'15	-12°23'37				
direct	13932 Apr 25 10:10	23° $\Omega$ 07'45		conjunction	13938 Aug 12 11:59	2° $\mathbb{N}$ 44'27	-13°11'55
evening set	13932 Jul 25 21:52	24° $\Omega$ 39'16		minimum elong	13938 Aug 12 11:56	2° $\mathbb{N}$ 44'26	13°12'31

max. Earth dist.	13938 Aug 14 18:58	2° $\mathring{M}$ 48'10	43.10651 AU	conjunction	13945 Aug 20 19:02	11° $\mathring{M}$ 23'10	-14°19'03
morning rise	13938 Aug 19 19:54	2° $\mathring{M}$ 56'19		minimum elong	13945 Aug 20 19:02	11° $\mathring{M}$ 23'10	14°19'29
retrograde	13938 Nov 22 01:46	4° $\mathring{M}$ 29'03		max. Earth dist.	13945 Aug 22 23:09	11° $\mathring{M}$ 26'35	44.57506 AU
min. Earth dist.	13939 Feb 10 05:15	3° $\mathring{M}$ 26'10	41.27145 AU	morning rise	13945 Aug 25 09:22	11° $\mathring{M}$ 30'23	
opposition	13939 Feb 12 12:51	3° $\mathring{M}$ 23'16	-13°55'49	retrograde	13945 Nov 30 05:39	13° $\mathring{M}$ 04'23	
direct	13939 May 05 17:07	2° $\mathring{M}$ 17'23		min. Earth dist.	13946 Feb 18 23:11	12° $\mathring{M}$ 02'36	42.73757 AU
evening set	13939 Aug 07 00:29	3° $\mathring{M}$ 49'00		opposition	13946 Feb 21 02:47	11° $\mathring{M}$ 59'58	-15°03'03
				direct	13946 May 14 11:33	10° $\mathring{M}$ 55'36	
conjunction	13939 Aug 13 23:50	4° $\mathring{M}$ 00'15	-13°22'53	evening set	13946 Aug 18 02:07	12° $\mathring{M}$ 28'20	
minimum elong	13939 Aug 13 23:45	4° $\mathring{M}$ 00'15	13°23'26				
max. Earth dist.	13939 Aug 16 06:50	4° $\mathring{M}$ 03'58	43.32551 AU	conjunction	13946 Aug 22 05:21	12° $\mathring{M}$ 34'48	-14°26'56
morning rise	13939 Aug 20 23:13	4° $\mathring{M}$ 11'30		minimum elong	13946 Aug 22 05:20	12° $\mathring{M}$ 34'48	14°27'22
retrograde	13939 Nov 23 12:48	5° $\mathring{M}$ 44'22		max. Earth dist.	13946 Aug 24 08:16	12° $\mathring{M}$ 38'07	44.76932 AU
min. Earth dist.	13940 Feb 11 18:59	4° $\mathring{M}$ 41'39	41.49103 AU	morning rise	13946 Aug 26 08:40	12° $\mathring{M}$ 41'17	
opposition	13940 Feb 14 01:54	4° $\mathring{M}$ 38'48	-14°06'50	retrograde	13946 Dec 01 16:48	14° $\mathring{M}$ 15'33	
direct	13940 May 06 07:36	3° $\mathring{M}$ 33'10		min. Earth dist.	13947 Feb 20 10:46	13° $\mathring{M}$ 13'53	42.93140 AU
evening set	13940 Aug 07 21:03	5° $\mathring{M}$ 04'53		opposition	13947 Feb 22 14:05	13° $\mathring{M}$ 11'17	-15°10'53
				direct	13947 May 15 23:01	12° $\mathring{M}$ 07'05	
conjunction	13940 Aug 14 11:35	5° $\mathring{M}$ 15'29	-13°33'22	evening set	13947 Aug 20 00:05	13° $\mathring{M}$ 40'06	
minimum elong	13940 Aug 14 11:32	5° $\mathring{M}$ 15'29	13°33'55				
max. Earth dist.	13940 Aug 16 18:51	5° $\mathring{M}$ 19'12	43.54238 AU	conjunction	13947 Aug 23 15:30	13° $\mathring{M}$ 45'46	-14°34'24
morning rise	13940 Aug 21 02:06	5° $\mathring{M}$ 26'06		minimum elong	13947 Aug 23 15:31	13° $\mathring{M}$ 45'46	14°34'48
retrograde	13940 Nov 23 23:00	6° $\mathring{M}$ 59'06		max. Earth dist.	13947 Aug 25 19:07	13° $\mathring{M}$ 49'07	44.96035 AU
min. Earth dist.	13941 Feb 12 07:59	5° $\mathring{M}$ 56'35	41.70797 AU	morning rise	13947 Aug 27 07:01	13° $\mathring{M}$ 51'27	
opposition	13941 Feb 14 14:31	5° $\mathring{M}$ 53'46	-14°17'21	retrograde	13947 Dec 03 03:18	15° $\mathring{M}$ 26'04	
direct	13941 May 07 22:37	4° $\mathring{M}$ 48'23		min. Earth dist.	13948 Feb 21 22:53	14° $\mathring{M}$ 24'28	43.12208 AU
evening set	13941 Aug 09 17:34	6° $\mathring{M}$ 20'13		opposition	13948 Feb 24 01:07	14° $\mathring{M}$ 21'56	-15°18'18
				direct	13948 May 16 10:24	13° $\mathring{M}$ 17'54	
conjunction	13941 Aug 15 23:01	6° $\mathring{M}$ 30'10	-13°43'22	evening set	13948 Aug 20 22:57	14° $\mathring{M}$ 51'18	
minimum elong	13941 Aug 15 22:58	6° $\mathring{M}$ 30'10	13°43'53				
max. Earth dist.	13941 Aug 18 05:00	6° $\mathring{M}$ 33'47	43.75645 AU	conjunction	13948 Aug 24 01:20	14° $\mathring{M}$ 56'06	-14°41'27
morning rise	13941 Aug 22 04:34	6° $\mathring{M}$ 40'09		minimum elong	13948 Aug 24 01:19	14° $\mathring{M}$ 56'06	14°41'50
retrograde	13941 Nov 25 13:32	8° $\mathring{M}$ 13'19		max. Earth dist.	13948 Aug 26 03:35	14° $\mathring{M}$ 59'21	45.14864 AU
min. Earth dist.	13942 Feb 13 20:22	7° $\mathring{M}$ 11'00	41.92199 AU	morning rise	13948 Aug 27 03:46	15° $\mathring{M}$ 00'55	
opposition	13942 Feb 16 03:04	7° $\mathring{M}$ 08'11	-14°27'23	retrograde	13948 Dec 03 14:56	16° $\mathring{M}$ 35'57	
direct	13942 May 09 08:49	6° $\mathring{M}$ 03'02		min. Earth dist.	13949 Feb 22 08:49	15° $\mathring{M}$ 34'33	43.31027 AU
evening set	13942 Aug 11 14:01	7° $\mathring{M}$ 35'00		opposition	13949 Feb 24 11:46	15° $\mathring{M}$ 31'59	-15°25'16
				direct	13949 May 17 18:49	14° $\mathring{M}$ 28'08	
conjunction	13942 Aug 17 10:17	7° $\mathring{M}$ 44'18	-13°52'56	evening set	13949 Aug 22 23:33	16° $\mathring{M}$ 02'04	
minimum elong	13942 Aug 17 10:15	7° $\mathring{M}$ 44'18	13°53'26				
max. Earth dist.	13942 Aug 19 16:50	7° $\mathring{M}$ 47'55	43.96724 AU	conjunction	13949 Aug 25 11:02	16° $\mathring{M}$ 05'53	-14°48'04
morning rise	13942 Aug 23 06:35	7° $\mathring{M}$ 53'37		minimum elong	13949 Aug 25 11:03	16° $\mathring{M}$ 05'53	14°48'26
retrograde	13942 Nov 27 01:36	9° $\mathring{M}$ 26'59		morning rise	13949 Aug 27 22:36	16° $\mathring{M}$ 09'43	
min. Earth dist.	13943 Feb 15 10:22	8° $\mathring{M}$ 24'46	42.13230 AU	max. Earth dist.	13949 Aug 27 13:41	16° $\mathring{M}$ 09'09	45.33458 AU
opposition	13943 Feb 17 15:28	8° $\mathring{M}$ 22'03	-14°36'57	retrograde	13949 Dec 04 23:28	17° $\mathring{M}$ 45'19	
direct	13943 May 10 21:01	7° $\mathring{M}$ 17'08		min. Earth dist.	13950 Feb 23 20:44	16° $\mathring{M}$ 44'01	43.49617 AU
evening set	13943 Aug 13 10:49	8° $\mathring{M}$ 49'15		opposition	13950 Feb 25 22:27	16° $\mathring{M}$ 41'31	-15°31'47
				direct	13950 May 19 05:39	15° $\mathring{M}$ 37'52	
conjunction	13943 Aug 18 21:25	8° $\mathring{M}$ 57'52	-14°02'03	evening set	13950 Aug 25 03:48	17° $\mathring{M}$ 12'34	
minimum elong	13943 Aug 18 21:24	8° $\mathring{M}$ 57'52	14°02'32				
max. Earth dist.	13943 Aug 21 02:26	9° $\mathring{M}$ 01'23	44.17419 AU	conjunction	13950 Aug 26 20:26	17° $\mathring{M}$ 15'10	-14°54'17
morning rise	13943 Aug 24 08:07	9° $\mathring{M}$ 06'30		minimum elong	13950 Aug 26 20:27	17° $\mathring{M}$ 15'10	14°54'37
retrograde	13943 Nov 28 12:13	10° $\mathring{M}$ 40'03		morning rise	13950 Aug 28 13:07	17° $\mathring{M}$ 17'47	
min. Earth dist.	13944 Feb 16 21:54	9° $\mathring{M}$ 38'03	42.33846 AU	max. Earth dist.	13950 Aug 28 22:46	17° $\mathring{M}$ 18'24	45.51837 AU
opposition	13944 Feb 19 03:19	9° $\mathring{M}$ 35'20	-14°46'05	retrograde	13950 Dec 06 06:06	18° $\mathring{M}$ 54'13	
direct	13944 May 11 08:20	8° $\mathring{M}$ 30'36		min. Earth dist.	13951 Feb 25 06:42	17° $\mathring{M}$ 53'06	43.67962 AU
evening set	13944 Aug 14 07:40	10° $\mathring{M}$ 02'54		opposition	13951 Feb 27 08:45	17° $\mathring{M}$ 50'35	-15°37'53
				direct	13951 May 20 18:22	16° $\mathring{M}$ 47'08	
conjunction	13944 Aug 19 08:24	10° $\mathring{M}$ 10'51	-14°10'45				
minimum elong	13944 Aug 19 08:22	10° $\mathring{M}$ 10'51	14°11'14	conjunction	13951 Aug 28 05:42	18° $\mathring{M}$ 24'02	-15°00'05
max. Earth dist.	13944 Aug 21 13:04	10° $\mathring{M}$ 14'19	44.37676 AU	minimum elong	13951 Aug 28 05:45	18° $\mathring{M}$ 24'02	15°00'24
morning rise	13944 Aug 24 09:13	10° $\mathring{M}$ 18'47		max. Earth dist.	13951 Aug 30 07:11	18° $\mathring{M}$ 27'12	45.69959 AU
retrograde	13944 Nov 28 21:38	11° $\mathring{M}$ 52'33		retrograde	13951 Dec 07 16:20	20° $\mathring{M}$ 02'42	
min. Earth dist.	13945 Feb 17 11:19	10° $\mathring{M}$ 50'38	42.54020 AU	min. Earth dist.	13952 Feb 26 17:15	19° $\mathring{M}$ 01'45	43.86046 AU
opposition	13945 Feb 19 15:15	10° $\mathring{M}$ 47'59	-14°54'47	opposition	13952 Feb 28 18:47	18° $\mathring{M}$ 59'16	-15°43'34
direct	13945 May 12 21:19	9° $\mathring{M}$ 43'27		direct	13952 May 21 04:54	17° $\mathring{M}$ 56'02	
evening set	13945 Aug 16 04:46	11° $\mathring{M}$ 15'56					

conjunction	13952 Aug 28 14:55	19° <u>0</u> 32'32	-15°05'29			13960 Dec 02 15:58	0° <u>0</u>
minimum elong	13952 Aug 28 14:57	19° <u>0</u> 32'32	15°05'47	retrograde		13960 Dec 16 22:02	0° <u>0</u> 02'16
max. Earth dist.	13952 Aug 30 16:47	19° <u>0</u> 35'42	45.87805 AU			13960 Dec 31 05:23	30° <u>0</u> <u>0</u>
retrograde	13952 Dec 08 01:40	21° <u>0</u> 10'51		min. Earth dist.		13961 Mar 08 11:01	29° <u>0</u> 02'15 45.30292 AU
min. Earth dist.	13953 Feb 27 04:18	20° <u>0</u> 10'01	44.03809 AU	opposition		13961 Mar 10 06:08	29° <u>0</u> 00'09 -16°18'19
opposition	13953 Mar 01 04:46	20° <u>0</u> 07'36	-15°48'51	direct		13961 May 31 15:13	27° <u>0</u> 58'20
direct	13953 May 22 15:43	19° <u>0</u> 04'34					
conjunction	13953 Aug 29 23:44	20° <u>0</u> 40'41	-15°10'31	conjunction		13961 Sep 07 17:57	29° <u>0</u> 31'26 -15°38'34
minimum elong	13953 Aug 29 23:48	20° <u>0</u> 40'41	15°10'49	minimum elong		13961 Sep 07 18:02	29° <u>0</u> 31'27 15°38'41
max. Earth dist.	13953 Sep 01 00:07	20° <u>0</u> 43'45	46.05316 AU	max. Earth dist.		13961 Sep 09 12:42	29° <u>0</u> 34'04 47.29654 AU
retrograde	13953 Dec 09 13:14	22° <u>0</u> 18'39				13961 Sep 27 08:41	0° <u>0</u>
min. Earth dist.	13954 Feb 28 13:54	21° <u>0</u> 18'01	44.21215 AU	retrograde		13961 Dec 18 04:02	1° <u>0</u> 06'37
opposition	13954 Mar 02 14:35	21° <u>0</u> 15'36	-15°53'44	min. Earth dist.		13962 Mar 09 20:24	0° <u>0</u> 06'39 45.44389 AU
direct	13954 May 23 22:40	20° <u>0</u> 12'46		opposition		13962 Mar 11 14:37	0° <u>0</u> 04'36 -16°20'27
						13962 Mar 15 13:13	30° <u>0</u> <u>0</u> <u>0</u>
conjunction	13954 Aug 31 08:38	21° <u>0</u> 48'31	-15°15'11	direct		13962 Jun 02 00:06	29° <u>0</u> 02'55
minimum elong	13954 Aug 31 08:41	21° <u>0</u> 48'31	15°15'27			13962 Aug 15 05:14	0° <u>0</u>
max. Earth dist.	13954 Sep 02 09:06	21° <u>0</u> 51'34	46.22436 AU	conjunction		13962 Sep 09 01:32	0° <u>0</u> 35'41 -15°40'33
retrograde	13954 Dec 10 22:42	23° <u>0</u> 26'08		minimum elong		13962 Sep 09 01:39	0° <u>0</u> 35'41 15°40'40
min. Earth dist.	13955 Mar 02 01:22	22° <u>0</u> 25'35	44.38201 AU	max. Earth dist.		13962 Sep 10 20:35	0° <u>0</u> 38'20 47.43582 AU
opposition	13955 Mar 04 00:16	22° <u>0</u> 23'16	-15°58'16	retrograde		13962 Dec 19 09:38	2° <u>0</u> 10'33
direct	13955 May 25 06:49	21° <u>0</u> 20'38		min. Earth dist.		13963 Mar 11 04:59	1° <u>0</u> 10'40 45.58205 AU
				opposition		13963 Mar 12 22:42	1° <u>0</u> 08'39 -16°22'14
conjunction	13955 Sep 01 17:24	22° <u>0</u> 56'00	-15°19'30	direct		13963 Jun 03 10:46	0° <u>0</u> 07'06
minimum elong	13955 Sep 01 17:28	22° <u>0</u> 56'01	15°19'45				
max. Earth dist.	13955 Sep 03 16:39	22° <u>0</u> 58'59	46.39119 AU	conjunction		13963 Sep 10 08:48	1° <u>0</u> 39'32 -15°42'13
retrograde	13955 Dec 12 05:27	24° <u>0</u> 33'17		minimum elong		13963 Sep 10 08:54	1° <u>0</u> 39'32 15°42'18
min. Earth dist.	13956 Mar 02 10:57	23° <u>0</u> 32'53	44.54701 AU	max. Earth dist.		13963 Sep 12 02:22	1° <u>0</u> 42'05 47.57235 AU
opposition	13956 Mar 04 09:41	23° <u>0</u> 30'34	-16°02'27	retrograde		13963 Dec 20 18:56	3° <u>0</u> 14'07
direct	13956 May 25 16:19	22° <u>0</u> 28'07		min. Earth dist.		13964 Mar 11 12:57	2° <u>0</u> 14'22 45.71741 AU
				opposition		13964 Mar 13 06:42	2° <u>0</u> 12'21 -16°23'40
conjunction	13956 Sep 02 01:58	24° <u>0</u> 03'07	-15°23'30	direct		13964 Jun 03 18:29	1° <u>0</u> 10'57
minimum elong	13956 Sep 02 02:02	24° <u>0</u> 03'07	15°23'42				
max. Earth dist.	13956 Sep 03 23:52	24° <u>0</u> 06'00	46.55293 AU	conjunction		13964 Sep 10 16:02	2° <u>0</u> 43'04 -15°43'33
retrograde	13956 Dec 12 13:09	25° <u>0</u> 40'03		minimum elong		13964 Sep 10 16:11	2° <u>0</u> 43'04 15°43'37
min. Earth dist.	13957 Mar 03 21:36	24° <u>0</u> 39'43	44.70695 AU	max. Earth dist.		13964 Sep 12 10:03	2° <u>0</u> 45'38 47.70582 AU
opposition	13957 Mar 05 19:01	24° <u>0</u> 37'29	-16°06'18	retrograde		13964 Dec 21 03:50	4° <u>0</u> 17'22
direct	13957 May 27 03:46	23° <u>0</u> 35'10		min. Earth dist.		13965 Mar 12 22:24	3° <u>0</u> 17'40 45.84944 AU
				opposition		13965 Mar 14 14:37	3° <u>0</u> 15'44 -16°24'46
conjunction	13957 Sep 03 10:30	25° <u>0</u> 09'47	-15°27'10	direct		13965 Jun 05 01:29	2° <u>0</u> 14'29
minimum elong	13957 Sep 03 10:35	25° <u>0</u> 09'47	15°27'23				
max. Earth dist.	13957 Sep 05 08:21	25° <u>0</u> 12'39	46.70974 AU	conjunction		13965 Sep 11 23:09	3° <u>0</u> 46'19 -15°44'34
retrograde	13957 Dec 13 20:27	26° <u>0</u> 46'22		minimum elong		13965 Sep 11 23:16	3° <u>0</u> 46'19 15°44'37
min. Earth dist.	13958 Mar 05 07:50	25° <u>0</u> 46'06	44.86184 AU	max. Earth dist.		13965 Sep 13 15:56	3° <u>0</u> 48'48 47.83602 AU
opposition	13958 Mar 07 04:10	25° <u>0</u> 43'55	-16°09'49	retrograde		13965 Dec 22 11:47	5° <u>0</u> 20'20
direct	13958 May 28 15:55	24° <u>0</u> 41'45		min. Earth dist.		13966 Mar 14 05:51	4° <u>0</u> 20'47 45.97787 AU
				opposition		13966 Mar 15 22:21	4° <u>0</u> 18'50 -16°25'34
conjunction	13958 Sep 04 18:33	26° <u>0</u> 15'58	-15°30'31	direct		13966 Jun 06 06:43	3° <u>0</u> 17'44
minimum elong	13958 Sep 04 18:39	26° <u>0</u> 15'58	15°30'41				
max. Earth dist.	13958 Sep 06 14:34	26° <u>0</u> 18'42	46.86186 AU	conjunction		13966 Sep 13 06:06	4° <u>0</u> 49'18 -15°45'18
retrograde	13958 Dec 15 07:38	27° <u>0</u> 52'11		minimum elong		13966 Sep 13 06:15	4° <u>0</u> 49'18 15°45'19
min. Earth dist.	13959 Mar 06 16:43	26° <u>0</u> 52'01	45.01241 AU	max. Earth dist.		13966 Sep 14 22:05	4° <u>0</u> 51'43 47.96222 AU
opposition	13959 Mar 08 13:04	26° <u>0</u> 49'51	-16°13'00	retrograde		13966 Dec 23 18:02	6° <u>0</u> 23'04
direct	13959 May 29 23:07	25° <u>0</u> 47'47		min. Earth dist.		13967 Mar 15 15:17	5° <u>0</u> 23'34 46.10211 AU
				opposition		13967 Mar 17 06:04	5° <u>0</u> 21'42 -16°26'03
conjunction	13959 Sep 06 02:38	27° <u>0</u> 12'37	-15°33'32	direct		13967 Jun 07 14:54	4° <u>0</u> 20'44
minimum elong	13959 Sep 06 02:43	27° <u>0</u> 12'37	15°33'42				
max. Earth dist.	13959 Sep 07 22:52	27° <u>0</u> 12'37	47.00991 AU	conjunction		13967 Sep 14 13:13	5° <u>0</u> 52'01 -15°45'44
retrograde	13959 Dec 16 16:17	28° <u>0</u> 57'29		minimum elong		13967 Sep 14 13:22	5° <u>0</u> 52'02 15°45'43
min. Earth dist.	13960 Mar 07 03:04	27° <u>0</u> 57'19	45.15923 AU	max. Earth dist.		13967 Sep 16 04:53	5° <u>0</u> 54'25 48.08401 AU
opposition	13960 Mar 08 21:41	27° <u>0</u> 55'15	-16°15'50	retrograde		13967 Dec 24 22:21	7° <u>0</u> 25'33
direct	13960 May 30 07:16	26° <u>0</u> 53'19		min. Earth dist.		13968 Mar 15 23:26	6° <u>0</u> 26'08 46.22142 AU
				opposition		13968 Mar 17 13:25	6° <u>0</u> 24'18 -16°26'15
conjunction	13960 Sep 06 10:28	28° <u>0</u> 26'46	-15°36'13	direct		13968 Jun 08 01:15	5° <u>0</u> 23'28
minimum elong	13960 Sep 06 10:35	28° <u>0</u> 26'46	15°36'21				
max. Earth dist.	13960 Sep 08 05:51	28° <u>0</u> 29'27	47.15471 AU	conjunction		13968 Sep 14 20:08	6° <u>0</u> 54'29 -15°45'53

minimum elong	13968 Sep 14 20:17	6° <u>♁</u> 54'30	15°45'53	min. Earth dist.	13977 Mar 25 20:01	15° <u>♁</u> 35'48	47.10744 AU
max. Earth dist.	13968 Sep 16 09:39	6° <u>♁</u> 56'46	48.20075 AU	opposition	13977 Mar 27 03:14	15° <u>♁</u> 34'19	-16°15'24
retrograde	13968 Dec 25 07:21	8° <u>♁</u> 27'46		direct	13977 Jun 17 10:46	14° <u>♁</u> 34'27	
min. Earth dist.	13969 Mar 17 07:32	7° <u>♁</u> 28'25	46.33567 AU				
opposition	13969 Mar 18 20:53	7° <u>♁</u> 26'38	-16°26'11	conjunction	13977 Sep 24 04:12	16° <u>♁</u> 03'18	-15°34'58
direct	13969 Jun 09 08:25	6° <u>♁</u> 25'55		minimum elong	13977 Sep 24 04:24	16° <u>♁</u> 03'19	15°34'47
				max. Earth dist.	13977 Sep 25 12:41	16° <u>♁</u> 05'13	49.07221 AU
conjunction	13969 Sep 16 02:53	7° <u>♁</u> 56'40	-15°45'48	retrograde	13978 Jan 03 14:23	17° <u>♁</u> 34'37	
minimum elong	13969 Sep 16 03:02	7° <u>♁</u> 56'40	15°45'45	min. Earth dist.	13978 Mar 27 02:37	16° <u>♁</u> 35'47	47.18928 AU
max. Earth dist.	13969 Sep 17 16:21	7° <u>♁</u> 58'55	48.31235 AU	opposition	13978 Mar 28 09:34	16° <u>♁</u> 34'19	-16°12'45
retrograde	13969 Dec 26 15:21	9° <u>♁</u> 29'42		direct	13978 Jun 18 19:28	15° <u>♁</u> 34'34	
min. Earth dist.	13970 Mar 18 16:45	8° <u>♁</u> 30'21	46.44471 AU				
opposition	13970 Mar 20 04:16	8° <u>♁</u> 28'39	-16°25'51	conjunction	13978 Sep 25 09:59	17° <u>♁</u> 03'14	-15°32'22
direct	13970 Jun 10 16:09	7° <u>♁</u> 28'03		minimum elong	13978 Sep 25 10:10	17° <u>♁</u> 03'15	15°32'10
				max. Earth dist.	13978 Sep 26 16:35	17° <u>♁</u> 05'03	49.15246 AU
conjunction	13970 Sep 17 09:31	8° <u>♁</u> 58'30	-15°45'26	retrograde	13979 Jan 04 20:40	18° <u>♁</u> 34'23	
minimum elong	13970 Sep 17 09:40	8° <u>♁</u> 58'31	15°45'23	min. Earth dist.	13979 Mar 28 09:40	17° <u>♁</u> 35'37	47.26700 AU
max. Earth dist.	13970 Sep 18 21:33	9° <u>♁</u> 00'40	48.41918 AU	opposition	13979 Mar 29 15:45	17° <u>♁</u> 34'12	-16°09'51
retrograde	13970 Dec 27 21:42	10° <u>♁</u> 31'16		direct	13979 Jun 20 02:48	16° <u>♁</u> 34'32	
min. Earth dist.	13971 Mar 19 23:37	9° <u>♁</u> 32'00	46.54923 AU				
opposition	13971 Mar 21 11:14	9° <u>♁</u> 30'19	-16°25'14	conjunction	13979 Sep 26 15:55	18° <u>♁</u> 03'02	-15°29'31
direct	13971 Jun 11 21:02	8° <u>♁</u> 29'48		minimum elong	13979 Sep 26 16:07	18° <u>♁</u> 03'03	15°29'18
				max. Earth dist.	13979 Sep 27 22:28	18° <u>♁</u> 04'50	49.22817 AU
conjunction	13971 Sep 18 15:56	10° <u>♁</u> 00'00	-15°44'48	retrograde	13980 Jan 06 03:36	19° <u>♁</u> 34'01	
minimum elong	13971 Sep 18 16:07	10° <u>♁</u> 00'00	15°44'43	opposition	13980 Mar 29 22:00	18° <u>♁</u> 33'55	-16°06'43
max. Earth dist.	13971 Sep 20 03:10	10° <u>♁</u> 02'06	48.52169 AU	min. Earth dist.	13980 Mar 28 17:44	18° <u>♁</u> 35'15	47.33970 AU
retrograde	13971 Dec 29 02:53	11° <u>♁</u> 32'30		direct	13980 Jun 20 10:27	17° <u>♁</u> 34'21	
min. Earth dist.	13972 Mar 20 08:07	10° <u>♁</u> 33'15	46.64986 AU				
opposition	13972 Mar 21 18:15	10° <u>♁</u> 31'37	-16°24'20	conjunction	13980 Sep 26 21:38	19° <u>♁</u> 02'39	-15°26'27
direct	13972 Jun 12 03:28	9° <u>♁</u> 31'12		minimum elong	13980 Sep 26 21:51	19° <u>♁</u> 02'40	15°26'12
				max. Earth dist.	13980 Sep 28 02:24	19° <u>♁</u> 04'21	49.29877 AU
conjunction	13972 Sep 18 22:16	11° <u>♁</u> 01'09	-15°43'52	retrograde	13981 Jan 06 11:04	20° <u>♁</u> 33'28	
minimum elong	13972 Sep 18 22:25	11° <u>♁</u> 01'10	15°43'47	min. Earth dist.	13981 Mar 29 23:56	19° <u>♁</u> 34'46	47.40707 AU
max. Earth dist.	13972 Sep 20 09:30	11° <u>♁</u> 03'15	48.62073 AU	opposition	13981 Mar 31 04:05	19° <u>♁</u> 33'26	-16°03'20
retrograde	13972 Dec 29 06:20	12° <u>♁</u> 33'26		direct	13981 Jun 21 14:41	18° <u>♁</u> 33'56	
min. Earth dist.	13973 Mar 21 15:08	11° <u>♁</u> 34'15	46.74709 AU				
opposition	13973 Mar 23 01:01	11° <u>♁</u> 32'38	-16°23'09	conjunction	13981 Sep 28 03:22	20° <u>♁</u> 02'04	-15°23'09
direct	13973 Jun 13 12:40	10° <u>♁</u> 32'18		minimum elong	13981 Sep 28 03:35	20° <u>♁</u> 02'04	15°22'54
				max. Earth dist.	13981 Sep 29 06:58	20° <u>♁</u> 03'40	49.36391 AU
conjunction	13973 Sep 20 04:22	12° <u>♁</u> 02'00	-15°42'40	retrograde	13982 Jan 07 17:28	21° <u>♁</u> 32'41	
minimum elong	13973 Sep 20 04:34	12° <u>♁</u> 02'01	15°42'33	min. Earth dist.	13982 Mar 31 08:06	20° <u>♁</u> 33'55	47.46908 AU
max. Earth dist.	13973 Sep 21 14:11	12° <u>♁</u> 04'01	48.71674 AU	opposition	13982 Apr 01 10:14	20° <u>♁</u> 32'42	-15°59'44
retrograde	13973 Dec 30 13:41	13° <u>♁</u> 34'04		direct	13982 Jun 22 18:48	19° <u>♁</u> 33'16	
min. Earth dist.	13974 Mar 22 22:06	12° <u>♁</u> 34'58	46.84158 AU				
opposition	13974 Mar 24 07:46	12° <u>♁</u> 33'22	-16°21'39	conjunction	13982 Sep 29 09:00	21° <u>♁</u> 01'11	-15°19'38
direct	13974 Jun 14 20:03	11° <u>♁</u> 33'09		minimum elong	13982 Sep 29 09:13	21° <u>♁</u> 01'12	15°19'21
				max. Earth dist.	13982 Sep 30 12:08	21° <u>♁</u> 02'46	49.42399 AU
conjunction	13974 Sep 21 10:27	13° <u>♁</u> 02'36	-15°41'10	retrograde	13983 Jan 08 20:01	22° <u>♁</u> 31'37	
minimum elong	13974 Sep 21 10:37	13° <u>♁</u> 02'37	15°41'02	opposition	13983 Apr 02 16:07	21° <u>♁</u> 31'41	-15°55'55
max. Earth dist.	13974 Sep 22 20:45	13° <u>♁</u> 04'39	48.81000 AU	min. Earth dist.	13983 Apr 01 14:24	21° <u>♁</u> 32'53	47.52605 AU
retrograde	13974 Dec 31 21:40	14° <u>♁</u> 34'29		direct	13983 Jun 24 01:28	20° <u>♁</u> 32'17	
min. Earth dist.	13975 Mar 24 05:59	13° <u>♁</u> 35'24	46.93317 AU				
opposition	13975 Mar 25 14:25	13° <u>♁</u> 33'52	-16°19'52	conjunction	13983 Sep 30 14:28	22° <u>♁</u> 00'01	-15°15'53
direct	13975 Jun 16 03:09	12° <u>♁</u> 33'46		minimum elong	13983 Sep 30 14:41	22° <u>♁</u> 00'01	15°15'36
				max. Earth dist.	13983 Oct 01 15:44	22° <u>♁</u> 01'29	49.47933 AU
conjunction	13975 Sep 22 16:28	14° <u>♁</u> 03'00	-15°39'22	retrograde	13984 Jan 10 01:13	23° <u>♁</u> 30'16	
minimum elong	13975 Sep 22 16:40	14° <u>♁</u> 03'01	15°39'13	opposition	13984 Apr 02 21:48	22° <u>♁</u> 30'22	-15°51'51
max. Earth dist.	13975 Sep 24 01:32	14° <u>♁</u> 04'58	48.90054 AU	min. Earth dist.	13984 Apr 01 21:04	22° <u>♁</u> 31'31	47.57879 AU
retrograde	13976 Jan 02 06:35	15° <u>♁</u> 34'40		direct	13984 Jun 24 08:20	21° <u>♁</u> 31'00	
min. Earth dist.	13976 Mar 24 11:53	14° <u>♁</u> 35'43	47.02188 AU				
opposition	13976 Mar 25 20:42	14° <u>♁</u> 34'10	-16°17'46	conjunction	13984 Sep 30 19:56	22° <u>♁</u> 58'33	-15°11'54
direct	13976 Jun 16 05:53	13° <u>♁</u> 34'11		minimum elong	13984 Sep 30 20:10	22° <u>♁</u> 58'34	15°11'35
				max. Earth dist.	13984 Oct 01 21:27	23° <u>♁</u> 00'02	49.53073 AU
conjunction	13976 Sep 22 22:23	15° <u>♁</u> 03'14	-15°37'18	retrograde	13985 Jan 10 06:24	24° <u>♁</u> 28'40	
minimum elong	13976 Sep 22 22:34	15° <u>♁</u> 03'15	15°37'08	min. Earth dist.	13985 Apr 03 04:00	23° <u>♁</u> 29'53	47.62777 AU
max. Earth dist.	13976 Sep 24 06:53	15° <u>♁</u> 05'09	48.98800 AU	opposition	13985 Apr 04 03:35	23° <u>♁</u> 28'47	-15°47'31
retrograde	13977 Jan 02 12:18	16° <u>♁</u> 34'43		direct	13985 Jun 25 16:33	22° <u>♁</u> 29'28	

conjunction	13985 Oct 02 01:06	23° <u>♁</u> 56'51	-15°07'39			13992 Apr 23 22:03	30° <u>♁</u>
minimum elong	13985 Oct 02 01:19	23° <u>♁</u> 56'52	15°07'20	direct		13992 Jul 02 01:25	29° <u>♁</u> 15'45
max. Earth dist.	13985 Oct 03 01:19	23° <u>♁</u> 58'16	49.57881 AU			13992 Sep 06 12:09	0° <u>♁</u>
retrograde	13986 Jan 11 14:09	25° <u>♁</u> 26'49		evening set		13992 Oct 04 14:37	0° <u>♁</u> 36'59
min. Earth dist.	13986 Apr 04 09:20	24° <u>♁</u> 28'06	47.67358 AU				
opposition	13986 Apr 05 09:13	24° <u>♁</u> 26'59	-15°42'57	conjunction		13992 Oct 08 13:21	0° <u>♁</u> 42'26 -14°31'10
direct	13986 Jun 26 20:03	23° <u>♁</u> 27'44		minimum elong		13992 Oct 08 13:36	0° <u>♁</u> 42'27 14°30'44
				max. Earth dist.		13992 Oct 09 08:14	0° <u>♁</u> 43'32 49.81930 AU
conjunction	13986 Oct 03 06:22	24° <u>♁</u> 54'58	-15°03'10	morning rise		13992 Oct 12 12:42	0° <u>♁</u> 47'56
minimum elong	13986 Oct 03 06:37	24° <u>♁</u> 54'59	15°02'49	retrograde		13993 Jan 18 02:42	2° <u>♁</u> 11'47
max. Earth dist.	13986 Oct 04 06:05	24° <u>♁</u> 56'21	49.62370 AU	opposition		13993 Apr 11 23:12	1° <u>♁</u> 12'24 -15°03'57
retrograde	13987 Jan 12 20:29	26° <u>♁</u> 24'48		min. Earth dist.		13993 Apr 11 05:47	1° <u>♁</u> 13'13 47.89409 AU
opposition	13987 Apr 06 14:45	25° <u>♁</u> 25'02	-15°38'06	direct		13993 Jul 03 05:59	0° <u>♁</u> 13'38
min. Earth dist.	13987 Apr 05 16:32	25° <u>♁</u> 26'04	47.71631 AU	evening set		13993 Oct 05 10:20	1° <u>♁</u> 34'16
direct	13987 Jun 27 23:24	24° <u>♁</u> 25'51					
evening set	13987 Oct 03 11:16	25° <u>♁</u> 51'33		conjunction		13993 Oct 09 18:20	1° <u>♁</u> 40'15 -14°25'05
				minimum elong		13993 Oct 09 18:34	1° <u>♁</u> 40'16 14°24'37
conjunction	13987 Oct 04 11:39	25° <u>♁</u> 52'58	-14°58'25	max. Earth dist.		13993 Oct 10 11:03	1° <u>♁</u> 41'13 49.83533 AU
minimum elong	13987 Oct 04 11:52	25° <u>♁</u> 52'58	14°58'04	morning rise		13993 Oct 14 03:01	1° <u>♁</u> 46'17
morning rise	13987 Oct 05 12:31	25° <u>♁</u> 54'24		retrograde		13994 Jan 19 07:38	3° <u>♁</u> 09'31
max. Earth dist.	13987 Oct 05 11:12	25° <u>♁</u> 54'20	49.66567 AU	opposition		13994 Apr 13 04:36	2° <u>♁</u> 10'10 -14°57'30
retrograde	13988 Jan 13 22:44	27° <u>♁</u> 22'41		min. Earth dist.		13994 Apr 12 12:32	2° <u>♁</u> 10'55 47.90652 AU
opposition	13988 Apr 06 20:12	26° <u>♁</u> 22'58	-15°33'00	direct		13994 Jul 04 12:06	1° <u>♁</u> 11'25
min. Earth dist.	13988 Apr 05 21:55	26° <u>♁</u> 24'01	47.75585 AU	evening set		13994 Oct 06 06:46	2° <u>♁</u> 31'27
direct	13988 Jun 28 06:03	25° <u>♁</u> 23'51					
evening set	13988 Oct 02 18:20	26° <u>♁</u> 48'11		conjunction		13994 Oct 10 23:31	2° <u>♁</u> 37'56 -14°18'48
				minimum elong		13994 Oct 10 23:45	2° <u>♁</u> 37'57 14°18'20
conjunction	13988 Oct 04 16:38	26° <u>♁</u> 50'52	-14°53'26	max. Earth dist.		13994 Oct 11 16:03	2° <u>♁</u> 38'53 49.84605 AU
minimum elong	13988 Oct 04 16:53	26° <u>♁</u> 50'53	14°53'03	morning rise		13994 Oct 15 16:56	2° <u>♁</u> 44'28
morning rise	13988 Oct 06 15:29	26° <u>♁</u> 53'35		retrograde		13995 Jan 20 11:25	4° <u>♁</u> 07'07
max. Earth dist.	13988 Oct 05 14:33	26° <u>♁</u> 52'09	49.70439 AU	opposition		13995 Apr 14 09:43	3° <u>♁</u> 07'46 -14°50'51
retrograde	13989 Jan 14 03:42	28° <u>♁</u> 20'30		min. Earth dist.		13995 Apr 13 19:07	3° <u>♁</u> 08'27 47.91375 AU
min. Earth dist.	13989 Apr 07 04:14	27° <u>♁</u> 21'52	47.79215 AU	direct		13995 Jul 05 20:59	2° <u>♁</u> 09'02
opposition	13989 Apr 08 01:43	27° <u>♁</u> 20'52	-15°27'39	evening set		13995 Oct 07 03:31	3° <u>♁</u> 28'30
direct	13989 Jun 29 12:20	26° <u>♁</u> 21'50					
evening set	13989 Oct 03 08:27	27° <u>♁</u> 45'13		conjunction		13995 Oct 12 04:30	3° <u>♁</u> 35'27 -14°12'18
				minimum elong		13995 Oct 12 04:45	3° <u>♁</u> 35'27 14°11'48
conjunction	13989 Oct 05 21:50	27° <u>♁</u> 48'46	-14°48'12	max. Earth dist.		13995 Oct 12 19:24	3° <u>♁</u> 36'18 49.85206 AU
minimum elong	13989 Oct 05 22:03	27° <u>♁</u> 48'46	14°47'48	morning rise		13995 Oct 17 06:12	3° <u>♁</u> 42'27
max. Earth dist.	13989 Oct 06 20:00	27° <u>♁</u> 50'03	49.73968 AU	retrograde		13996 Jan 21 19:14	5° <u>♁</u> 04'32
morning rise	13989 Oct 08 11:45	27° <u>♁</u> 52'21		opposition		13996 Apr 14 14:47	4° <u>♁</u> 05'11 -14°43'59
retrograde	13990 Jan 15 09:48	29° <u>♁</u> 18'19		min. Earth dist.		13996 Apr 14 00:15	4° <u>♁</u> 05'52 47.91663 AU
min. Earth dist.	13990 Apr 08 11:03	28° <u>♁</u> 19'42	47.82467 AU	direct		13996 Jul 06 01:07	3° <u>♁</u> 06'27
opposition	13990 Apr 09 07:11	28° <u>♁</u> 18'45	-15°22'03	evening set		13996 Oct 07 00:17	4° <u>♁</u> 25'23
direct	13990 Jun 30 19:17	27° <u>♁</u> 19'49					
evening set	13990 Oct 04 01:07	28° <u>♁</u> 42'23		conjunction		13996 Oct 12 09:18	4° <u>♁</u> 32'47 -14°05'35
				minimum elong		13996 Oct 12 09:31	4° <u>♁</u> 32'47 14°05'05
conjunction	13990 Oct 07 02:54	28° <u>♁</u> 46'39	-14°42'44	max. Earth dist.		13996 Oct 12 23:29	4° <u>♁</u> 33'35 49.85388 AU
minimum elong	13990 Oct 07 03:09	28° <u>♁</u> 46'40	14°42'19	morning rise		13996 Oct 17 19:02	4° <u>♁</u> 40'13
max. Earth dist.	13990 Oct 07 23:34	28° <u>♁</u> 47'50	49.77108 AU	retrograde		13997 Jan 22 02:55	6° <u>♁</u> 01'47
morning rise	13990 Oct 10 05:16	28° <u>♁</u> 50'57		opposition		13997 Apr 15 19:58	5° <u>♁</u> 02'26 -14°36'53
	13990 Dec 08 03:09	0° <u>♁</u>		min. Earth dist.		13997 Apr 15 07:12	5° <u>♁</u> 03'02 47.91573 AU
retrograde	13991 Jan 16 17:32	0° <u>♁</u> 16'08		direct		13997 Jul 07 03:35	4° <u>♁</u> 03'42
	13991 Feb 25 22:49	30° <u>♁</u>		evening set		13997 Oct 07 21:34	5° <u>♁</u> 22'07
opposition	13991 Apr 10 12:31	29° <u>♁</u> 16'39	-15°16'14				
min. Earth dist.	13991 Apr 09 16:30	29° <u>♁</u> 17'35	47.85296 AU	conjunction		13997 Oct 13 14:13	5° <u>♁</u> 29'56 -13°58'39
direct	13991 Jul 01 22:41	28° <u>♁</u> 17'47		minimum elong		13997 Oct 13 14:28	5° <u>♁</u> 29'57 13°58'07
evening set	13991 Oct 04 19:16	29° <u>♁</u> 39'40		max. Earth dist.		13997 Oct 14 04:17	5° <u>♁</u> 30'45 49.85238 AU
				morning rise		13997 Oct 19 07:36	5° <u>♁</u> 37'49
conjunction	13991 Oct 08 08:05	29° <u>♁</u> 44'33	-14°37'03	retrograde		13998 Jan 23 05:01	6° <u>♁</u> 58'52
minimum elong	13991 Oct 08 08:19	29° <u>♁</u> 44'34	14°36'37	min. Earth dist.		13998 Apr 16 11:55	6° <u>♁</u> 00'07 47.91157 AU
max. Earth dist.	13991 Oct 09 03:35	29° <u>♁</u> 45'40	49.79773 AU	opposition		13998 Apr 17 00:55	5° <u>♁</u> 59'31 -14°29'32
morning rise	13991 Oct 11 21:30	29° <u>♁</u> 49'28		direct		13998 Jul 08 08:42	5° <u>♁</u> 00'47
	13991 Oct 19 13:01	0° <u>♁</u>		evening set		13998 Oct 08 18:52	6° <u>♁</u> 18'43
retrograde	13992 Jan 18 00:02	1° <u>♁</u> 13'58					
opposition	13992 Apr 10 17:52	0° <u>♁</u> 14'33	-15°10'12	conjunction		13998 Oct 14 18:56	6° <u>♁</u> 26'58 -13°51'28
min. Earth dist.	13992 Apr 09 23:59	0° <u>♁</u> 15'23	47.87625 AU	minimum elong		13998 Oct 14 19:10	6° <u>♁</u> 26'59 13°50'56

max. Earth dist.	13998 Oct 15 07:21	6° <del>ℳ</del> 27'41	49.84777 AU	conjunction	14005 Oct 21 05:07	13° <del>ℳ</del> 05'34	-12°54'55
morning rise	13998 Oct 20 19:52	6° <del>ℳ</del> 35'15		minimum elong	14005 Oct 21 05:21	13° <del>ℳ</del> 05'34	12°54'17
retrograde	13999 Jan 24 07:57	7° <del>ℳ</del> 55'50		max. Earth dist.	14005 Oct 21 11:27	13° <del>ℳ</del> 05'55	49.71894 AU
opposition	13999 Apr 18 05:55	6° <del>ℳ</del> 56'29	-14°21'57	morning rise	14005 Oct 29 05:32	13° <del>ℳ</del> 16'33	
min. Earth dist.	13999 Apr 17 17:51	6° <del>ℳ</del> 57'03	47.90449 AU	retrograde	14006 Jan 30 21:12	14° <del>ℳ</del> 34'24	
direct	13999 Jul 09 14:06	5° <del>ℳ</del> 57'46		opposition	14006 Apr 24 16:34	13° <del>ℳ</del> 35'09	-13°22'24
evening set	13999 Oct 09 16:26	7° <del>ℳ</del> 15'14		min. Earth dist.	14006 Apr 24 10:35	13° <del>ℳ</del> 35'25	47.75299 AU
				direct	14006 Jul 16 00:54	12° <del>ℳ</del> 36'31	
conjunction	13999 Oct 15 23:49	7° <del>ℳ</del> 23'54	-13°44'04	evening set	14006 Oct 14 04:29	13° <del>ℳ</del> 51'20	
minimum elong	13999 Oct 16 00:05	7° <del>ℳ</del> 23'54	13°43'30				
max. Earth dist.	13999 Oct 16 12:37	7° <del>ℳ</del> 24'38	49.84022 AU	conjunction	14006 Oct 22 10:06	14° <del>ℳ</del> 02'36	-12°46'01
morning rise	13999 Oct 22 08:01	7° <del>ℳ</del> 32'36		minimum elong	14006 Oct 22 10:20	14° <del>ℳ</del> 02'37	12°45'21
retrograde	14000 Jan 25 11:39	8° <del>ℳ</del> 52'44		max. Earth dist.	14006 Oct 22 15:15	14° <del>ℳ</del> 02'54	49.68183 AU
opposition	14000 Apr 18 10:47	7° <del>ℳ</del> 53'23	-14°14'07	morning rise	14006 Oct 30 16:50	14° <del>ℳ</del> 13'57	
min. Earth dist.	14000 Apr 17 23:44	7° <del>ℳ</del> 53'54	47.89434 AU		14006 Dec 06 19:54	15° <del>ℳ</del>	
direct	14000 Jul 09 21:42	6° <del>ℳ</del> 54'41		retrograde	14007 Feb 01 05:13	15° <del>ℳ</del> 31'27	
evening set	14000 Oct 09 14:14	8° <del>ℳ</del> 11'43			14007 Mar 30 20:58	15° <del>ℳ</del>	
				opposition	14007 Apr 25 21:37	14° <del>ℳ</del> 32'11	-13°13'04
conjunction	14000 Oct 16 04:36	8° <del>ℳ</del> 20'46	-13°36'25	min. Earth dist.	14007 Apr 25 17:42	14° <del>ℳ</del> 32'21	47.71221 AU
minimum elong	14000 Oct 16 04:50	8° <del>ℳ</del> 20'47	13°35'51	direct	14007 Jul 17 03:33	13° <del>ℳ</del> 33'32	
max. Earth dist.	14000 Oct 16 16:03	8° <del>ℳ</del> 21'25	49.82981 AU	evening set	14007 Oct 15 03:25	14° <del>ℳ</del> 48'00	
morning rise	14000 Oct 22 19:51	8° <del>ℳ</del> 29'53					
retrograde	14001 Jan 25 18:36	9° <del>ℳ</del> 49'34		conjunction	14007 Oct 23 15:05	14° <del>ℳ</del> 59'37	-12°36'55
opposition	14001 Apr 19 15:44	8° <del>ℳ</del> 50'15	-14°06'03	minimum elong	14007 Oct 23 15:19	14° <del>ℳ</del> 59'38	12°36'15
min. Earth dist.	14001 Apr 19 04:28	8° <del>ℳ</del> 50'47	47.88125 AU		14007 Oct 23 21:39	15° <del>ℳ</del>	
direct	14001 Jul 11 01:53	7° <del>ℳ</del> 51'34		max. Earth dist.	14007 Oct 23 19:47	14° <del>ℳ</del> 59'54	49.64002 AU
evening set	14001 Oct 10 11:57	9° <del>ℳ</del> 08'11		morning rise	14007 Nov 01 03:46	15° <del>ℳ</del> 11'19	
				retrograde	14008 Feb 02 08:30	16° <del>ℳ</del> 28'28	
conjunction	14001 Oct 17 09:18	9° <del>ℳ</del> 17'38	-13°28'32	opposition	14008 Apr 26 02:24	15° <del>ℳ</del> 29'11	-13°03'31
minimum elong	14001 Oct 17 09:33	9° <del>ℳ</del> 17'39	13°27'58	min. Earth dist.	14008 Apr 25 22:31	15° <del>ℳ</del> 29'21	47.66695 AU
max. Earth dist.	14001 Oct 17 20:03	9° <del>ℳ</del> 18'15	49.81613 AU		14008 May 23 11:07	15° <del>ℳ</del>	
morning rise	14001 Oct 24 07:36	9° <del>ℳ</del> 27'08		direct	14008 Jul 17 07:55	14° <del>ℳ</del> 30'30	
retrograde	14002 Jan 27 01:30	10° <del>ℳ</del> 46'26			14008 Sep 08 20:43	15° <del>ℳ</del>	
opposition	14002 Apr 20 20:48	9° <del>ℳ</del> 47'08	-13°57'45	evening set	14008 Oct 15 02:24	15° <del>ℳ</del> 44'40	
min. Earth dist.	14002 Apr 20 11:19	9° <del>ℳ</del> 47'34	47.86472 AU				
direct	14002 Jul 12 05:06	8° <del>ℳ</del> 48'29		conjunction	14008 Oct 23 19:55	15° <del>ℳ</del> 56'37	-12°27'37
evening set	14002 Oct 11 10:10	10° <del>ℳ</del> 04'42		minimum elong	14008 Oct 23 20:10	15° <del>ℳ</del> 56'38	12°26'55
				max. Earth dist.	14008 Oct 23 22:49	15° <del>ℳ</del> 56'47	49.59407 AU
conjunction	14002 Oct 18 14:16	10° <del>ℳ</del> 14'32	-13°20'26	morning rise	14008 Nov 01 14:42	16° <del>ℳ</del> 08'38	
minimum elong	14002 Oct 18 14:30	10° <del>ℳ</del> 14'33	13°19'50	retrograde	14009 Feb 02 11:57	17° <del>ℳ</del> 25'29	
max. Earth dist.	14002 Oct 19 00:46	10° <del>ℳ</del> 15'08	49.79891 AU	opposition	14009 Apr 27 07:24	16° <del>ℳ</del> 26'09	-12°53'44
morning rise	14002 Oct 25 19:13	10° <del>ℳ</del> 24'25		min. Earth dist.	14009 Apr 27 04:42	16° <del>ℳ</del> 26'17	47.61802 AU
retrograde	14003 Jan 28 05:35	11° <del>ℳ</del> 43'20		direct	14009 Jul 18 13:08	15° <del>ℳ</del> 27'27	
opposition	14003 Apr 22 01:33	10° <del>ℳ</del> 44'04	-13°49'13	evening set	14009 Oct 16 01:18	16° <del>ℳ</del> 41'19	
min. Earth dist.	14003 Apr 21 16:19	10° <del>ℳ</del> 44'29	47.84419 AU				
direct	14003 Jul 13 08:15	9° <del>ℳ</del> 45'25		conjunction	14009 Oct 25 00:48	16° <del>ℳ</del> 53'36	-12°18'05
evening set	14003 Oct 12 08:32	11° <del>ℳ</del> 01'18		minimum elong	14009 Oct 25 01:02	16° <del>ℳ</del> 53'37	12°17'23
				max. Earth dist.	14009 Oct 25 04:00	16° <del>ℳ</del> 53'47	49.54463 AU
conjunction	14003 Oct 19 19:09	11° <del>ℳ</del> 11'30	-13°12'08	morning rise	14009 Nov 03 01:22	17° <del>ℳ</del> 05'58	
minimum elong	14003 Oct 19 19:24	11° <del>ℳ</del> 11'31	13°11'32	retrograde	14010 Feb 03 15:13	18° <del>ℳ</del> 22'31	
max. Earth dist.	14003 Oct 20 03:35	11° <del>ℳ</del> 11'59	49.77730 AU	opposition	14010 Apr 28 12:22	17° <del>ℳ</del> 23'10	-12°43'44
morning rise	14003 Oct 27 06:50	11° <del>ℳ</del> 21'45		min. Earth dist.	14010 Apr 28 10:34	17° <del>ℳ</del> 23'15	47.56568 AU
retrograde	14004 Jan 29 10:47	12° <del>ℳ</del> 40'18		direct	14010 Jul 19 21:08	16° <del>ℳ</del> 24'26	
opposition	14004 Apr 22 06:34	11° <del>ℳ</del> 41'03	-13°40'29	evening set	14010 Oct 17 00:37	17° <del>ℳ</del> 38'01	
min. Earth dist.	14004 Apr 21 22:49	11° <del>ℳ</del> 41'25	47.81909 AU				
direct	14004 Jul 13 12:38	10° <del>ℳ</del> 42'26		conjunction	14010 Oct 26 05:44	17° <del>ℳ</del> 50'38	-12°08'20
evening set	14004 Oct 12 06:57	11° <del>ℳ</del> 57'57		minimum elong	14010 Oct 26 05:58	17° <del>ℳ</del> 50'39	12°07'37
				max. Earth dist.	14010 Oct 26 07:35	17° <del>ℳ</del> 50'44	49.49211 AU
conjunction	14004 Oct 20 00:07	12° <del>ℳ</del> 08'31	-13°03'37	morning rise	14010 Nov 04 12:06	18° <del>ℳ</del> 03'20	
minimum elong	14004 Oct 20 00:21	12° <del>ℳ</del> 08'32	13°02'59	retrograde	14011 Feb 04 22:22	19° <del>ℳ</del> 19'36	
max. Earth dist.	14004 Oct 20 08:17	12° <del>ℳ</del> 08'59	49.75074 AU	opposition	14011 Apr 29 17:06	18° <del>ℳ</del> 20'13	-12°33'29
morning rise	14004 Oct 27 18:14	12° <del>ℳ</del> 19'08		min. Earth dist.	14011 Apr 29 15:14	18° <del>ℳ</del> 20'19	47.51042 AU
retrograde	14005 Jan 29 14:06	13° <del>ℳ</del> 37'20		direct	14011 Jul 21 01:24	17° <del>ℳ</del> 21'28	
opposition	14005 Apr 23 11:39	12° <del>ℳ</del> 38'05	-13°31'32	evening set	14011 Oct 17 23:50	18° <del>ℳ</del> 34'47	
min. Earth dist.	14005 Apr 23 05:11	12° <del>ℳ</del> 38'23	47.78866 AU				
direct	14005 Jul 14 20:28	11° <del>ℳ</del> 39'29		conjunction	14011 Oct 27 10:41	18° <del>ℳ</del> 47'44	-11°58'20
evening set	14005 Oct 13 05:46	12° <del>ℳ</del> 54'39		minimum elong	14011 Oct 27 10:54	18° <del>ℳ</del> 47'44	11°57'37

max. Earth dist.	14011 Oct 27 11:46	18° $\mathcal{M}$ 47'47	49.43656 AU	conjunction	14018 Nov 02 23:11	25° $\mathcal{M}$ 31'27	-10°42'22
morning rise	14011 Nov 05 22:48	19° $\mathcal{M}$ 00'45		minimum elong	14018 Nov 02 23:24	25° $\mathcal{M}$ 31'28	10°41'35
retrograde	14012 Feb 06 05:35	20° $\mathcal{M}$ 16'46		max. Earth dist.	14018 Nov 02 16:35	25° $\mathcal{M}$ 31'04	48.94235 AU
opposition	14012 Apr 29 22:09	19° $\mathcal{M}$ 17'23	-12°23'00	morning rise	14018 Nov 14 00:34	25° $\mathcal{M}$ 46'41	
min. Earth dist.	14012 Apr 29 21:54	19° $\mathcal{M}$ 17'23	47.45216 AU	retrograde	14019 Feb 12 21:09	27° $\mathcal{M}$ 01'09	
direct	14012 Jul 21 04:34	18° $\mathcal{M}$ 18'37		opposition	14019 May 07 09:55	26° $\mathcal{M}$ 01'32	-11°03'26
evening set	14012 Oct 17 23:11	19° $\mathcal{M}$ 31'40		min. Earth dist.	14019 May 07 16:33	26° $\mathcal{M}$ 01'14	46.93295 AU
				direct	14019 Jul 28 11:28	25° $\mathcal{M}$ 02'30	
conjunction	14012 Oct 27 15:36	19° $\mathcal{M}$ 44'56	-11°48'08	evening set	14019 Oct 23 23:54	26° $\mathcal{M}$ 14'07	
minimum elong	14012 Oct 27 15:50	19° $\mathcal{M}$ 44'57	11°47'24				
max. Earth dist.	14012 Oct 27 16:43	19° $\mathcal{M}$ 45'00	49.37817 AU	conjunction	14019 Nov 04 04:45	26° $\mathcal{M}$ 29'32	-10°30'43
morning rise	14012 Nov 06 09:11	19° $\mathcal{M}$ 58'18		minimum elong	14019 Nov 04 04:58	26° $\mathcal{M}$ 29'33	10°29'54
retrograde	14013 Feb 06 10:46	21° $\mathcal{M}$ 14'03		max. Earth dist.	14019 Nov 03 22:01	26° $\mathcal{M}$ 29'09	48.85207 AU
opposition	14013 May 01 03:07	20° $\mathcal{M}$ 14'39	-12°12'17	morning rise	14019 Nov 15 10:57	26° $\mathcal{M}$ 45'03	
min. Earth dist.	14013 May 01 02:39	20° $\mathcal{M}$ 14'40	47.39087 AU	retrograde	14020 Feb 13 23:17	27° $\mathcal{M}$ 59'19	
direct	14013 Jul 22 06:53	19° $\mathcal{M}$ 15'52		opposition	14020 May 07 15:13	26° $\mathcal{M}$ 59'37	-10°51'14
evening set	14013 Oct 18 22:46	20° $\mathcal{M}$ 28'42		min. Earth dist.	14020 May 07 22:50	26° $\mathcal{M}$ 59'15	46.83905 AU
				direct	14020 Jul 28 19:34	26° $\mathcal{M}$ 00'29	
conjunction	14013 Oct 28 20:33	20° $\mathcal{M}$ 42'18	-11°37'41	evening set	14020 Oct 24 00:30	27° $\mathcal{M}$ 11'55	
minimum elong	14013 Oct 28 20:46	20° $\mathcal{M}$ 42'19	11°36'56				
max. Earth dist.	14013 Oct 28 19:52	20° $\mathcal{M}$ 42'15	49.31659 AU	conjunction	14020 Nov 04 10:02	27° $\mathcal{M}$ 27'37	-10°18'51
morning rise	14013 Nov 07 19:47	20° $\mathcal{M}$ 55'58		minimum elong	14020 Nov 04 10:14	27° $\mathcal{M}$ 27'38	10°18'02
retrograde	14014 Feb 07 15:58	22° $\mathcal{M}$ 11'29		max. Earth dist.	14020 Nov 04 01:46	27° $\mathcal{M}$ 27'09	48.75753 AU
opposition	14014 May 02 08:07	21° $\mathcal{M}$ 12'05	-12°01'20	morning rise	14020 Nov 15 21:08	27° $\mathcal{M}$ 43'26	
min. Earth dist.	14014 May 02 08:57	21° $\mathcal{M}$ 12'03	47.32632 AU	retrograde	14021 Feb 14 05:17	28° $\mathcal{M}$ 57'31	
direct	14014 Jul 23 10:11	20° $\mathcal{M}$ 13'18		opposition	14021 May 08 20:31	27° $\mathcal{M}$ 57'44	-10°38'48
evening set	14014 Oct 19 22:25	21° $\mathcal{M}$ 25'55		min. Earth dist.	14021 May 09 04:21	27° $\mathcal{M}$ 57'21	46.74127 AU
				direct	14021 Jul 30 01:04	26° $\mathcal{M}$ 58'30	
conjunction	14014 Oct 30 01:45	21° $\mathcal{M}$ 39'49	-11°27'02	evening set	14021 Oct 25 01:14	28° $\mathcal{M}$ 09'45	
minimum elong	14014 Oct 30 01:59	21° $\mathcal{M}$ 39'50	11°26'17				
max. Earth dist.	14014 Oct 30 01:06	21° $\mathcal{M}$ 39'47	49.25141 AU	conjunction	14021 Nov 05 15:33	28° $\mathcal{M}$ 25'45	-10°06'46
morning rise	14014 Nov 09 06:20	21° $\mathcal{M}$ 53'49		minimum elong	14021 Nov 05 15:46	28° $\mathcal{M}$ 25'46	10°05'55
retrograde	14015 Feb 08 18:51	23° $\mathcal{M}$ 09'08		max. Earth dist.	14021 Nov 05 06:28	28° $\mathcal{M}$ 25'14	48.65917 AU
opposition	14015 May 03 13:11	22° $\mathcal{M}$ 09'42	-11°50'10	morning rise	14021 Nov 17 07:28	28° $\mathcal{M}$ 41'51	
min. Earth dist.	14015 May 03 15:05	22° $\mathcal{M}$ 09'37	47.25771 AU	retrograde	14022 Feb 15 12:30	29° $\mathcal{M}$ 55'47	
direct	14015 Jul 24 17:50	21° $\mathcal{M}$ 10'54		opposition	14022 May 10 01:53	28° $\mathcal{M}$ 55'54	-10°26'08
evening set	14015 Oct 20 22:29	22° $\mathcal{M}$ 23'19		min. Earth dist.	14022 May 10 11:24	28° $\mathcal{M}$ 55'27	46.63998 AU
				direct	14022 Jul 31 06:07	27° $\mathcal{M}$ 56'35	
conjunction	14015 Oct 31 06:57	22° $\mathcal{M}$ 37'32	-11°16'10	evening set	14022 Oct 26 02:09	29° $\mathcal{M}$ 07'41	
minimum elong	14015 Oct 31 07:10	22° $\mathcal{M}$ 37'33	11°15'23				
max. Earth dist.	14015 Oct 31 04:39	22° $\mathcal{M}$ 37'24	49.18196 AU	conjunction	14022 Nov 06 21:11	29° $\mathcal{M}$ 23'58	-9°54'27
morning rise	14015 Nov 10 16:51	22° $\mathcal{M}$ 51'50		minimum elong	14022 Nov 06 21:23	29° $\mathcal{M}$ 23'59	9°53'36
retrograde	14016 Feb 10 01:16	24° $\mathcal{M}$ 06'57		max. Earth dist.	14022 Nov 06 11:57	29° $\mathcal{M}$ 23'26	48.55767 AU
opposition	14016 May 03 18:11	23° $\mathcal{M}$ 07'30	-11°38'47	morning rise	14022 Nov 18 17:40	29° $\mathcal{M}$ 40'22	
min. Earth dist.	14016 May 03 20:38	23° $\mathcal{M}$ 07'24	47.18454 AU		14022 Dec 03 12:48	0° $\mathcal{A}$	
direct	14016 Jul 24 23:52	22° $\mathcal{M}$ 08'40		retrograde	14023 Feb 16 18:52	0° $\mathcal{A}$ 54'08	
evening set	14016 Oct 20 22:35	23° $\mathcal{M}$ 20'53			14023 May 06 03:30	30° $\mathcal{R}$ $\mathcal{M}$	
				opposition	14023 May 11 07:11	29° $\mathcal{M}$ 54'11	-10°13'15
conjunction	14016 Oct 31 12:19	23° $\mathcal{M}$ 35'24	-11°05'06	min. Earth dist.	14023 May 11 16:30	29° $\mathcal{M}$ 53'45	46.53559 AU
minimum elong	14016 Oct 31 12:32	23° $\mathcal{M}$ 35'25	11°04'19	direct	14023 Aug 01 09:41	28° $\mathcal{M}$ 54'47	
max. Earth dist.	14016 Oct 31 08:40	23° $\mathcal{M}$ 35'12	49.10745 AU		14023 Oct 22 21:07	0° $\mathcal{A}$	
morning rise	14016 Nov 11 03:29	23° $\mathcal{M}$ 50'02		evening set	14023 Oct 27 03:14	0° $\mathcal{A}$ 05'46	
retrograde	14017 Feb 10 10:28	25° $\mathcal{M}$ 04'56					
opposition	14017 May 04 23:30	24° $\mathcal{M}$ 05'27	-11°27'12	conjunction	14023 Nov 08 02:41	0° $\mathcal{A}$ 22'20	-9°41'55
min. Earth dist.	14017 May 05 04:06	24° $\mathcal{M}$ 05'14	47.10608 AU	minimum elong	14023 Nov 08 02:54	0° $\mathcal{A}$ 22'21	9°41'03
direct	14017 Jul 26 03:27	23° $\mathcal{M}$ 06'34		max. Earth dist.	14023 Nov 07 15:41	0° $\mathcal{A}$ 21'42	48.45309 AU
evening set	14017 Oct 21 22:52	24° $\mathcal{M}$ 18'34		morning rise	14023 Nov 20 03:54	0° $\mathcal{A}$ 39'01	
				retrograde	14024 Feb 18 01:10	1° $\mathcal{A}$ 52'40	
conjunction	14017 Nov 01 17:44	24° $\mathcal{M}$ 33'24	-10°53'50	opposition	14024 May 11 12:40	0° $\mathcal{A}$ 52'38	-10°00'06
minimum elong	14017 Nov 01 17:57	24° $\mathcal{M}$ 33'25	10°53'02	min. Earth dist.	14024 May 11 23:12	0° $\mathcal{A}$ 52'08	46.42832 AU
max. Earth dist.	14017 Nov 01 13:24	24° $\mathcal{M}$ 33'09	49.02765 AU		14024 Jul 07 09:53	30° $\mathcal{R}$ $\mathcal{M}$	
morning rise	14017 Nov 12 13:56	24° $\mathcal{M}$ 48'20		direct	14024 Aug 01 12:59	29° $\mathcal{M}$ 53'09	
retrograde	14018 Feb 11 16:16	26° $\mathcal{M}$ 03'01			14024 Aug 26 14:44	0° $\mathcal{A}$	
opposition	14018 May 06 04:44	25° $\mathcal{M}$ 03'29	-11°15'25	evening set	14024 Oct 27 04:22	1° $\mathcal{A}$ 04'03	
min. Earth dist.	14018 May 06 09:32	25° $\mathcal{M}$ 03'15	47.02210 AU				
direct	14018 Jul 27 06:50	24° $\mathcal{M}$ 04'31		conjunction	14024 Nov 08 08:28	1° $\mathcal{A}$ 20'54	-9°29'08
evening set	14018 Oct 22 23:24	25° $\mathcal{M}$ 16'20		minimum elong	14024 Nov 08 08:40	1° $\mathcal{A}$ 20'55	9°28'16

max. Earth dist.	14024 Nov 07 21:44	1°♂20'17	48.34568 AU	max. Earth dist.	14031 Nov 15 08:50	8°♂18'15	47.48362 AU
morning rise	14024 Nov 20 14:04	1°♂37'52					
retrograde	14025 Feb 18 05:06	2°♂51'25		conjunction	14031 Nov 16 03:47	8°♂19'22	-7°53'34
opposition	14025 May 12 18:15	1°♂51'19	-9°46'44	minimum elong	14031 Nov 16 03:57	8°♂19'22	7°52'37
min. Earth dist.	14025 May 13 05:19	1°♂50'48	46.31811 AU	morning rise	14031 Nov 29 14:29	8°♂38'16	
direct	14025 Aug 02 20:05	0°♂51'47		retrograde	14032 Feb 26 05:00	9°♂51'28	
evening set	14025 Oct 28 05:46	2°♂02'35		opposition	14032 May 19 11:37	8°♂50'47	-8°06'40
				min. Earth dist.	14032 May 20 06:22	8°♂49'53	45.43154 AU
conjunction	14025 Nov 09 14:09	2°♂19'43	-9°16'08	direct	14032 Aug 09 11:50	7°♂50'35	
minimum elong	14025 Nov 09 14:21	2°♂19'44	9°15'15	evening set	14032 Nov 02 21:45	9°♂01'08	
max. Earth dist.	14025 Nov 09 02:08	2°♂19'01	48.23538 AU				
morning rise	14025 Nov 22 00:16	2°♂36'58		conjunction	14032 Nov 16 10:26	9°♂20'10	-7°39'03
retrograde	14026 Feb 19 11:34	3°♂50'27		minimum elong	14032 Nov 16 10:37	9°♂20'11	7°38'05
opposition	14026 May 13 23:51	2°♂50'18	-9°33'06	max. Earth dist.	14032 Nov 15 15:09	9°♂19'02	47.34208 AU
min. Earth dist.	14026 May 14 11:16	2°♂49'45	46.20485 AU	morning rise	14032 Nov 30 00:48	9°♂39'20	
direct	14026 Aug 04 02:11	1°♂50'42		retrograde	14033 Feb 26 13:21	10°♂52'30	
evening set	14026 Oct 29 07:24	3°♂01'27		opposition	14033 May 20 17:48	9°♂51'41	-7°51'27
				min. Earth dist.	14033 May 21 12:25	9°♂50'48	45.28695 AU
conjunction	14026 Nov 10 20:09	3°♂18'52	-9°02'54	direct	14033 Aug 10 16:11	8°♂51'20	
minimum elong	14026 Nov 10 20:20	3°♂18'52	9°02'00	evening set	14033 Nov 04 00:46	10°♂01'53	
max. Earth dist.	14026 Nov 10 07:07	3°♂18'06	48.12158 AU				
morning rise	14026 Nov 23 10:37	3°♂36'24		conjunction	14033 Nov 17 17:00	10°♂21'11	-7°24'18
retrograde	14027 Feb 20 20:37	4°♂49'49		minimum elong	14033 Nov 17 17:09	10°♂21'11	7°23'21
opposition	14027 May 15 05:31	3°♂49'37	-9°19'15	max. Earth dist.	14033 Nov 16 19:52	10°♂19'56	47.19701 AU
min. Earth dist.	14027 May 15 18:48	3°♂48'59	46.08786 AU	morning rise	14033 Dec 01 11:12	10°♂40'36	
direct	14027 Aug 05 06:32	2°♂49'57		retrograde	14034 Feb 27 22:39	11°♂53'45	
evening set	14027 Oct 30 09:17	4°♂00'40		opposition	14034 May 22 00:13	10°♂52'47	-7°36'00
				min. Earth dist.	14034 May 22 20:19	10°♂51'49	45.13919 AU
conjunction	14027 Nov 12 02:18	4°♂18'22	-8°49'27	direct	14034 Aug 11 18:54	9°♂52'17	
minimum elong	14027 Nov 12 02:30	4°♂18'22	8°48'34	evening set	14034 Nov 05 04:00	11°♂02'51	
max. Earth dist.	14027 Nov 11 12:50	4°♂17'34	48.00388 AU				
morning rise	14027 Nov 24 20:53	4°♂36'11		conjunction	14034 Nov 18 23:57	11°♂22'24	-7°09'19
retrograde	14028 Feb 22 04:55	5°♂49'32		minimum elong	14034 Nov 19 00:07	11°♂22'25	7°08'21
opposition	14028 May 15 11:18	4°♂49'17	-9°05'11	max. Earth dist.	14034 Nov 18 03:05	11°♂21'10	47.04892 AU
min. Earth dist.	14028 May 16 00:39	4°♂48'39	45.96656 AU	morning rise	14034 Dec 02 21:32	11°♂42'05	
direct	14028 Aug 05 09:10	3°♂49'33		retrograde	14035 Mar 01 03:55	12°♂55'14	
evening set	14028 Oct 30 11:22	5°♂00'14		opposition	14035 May 23 06:33	11°♂54'08	-7°20'18
				min. Earth dist.	14035 May 24 02:59	11°♂53'09	44.98855 AU
conjunction	14028 Nov 12 08:21	5°♂18'12	-8°35'48	direct	14035 Aug 13 02:19	10°♂53'28	
minimum elong	14028 Nov 12 08:32	5°♂18'13	8°34'52	evening set	14035 Nov 06 07:34	12°♂04'04	
max. Earth dist.	14028 Nov 11 16:45	5°♂17'17	47.88143 AU	max. Earth dist.	14035 Nov 19 08:36	12°♂22'33	46.89825 AU
morning rise	14028 Nov 25 07:14	5°♂36'18					
retrograde	14029 Feb 22 12:00	6°♂49'37		conjunction	14035 Nov 20 06:49	12°♂23'53	-6°54'06
opposition	14029 May 16 17:22	5°♂49'17	-8°50'53	minimum elong	14035 Nov 20 06:58	12°♂23'53	6°53'08
min. Earth dist.	14029 May 17 08:36	5°♂48'34	45.84036 AU	morning rise	14035 Dec 04 07:59	12°♂43'49	
direct	14029 Aug 06 13:50	4°♂49'28		retrograde	14036 Mar 01 09:17	13°♂56'59	
evening set	14029 Oct 31 13:40	6°♂00'06		opposition	14036 May 23 13:08	12°♂55'45	-7°04'21
				min. Earth dist.	14036 May 24 09:55	12°♂54'45	44.83554 AU
conjunction	14029 Nov 13 14:51	6°♂18'21	-8°21'56	direct	14036 Aug 13 09:50	11°♂54'57	
minimum elong	14029 Nov 13 15:02	6°♂18'22	8°21'01	evening set	14036 Nov 06 11:06	13°♂05'35	
max. Earth dist.	14029 Nov 12 22:54	6°♂17'25	47.75385 AU				
morning rise	14029 Nov 26 17:39	6°♂36'43		conjunction	14036 Nov 20 13:46	13°♂25'39	-6°38'39
retrograde	14030 Feb 23 14:58	7°♂50'00		minimum elong	14036 Nov 20 13:56	13°♂25'40	6°37'40
opposition	14030 May 17 23:21	6°♂49'33	-8°36'22	max. Earth dist.	14036 Nov 19 14:57	13°♂24'17	46.74505 AU
min. Earth dist.	14030 May 18 15:36	6°♂48'47	45.70886 AU	morning rise	14036 Dec 04 18:16	13°♂45'51	
direct	14030 Aug 07 22:19	5°♂49'38		retrograde	14037 Mar 02 16:38	14°♂59'05	
evening set	14030 Nov 01 16:17	7°♂00'14		opposition	14037 May 24 20:00	13°♂57'42	-6°48'09
				min. Earth dist.	14037 May 25 18:04	13°♂56'38	44.68000 AU
conjunction	14030 Nov 14 21:18	7°♂18'45	-8°07'51	direct	14037 Aug 14 17:44	12°♂56'46	
minimum elong	14030 Nov 14 21:29	7°♂18'46	8°06'55	evening set	14037 Nov 07 15:05	14°♂07'28	
max. Earth dist.	14030 Nov 14 03:24	7°♂17'42	47.62118 AU				
morning rise	14030 Nov 28 04:09	7°♂37'23		conjunction	14037 Nov 21 21:03	14°♂27'47	-6°22'57
retrograde	14031 Feb 24 21:19	8°♂50'37		minimum elong	14037 Nov 21 21:12	14°♂27'48	6°21'58
opposition	14031 May 19 05:24	7°♂50'04	-8°21'38	max. Earth dist.	14037 Nov 20 22:04	14°♂26'25	46.58946 AU
min. Earth dist.	14031 May 19 22:19	7°♂49'16	45.57246 AU	morning rise	14037 Dec 06 04:45	14°♂48'14	
direct	14031 Aug 09 05:06	6°♂50'00		retrograde	14038 Mar 04 02:21	16°♂01'32	
evening set	14031 Nov 02 18:53	8°♂00'35		opposition	14038 May 26 02:43	15°♂00'03	-6°31'41



min. Earth dist.	14038 May 27 00:30	14°♂58'59	44.52189 AU	morning rise	14044 Dec 14 08:36	22°♂17'26	
direct	14038 Aug 15 22:28	13°♂58'58		retrograde	14045 Mar 11 16:56	23°♂31'40	
evening set	14038 Nov 08 19:27	15°♂09'47		opposition	14045 Jun 02 07:46	22°♂29'06	-4°29'36
max. Earth dist.	14038 Nov 22 03:42	15°♂28'52	46.43093 AU	min. Earth dist.	14045 Jun 03 12:55	22°♂27'39	43.30202 AU
				direct	14045 Aug 22 20:59	21°♂26'50	
conjunction	14038 Nov 23 04:27	15°♂30'21	-6°07'01	evening set	14045 Nov 15 10:17	22°♂38'46	
minimum elong	14038 Nov 23 04:36	15°♂30'21	6°06'01	max. Earth dist.	14045 Nov 29 05:50	22°♂59'00	45.20328 AU
morning rise	14038 Dec 07 15:27	15°♂51'02					
retrograde	14039 Mar 05 12:13	17°♂04'26		conjunction	14045 Nov 30 14:04	23°♂00'59	-4°09'03
opposition	14039 May 27 09:49	16°♂02'50	-6°14'58	minimum elong	14045 Nov 30 14:10	23°♂01'00	4°08'00
min. Earth dist.	14039 May 28 09:24	16°♂01'41	44.36067 AU	morning rise	14045 Dec 15 19:46	23°♂23'21	
direct	14039 Aug 17 02:44	15°♂01'37		retrograde	14046 Mar 13 01:29	24°♂37'45	
evening set	14039 Nov 09 23:57	16°♂12'33		opposition	14046 Jun 03 15:51	23°♂35'00	-4°11'10
max. Earth dist.	14039 Nov 23 11:23	16°♂31'53	46.26889 AU	min. Earth dist.	14046 Jun 04 21:56	23°♂33'30	43.11197 AU
				direct	14046 Aug 24 04:55	22°♂32'32	
conjunction	14039 Nov 24 12:07	16°♂33'22	-5°50'50	evening set	14046 Nov 16 17:01	23°♂44'41	
minimum elong	14039 Nov 24 12:15	16°♂33'22	5°49'49				
morning rise	14039 Dec 09 01:57	16°♂54'19		conjunction	14046 Dec 01 23:05	24°♂07'08	-3°51'16
retrograde	14040 Mar 05 19:02	18°♂07'49		minimum elong	14046 Dec 01 23:10	24°♂07'09	3°50'14
opposition	14040 May 27 17:01	17°♂06'05	-5°58'00	max. Earth dist.	14046 Nov 30 14:17	24°♂05'06	45.01252 AU
min. Earth dist.	14040 May 28 17:08	17°♂04'54	44.19555 AU	morning rise	14046 Dec 17 06:51	24°♂29'43	
direct	14040 Aug 17 10:18	16°♂04'44		retrograde	14047 Mar 14 08:25	25°♂44'21	
evening set	14040 Nov 10 05:01	17°♂15'49		opposition	14047 Jun 05 00:19	24°♂41'24	-3°52'29
				min. Earth dist.	14047 Jun 06 07:30	24°♂39'50	42.91918 AU
conjunction	14040 Nov 24 19:57	17°♂36'52	-5°34'26	direct	14047 Aug 25 15:35	23°♂38'44	
minimum elong	14040 Nov 24 20:05	17°♂36'53	5°33'26	evening set	14047 Nov 18 00:03	24°♂51'08	
max. Earth dist.	14040 Nov 23 17:17	17°♂35'15	46.10272 AU	max. Earth dist.	14047 Dec 01 22:59	25°♂11'44	44.81936 AU
morning rise	14040 Dec 09 12:51	17°♂58'03					
retrograde	14041 Mar 07 03:09	19°♂11'41		conjunction	14047 Dec 03 08:09	25°♂13'48	-3°33'14
opposition	14041 May 29 00:25	18°♂09'49	-5°40'48	minimum elong	14047 Dec 03 08:14	25°♂13'48	3°32'11
min. Earth dist.	14041 May 30 01:30	18°♂08'35	44.02609 AU	morning rise	14047 Dec 18 17:56	25°♂36'36	
direct	14041 Aug 18 17:33	17°♂08'19		retrograde	14048 Mar 14 18:53	26°♂51'29	
evening set	14041 Nov 11 10:16	18°♂19'32		opposition	14048 Jun 05 08:51	25°♂48'21	-3°33'32
max. Earth dist.	14041 Nov 25 00:21	18°♂39'09	45.93173 AU	min. Earth dist.	14048 Jun 06 15:41	25°♂46'48	42.72417 AU
				direct	14048 Aug 25 23:03	24°♂45'28	
conjunction	14041 Nov 26 04:06	18°♂40'50	-5°17'49	evening set	14048 Nov 18 07:34	25°♂58'08	
minimum elong	14041 Nov 26 04:13	18°♂40'50	5°16'48	max. Earth dist.	14048 Dec 02 06:51	26°♂18'52	44.62392 AU
morning rise	14041 Dec 10 23:44	19°♂02'16					
retrograde	14042 Mar 08 10:55	20°♂16'02		conjunction	14048 Dec 03 17:29	26°♂21'02	-3°14'58
opposition	14042 May 30 08:08	19°♂14'00	-5°23'22	minimum elong	14048 Dec 03 17:33	26°♂21'02	3°13'55
min. Earth dist.	14042 May 31 11:01	19°♂12'41	43.85163 AU	morning rise	14048 Dec 19 05:14	26°♂44'03	
direct	14042 Aug 20 02:00	18°♂12'20		retrograde	14049 Mar 16 07:06	27°♂59'12	
evening set	14042 Nov 12 15:54	19°♂23'42		opposition	14049 Jun 06 17:45	26°♂55'53	-3°14'19
max. Earth dist.	14042 Nov 26 07:50	19°♂43'29	45.75592 AU	min. Earth dist.	14049 Jun 08 02:11	26°♂54'15	42.52706 AU
				direct	14049 Aug 27 04:32	25°♂52'49	
conjunction	14042 Nov 27 12:28	19°♂45'14	-5°00'58	evening set	14049 Nov 19 15:19	27°♂05'47	
minimum elong	14042 Nov 27 12:35	19°♂45'15	4°59'58	max. Earth dist.	14049 Dec 03 16:51	27°♂26'44	44.42637 AU
morning rise	14042 Dec 12 10:45	20°♂06'54					
retrograde	14043 Mar 09 20:24	21°♂20'48		conjunction	14049 Dec 05 03:11	27°♂28'53	-2°56'27
opposition	14043 May 31 15:42	20°♂18'37	-5°05'42	minimum elong	14049 Dec 05 03:16	27°♂28'53	2°55'24
min. Earth dist.	14043 Jun 01 18:48	20°♂17'17	43.67248 AU	morning rise	14049 Dec 20 16:35	27°♂52'07	
direct	14043 Aug 21 08:41	19°♂16'46		retrograde	14050 Mar 17 18:24	29°♂07'33	
evening set	14043 Nov 13 21:50	20°♂28'18		opposition	14050 Jun 08 02:49	28°♂04'04	-2°54'51
				min. Earth dist.	14050 Jun 09 11:08	28°♂02'26	42.32766 AU
conjunction	14043 Nov 28 20:51	20°♂50'04	-4°43'54	direct	14050 Aug 28 12:25	27°♂00'48	
minimum elong	14043 Nov 28 20:57	20°♂50'04	4°42'52	evening set	14050 Nov 20 23:44	28°♂14'06	
max. Earth dist.	14043 Nov 27 14:07	20°♂48'11	45.57547 AU	max. Earth dist.	14050 Dec 05 00:56	28°♂35'08	44.22636 AU
morning rise	14043 Dec 13 21:48	21°♂11'58					
retrograde	14044 Mar 10 08:20	22°♂26'01		conjunction	14050 Dec 06 13:04	28°♂37'25	-2°37'42
opposition	14044 May 31 23:42	21°♂23'39	-4°47'46	minimum elong	14050 Dec 06 13:07	28°♂37'25	2°36'39
min. Earth dist.	14044 Jun 02 04:39	21°♂22'13	43.48910 AU	morning rise	14050 Dec 22 04:12	29°♂00'52	
direct	14044 Aug 21 13:08	20°♂21'36			14051 Feb 08 20:35	0°♂	
evening set	14044 Nov 14 03:45	21°♂33'19		retrograde	14051 Mar 19 06:28	0°♂16'37	
max. Earth dist.	14044 Nov 27 22:48	21°♂53'26	45.39106 AU		14051 Apr 26 23:53	30°♂	
				opposition	14051 Jun 09 12:02	29°♂12'56	-2°35'08
conjunction	14044 Nov 29 05:22	21°♂55'18	-4°26'35	min. Earth dist.	14051 Jun 10 21:28	29°♂11'14	42.12569 AU
minimum elong	14044 Nov 29 05:28	21°♂55'19	4°25'34	direct	14051 Aug 29 20:10	28°♂09'28	

evening set	14051 Nov 22 08:28	29° <del>7</del> 23'08		minimum elong	14057 Dec 14 18:57	6° <del>3</del> 56'19	0°18'57
max. Earth dist.	14051 Dec 06 10:51	29° <del>7</del> 44'21	44.02328 AU	morning rise	14057 Dec 30 16:40	7° <del>3</del> 21'03	
				retrograde	14058 Mar 27 15:48	8° <del>3</del> 39'30	
conjunction	14051 Dec 07 23:22	29° <del>7</del> 46'40	-2°18'43	opposition	14058 Jun 17 12:52	7° <del>3</del> 34'07	-0°10'03
minimum elong	14051 Dec 07 23:26	29° <del>7</del> 46'40	2°17'40	min. Earth dist.	14058 Jun 19 04:35	7° <del>3</del> 32'01	40.60550 AU
	14051 Dec 16 18:26	0° <del>3</del>		direct	14058 Sep 06 18:16	6° <del>3</del> 28'45	
morning rise	14051 Dec 23 15:48	0° <del>3</del> 10'19		evening set	14058 Nov 30 10:42	7° <del>3</del> 45'22	
retrograde	14052 Mar 19 15:55	1° <del>3</del> 26'25		asc. node	14058 Dec 05 11:23	7° <del>3</del> 53'09	
opposition	14052 Jun 09 21:42	0° <del>3</del> 22'33	-2°15'09	max. Earth dist.	14058 Dec 14 10:49	8° <del>3</del> 07'14	42.49268 AU
min. Earth dist.	14052 Jun 11 08:21	0° <del>3</del> 20'47	41.92035 AU				
	14052 Jun 28 16:47	30° <del>8</del>		conjunction	14058 Dec 16 07:13	8° <del>3</del> 10'09	0°00'40
direct	14052 Aug 30 06:26	29° <del>7</del> 18'52		minimum elong	14058 Dec 16 07:13	8° <del>3</del> 10'09	0°01'44
	14052 Oct 29 22:02	0° <del>3</del>		behind sun begin	14058 Dec 16 00:44	8° <del>3</del> 09'45	
evening set	14052 Nov 22 17:38	0° <del>3</del> 32'55		behind sun end	14058 Dec 16 13:41	8° <del>3</del> 10'33	
max. Earth dist.	14052 Dec 06 20:16	0° <del>3</del> 54'14	43.81661 AU	morning rise	14059 Jan 01 05:06	8° <del>3</del> 35'03	
				retrograde	14059 Mar 29 03:36	9° <del>3</del> 53'58	
conjunction	14052 Dec 08 09:48	0° <del>3</del> 56'38	-1°59'30	opposition	14059 Jun 19 00:20	8° <del>3</del> 48'18	0°11'40
minimum elong	14052 Dec 08 09:51	0° <del>3</del> 56'38	1°58'27	min. Earth dist.	14059 Jun 20 17:32	8° <del>3</del> 46'07	40.37599 AU
morning rise	14052 Dec 24 03:36	1° <del>3</del> 20'30		direct	14059 Sep 08 05:10	7° <del>3</del> 42'37	
retrograde	14053 Mar 21 01:37	2° <del>3</del> 36'57		evening set	14059 Dec 01 23:08	8° <del>3</del> 59'46	
opposition	14053 Jun 11 07:34	1° <del>3</del> 32'53	-1°54'56	max. Earth dist.	14059 Dec 15 23:39	9° <del>3</del> 21'47	42.26239 AU
min. Earth dist.	14053 Jun 12 18:35	1° <del>3</del> 31'05	41.71114 AU				
direct	14053 Aug 31 16:58	0° <del>3</del> 28'58		conjunction	14059 Dec 17 19:48	9° <del>3</del> 24'42	0°21'27
evening set	14053 Nov 24 03:27	1° <del>3</del> 43'23		minimum elong	14059 Dec 17 19:48	9° <del>3</del> 24'42	0°22'30
max. Earth dist.	14053 Dec 08 05:11	2° <del>3</del> 04'47	43.60555 AU	morning rise	14060 Jan 02 17:39	9° <del>3</del> 49'45	
				retrograde	14060 Mar 29 17:05	11° <del>3</del> 09'11	
conjunction	14053 Dec 09 20:44	2° <del>3</del> 07'18	-1°40'03	opposition	14060 Jun 19 12:06	10° <del>3</del> 03'14	0°33'38
minimum elong	14053 Dec 09 20:47	2° <del>3</del> 07'19	1°39'01	min. Earth dist.	14060 Jun 21 04:47	10° <del>3</del> 01'04	40.14503 AU
morning rise	14053 Dec 25 15:41	2° <del>3</del> 31'21		direct	14060 Sep 08 15:40	8° <del>3</del> 57'15	
retrograde	14054 Mar 22 14:22	3° <del>3</del> 48'11		evening set	14060 Dec 02 12:05	10° <del>3</del> 14'58	
opposition	14054 Jun 12 17:44	2° <del>3</del> 43'53	-1°34'27	max. Earth dist.	14060 Dec 16 10:42	10° <del>3</del> 37'00	42.03069 AU
min. Earth dist.	14054 Jun 14 06:50	2° <del>3</del> 41'58	41.49751 AU				
direct	14054 Sep 02 01:07	1° <del>3</del> 39'43		conjunction	14060 Dec 18 08:30	10° <del>3</del> 40'03	0°42'28
evening set	14054 Nov 25 13:36	2° <del>3</del> 54'32		minimum elong	14060 Dec 18 08:29	10° <del>3</del> 40'03	0°43'32
max. Earth dist.	14054 Dec 09 16:14	3° <del>3</del> 16'05	43.39013 AU	morning rise	14061 Jan 03 06:19	11° <del>3</del> 05'14	
				retrograde	14061 Mar 31 09:56	12° <del>3</del> 25'14	
conjunction	14054 Dec 11 08:02	3° <del>3</del> 18'38	-1°20'23	opposition	14061 Jun 21 00:18	11° <del>3</del> 19'00	0°55'51
minimum elong	14054 Dec 11 08:04	3° <del>3</del> 18'38	1°19'19	min. Earth dist.	14061 Jun 22 18:13	11° <del>3</del> 16'46	39.91289 AU
morning rise	14054 Dec 27 03:49	3° <del>3</del> 42'52		direct	14061 Sep 09 23:58	10° <del>3</del> 12'44	
retrograde	14055 Mar 24 03:13	5° <del>3</del> 00'04		evening set	14061 Dec 04 01:38	11° <del>3</del> 31'04	
opposition	14055 Jun 14 04:06	3° <del>3</del> 55'32	-1°13'43	max. Earth dist.	14061 Dec 18 00:29	11° <del>3</del> 53'15	41.79775 AU
min. Earth dist.	14055 Jun 15 17:19	3° <del>3</del> 53'36	41.27956 AU				
direct	14055 Sep 03 09:24	2° <del>3</del> 51'04		conjunction	14061 Dec 19 21:53	11° <del>3</del> 56'17	1°03'42
evening set	14055 Nov 27 00:12	4° <del>3</del> 06'19		minimum elong	14061 Dec 19 21:52	11° <del>3</del> 56'17	1°04'45
max. Earth dist.	14055 Dec 11 01:21	4° <del>3</del> 27'53	43.17052 AU	morning rise	14062 Jan 04 19:09	12° <del>3</del> 21'36	
				retrograde	14062 Apr 01 23:55	13° <del>3</del> 42'12	
conjunction	14055 Dec 12 19:16	4° <del>3</del> 30'35	-1°00'29	opposition	14062 Jun 22 12:41	12° <del>3</del> 35'42	1°18'17
minimum elong	14055 Dec 12 19:17	4° <del>3</del> 30'35	0°59'26	min. Earth dist.	14062 Jun 24 06:41	12° <del>3</del> 33'27	39.67951 AU
morning rise	14055 Dec 28 15:59	4° <del>3</del> 55'00		direct	14062 Sep 11 11:52	11° <del>3</del> 29'09	
retrograde	14056 Mar 24 16:51	6° <del>3</del> 12'36		evening set	14062 Dec 05 15:57	12° <del>3</del> 48'09	
opposition	14056 Jun 14 14:49	5° <del>3</del> 07'46	-0°52'45	max. Earth dist.	14062 Dec 19 12:56	13° <del>3</del> 10'21	41.56356 AU
min. Earth dist.	14056 Jun 16 05:36	5° <del>3</del> 05'45	41.05786 AU				
direct	14056 Sep 03 18:19	4° <del>3</del> 03'01		conjunction	14062 Dec 21 11:31	13° <del>3</del> 13'30	1°25'10
evening set	14056 Nov 27 11:10	5° <del>3</del> 18'41		minimum elong	14062 Dec 21 11:29	13° <del>3</del> 13'30	1°26'13
max. Earth dist.	14056 Dec 11 12:49	5° <del>3</del> 40'24	42.94730 AU	morning rise	14063 Jan 06 08:19	13° <del>3</del> 38'57	
				retrograde	14063 Apr 03 14:54	15° <del>3</del> 00'11	
conjunction	14056 Dec 13 07:02	5° <del>3</del> 43'09	-0°40'21	opposition	14063 Jun 24 01:29	13° <del>3</del> 53'26	1°40'57
minimum elong	14056 Dec 13 07:03	5° <del>3</del> 43'09	0°39'17	min. Earth dist.	14063 Jun 25 20:02	13° <del>3</del> 51'09	39.44484 AU
morning rise	14056 Dec 29 04:12	6° <del>3</del> 07'43		direct	14063 Sep 13 00:11	12° <del>3</del> 46'36	
retrograde	14057 Mar 26 03:35	7° <del>3</del> 25'44		evening set	14063 Dec 07 06:41	14° <del>3</del> 06'18	
opposition	14057 Jun 16 01:44	6° <del>3</del> 20'37	-0°31'31	max. Earth dist.	14063 Dec 21 02:08	14° <del>3</del> 28'33	41.32751 AU
min. Earth dist.	14057 Jun 17 17:15	6° <del>3</del> 18'33	40.83291 AU				
direct	14057 Sep 05 06:50	5° <del>3</del> 15'34		conjunction	14063 Dec 23 01:31	14° <del>3</del> 31'46	1°46'49
evening set	14057 Nov 28 22:40	6° <del>3</del> 31'42		minimum elong	14063 Dec 23 01:28	14° <del>3</del> 31'46	1°47'52
max. Earth dist.	14057 Dec 12 23:42	6° <del>3</del> 53'29	42.72125 AU	morning rise	14064 Jan 07 21:22	14° <del>3</del> 57'20	
				retrograde	14064 Apr 04 04:15	16° <del>3</del> 19'16	
conjunction	14057 Dec 14 18:56	6° <del>3</del> 56'19	-0°20'00	opposition	14064 Jun 24 14:48	15° <del>3</del> 12'15	2°03'51

min. Earth dist.	14064 Jun 26 10:43	15°30'53"	39.20811 AU	morning rise	14071 Jan 16 23:49	24°33'01"	
direct	14064 Sep 13 13:48	14°30'05"		retrograde	14071 Apr 15 03:23	26°30'31"	
evening set	14064 Dec 07 22:18	15°32'53"		opposition	14071 Jul 04 22:54	24°35'41"	4°49'47"
max. Earth dist.	14064 Dec 21 16:26	15°34'53"	41.08922 AU	min. Earth dist.	14071 Jul 07 00:05	24°35'26"	37.48077 AU
				direct	14071 Sep 23 13:46	23°34'43"	
conjunction	14064 Dec 23 16:08	15°35'09"	2°08'40"	evening set	14071 Dec 19 06:55	25°31'00"	
minimum elong	14064 Dec 23 16:05	15°35'09"	2°09'43"	max. Earth dist.	14072 Jan 01 05:08	25°33'05"	39.34931 AU
morning rise	14065 Jan 08 10:54	16°31'6"					
retrograde	14065 Apr 05 19:31	17°33'28"		conjunction	14072 Jan 03 10:26	25°33'55"	4°46'32"
opposition	14065 Jun 26 04:21	16°33'12"	2°26'57"	minimum elong	14072 Jan 03 10:19	25°33'55"	4°47'32"
min. Earth dist.	14065 Jun 28 00:11	16°32'48"	38.96889 AU	morning rise	14072 Jan 18 14:19	26°30'25"	
direct	14065 Sep 15 01:57	15°32'46"		retrograde	14072 Apr 15 21:19	27°31'21"	
evening set	14065 Dec 09 14:41	16°34'58"		opposition	14072 Jul 05 15:31	26°32'41"	5°14'11"
max. Earth dist.	14065 Dec 23 05:25	17°30'13"	40.84792 AU	min. Earth dist.	14072 Jul 07 15:55	26°31'56"	37.22880 AU
				direct	14072 Sep 24 05:03	25°31'37"	
conjunction	14065 Dec 25 07:11	17°31'39"	2°30'42"	evening set	14072 Dec 20 04:24	26°33'06"	
minimum elong	14065 Dec 25 07:07	17°31'38"	2°31'45"	max. Earth dist.	14073 Jan 01 21:51	27°30'01"	39.09621 AU
morning rise	14066 Jan 10 00:43	17°33'25"					
retrograde	14066 Apr 07 12:55	19°30'48"		conjunction	14073 Jan 04 04:33	27°30'45"	5°09'39"
opposition	14066 Jun 27 18:31	17°33'14"	2°50'17"	minimum elong	14073 Jan 04 04:25	27°30'45"	5°10'37"
min. Earth dist.	14066 Jun 29 16:17	17°33'43"	38.72662 AU	morning rise	14073 Jan 19 05:17	27°30'56"	
direct	14066 Sep 16 12:54	16°34'52"		retrograde	14073 Apr 17 18:31	29°30'24"	
evening set	14066 Dec 11 07:39	18°30'29"		opposition	14073 Jul 07 08:38	27°30'21"	5°38'41"
max. Earth dist.	14066 Dec 24 20:57	18°32'46"	40.60346 AU	min. Earth dist.	14073 Jul 09 10:02	27°34'32"	36.97720 AU
				direct	14073 Sep 25 18:45	26°33'54"	
conjunction	14066 Dec 26 22:47	18°33'13"	2°52'56"	evening set	14073 Dec 22 02:34	28°30'29"	
minimum elong	14066 Dec 26 22:42	18°33'13"	2°53'58"	max. Earth dist.	14074 Jan 03 17:13	28°30'22"	38.84343 AU
morning rise	14067 Jan 11 14:35	18°35'04"					
retrograde	14067 Apr 09 06:40	20°32'12"		conjunction	14074 Jan 05 23:23	28°33'19"	5°32'51"
opposition	14067 Jun 29 08:55	19°31'52"	3°13'48"	minimum elong	14074 Jan 05 23:15	28°33'18"	5°33'50"
min. Earth dist.	14067 Jul 01 06:51	19°31'24"	38.48128 AU	morning rise	14074 Jan 20 20:22	29°30'13"	
direct	14067 Sep 18 02:01	18°30'13"			14074 Mar 01 16:57	0°	
evening set	14067 Dec 13 01:24	19°33'03"		retrograde	14074 Apr 19 15:27	0°30'43"	
max. Earth dist.	14067 Dec 26 10:53	19°35'15"	40.35617 AU		14074 Jun 08 12:12	30°R	
				opposition	14074 Jul 09 02:19	29°32'20"	6°03'18"
conjunction	14067 Dec 28 14:36	19°35'52"	3°15'21"	min. Earth dist.	14074 Jul 11 03:38	29°31'30"	36.72598 AU
minimum elong	14067 Dec 28 14:31	19°35'51"	3°16'23"	direct	14074 Sep 27 11:31	28°30'29"	
morning rise	14068 Jan 13 04:45	20°32'14"		evening set	14074 Dec 24 01:49	29°33'13"	
retrograde	14068 Apr 10 02:22	21°34'41"			14075 Jan 04 22:41	0°	
opposition	14068 Jun 29 23:48	20°33'28"	3°37'32"	max. Earth dist.	14075 Jan 05 11:33	0°00'57"	38.59110 AU
min. Earth dist.	14068 Jul 01 22:48	20°33'52"	38.23353 AU				
direct	14068 Sep 18 14:49	19°32'59"		conjunction	14075 Jan 07 18:36	0°05'00"	5°56'07"
evening set	14068 Dec 13 19:34	20°35'40"		minimum elong	14075 Jan 07 18:27	0°04'59"	5°57'05"
max. Earth dist.	14068 Dec 27 02:49	21°31'52"	40.10645 AU	morning rise	14075 Jan 22 11:45	0°30'49"	
				retrograde	14075 Apr 21 13:53	2°02'27"	
conjunction	14068 Dec 29 06:53	21°31'32"	3°37'55"	opposition	14075 Jul 10 20:26	0°51'43"	6°28'00"
minimum elong	14068 Dec 29 06:48	21°31'31"	3°38'56"	min. Earth dist.	14075 Jul 12 21:56	0°48'51"	36.47526 AU
morning rise	14069 Jan 13 18:49	21°34'52"			14075 Aug 21 11:03	30°R	
retrograde	14069 Apr 11 18:12	23°31'13"		direct	14075 Sep 29 03:47	29°34'02"	
opposition	14069 Jul 01 15:09	22°30'23"	4°01'27"		14075 Nov 06 08:34	0°	
min. Earth dist.	14069 Jul 03 14:59	21°35'59"	37.98369 AU	evening set	14075 Dec 26 01:52	1°11'26"	
direct	14069 Sep 20 06:32	20°35'47"		max. Earth dist.	14076 Jan 07 07:01	1°33'00"	38.33879 AU
evening set	14069 Dec 15 14:41	22°31'8"					
max. Earth dist.	14069 Dec 28 19:02	22°34'31"	39.85505 AU	conjunction	14076 Jan 09 14:32	1°37'08"	6°19'27"
				minimum elong	14076 Jan 09 14:22	1°37'07"	6°20'25"
conjunction	14069 Dec 30 23:40	22°34'15"	4°00'39"	morning rise	14076 Jan 24 03:19	2°02'52"	
minimum elong	14069 Dec 30 23:34	22°34'14"	4°01'40"	retrograde	14076 Apr 22 09:58	3°35'39"	
morning rise	14070 Jan 15 09:17	23°31'01"		opposition	14076 Jul 11 15:18	2°24'35"	6°52'46"
retrograde	14070 Apr 13 10:26	24°36'49"		min. Earth dist.	14076 Jul 13 17:48	2°21'39"	36.22443 AU
opposition	14070 Jul 03 06:40	23°32'53"	4°25'32"	direct	14076 Sep 29 22:29	1°12'59"	
min. Earth dist.	14070 Jul 05 06:29	23°32'51"	37.73261 AU	evening set	14076 Dec 27 02:57	2°45'12"	
direct	14070 Sep 21 23:17	22°31'8"		max. Earth dist.	14077 Jan 08 03:33	3°06'37"	38.08617 AU
evening set	14070 Dec 17 10:32	23°34'07"					
max. Earth dist.	14070 Dec 30 10:56	24°30'11"	39.60241 AU	conjunction	14077 Jan 10 11:02	3°10'47"	6°42'49"
				minimum elong	14077 Jan 10 10:52	3°10'46"	6°43'45"
conjunction	14071 Jan 01 16:52	24°31'02"	4°23'32"	morning rise	14077 Jan 24 19:11	3°36'23"	
minimum elong	14071 Jan 01 16:46	24°31'01"	4°24'32"	retrograde	14077 Apr 24 07:34	5°10'24"	

opposition	14077 Jul 13 10:38	3°58'59"	7°17'35"	conjunction	14084 Jan 23 05:07	14°49'45"	9°25'40"
min. Earth dist.	14077 Jul 15 12:52	3°56'02"	35.97303 AU	minimum elong	14084 Jan 23 04:53	14°49'44"	9°26'30"
direct	14077 Oct 01 17:27	2°46'59"			14084 Jan 28 13:42	15°	
evening set	14077 Dec 29 05:14	4°20'32"		morning rise	14084 Feb 04 17:31	15°13'35"	
max. Earth dist.	14078 Jan 09 23:02	4°41'38"	37.83242 AU	retrograde	14084 May 06 12:06	16°57'39"	
				opposition	14084 Jul 24 19:22	15°43'23"	10°10'43"
conjunction	14078 Jan 12 08:18	4°45'58"	7°06'12"	min. Earth dist.	14084 Jul 27 00:13	15°40'08"	34.20007 AU
minimum elong	14078 Jan 12 08:07	4°45'57"	7°07'08"		14084 Aug 25 02:13	15°8'	
morning rise	14078 Jan 26 11:31	5°11'26"		direct	14084 Oct 12 16:45	14°28'14"	
retrograde	14078 Apr 26 05:48	6°46'44"			14084 Nov 29 01:37	15°	
opposition	14078 Jul 15 06:35	5°34'56"	7°42'26"	evening set	14085 Jan 12 01:59	16°12'38"	
min. Earth dist.	14078 Jul 17 10:34	5°31'52"	35.72051 AU	max. Earth dist.	14085 Jan 21 18:48	16°31'14"	36.04607 AU
direct	14078 Oct 03 09:56	4°22'32"					
evening set	14078 Dec 31 08:26	5°57'26"		conjunction	14085 Jan 24 06:48	16°36'04"	9°48'26"
max. Earth dist.	14079 Jan 11 21:17	6°18'21"	37.57749 AU	minimum elong	14085 Jan 24 06:35	16°36'03"	9°49'14"
				morning rise	14085 Feb 05 11:19	16°59'29"	
conjunction	14079 Jan 14 06:17	6°22'42"	7°29'36"	retrograde	14085 May 08 13:57	18°45'15"	
minimum elong	14079 Jan 14 06:07	6°22'41"	7°30'30"	opposition	14085 Jul 26 19:53	17°30'34"	10°34'55"
morning rise	14079 Jan 28 03:56	6°47'59"		min. Earth dist.	14085 Jul 29 01:36	17°27'14"	33.95162 AU
retrograde	14079 Apr 28 04:09	8°24'36"		direct	14085 Oct 14 13:57	16°14'57"	
opposition	14079 Jul 17 03:12	7°12'26"	8°07'18"	evening set	14086 Jan 14 12:59	18°01'11"	
min. Earth dist.	14079 Jul 19 06:52	7°09'22"	35.46685 AU	max. Earth dist.	14086 Jan 23 22:35	18°19'22"	35.79657 AU
direct	14079 Oct 05 05:48	5°59'36"					
evening set	14080 Jan 02 12:39	7°35'55"		conjunction	14086 Jan 26 09:27	18°24'09"	10°10'57"
max. Earth dist.	14080 Jan 13 17:57	7°56'28"	37.32153 AU	minimum elong	14086 Jan 26 09:13	18°24'08"	10°11'43"
				morning rise	14086 Feb 07 05:18	18°47'07"	
conjunction	14080 Jan 16 04:36	8°00'58"	7°52'58"	retrograde	14086 May 10 16:25	20°34'38"	
minimum elong	14080 Jan 16 04:24	8°00'57"	7°53'53"	opposition	14086 Jul 28 20:55	19°19'33"	10°58'51"
morning rise	14080 Jan 29 20:37	8°26'02"		min. Earth dist.	14086 Jul 31 01:41	19°16'15"	33.70609 AU
retrograde	14080 Apr 29 06:00	10°04'02"		direct	14086 Oct 16 13:29	18°03'30"	
opposition	14080 Jul 18 00:28	8°51'27"	8°32'09"	evening set	14087 Jan 17 01:17	19°51'38"	
min. Earth dist.	14080 Jul 20 05:10	8°48'19"	35.21254 AU	max. Earth dist.	14087 Jan 26 00:56	20°09'13"	35.55015 AU
direct	14080 Oct 06 00:06	7°38'10"					
evening set	14081 Jan 03 17:52	9°15'59"		conjunction	14087 Jan 28 12:39	20°14'07"	10°33'09"
max. Earth dist.	14081 Jan 14 17:23	9°36'15"	37.06493 AU	minimum elong	14087 Jan 28 12:26	20°14'06"	10°33'55"
				morning rise	14087 Feb 08 23:40	20°36'34"	
conjunction	14081 Jan 17 03:51	9°40'47"	8°16'18"	retrograde	14087 May 12 22:33	22°25'57"	
minimum elong	14081 Jan 17 03:39	9°40'46"	8°17'11"	opposition	14087 Jul 30 22:51	21°10'28"	11°22'27"
morning rise	14081 Jan 30 13:31	10°05'37"		min. Earth dist.	14087 Aug 02 03:51	21°07'08"	33.46378 AU
retrograde	14081 May 01 06:08	11°45'02"		direct	14087 Oct 18 11:29	19°53'58"	
opposition	14081 Jul 19 22:13	10°32'02"	8°56'58"	evening set	14088 Jan 19 14:37	21°44'07"	
min. Earth dist.	14081 Jul 22 03:17	10°28'50"	34.95796 AU	max. Earth dist.	14088 Jan 28 05:56	22°01'11"	35.30671 AU
direct	14081 Oct 07 21:17	9°18'17"					
evening set	14082 Jan 06 00:21	10°57'39"		conjunction	14088 Jan 30 16:40	22°06'02"	10°55'02"
max. Earth dist.	14082 Jan 16 16:24	11°17'32"	36.80848 AU	minimum elong	14088 Jan 30 16:25	22°06'01"	10°55'46"
				morning rise	14088 Feb 10 18:03	22°27'55"	
conjunction	14082 Jan 19 03:38	11°22'10"	8°39'33"	retrograde	14088 May 14 03:38	24°19'14"	
minimum elong	14082 Jan 19 03:25	11°22'09"	8°40'26"	opposition	14088 Aug 01 01:35	23°03'22"	11°45'41"
morning rise	14082 Feb 01 06:46	11°46'42"		min. Earth dist.	14088 Aug 03 06:26	23°00'02"	33.22431 AU
retrograde	14082 May 03 08:40	13°27'36"		direct	14088 Oct 19 12:14	21°46'27"	
opposition	14082 Jul 21 20:36	12°14'11"	9°21'41"	evening set	14089 Jan 21 05:41	23°38'41"	
min. Earth dist.	14082 Jul 24 01:39	12°10'58"	34.70395 AU	max. Earth dist.	14089 Jan 29 10:33	23°55'03"	35.06604 AU
direct	14082 Oct 09 19:01	10°59'58"					
evening set	14083 Jan 08 07:43	12°40'56"		conjunction	14089 Jan 31 21:33	23°59'58"	11°16'31"
max. Earth dist.	14083 Jan 18 16:17	13°00'25"	36.55259 AU	minimum elong	14089 Jan 31 21:20	23°59'57"	11°17'14"
				morning rise	14089 Feb 11 12:58	24°21'15"	
conjunction	14083 Jan 21 04:02	13°05'09"	9°02'41"	retrograde	14089 May 16 12:45	26°14'33"	
minimum elong	14083 Jan 21 03:50	13°05'08"	9°03'32"	opposition	14089 Aug 03 04:53	24°58'18"	12°08'31"
morning rise	14083 Feb 03 00:01	13°29'21"		min. Earth dist.	14089 Aug 05 09:29	24°54'57"	32.98747 AU
	14083 Apr 06 15:02	15°		direct	14089 Oct 21 15:37	23°40'56"	
retrograde	14083 May 05 09:29	15°11'48"		evening set	14090 Jan 23 22:02	25°35'20"	
	14083 Jun 03 09:32	15°8'		max. Earth dist.	14090 Jan 31 16:11	25°50'57"	34.82751 AU
opposition	14083 Jul 23 19:43	13°57'57"	9°46'17"				
min. Earth dist.	14083 Jul 26 01:35	13°54'39"	34.45101 AU	conjunction	14090 Feb 03 03:27	25°55'57"	11°37'36"
direct	14083 Oct 11 17:49	12°43'16"		minimum elong	14090 Feb 03 03:12	25°55'56"	11°38'17"
evening set	14084 Jan 10 16:19	14°25'55"		morning rise	14090 Feb 13 08:14	26°16'32"	
max. Earth dist.	14084 Jan 20 18:01	14°45'02"	36.29828 AU	retrograde	14090 May 18 20:27	28°11'54"	

opposition	14090 Aug 05 09:17	26° $\approx$ 55'14	12°30'54	direct	14096 Nov 04 04:39	7° $\times$ 56'30	
min. Earth dist.	14090 Aug 07 14:42	26° $\approx$ 51'49	32.75267 AU	evening set	14097 Feb 11 10:14	10° $\times$ 08'04	
direct	14090 Oct 23 19:14	25° $\approx$ 37'27		max. Earth dist.	14097 Feb 15 09:39	10° $\times$ 16'37	33.24114 AU
evening set	14091 Jan 26 15:54	27° $\approx$ 34'03					
max. Earth dist.	14091 Feb 02 23:09	27° $\approx$ 48'55	34.59115 AU	conjunction	14097 Feb 17 18:02	10° $\times$ 21'41	13°48'47
				minimum elong	14097 Feb 17 17:52	10° $\times$ 21'40	13°49'14
conjunction	14091 Feb 05 09:59	27° $\approx$ 53'55	11°58'12	morning rise	14097 Feb 24 01:21	10° $\times$ 35'16	
minimum elong	14091 Feb 05 09:46	27° $\approx$ 53'54	11°58'51	retrograde	14097 Jun 02 15:39	12° $\times$ 47'02	
morning rise	14091 Feb 15 03:29	28° $\approx$ 13'45		opposition	14097 Aug 19 12:58	11° $\times$ 27'24	14°49'47
	14091 Apr 24 02:19	0° $\times$		min. Earth dist.	14097 Aug 21 15:30	11° $\times$ 24'00	31.19883 AU
retrograde	14091 May 21 04:46	0° $\times$ 11'14		direct	14097 Nov 06 12:52	10° $\times$ 06'16	
	14091 Jun 17 11:02	30° $\times$		evening set	14098 Feb 14 15:25	12° $\times$ 20'42	
opposition	14091 Aug 07 14:18	28° $\approx$ 54'10	12°52'47	max. Earth dist.	14098 Feb 17 22:39	12° $\times$ 27'52	33.03446 AU
min. Earth dist.	14091 Aug 09 18:44	28° $\approx$ 50'48	32.52004 AU				
direct	14091 Oct 26 00:13	27° $\approx$ 35'54		conjunction	14098 Feb 20 06:06	12° $\times$ 32'54	14°04'21
evening set	14092 Jan 29 11:04	29° $\approx$ 34'48		minimum elong	14098 Feb 20 05:56	12° $\times$ 32'53	14°04'46
max. Earth dist.	14092 Feb 05 05:41	29° $\approx$ 48'43	34.35698 AU	morning rise	14098 Feb 25 20:23	12° $\times$ 45'04	
				retrograde	14098 Jun 05 06:37	14° $\times$ 59'34	
conjunction	14092 Feb 07 17:23	29° $\approx$ 53'51	12°18'18	opposition	14098 Aug 21 23:29	13° $\times$ 39'33	15°06'08
minimum elong	14092 Feb 07 17:08	29° $\approx$ 53'50	12°18'56	min. Earth dist.	14098 Aug 24 00:18	13° $\times$ 36'15	30.99804 AU
	14092 Feb 10 16:59	0° $\times$		direct	14098 Nov 08 23:41	12° $\times$ 18'00	
morning rise	14092 Feb 16 23:09	0° $\times$ 12'51		evening set	14099 Feb 17 22:39	14° $\times$ 35'28	
retrograde	14092 May 22 12:46	2° $\times$ 12'31		max. Earth dist.	14099 Feb 20 12:27	14° $\times$ 41'06	32.83484 AU
opposition	14092 Aug 08 20:13	0° $\times$ 55'02	13°14'07				
min. Earth dist.	14092 Aug 11 01:34	0° $\times$ 51'34	32.28989 AU	conjunction	14099 Feb 22 18:54	14° $\times$ 46'05	14°18'53
	14092 Sep 16 21:46	30° $\times$		minimum elong	14099 Feb 22 18:46	14° $\times$ 46'04	14°19'16
direct	14092 Oct 27 03:43	29° $\approx$ 36'17		morning rise	14099 Feb 27 14:47	14° $\times$ 56'40	
	14092 Dec 05 14:15	0° $\times$		retrograde	14099 Jun 07 20:30	17° $\times$ 14'05	
evening set	14093 Jan 31 07:48	1° $\times$ 37'32		opposition	14099 Aug 24 10:58	15° $\times$ 53'42	15°21'21
max. Earth dist.	14093 Feb 06 15:09	1° $\times$ 50'37	34.12561 AU	min. Earth dist.	14099 Aug 26 11:32	15° $\times$ 50'25	30.80441 AU
				direct	14099 Nov 11 09:47	14° $\times$ 31'48	
conjunction	14093 Feb 09 01:37	1° $\times$ 55'41	12°37'49	evening set	14100 Feb 21 09:01	16° $\times$ 52'29	
minimum elong	14093 Feb 09 01:24	1° $\times$ 55'40	12°38'25	max. Earth dist.	14100 Feb 23 03:55	16° $\times$ 56'27	32.64281 AU
morning rise	14093 Feb 17 18:46	2° $\times$ 13'47					
retrograde	14093 May 24 21:38	4° $\times$ 15'42		conjunction	14100 Feb 25 08:34	17° $\times$ 01'18	14°32'19
opposition	14093 Aug 11 02:48	2° $\times$ 57'46	13°34'49	minimum elong	14100 Feb 25 08:25	17° $\times$ 01'17	14°32'41
min. Earth dist.	14093 Aug 13 07:03	2° $\times$ 54'21	32.06268 AU	morning rise	14100 Mar 01 07:47	17° $\times$ 10'04	
direct	14093 Oct 29 09:22	1° $\times$ 38'33		retrograde	14100 Jun 10 11:59	19° $\times$ 30'36	
evening set	14094 Feb 03 06:01	3° $\times$ 42'14		opposition	14100 Aug 26 22:59	18° $\times$ 09'55	15°35'22
max. Earth dist.	14094 Feb 08 23:13	3° $\times$ 54'12	33.89750 AU	min. Earth dist.	14100 Aug 28 21:29	18° $\times$ 06'45	30.61813 AU
				direct	14100 Nov 13 21:47	16° $\times$ 47'40	
conjunction	14094 Feb 11 10:33	3° $\times$ 59'23	12°56'42	evening set	14101 Feb 24 23:43	19° $\times$ 11'57	
minimum elong	14094 Feb 11 10:19	3° $\times$ 59'22	12°57'16	max. Earth dist.	14101 Feb 25 18:46	19° $\times$ 13'44	32.45802 AU
morning rise	14094 Feb 19 14:36	4° $\times$ 16'31					
retrograde	14094 May 27 07:06	6° $\times$ 20'45		conjunction	14101 Feb 27 23:02	19° $\times$ 18'35	14°44'36
opposition	14094 Aug 13 10:09	5° $\times$ 02'23	13°54'49	minimum elong	14101 Feb 27 22:56	19° $\times$ 18'35	14°44'54
min. Earth dist.	14094 Aug 15 14:51	4° $\times$ 58'55	31.83922 AU	morning rise	14101 Mar 02 22:08	19° $\times$ 25'12	
direct	14094 Oct 31 13:49	3° $\times$ 42'40		retrograde	14101 Jun 13 03:43	21° $\times$ 49'11	
evening set	14095 Feb 06 05:48	5° $\times$ 48'53		opposition	14101 Aug 29 12:00	20° $\times$ 28'13	15°48'06
max. Earth dist.	14095 Feb 11 10:35	5° $\times$ 59'51	33.67349 AU	min. Earth dist.	14101 Aug 31 10:30	20° $\times$ 25'01	30.43883 AU
				direct	14101 Nov 16 08:12	19° $\times$ 05'38	
conjunction	14095 Feb 13 20:22	6° $\times$ 04'57	13°14'53				
minimum elong	14095 Feb 13 20:11	6° $\times$ 04'56	13°15'24				
morning rise	14095 Feb 21 10:19	6° $\times$ 21'01					
retrograde	14095 May 29 16:00	8° $\times$ 27'39					
opposition	14095 Aug 15 18:20	7° $\times$ 08'51	14°14'02				
min. Earth dist.	14095 Aug 17 22:05	7° $\times$ 05'25	31.62015 AU				
direct	14095 Nov 02 21:20	5° $\times$ 48'39					
evening set	14096 Feb 09 07:02	7° $\times$ 57'28					
max. Earth dist.	14096 Feb 13 20:47	8° $\times$ 07'13	33.45448 AU				
conjunction	14096 Feb 16 06:38	8° $\times$ 12'23	13°32'16				
minimum elong	14096 Feb 16 06:26	8° $\times$ 12'22	13°32'46				
morning rise	14096 Feb 23 05:47	8° $\times$ 27'16					
retrograde	14096 May 31 04:26	10° $\times$ 36'25					
opposition	14096 Aug 17 03:16	9° $\times$ 17'11	14°32'23				
min. Earth dist.	14096 Aug 19 06:15	9° $\times$ 13'47	31.40649 AU				