

morning rise	14600 Jan 16 22:12	24°33'33"		minimum elong	14606 Jan 15 01:17	7°21'02"	0°18'55"
retrograde	14600 Apr 16 19:50	26°32'00"		max. Earth dist.	14606 Jan 15 08:41	7°21'42"	31.00986 AU
opposition	14600 Jul 04 19:00	25°07'46"	0°13'10"	morning rise	14606 Jan 31 04:14	7°56'49"	
min. Earth dist.	14600 Jul 04 09:48	25°08'24"	28.96094 AU	retrograde	14606 Apr 30 19:15	9°52'34"	
direct	14600 Sep 21 02:55	23°43'43"		opposition	14606 Jul 18 12:59	8°28'29"	0°19'50"
evening set	14600 Dec 18 07:12	25°37'52"		min. Earth dist.	14606 Jul 18 05:59	8°28'59"	29.01506 AU
				direct	14606 Oct 05 02:18	7°04'17"	
conjunction	14601 Jan 03 08:48	26°13'37"	0°12'50"	evening set	14607 Jan 01 11:42	8°58'23"	
minimum elong	14601 Jan 03 08:48	26°13'37"	0°13'48"				
behind sun begin	14601 Jan 03 05:27	26°13'19"		conjunction	14607 Jan 17 14:01	9°34'05"	0°18'59"
behind sun end	14601 Jan 03 12:09	26°13'55"		minimum elong	14607 Jan 17 14:01	9°34'05"	0°19'51"
max. Earth dist.	14601 Jan 03 18:42	26°14'32"	30.96558 AU	max. Earth dist.	14607 Jan 17 20:30	9°34'41"	31.02049 AU
morning rise	14601 Jan 19 11:19	26°49'28"		morning rise	14607 Feb 02 17:07	10°09'52"	
retrograde	14601 Apr 19 07:09	28°45'49"		retrograde	14607 May 03 05:47	12°05'31"	
opposition	14601 Jul 07 06:13	27°21'37"	0°14'21"	opposition	14607 Jul 20 23:44	10°41'30"	0°20'50"
min. Earth dist.	14601 Jul 06 21:55	27°22'12"	28.97019 AU	min. Earth dist.	14607 Jul 20 17:41	10°41'55"	29.02641 AU
direct	14601 Sep 23 15:18	25°57'33"		direct	14607 Oct 07 12:00	9°17'17"	
evening set	14601 Dec 20 20:09	27°51'41"		evening set	14608 Jan 04 00:17	11°11'24"	
conjunction	14602 Jan 05 21:47	28°27'25"	0°13'55"	conjunction	14608 Jan 20 02:54	11°47'05"	0°19'55"
minimum elong	14602 Jan 05 21:47	28°27'25"	0°14'53"	minimum elong	14608 Jan 20 02:54	11°47'05"	0°20'46"
behind sun begin	14602 Jan 05 19:26	28°27'13"		max. Earth dist.	14608 Jan 20 10:03	11°47'45"	31.03243 AU
behind sun end	14602 Jan 06 00:08	28°27'38"		morning rise	14608 Feb 05 05:53	12°22'52"	
max. Earth dist.	14602 Jan 06 06:07	28°28'11"	30.97457 AU	retrograde	14608 May 04 16:20	14°18'25"	
morning rise	14602 Jan 22 00:33	29°03'16"		opposition	14608 Jul 22 10:29	12°54'28"	0°21'49"
	14602 Feb 19 04:17	0°		min. Earth dist.	14608 Jul 22 04:16	12°54'54"	29.03883 AU
retrograde	14602 Apr 21 21:14	0°59'30"		direct	14608 Oct 09 00:08	11°30'17"	
	14602 Jun 24 19:34	30°R3		evening set	14609 Jan 05 12:59	13°24'25"	
opposition	14602 Jul 09 17:19	29°33'18"	0°15'30"				
min. Earth dist.	14602 Jul 09 08:59	29°35'53"	28.97891 AU	conjunction	14609 Jan 21 15:29	14°00'06"	0°20'50"
direct	14602 Sep 26 03:57	28°11'12"		minimum elong	14609 Jan 21 15:29	14°00'06"	0°21'38"
	14602 Dec 20 21:57	0°		max. Earth dist.	14609 Jan 21 21:14	14°00'38"	31.04541 AU
evening set	14602 Dec 23 08:52	0°05'20"		morning rise	14609 Feb 06 18:38	14°35'51"	
					14609 Feb 18 03:41	15°	
conjunction	14603 Jan 08 10:47	0°41'04"	0°14'59"	retrograde	14609 May 07 04:56	16°31'20"	
minimum elong	14603 Jan 08 10:47	0°41'04"	0°15'55"	opposition	14609 Jul 24 21:12	15°07'28"	0°22'46"
max. Earth dist.	14603 Jan 08 19:20	0°41'51"	30.98303 AU	min. Earth dist.	14609 Jul 24 15:19	15°07'53"	29.05227 AU
morning rise	14603 Jan 24 13:33	1°16'54"			14609 Jul 29 07:54	15°R	
retrograde	14603 Apr 24 08:39	3°13'01"		direct	14609 Oct 11 10:04	13°43'18"	
opposition	14603 Jul 12 04:27	1°48'50"	0°16'37"		14609 Dec 21 00:34	15°	
min. Earth dist.	14603 Jul 11 21:28	1°49'20"	28.98727 AU	evening set	14610 Jan 08 01:35	15°37'29"	
direct	14603 Sep 28 16:11	0°24'43"					
evening set	14603 Dec 25 21:42	2°18'49"		conjunction	14610 Jan 24 04:20	16°13'10"	0°21'42"
				minimum elong	14610 Jan 24 04:20	16°13'10"	0°22'30"
conjunction	14604 Jan 10 23:44	2°54'33"	0°16'01"	max. Earth dist.	14610 Jan 24 10:44	16°13'45"	31.05907 AU
minimum elong	14604 Jan 10 23:44	2°54'33"	0°16'57"	morning rise	14610 Feb 09 07:19	16°48'54"	
max. Earth dist.	14604 Jan 11 07:23	2°55'15"	30.99150 AU	retrograde	14610 May 09 16:03	18°44'18"	
morning rise	14604 Jan 27 02:39	3°30'22"		opposition	14610 Jul 27 07:56	17°20'32"	0°23'41"
retrograde	14604 Apr 25 20:53	5°26'20"		min. Earth dist.	14610 Jul 27 02:54	17°20'53"	29.06596 AU
opposition	14604 Jul 13 15:12	4°02'12"	0°17'43"	direct	14610 Oct 13 21:20	15°56'24"	
min. Earth dist.	14604 Jul 13 07:39	4°02'44"	28.99584 AU	evening set	14611 Jan 10 14:22	17°50'37"	
direct	14604 Sep 30 04:33	2°38'02"					
evening set	14604 Dec 27 10:29	4°32'08"		conjunction	14611 Jan 26 17:04	18°26'17"	0°22'33"
				minimum elong	14611 Jan 26 17:04	18°26'17"	0°23'18"
conjunction	14605 Jan 12 12:36	5°07'52"	0°17'02"	max. Earth dist.	14611 Jan 26 21:50	18°26'43"	31.07270 AU
minimum elong	14605 Jan 12 12:36	5°07'52"	0°17'56"	morning rise	14611 Feb 11 20:13	19°02'01"	
max. Earth dist.	14605 Jan 12 19:51	5°08'31"	31.00023 AU	retrograde	14611 May 12 06:08	20°57'20"	
morning rise	14605 Jan 28 15:33	5°43'40"		opposition	14611 Jul 29 18:38	19°33'38"	0°24'34"
retrograde	14605 Apr 28 07:23	7°39'31"		min. Earth dist.	14611 Jul 29 13:41	19°33'59"	29.07927 AU
opposition	14605 Jul 16 02:11	6°15'24"	0°18'47"	direct	14611 Oct 16 10:02	18°09'32"	
min. Earth dist.	14605 Jul 15 19:53	6°15'51"	29.00499 AU	evening set	14612 Jan 13 03:13	20°03'46"	
direct	14605 Oct 02 15:02	4°51'13"					
evening set	14605 Dec 29 22:57	6°45'18"		conjunction	14612 Jan 29 06:03	20°39'26"	0°23'21"
				minimum elong	14612 Jan 29 06:03	20°39'26"	0°24'05"
conjunction	14606 Jan 15 01:17	7°21'02"	0°18'02"	max. Earth dist.	14612 Jan 29 10:45	20°39'52"	31.08539 AU

morning rise	14612 Feb 14 09:01	21° $\approx$ 15'08	direct	14618 Oct 31 18:19	3° $\approx$ 37'15	
retrograde	14612 May 13 17:08	23° $\approx$ 10'22	evening set	14619 Jan 28 19:16	5° $\approx$ 31'23	
opposition	14612 Jul 31 05:21	21° $\approx$ 46'43 0°25'24				
min. Earth dist.	14612 Jul 31 02:05	21° $\approx$ 46'57 29.09141 AU	conjunction	14619 Feb 13 22:18	6° $\approx$ 06'56 0°27'55	
direct	14612 Oct 17 22:08	20° $\approx$ 22'37	minimum elong	14619 Feb 13 22:18	6° $\approx$ 06'56 0°28'26	
evening set	14613 Jan 14 16:03	22° $\approx$ 16'52	max. Earth dist.	14619 Feb 13 22:40	6° $\approx$ 06'58 31.15015 AU	
			morning rise	14619 Mar 02 00:50	6° $\approx$ 42'29	
conjunction	14613 Jan 30 18:53	22° $\approx$ 52'31 0°24'07	retrograde	14619 May 29 20:56	8° $\approx$ 36'50	
minimum elong	14613 Jan 30 18:53	22° $\approx$ 52'31 0°24'49	opposition	14619 Aug 16 06:48	7° $\approx$ 13'20 0°30'07	
max. Earth dist.	14613 Jan 30 22:16	22° $\approx$ 52'50 31.09697 AU	min. Earth dist.	14619 Aug 16 07:04	7° $\approx$ 13'19 29.15499 AU	
morning rise	14613 Feb 15 21:54	23° $\approx$ 28'12	direct	14619 Nov 03 05:45	5° $\approx$ 48'59	
retrograde	14613 May 16 05:53	25° $\approx$ 23'19	evening set	14620 Jan 31 07:44	7° $\approx$ 43'07	
opposition	14613 Aug 02 16:02	23° $\approx$ 59'43 0°26'12				
min. Earth dist.	14613 Aug 02 12:27	23° $\approx$ 59'58 29.10231 AU	conjunction	14620 Feb 16 10:35	8° $\approx$ 18'39 0°28'25	
direct	14613 Oct 20 10:41	22° $\approx$ 35'36	minimum elong	14620 Feb 16 10:35	8° $\approx$ 18'39 0°28'54	
evening set	14614 Jan 17 04:40	24° $\approx$ 29'50	max. Earth dist.	14620 Feb 16 09:37	8° $\approx$ 18'34 31.15994 AU	
			morning rise	14620 Mar 03 13:08	8° $\approx$ 54'11	
conjunction	14614 Feb 02 07:32	25° $\approx$ 05'28 0°24'51	retrograde	14620 May 31 09:30	10° $\approx$ 48'26	
minimum elong	14614 Feb 02 07:32	25° $\approx$ 05'28 0°25'32	opposition	14620 Aug 17 17:00	9° $\approx$ 24'59 0°30'37	
max. Earth dist.	14614 Feb 02 10:08	25° $\approx$ 05'42 31.10719 AU	min. Earth dist.	14620 Aug 17 16:52	9° $\approx$ 25'00 29.16532 AU	
morning rise	14614 Feb 18 10:30	25° $\approx$ 41'08	direct	14620 Nov 04 17:34	8° $\approx$ 00'38	
retrograde	14614 May 18 17:04	27° $\approx$ 36'07	evening set	14621 Feb 01 20:01	9° $\approx$ 54'48	
opposition	14614 Aug 05 02:47	26° $\approx$ 12'33 0°26'57				
min. Earth dist.	14614 Aug 05 00:53	26° $\approx$ 12'41 29.11200 AU	conjunction	14621 Feb 17 22:55	10° $\approx$ 30'20 0°28'52	
direct	14614 Oct 22 21:56	24° $\approx$ 48'24	minimum elong	14621 Feb 17 22:55	10° $\approx$ 30'20 0°29'18	
evening set	14615 Jan 19 17:20	26° $\approx$ 42'36	max. Earth dist.	14621 Feb 17 22:28	10° $\approx$ 30'18 31.17074 AU	
			morning rise	14621 Mar 06 01:14	11° $\approx$ 05'50	
conjunction	14615 Feb 04 20:19	27° $\approx$ 18'14 0°25'32	retrograde	14621 Jun 02 19:51	13° $\approx$ 00'01	
minimum elong	14615 Feb 04 20:20	27° $\approx$ 18'14 0°26'11	opposition	14621 Aug 20 03:24	11° $\approx$ 36'38 0°31'05	
max. Earth dist.	14615 Feb 04 22:28	27° $\approx$ 18'25 31.11644 AU	min. Earth dist.	14621 Aug 20 04:26	11° $\approx$ 36'34 29.17659 AU	
morning rise	14615 Feb 20 23:14	27° $\approx$ 53'52	direct	14621 Nov 07 04:46	10° $\approx$ 12'20	
retrograde	14615 May 21 04:43	29° $\approx$ 48'42	evening set	14622 Feb 04 08:12	12° $\approx$ 06'31	
opposition	14615 Aug 07 13:11	28° $\approx$ 25'09 0°27'40				
min. Earth dist.	14615 Aug 07 11:08	28° $\approx$ 25'18 29.12074 AU	conjunction	14622 Feb 20 11:02	12° $\approx$ 42'02 0°29'17	
direct	14615 Oct 25 10:21	27° $\approx$ 00'57	minimum elong	14622 Feb 20 11:02	12° $\approx$ 42'02 0°29'42	
evening set	14616 Jan 22 06:05	28° $\approx$ 55'08	max. Earth dist.	14622 Feb 20 09:48	12° $\approx$ 41'56 31.18246 AU	
			morning rise	14622 Mar 08 13:20	13° $\approx$ 17'32	
conjunction	14616 Feb 07 08:58	29° $\approx$ 30'45 0°26'12	retrograde	14622 Jun 05 08:27	15° $\approx$ 11'38	
minimum elong	14616 Feb 07 08:58	29° $\approx$ 30'45 0°26'49	opposition	14622 Aug 22 13:36	13° $\approx$ 48'22 0°31'30	
max. Earth dist.	14616 Feb 07 09:45	29° $\approx$ 30'49 31.12485 AU	min. Earth dist.	14622 Aug 22 14:05	13° $\approx$ 48'20 29.18841 AU	
	14616 Feb 20 13:45	0° $\approx$	direct	14622 Nov 09 16:48	12° $\approx$ 24'05	
morning rise	14616 Feb 23 11:53	0° $\approx$ 06'22	evening set	14623 Feb 06 20:37	14° $\approx$ 18'20	
retrograde	14616 May 22 14:28	2° $\approx$ 01'05				
opposition	14616 Aug 08 23:44	0° $\approx$ 37'32 0°28'21	conjunction	14623 Feb 22 23:22	14° $\approx$ 53'50 0°29'39	
min. Earth dist.	14616 Aug 08 22:57	0° $\approx$ 37'35 29.12903 AU	minimum elong	14623 Feb 22 23:23	14° $\approx$ 53'50 0°30'00	
	14616 Sep 01 03:52	30° $\approx$	max. Earth dist.	14623 Feb 22 21:36	14° $\approx$ 53'41 31.19420 AU	
direct	14616 Oct 26 20:36	29° $\approx$ 13'17	morning rise	14623 Mar 11 01:31	15° $\approx$ 29'19	
	14616 Dec 19 23:47	0° $\approx$	retrograde	14623 Jun 07 19:57	17° $\approx$ 23'22	
evening set	14617 Jan 23 18:27	1° $\approx$ 07'26	opposition	14623 Aug 24 23:52	16° $\approx$ 00'10 0°31'52	
			min. Earth dist.	14623 Aug 25 01:57	16° $\approx$ 00'01 29.20003 AU	
conjunction	14617 Feb 08 21:28	1° $\approx$ 43'02 0°26'49	direct	14623 Nov 12 03:36	14° $\approx$ 35'56	
minimum elong	14617 Feb 08 21:29	1° $\approx$ 43'02 0°27'23	evening set	14624 Feb 09 09:01	16° $\approx$ 30'13	
max. Earth dist.	14617 Feb 08 22:42	1° $\approx$ 43'09 31.13299 AU				
morning rise	14617 Feb 25 00:10	2° $\approx$ 18'38	conjunction	14624 Feb 25 11:46	17° $\approx$ 05'44 0°29'58	
retrograde	14617 May 24 23:50	4° $\approx$ 13'12	minimum elong	14624 Feb 25 11:46	17° $\approx$ 05'44 0°30'19	
opposition	14617 Aug 11 10:08	2° $\approx$ 49'40 0°28'59	max. Earth dist.	14624 Feb 25 09:33	17° $\approx$ 05'31 31.20547 AU	
min. Earth dist.	14617 Aug 11 09:26	2° $\approx$ 49'43 29.13711 AU	morning rise	14624 Mar 12 13:43	17° $\approx$ 41'11	
direct	14617 Oct 29 08:37	1° $\approx$ 25'23	retrograde	14624 Jun 09 07:48	19° $\approx$ 35'10	
evening set	14618 Jan 26 06:59	3° $\approx$ 19'31	opposition	14624 Aug 26 10:10	18° $\approx$ 12'03 0°32'11	
			min. Earth dist.	14624 Aug 26 12:08	18° $\approx$ 11'55 29.21073 AU	
conjunction	14618 Feb 11 09:51	3° $\approx$ 55'05 0°27'23	direct	14624 Nov 13 15:51	16° $\approx$ 47'51	
minimum elong	14618 Feb 11 09:51	3° $\approx$ 55'05 0°27'57	evening set	14625 Feb 10 21:23	18° $\approx$ 42'10	
max. Earth dist.	14618 Feb 11 09:31	3° $\approx$ 55'03 31.14127 AU				
morning rise	14618 Feb 27 12:37	4° $\approx$ 30'39	conjunction	14625 Feb 26 23:54	19° $\approx$ 17'39 0°30'15	
retrograde	14618 May 27 11:17	6° $\approx$ 25'07	minimum elong	14625 Feb 26 23:54	19° $\approx$ 17'39 0°30'32	
opposition	14618 Aug 13 20:26	5° $\approx$ 01'35 0°29'34	max. Earth dist.	14625 Feb 26 20:16	19° $\approx$ 17'19 31.21554 AU	
min. Earth dist.	14618 Aug 13 20:03	5° $\approx$ 01'37 29.14574 AU	morning rise	14625 Mar 15 01:45	19° $\approx$ 53'05	

retrograde	14625 Jun 11 17:36	21° $\text{H}$ 47'00	min. Earth dist.	14631 Sep 11 15:07	3° $\text{Y}$ 31'57	29.25898 AU
opposition	14625 Aug 28 20:35	20° $\text{H}$ 23'57 0°32'27	direct	14631 Nov 29 21:11	2° $\text{Y}$ 07'56	
min. Earth dist.	14625 Aug 28 23:52	20° $\text{H}$ 23'43 29.22028 AU	evening set	14632 Feb 27 10:00	4° $\text{Y}$ 02'12	
direct	14625 Nov 16 01:55	18° $\text{H}$ 59'45				
evening set	14626 Feb 13 09:39	20° $\text{H}$ 54'04	conjunction	14632 Mar 14 11:48	4° $\text{Y}$ 37'33 0°30'58	
			minimum elong	14632 Mar 14 11:48	4° $\text{Y}$ 37'33 0°31'00	
conjunction	14626 Mar 01 12:15	21° $\text{H}$ 29'33 0°30'29	max. Earth dist.	14632 Mar 14 04:35	4° $\text{Y}$ 36'53 31.26223 AU	
minimum elong	14626 Mar 01 12:15	21° $\text{H}$ 29'33 0°30'45	morning rise	14632 Mar 30 12:19	5° $\text{Y}$ 12'49	
max. Earth dist.	14626 Mar 01 08:45	21° $\text{H}$ 29'13 31.22441 AU	retrograde	14632 Jun 26 17:57	7° $\text{Y}$ 06'03	
morning rise	14626 Mar 17 13:50	22° $\text{H}$ 04'57	opposition	14632 Sep 12 19:41	5° $\text{Y}$ 43'04 0°33'02	
retrograde	14626 Jun 14 02:52	23° $\text{H}$ 58'47	min. Earth dist.	14632 Sep 13 02:21	5° $\text{Y}$ 42'36 29.26607 AU	
opposition	14626 Aug 31 06:48	22° $\text{H}$ 35'46 0°32'40	direct	14632 Dec 01 08:38	4° $\text{Y}$ 18'40	
min. Earth dist.	14626 Aug 31 10:33	22° $\text{H}$ 35'31 29.22843 AU	evening set	14633 Feb 28 21:37	6° $\text{Y}$ 12'55	
direct	14626 Nov 18 13:31	21° $\text{H}$ 11'34				
evening set	14627 Feb 15 22:02	23° $\text{H}$ 05'53	conjunction	14633 Mar 16 23:19	6° $\text{Y}$ 48'15 0°30'54	
			minimum elong	14633 Mar 16 23:19	6° $\text{Y}$ 48'15 0°30'52	
conjunction	14627 Mar 04 00:24	23° $\text{H}$ 41'21 0°30'40	max. Earth dist.	14633 Mar 16 16:19	6° $\text{Y}$ 47'37 31.26990 AU	
minimum elong	14627 Mar 04 00:24	23° $\text{H}$ 41'21 0°30'53	morning rise	14633 Apr 01 23:36	7° $\text{Y}$ 23'29	
max. Earth dist.	14627 Mar 03 18:58	23° $\text{H}$ 40'51 31.23198 AU	retrograde	14633 Jun 29 04:49	9° $\text{Y}$ 16'39	
morning rise	14627 Mar 20 01:59	24° $\text{H}$ 16'44	opposition	14633 Sep 15 05:46	7° $\text{Y}$ 53'43 0°32'56	
retrograde	14627 Jun 16 14:09	26° $\text{H}$ 10'28	min. Earth dist.	14633 Sep 15 11:45	7° $\text{Y}$ 53'18 29.27419 AU	
opposition	14627 Sep 02 17:04	24° $\text{H}$ 47'29 0°32'51	direct	14633 Dec 03 21:25	6° $\text{Y}$ 29'19	
min. Earth dist.	14627 Sep 02 21:21	24° $\text{H}$ 47'11 29.23548 AU	evening set	14634 Mar 03 09:27	8° $\text{Y}$ 23'36	
direct	14627 Nov 20 22:50	23° $\text{H}$ 23'14				
evening set	14628 Feb 18 10:11	25° $\text{H}$ 17'33	conjunction	14634 Mar 19 10:53	8° $\text{Y}$ 58'55 0°30'46	
			minimum elong	14634 Mar 19 10:53	8° $\text{Y}$ 58'55 0°30'44	
conjunction	14628 Mar 05 12:35	25° $\text{H}$ 52'59 0°30'49	max. Earth dist.	14634 Mar 19 03:01	8° $\text{Y}$ 58'12 31.27851 AU	
minimum elong	14628 Mar 05 12:35	25° $\text{H}$ 53'00 0°31'00	morning rise	14634 Apr 04 11:03	9° $\text{Y}$ 34'08	
max. Earth dist.	14628 Mar 05 07:30	25° $\text{H}$ 52'32 31.23846 AU	retrograde	14634 Jul 01 14:53	11° $\text{Y}$ 27'14	
morning rise	14628 Mar 21 13:48	26° $\text{H}$ 28'22	opposition	14634 Sep 17 15:47	10° $\text{Y}$ 04'22 0°32'47	
retrograde	14628 Jun 17 22:41	28° $\text{H}$ 22'00	min. Earth dist.	14634 Sep 17 22:37	10° $\text{Y}$ 03'54 29.28323 AU	
opposition	14628 Sep 04 03:16	26° $\text{H}$ 59'01 0°32'59	direct	14634 Dec 06 07:04	8° $\text{Y}$ 40'00	
min. Earth dist.	14628 Sep 04 08:36	26° $\text{H}$ 58'39 29.24151 AU	evening set	14635 Mar 05 21:11	10° $\text{Y}$ 34'18	
direct	14628 Nov 22 10:19	25° $\text{H}$ 34'44				
evening set	14629 Feb 19 22:20	27° $\text{H}$ 29'02	conjunction	14635 Mar 21 22:37	11° $\text{Y}$ 09'37 0°30'37	
			minimum elong	14635 Mar 21 22:38	11° $\text{Y}$ 09'37 0°30'31	
conjunction	14629 Mar 08 00:29	28° $\text{H}$ 04'27 0°30'55	max. Earth dist.	14635 Mar 21 15:22	11° $\text{Y}$ 08'57 31.28773 AU	
minimum elong	14629 Mar 08 00:29	28° $\text{H}$ 04'27 0°31'03	morning rise	14635 Apr 06 22:26	11° $\text{Y}$ 44'49	
max. Earth dist.	14629 Mar 07 17:51	28° $\text{H}$ 03'50 31.24431 AU	retrograde	14635 Jul 04 00:26	13° $\text{Y}$ 37'52	
morning rise	14629 Mar 24 01:41	28° $\text{H}$ 39'48	opposition	14635 Sep 20 01:55	12° $\text{Y}$ 15'05 0°32'35	
	14629 May 06 06:52	0° $\text{Y}$	min. Earth dist.	14635 Sep 20 09:01	12° $\text{Y}$ 14'35 29.29234 AU	
retrograde	14629 Jun 20 10:03	0° $\text{Y}$ 33'19	direct	14635 Dec 08 18:48	10° $\text{Y}$ 50'45	
	14629 Aug 05 15:41	30° $\text{R}$ $\text{H}$	evening set	14636 Mar 07 09:05	12° $\text{Y}$ 45'05	
opposition	14629 Sep 06 13:21	29° $\text{H}$ 10'20 0°33'04				
min. Earth dist.	14629 Sep 06 18:26	29° $\text{H}$ 09'59 29.24721 AU	conjunction	14636 Mar 23 10:07	13° $\text{Y}$ 20'22 0°30'24	
direct	14629 Nov 24 21:58	27° $\text{H}$ 46'01	minimum elong	14636 Mar 23 10:08	13° $\text{Y}$ 20'22 0°30'17	
evening set	14630 Feb 22 10:10	29° $\text{H}$ 40'18 0° $\text{Y}$	max. Earth dist.	14636 Mar 23 01:18	13° $\text{Y}$ 19'34 31.29667 AU	
	14630 Mar 03 10:19	0° $\text{Y}$	morning rise	14636 Apr 08 09:50	13° $\text{Y}$ 55'33	
			retrograde	14636 Jul 05 11:38	15° $\text{Y}$ 48'34	
conjunction	14630 Mar 10 12:19	0° $\text{Y}$ 15'41 0°30'59	opposition	14636 Sep 21 12:03	14° $\text{Y}$ 25'51 0°32'20	
minimum elong	14630 Mar 10 12:19	0° $\text{Y}$ 15'42 0°31'05	min. Earth dist.	14636 Sep 21 19:25	14° $\text{Y}$ 25'20 29.30105 AU	
max. Earth dist.	14630 Mar 10 06:05	0° $\text{Y}$ 15'07 31.24987 AU	direct	14636 Dec 10 04:07	13° $\text{Y}$ 01'33	
morning rise	14630 Mar 26 13:13	0° $\text{Y}$ 51'01	evening set	14637 Mar 09 20:49	14° $\text{Y}$ 55'55	
retrograde	14630 Jun 22 19:19	2° $\text{Y}$ 44'26				
opposition	14630 Sep 08 23:35	1° $\text{Y}$ 21'27 0°33'06	conjunction	14637 Mar 25 21:50	15° $\text{Y}$ 31'11 0°30'09	
min. Earth dist.	14630 Sep 09 05:59	1° $\text{Y}$ 21'00 29.25284 AU	minimum elong	14637 Mar 25 21:50	15° $\text{Y}$ 31'11 0°29'59	
	14630 Nov 14 01:33	30° $\text{R}$ $\text{H}$	max. Earth dist.	14637 Mar 25 13:28	15° $\text{Y}$ 30'25 31.30486 AU	
direct	14630 Nov 27 08:47	29° $\text{H}$ 57'04	morning rise	14637 Apr 10 21:08	16° $\text{Y}$ 06'21	
	14630 Dec 10 17:43	0° $\text{Y}$	retrograde	14637 Jul 07 20:08	17° $\text{Y}$ 59'20	
evening set	14631 Feb 24 22:07	1° $\text{Y}$ 51'21	opposition	14637 Sep 23 22:19	16° $\text{Y}$ 36'40 0°32'02	
			min. Earth dist.	14637 Sep 24 06:48	16° $\text{Y}$ 36'05 29.30867 AU	
conjunction	14631 Mar 13 00:05	2° $\text{Y}$ 26'43 0°31'00	direct	14637 Dec 12 15:07	15° $\text{Y}$ 12'24	
minimum elong	14631 Mar 13 00:05	2° $\text{Y}$ 26'43 0°31'03	evening set	14638 Mar 12 08:38	17° $\text{Y}$ 06'46	
max. Earth dist.	14631 Mar 12 17:05	2° $\text{Y}$ 26'04 31.25574 AU				
morning rise	14631 Mar 29 00:52	3° $\text{Y}$ 02'00	conjunction	14638 Mar 28 09:20	17° $\text{Y}$ 42'02 0°29'52	
retrograde	14631 Jun 25 06:57	4° $\text{Y}$ 55'19	minimum elong	14638 Mar 28 09:20	17° $\text{Y}$ 42'02 0°29'39	
opposition	14631 Sep 11 09:28	3° $\text{Y}$ 32'20 0°33'05	max. Earth dist.	14638 Mar 27 23:19	17° $\text{Y}$ 41'07 31.31191 AU	

morning rise	14638 Apr 13 08:34	18° $\Upsilon$ 17'11	direct	14644 Dec 27 23:54	0° $\delta$ 26'29	
retrograde	14638 Jul 10 07:20	20° $\Upsilon$ 10'07	evening set	14645 Mar 27 17:22	2° $\delta$ 20'53	
opposition	14638 Sep 26 08:31	18° $\Upsilon$ 47'29 0°31'42				
min. Earth dist.	14638 Sep 26 16:51	18° $\Upsilon$ 46'55 29.31503 AU	conjunction	14645 Apr 12 16:31	2° $\delta$ 56'02 0°26'39	
direct	14638 Dec 15 02:00	17° $\Upsilon$ 23'13	minimum elong	14645 Apr 12 16:31	2° $\delta$ 56'02 0°26'11	
evening set	14639 Mar 14 20:26	19° $\Upsilon$ 17'37	max. Earth dist.	14645 Apr 12 03:51	2° $\delta$ 54'52 31.33511 AU	
			morning rise	14645 Apr 28 13:57	3° $\delta$ 31'02	
conjunction	14639 Mar 30 21:02	19° $\Upsilon$ 52'52 0°29'31	retrograde	14645 Jul 25 07:40	5° $\delta$ 23'37	
minimum elong	14639 Mar 30 21:02	19° $\Upsilon$ 52'52 0°29'16	opposition	14645 Oct 11 08:04	4° $\delta$ 01'06 0°28'06	
max. Earth dist.	14639 Mar 30 11:03	19° $\Upsilon$ 51'57 31.31748 AU	min. Earth dist.	14645 Oct 11 18:41	4° $\delta$ 00'22 29.33726 AU	
morning rise	14639 Apr 15 19:52	20° $\Upsilon$ 27'59	direct	14645 Dec 30 09:27	2° $\delta$ 36'45	
retrograde	14639 Jul 12 16:38	22° $\Upsilon$ 20'52	evening set	14646 Mar 30 04:29	4° $\delta$ 31'11	
opposition	14639 Sep 28 18:48	20° $\Upsilon$ 58'17 0°31'18				
min. Earth dist.	14639 Sep 29 04:43	20° $\Upsilon$ 57'36 29.31994 AU	conjunction	14646 Apr 15 03:36	5° $\delta$ 06'19 0°26'02	
direct	14639 Dec 17 12:14	19° $\Upsilon$ 34'00	minimum elong	14646 Apr 15 03:36	5° $\delta$ 06'19 0°25'32	
evening set	14640 Mar 16 08:12	21° $\Upsilon$ 28'25	max. Earth dist.	14646 Apr 14 15:56	5° $\delta$ 05'15 31.33923 AU	
			morning rise	14646 May 01 00:37	5° $\delta$ 41'19	
conjunction	14640 Apr 01 08:33	22° $\Upsilon$ 03'39 0°29'09	retrograde	14646 Jul 27 15:24	7° $\delta$ 33'53	
minimum elong	14640 Apr 01 08:33	22° $\Upsilon$ 03'39 0°28'52	opposition	14646 Oct 13 18:24	6° $\delta$ 11'25 0°27'25	
max. Earth dist.	14640 Mar 31 21:35	22° $\Upsilon$ 02'38 31.32183 AU	min. Earth dist.	14646 Oct 14 05:41	6° $\delta$ 10'38 29.34166 AU	
morning rise	14640 Apr 17 07:13	22° $\Upsilon$ 38'45	direct	14647 Jan 01 20:22	4° $\delta$ 47'07	
retrograde	14640 Jul 14 04:10	24° $\Upsilon$ 31'35	evening set	14647 Apr 01 15:50	6° $\delta$ 41'34	
opposition	14640 Sep 30 05:01	23° $\Upsilon$ 09'00 0°30'53				
min. Earth dist.	14640 Sep 30 14:24	23° $\Upsilon$ 08'21 29.32365 AU	conjunction	14647 Apr 17 14:33	7° $\delta$ 16'41 0°25'23	
direct	14640 Dec 19 00:39	21° $\Upsilon$ 44'43	minimum elong	14647 Apr 17 14:33	7° $\delta$ 16'41 0°24'50	
evening set	14641 Mar 18 19:42	23° $\Upsilon$ 39'08	max. Earth dist.	14647 Apr 17 01:51	7° $\delta$ 15'31 31.34396 AU	
			morning rise	14647 May 03 11:27	7° $\delta$ 51'40	
conjunction	14641 Apr 03 19:50	24° $\Upsilon$ 14'20 0°28'43	retrograde	14647 Jul 30 01:57	9° $\delta$ 44'13	
minimum elong	14641 Apr 03 19:51	24° $\Upsilon$ 14'20 0°28'24	opposition	14647 Oct 16 04:36	8° $\delta$ 21'49 0°26'42	
max. Earth dist.	14641 Apr 03 08:21	24° $\Upsilon$ 13'17 31.32497 AU	min. Earth dist.	14647 Oct 16 15:16	8° $\delta$ 21'05 29.34646 AU	
morning rise	14641 Apr 19 18:14	24° $\Upsilon$ 49'26	direct	14648 Jan 04 06:19	6° $\delta$ 57'33	
retrograde	14641 Jul 16 15:09	26° $\Upsilon$ 42'12	evening set	14648 Apr 03 03:05	8° $\delta$ 52'03	
opposition	14641 Oct 02 15:21	25° $\Upsilon$ 19'38 0°30'24				
min. Earth dist.	14641 Oct 03 02:04	25° $\Upsilon$ 18'53 29.32643 AU	conjunction	14648 Apr 19 01:38	9° $\delta$ 27'10 0°24'41	
direct	14641 Dec 21 12:10	23° $\Upsilon$ 55'20	minimum elong	14648 Apr 19 01:38	9° $\delta$ 27'10 0°24'08	
evening set	14642 Mar 21 07:13	25° $\Upsilon$ 49'44	max. Earth dist.	14648 Apr 18 13:25	9° $\delta$ 26'02 31.34865 AU	
			morning rise	14648 May 04 22:07	10° $\delta$ 02'08	
conjunction	14642 Apr 06 07:13	26° $\Upsilon$ 24'56 0°28'16	retrograde	14648 Jul 31 11:22	11° $\delta$ 54'42	
minimum elong	14642 Apr 06 07:13	26° $\Upsilon$ 24'56 0°27'55	opposition	14648 Oct 17 15:07	10° $\delta$ 32'21 0°25'56	
max. Earth dist.	14642 Apr 05 19:43	26° $\Upsilon$ 23'53 31.32747 AU	min. Earth dist.	14648 Oct 18 03:04	10° $\delta$ 31'31 29.35098 AU	
morning rise	14642 Apr 22 05:21	27° $\Upsilon$ 00'00	direct	14649 Jan 05 15:13	9° $\delta$ 08'08	
retrograde	14642 Jul 19 01:37	28° $\Upsilon$ 52'42	evening set	14649 Apr 05 14:14	11° $\delta$ 02'39	
opposition	14642 Oct 05 01:23	27° $\Upsilon$ 30'08 0°29'53				
min. Earth dist.	14642 Oct 05 11:47	27° $\Upsilon$ 29'25 29.32861 AU	conjunction	14649 Apr 21 12:29	11° $\delta$ 37'44 0°23'58	
direct	14642 Dec 24 01:21	26° $\Upsilon$ 05'49	minimum elong	14649 Apr 21 12:30	11° $\delta$ 37'44 0°23'21	
evening set	14643 Mar 23 18:46	28° $\Upsilon$ 00'13	max. Earth dist.	14649 Apr 20 23:43	11° $\delta$ 36'34 31.35284 AU	
			morning rise	14649 May 07 08:48	12° $\delta$ 12'42	
conjunction	14643 Apr 08 18:26	28° $\Upsilon$ 35'24 0°27'46	retrograde	14649 Aug 02 22:35	14° $\delta$ 05'16	
minimum elong	14643 Apr 08 18:27	28° $\Upsilon$ 35'24 0°27'22	opposition	14649 Oct 20 01:32	12° $\delta$ 42'58 0°25'08	
max. Earth dist.	14643 Apr 08 05:57	28° $\Upsilon$ 34'15 31.32956 AU	min. Earth dist.	14649 Oct 20 12:50	12° $\delta$ 42'11 29.35460 AU	
morning rise	14643 Apr 24 16:24	29° $\Upsilon$ 10'26	direct	14650 Jan 08 03:34	11° $\delta$ 18'46	
	14643 May 19 04:52	0° $\delta$	evening set	14650 Apr 08 01:36	13° $\delta$ 13'19	
retrograde	14643 Jul 21 11:35	1° $\delta$ 03'06				
	14643 Sep 25 15:13	30° $\Re$ $\Upsilon$	conjunction	14650 Apr 23 23:35	13° $\delta$ 48'24 0°23'12	
opposition	14643 Oct 07 11:39	29° $\Upsilon$ 40'32 0°29'20	minimum elong	14650 Apr 23 23:36	13° $\delta$ 48'24 0°22'35	
min. Earth dist.	14643 Oct 07 22:42	29° $\Upsilon$ 39'46 29.33087 AU	max. Earth dist.	14650 Apr 23 10:12	13° $\delta$ 47'10 31.35578 AU	
direct	14643 Dec 26 11:32	28° $\Upsilon$ 16'11	morning rise	14650 May 09 19:35	14° $\delta$ 23'20	
	14644 Mar 20 07:14	0° $\delta$		14650 May 27 11:59	15° $\delta$	
evening set	14644 Mar 25 06:00	0° $\delta$ 10'35	retrograde	14650 Aug 05 09:43	16° $\delta$ 15'54	
				14650 Oct 18 14:59	15° $\Re$ $\delta$	
conjunction	14644 Apr 10 05:33	0° $\delta$ 45'45 0°27'14	opposition	14650 Oct 22 12:02	14° $\delta$ 53'37 0°24'18	
minimum elong	14644 Apr 10 05:33	0° $\delta$ 45'45 0°26'48	min. Earth dist.	14650 Oct 23 00:40	14° $\delta$ 52'45 29.35694 AU	
max. Earth dist.	14644 Apr 09 18:01	0° $\delta$ 44'41 31.33196 AU	direct	14651 Jan 10 14:32	13° $\delta$ 29'25	
morning rise	14644 Apr 26 03:05	1° $\delta$ 20'46		14651 Mar 30 03:51	15° $\delta$	
retrograde	14644 Jul 22 20:39	3° $\delta$ 13'22	evening set	14651 Apr 10 12:56	15° $\delta$ 24'00	
opposition	14644 Oct 08 21:54	1° $\delta$ 50'50 0°28'44				
min. Earth dist.	14644 Oct 09 08:53	1° $\delta$ 50'04 29.33354 AU	conjunction	14651 Apr 26 10:43	15° $\delta$ 59'04 0°22'24	

minimum elong	14651 Apr 26 10:43	15°8'59.04	0°21'44			14657 Nov 10 04:16	30°8'8	
max. Earth dist.	14651 Apr 25 21:17	15°8'57.49	31.35737 AU	direct		14658 Jan 25 21:58	28°8'41.33	
morning rise	14651 May 12 06:23	16°8'33.59				14658 Apr 08 08:59	0°II	
retrograde	14651 Aug 07 20:14	18°8'26.32		evening set		14658 Apr 25 18:03	0°II36'03	
opposition	14651 Oct 24 22:37	17°8'04.15	0°23'26					
min. Earth dist.	14651 Oct 25 11:03	17°8'03.24	29.35766 AU	conjunction		14658 May 11 13:55	1°II11'02	0°16'04
direct	14652 Jan 13 03:34	15°8'40.04		minimum elong		14658 May 11 13:55	1°II11'02	0°15'14
evening set	14652 Apr 12 00:12	17°8'34.38		behind sun begin		14658 May 11 11:50	1°II10'50	
				behind sun end		14658 May 11 15:59	1°II11'13	
conjunction	14652 Apr 27 21:34	18°8'09.41	0°21'35	max. Earth dist.		14658 May 10 23:23	1°II09'41	31.34021 AU
minimum elong	14652 Apr 27 21:35	18°8'09.41	0°20'54	morning rise		14658 May 27 07:45	1°II45'51	
max. Earth dist.	14652 Apr 27 06:56	18°8'08.20	31.35731 AU	retrograde		14658 Aug 22 17:04	3°II38'18	
morning rise	14652 May 13 17:03	18°8'44.35		opposition		14658 Nov 09 00:54	2°II15'55	0°16'32
retrograde	14652 Aug 09 07:06	20°8'37.08		min. Earth dist.		14658 Nov 09 13:41	2°II15'03	29.33942 AU
opposition	14652 Oct 26 09:17	19°8'14.50	0°22'32	direct		14659 Jan 28 09:55	0°II51'35	
min. Earth dist.	14652 Oct 26 22:27	19°8'13.56	29.35693 AU	evening set		14659 Apr 28 04:54	2°II46'08	
direct	14653 Jan 14 14:13	17°8'50.38		max. Earth dist.		14659 May 13 09:54	3°II19'46	31.33858 AU
evening set	14653 Apr 14 11:19	19°8'45.12						
				conjunction		14659 May 14 00:28	3°II21'06	0°15'04
conjunction	14653 Apr 30 08:36	20°8'20.14	0°20'43	minimum elong		14659 May 14 00:28	3°II21'06	0°14'11
minimum elong	14653 Apr 30 08:36	20°8'20.14	0°20'00	behind sun begin		14659 May 13 21:21	3°II20'50	
max. Earth dist.	14653 Apr 29 18:37	20°8'18.57	31.35585 AU	behind sun end		14659 May 14 03:35	3°II21'23	
morning rise	14653 May 16 03:40	20°8'55.07		morning rise		14659 May 29 18:01	3°II55'55	
retrograde	14653 Aug 11 16:45	22°8'47.37		retrograde		14659 Aug 25 04:19	5°II48'26	
opposition	14653 Oct 28 19:49	21°8'25.19	0°21'36	opposition		14659 Nov 11 11:45	4°II26'04	0°15'27
min. Earth dist.	14653 Oct 29 09:23	21°8'24.23	29.35474 AU	min. Earth dist.		14659 Nov 12 01:12	4°II25'09	29.33815 AU
direct	14654 Jan 17 03:32	20°8'01.05		direct		14660 Jan 30 20:02	3°II01'47	
evening set	14654 Apr 16 22:31	21°8'55.37		evening set		14660 Apr 29 15:32	4°II56'23	
conjunction	14654 May 02 19:23	22°8'30.39	0°19'50	conjunction		14660 May 15 10:54	5°II31'20	0°14'02
minimum elong	14654 May 02 19:24	22°8'30.39	0°19'06	minimum elong		14660 May 15 10:54	5°II31'20	0°13'09
max. Earth dist.	14654 May 02 03:59	22°8'29.14	31.35315 AU	behind sun begin		14660 May 15 07:04	5°II30'59	
morning rise	14654 May 18 14:23	23°8'05.31		behind sun end		14660 May 15 14:43	5°II31'40	
retrograde	14654 Aug 14 03:39	24°8'57.59		max. Earth dist.		14660 May 14 21:04	5°II30'03	31.33750 AU
opposition	14654 Oct 31 06:23	23°8'35.39	0°20'38	morning rise		14660 May 31 04:08	6°II06'08	
min. Earth dist.	14654 Oct 31 19:47	23°8'34.44	29.35159 AU	retrograde		14660 Aug 26 14:52	7°II58'42	
direct	14655 Jan 19 14:28	22°8'11.22		opposition		14660 Nov 12 22:33	6°II36'23	0°14'21
evening set	14655 Apr 19 09:29	24°8'05.54		min. Earth dist.		14660 Nov 13 11:22	6°II35'31	29.33696 AU
				direct		14661 Feb 01 08:14	5°II12'09	
conjunction	14655 May 05 06:14	24°8'40.55	0°18'56	evening set		14661 May 02 02:23	7°II06'48	
minimum elong	14655 May 05 06:14	24°8'40.55	0°18'09					
max. Earth dist.	14655 May 04 15:41	24°8'39.34	31.34957 AU	conjunction		14661 May 17 21:20	7°II41'44	0°12'59
morning rise	14655 May 21 00:46	25°8'15.46		minimum elong		14661 May 17 21:21	7°II41'44	0°12'04
retrograde	14655 Aug 16 11:17	27°8'08.12		behind sun begin		14661 May 17 16:56	7°II41'21	
opposition	14655 Nov 02 17:02	25°8'45.51	0°19'39	behind sun end		14661 May 18 01:46	7°II42'08	
min. Earth dist.	14655 Nov 03 07:13	25°8'44.52	29.34780 AU	max. Earth dist.		14661 May 17 06:42	7°II40'23	31.33620 AU
direct	14656 Jan 22 02:08	24°8'21.32		morning rise		14661 Jun 02 14:26	8°II16'33	
evening set	14656 Apr 20 20:29	26°8'16.02		retrograde		14661 Aug 29 02:28	10°II09'10	
				opposition		14661 Nov 15 09:20	8°II46'53	0°13'13
conjunction	14656 May 06 16:49	26°8'51.01	0°18'00	min. Earth dist.		14661 Nov 15 22:33	8°II45'59	29.33551 AU
minimum elong	14656 May 06 16:49	26°8'51.01	0°17'12	direct		14662 Feb 03 18:22	7°II22'41	
max. Earth dist.	14656 May 06 01:28	26°8'49.36	31.34588 AU	evening set		14662 May 04 13:09	9°II17'23	
morning rise	14656 May 22 11:14	27°8'25.52						
retrograde	14656 Aug 17 21:29	29°8'18.17		conjunction		14662 May 20 08:01	9°II52'20	0°11'55
opposition	14656 Nov 04 03:37	27°8'55.54	0°18'39	minimum elong		14662 May 20 08:01	9°II52'20	0°11'00
min. Earth dist.	14656 Nov 04 16:48	27°8'55.00	29.34429 AU	behind sun begin		14662 May 20 03:08	9°II51'54	
direct	14657 Jan 23 12:40	26°8'31.33		behind sun end		14662 May 20 12:53	9°II52'46	
evening set	14657 Apr 23 07:11	28°8'26.03		max. Earth dist.		14662 May 19 18:19	9°II51'04	31.33431 AU
				morning rise		14662 Jun 05 00:42	10°II27'07	
conjunction	14657 May 09 03:21	29°8'01.02	0°17'03	retrograde		14662 Aug 31 13:03	12°II19'48	
minimum elong	14657 May 09 03:21	29°8'01.02	0°16'13	opposition		14662 Nov 17 20:22	10°II57'33	0°12'03
max. Earth dist.	14657 May 08 12:49	28°8'59.42	31.34257 AU	min. Earth dist.		14662 Nov 18 09:50	10°II56'38	29.33305 AU
morning rise	14657 May 24 21:23	29°8'35.52		direct		14663 Feb 06 07:46	9°II33'23	
	14657 Jun 05 07:14	0°II		evening set		14663 May 07 00:05	11°II28'07	
retrograde	14657 Aug 20 06:26	1°II28'18						
opposition	14657 Nov 06 14:24	0°II05'54	0°17'36	conjunction		14663 May 22 18:27	12°II03'03	0°10'50
min. Earth dist.	14657 Nov 07 04:23	0°II04'56	29.34142 AU	minimum elong		14663 May 22 18:27	12°II03'03	0°09'53

behind sun begin	14663 May 22 13:11	12°II02'35		direct	14669 Feb 19 01:43	22°II37'49	
behind sun end	14663 May 22 23:44	12°II03'31		evening set	14669 May 19 16:07	24°II32'30	
max. Earth dist.	14663 May 22 03:31	12°II01'40	31.33130 AU				
morning rise	14663 Jun 07 11:02	12°II37'51		conjunction	14669 Jun 04 09:04	25°II07'23	0°04'06
retrograde	14663 Sep 03 00:46	14°II30'35		minimum elong	14669 Jun 04 09:04	25°II07'23	0°03'05
opposition	14663 Nov 20 07:22	13°II08'20	0°10'53	behind sun begin	14669 Jun 04 02:38	25°II06'48	
min. Earth dist.	14663 Nov 20 20:30	13°II07'26	29.32947 AU	behind sun end	14669 Jun 04 15:30	25°II07'57	
direct	14664 Feb 08 18:47	11°II44'11		max. Earth dist.	14669 Jun 03 19:19	25°II06'06	31.29007 AU
evening set	14664 May 08 10:51	13°II38'56		morning rise	14669 Jun 20 00:06	25°II42'08	
				retrograde	14669 Sep 15 11:03	27°II35'02	
conjunction	14664 May 24 05:07	14°II13'52	0°09'45	opposition	14669 Dec 03 02:23	26°II12'34	0°03'38
minimum elong	14664 May 24 05:06	14°II13'52	0°08'48	min. Earth dist.	14669 Dec 03 15:13	26°II11'41	29.28640 AU
behind sun begin	14664 May 23 23:30	14°II13'22		direct	14670 Feb 21 13:41	24°II48'14	
behind sun end	14664 May 24 10:42	14°II14'22		evening set	14670 May 22 02:44	26°II42'56	
max. Earth dist.	14664 May 23 14:57	14°II12'34	31.32699 AU				
morning rise	14664 Jun 08 21:15	14°II48'39		conjunction	14670 Jun 06 19:16	27°II17'48	0°02'56
retrograde	14664 Sep 04 09:00	16°II41'26		minimum elong	14670 Jun 06 19:17	27°II17'48	0°01'56
opposition	14664 Nov 21 18:35	15°II19'12	0°09'42	behind sun begin	14670 Jun 06 12:49	27°II17'13	
min. Earth dist.	14664 Nov 22 08:35	15°II18'14	29.32448 AU	behind sun end	14670 Jun 07 01:45	27°II18'22	
direct	14665 Feb 10 06:32	13°II55'03		max. Earth dist.	14670 Jun 06 05:04	27°II16'29	31.28284 AU
evening set	14665 May 10 21:38	15°II49'48		morning rise	14670 Jun 22 10:13	27°II52'32	
				retrograde	14670 Sep 17 22:56	29°II45'30	
conjunction	14665 May 26 15:31	16°II24'44	0°08'38	opposition	14670 Dec 05 13:42	28°II22'59	0°02'24
minimum elong	14665 May 26 15:31	16°II24'44	0°07'39	min. Earth dist.	14670 Dec 06 02:16	28°II22'08	29.27979 AU
behind sun begin	14665 May 26 09:39	16°II24'12		direct	14671 Feb 24 00:23	26°II58'40	
behind sun end	14665 May 26 21:23	16°II25'15		evening set	14671 May 24 13:05	28°II53'22	
max. Earth dist.	14665 May 26 00:26	16°II23'20	31.32140 AU				
morning rise	14665 Jun 11 07:36	16°II59'30		conjunction	14671 Jun 09 05:33	29°II28'14	0°01'45
retrograde	14665 Sep 06 19:35	18°II52'18		minimum elong	14671 Jun 09 05:32	29°II28'14	0°00'43
opposition	14665 Nov 24 05:40	17°II30'03	0°08'30	behind sun begin	14671 Jun 08 23:05	29°II27'39	
min. Earth dist.	14665 Nov 24 18:53	17°II29'09	29.31816 AU	behind sun end	14671 Jun 09 11:59	29°II28'48	
direct	14666 Feb 12 17:36	16°II05'53		max. Earth dist.	14671 Jun 08 16:56	29°II27'04	31.27670 AU
evening set	14666 May 13 08:25	18°II00'37			14671 Jun 23 11:34	0°00	
max. Earth dist.	14666 May 28 11:23	18°II34'11	31.31437 AU	morning rise	14671 Jun 24 20:05	0°002'58	
				retrograde	14671 Sep 20 09:36	1°0055'59	
conjunction	14666 May 29 02:08	18°II35'33	0°07'31	opposition	14671 Dec 08 01:05	0°0033'28	0°01'09
minimum elong	14666 May 29 02:07	18°II35'33	0°06'33	min. Earth dist.	14671 Dec 08 13:19	0°0032'38	29.27403 AU
behind sun begin	14666 May 28 20:02	18°II35'00			14671 Dec 29 00:16	30°R11	
behind sun end	14666 May 29 08:12	18°II36'05		direct	14672 Feb 26 13:35	29°II09'11	
morning rise	14666 Jun 13 17:51	19°II10'19			14672 Apr 23 13:31	0°00	
retrograde	14666 Sep 09 04:45	21°II03'09		evening set	14672 May 25 23:39	1°0003'54	
opposition	14666 Nov 26 16:50	19°II40'51	0°07'18				
min. Earth dist.	14666 Nov 27 07:13	19°II39'52	29.31062 AU	conjunction	14672 Jun 10 15:40	1°0038'46	0°00'32
direct	14667 Feb 15 03:22	18°II16'39		minimum elong	14672 Jun 10 15:40	1°0038'46	0°00'29
evening set	14667 May 15 19:09	20°II11'23		behind sun begin	14672 Jun 10 09:14	1°0038'11	
				behind sun end	14672 Jun 10 22:07	1°0039'20	
conjunction	14667 May 31 12:34	20°II46'17	0°06'24	max. Earth dist.	14672 Jun 10 02:28	1°0037'32	31.27144 AU
minimum elong	14667 May 31 12:34	20°II46'17	0°05'23	morning rise	14672 Jun 26 06:12	2°0013'30	
behind sun begin	14667 May 31 06:19	20°II45'43		retrograde	14672 Sep 21 21:36	4°0006'36	
behind sun end	14667 May 31 18:49	20°II46'50		desc. node	14672 Nov 13 22:18	3°0024'17	
max. Earth dist.	14667 May 30 21:50	20°II44'55	31.30649 AU	opposition	14672 Dec 09 12:24	2°0044'05	-0°00'05
morning rise	14667 Jun 16 04:07	21°II21'03		min. Earth dist.	14672 Dec 09 23:44	2°0043'19	29.26909 AU
retrograde	14667 Sep 11 14:36	23°II13'54		direct	14673 Feb 28 00:19	1°0019'50	
opposition	14667 Nov 29 04:00	21°II51'33	0°06'05	evening set	14673 May 28 10:00	3°0014'35	
min. Earth dist.	14667 Nov 29 17:16	21°II50'38	29.30236 AU				
direct	14668 Feb 17 15:54	20°II27'18		conjunction	14673 Jun 13 02:00	3°0049'27	-0°00'40
evening set	14668 May 17 05:39	22°II22'00		minimum elong	14673 Jun 13 01:58	3°0049'26	0°01'42
				behind sun begin	14673 Jun 12 19:30	3°0048'52	
conjunction	14668 Jun 01 22:44	22°II56'53	0°05'15	behind sun end	14673 Jun 13 08:26	3°0050'01	
minimum elong	14668 Jun 01 22:45	22°II56'53	0°04'16	max. Earth dist.	14673 Jun 12 14:00	3°0048'20	31.26655 AU
behind sun begin	14668 Jun 01 16:23	22°II56'19		morning rise	14673 Jun 28 16:09	4°0024'11	
behind sun end	14668 Jun 02 05:08	22°II57'28		retrograde	14673 Sep 24 07:01	6°0017'22	
max. Earth dist.	14668 Jun 01 07:58	22°II55'31	31.29808 AU	opposition	14673 Dec 11 23:58	4°0054'52	-0°01'20
morning rise	14668 Jun 17 14:06	23°II31'39		min. Earth dist.	14673 Dec 12 11:51	4°0054'04	29.26414 AU
retrograde	14668 Sep 13 01:06	25°II24'32		direct	14674 Mar 02 12:12	3°0030'40	
opposition	14668 Nov 30 15:18	24°II02'06	0°04'52	evening set	14674 May 30 20:39	5°0025'26	
min. Earth dist.	14668 Dec 01 05:03	24°II01'10	29.29412 AU				

conjunction	14674 Jun 15 12:14	6°00'18" -0°01'51"	opposition	14679 Dec 25 22:39	18°02'46" -0°08'44"
minimum elong	14674 Jun 15 12:14	6°00'18" 0°02'52"	min. Earth dist.	14679 Dec 26 09:27	18°02'02" 29.21609 AU
behind sun begin	14674 Jun 15 05:48	5°59'44"	direct	14680 Mar 15 06:18	16°38'38"
behind sun end	14674 Jun 15 18:40	6°00'53"	evening set	14680 Jun 12 12:14	18°33'31"
max. Earth dist.	14674 Jun 14 23:47	5°59'09" 31.26153 AU			
morning rise	14674 Jul 01 02:20	6°35'03"	conjunction	14680 Jun 28 02:39	19°08'22" -0°08'43"
retrograde	14674 Sep 26 18:34	8°28'19"	minimum elong	14680 Jun 28 02:38	19°08'22" 0°09'43"
opposition	14674 Dec 14 11:25	7°05'50" -0°02'35"	behind sun begin	14680 Jun 27 21:19	19°07'53"
min. Earth dist.	14674 Dec 14 22:14	7°05'06" 29.25885 AU	behind sun end	14680 Jun 28 07:57	19°08'50"
direct	14675 Mar 04 23:38	5°41'40"	max. Earth dist.	14680 Jun 27 15:54	19°07'22" 31.21032 AU
evening set	14675 Jun 02 07:17	7°36'29"	morning rise	14680 Jul 13 15:36	19°43'07"
			retrograde	14680 Oct 09 12:43	21°36'55"
conjunction	14675 Jun 17 22:39	8°11'21" -0°03'01"	opposition	14680 Dec 27 10:33	20°14'16" -0°09'56"
minimum elong	14675 Jun 17 22:40	8°11'21" 0°04'03"	min. Earth dist.	14680 Dec 27 21:13	20°13'32" 29.20463 AU
behind sun begin	14675 Jun 17 16:18	8°10'47"	direct	14681 Mar 17 19:43	18°50'06"
behind sun end	14675 Jun 18 05:03	8°11'55"	evening set	14681 Jun 14 22:46	20°44'58"
max. Earth dist.	14675 Jun 17 10:46	8°10'15" 31.25581 AU			
morning rise	14675 Jul 03 12:29	8°46'06"	conjunction	14681 Jun 30 12:49	21°19'49" -0°09'50"
retrograde	14675 Sep 29 04:42	10°39'28"	minimum elong	14681 Jun 30 12:49	21°19'49" 0°10'50"
opposition	14675 Dec 16 23:16	9°17'00" -0°03'50"	behind sun begin	14681 Jun 30 07:53	21°19'23"
min. Earth dist.	14675 Dec 17 11:00	9°16'12" 29.25276 AU	behind sun end	14681 Jun 30 17:45	21°20'16"
direct	14676 Mar 06 09:42	7°52'52"	max. Earth dist.	14681 Jun 30 01:32	21°18'47" 31.19896 AU
evening set	14676 Jun 03 17:47	9°47'42"	morning rise	14681 Jul 16 01:50	21°54'35"
			retrograde	14681 Oct 12 00:56	23°48'28"
conjunction	14676 Jun 19 08:57	10°22'33" -0°04'11"	opposition	14681 Dec 29 22:29	22°25'44" -0°11'07"
minimum elong	14676 Jun 19 08:57	10°22'33" 0°05'12"	min. Earth dist.	14681 Dec 30 08:03	22°25'05" 29.19351 AU
behind sun begin	14676 Jun 19 02:42	10°22'00"	direct	14682 Mar 20 06:50	21°01'33"
behind sun end	14676 Jun 19 15:12	10°23'07"	evening set	14682 Jun 17 09:11	22°56'26"
max. Earth dist.	14676 Jun 18 21:14	10°21'28" 31.24925 AU			
morning rise	14676 Jul 04 22:37	10°57'18"	conjunction	14682 Jul 02 23:09	23°31'17" -0°10'56"
retrograde	14676 Sep 30 15:14	12°50'46"	minimum elong	14682 Jul 02 23:09	23°31'17" 0°11'54"
opposition	14676 Dec 18 10:59	11°28'18" -0°05'04"	behind sun begin	14682 Jul 02 18:39	23°30'52"
min. Earth dist.	14676 Dec 18 21:40	11°27'35" 29.24551 AU	behind sun end	14682 Jul 03 03:39	23°31'41"
direct	14677 Mar 08 21:50	10°04'11"	max. Earth dist.	14682 Jul 02 13:19	23°30'22" 31.18806 AU
evening set	14677 Jun 06 04:31	11°59'03"	morning rise	14682 Jul 18 11:51	24°06'03"
			retrograde	14682 Oct 14 10:50	26°00'00"
conjunction	14677 Jun 21 19:24	12°33'55" -0°05'20"	opposition	14683 Jan 01 10:33	24°37'14" -0°12'17"
minimum elong	14677 Jun 21 19:24	12°33'55" 0°06'21"	min. Earth dist.	14683 Jan 01 20:15	24°36'34" 29.18308 AU
behind sun begin	14677 Jun 21 13:19	12°33'22"	direct	14683 Mar 22 19:34	23°13'04"
behind sun end	14677 Jun 22 01:30	12°34'28"	evening set	14683 Jun 19 19:42	25°07'56"
max. Earth dist.	14677 Jun 21 07:15	12°32'47" 31.24130 AU			
morning rise	14677 Jul 07 08:56	13°08'40"	conjunction	14683 Jul 05 09:23	25°42'47" -0°12'01"
retrograde	14677 Oct 03 02:26	15°02'14"	minimum elong	14683 Jul 05 09:23	25°42'47" 0°12'59"
opposition	14677 Dec 20 22:46	13°39'44" -0°06'18"	behind sun begin	14683 Jul 05 05:26	25°42'26"
min. Earth dist.	14677 Dec 21 10:11	13°38'58" 29.23698 AU	behind sun end	14683 Jul 05 13:20	25°43'09"
direct	14678 Mar 11 07:16	12°15'38"	max. Earth dist.	14683 Jul 04 23:36	25°41'53" 31.17825 AU
evening set	14678 Jun 08 15:10	14°10'31"	morning rise	14683 Jul 20 22:05	26°17'33"
			retrograde	14683 Oct 16 23:19	28°11'36"
conjunction	14678 Jun 24 05:57	14°45'22" -0°06'28"	opposition	14684 Jan 03 22:35	26°48'49" -0°13'26"
minimum elong	14678 Jun 24 05:57	14°45'22" 0°07'29"	min. Earth dist.	14684 Jan 04 06:37	26°48'16" 29.17376 AU
behind sun begin	14678 Jun 24 00:04	14°44'51"	direct	14684 Mar 24 07:54	25°24'40"
behind sun end	14678 Jun 24 11:50	14°45'54"	evening set	14684 Jun 21 06:02	27°19'33"
max. Earth dist.	14678 Jun 23 18:32	14°44'19" 31.23209 AU			
morning rise	14678 Jul 09 19:13	15°20'08"	conjunction	14684 Jul 06 19:35	27°54'25" -0°13'04"
retrograde	14678 Oct 05 13:01	17°13'46"	minimum elong	14684 Jul 06 19:36	27°54'25" 0°14'01"
opposition	14678 Dec 23 10:39	15°51'15" -0°07'31"	behind sun begin	14684 Jul 06 16:18	27°54'07"
min. Earth dist.	14678 Dec 23 21:28	15°50'31" 29.22700 AU	behind sun end	14684 Jul 06 22:54	27°54'42"
direct	14679 Mar 13 19:16	14°27'08"	max. Earth dist.	14684 Jul 06 10:47	27°53'36" 31.16933 AU
evening set	14679 Jun 11 01:47	16°22'01"	morning rise	14684 Jul 22 08:08	28°29'12"
				14684 Sep 10 19:52	0°00'
conjunction	14679 Jun 26 16:12	16°56'52" -0°07'36"	retrograde	14684 Oct 18 09:42	0°02'23" 22'
minimum elong	14679 Jun 26 16:12	16°56'52" 0°08'37"		14684 Nov 25 23:51	30°00'
behind sun begin	14679 Jun 26 10:35	16°56'22"	opposition	14685 Jan 05 10:48	29°00'33" -0°14'34"
behind sun end	14679 Jun 26 21:50	16°57'22"	min. Earth dist.	14685 Jan 05 19:19	28°59'58" 29.16525 AU
max. Earth dist.	14679 Jun 26 04:02	16°55'44" 31.22158 AU	direct	14685 Mar 26 18:42	27°36'26"
morning rise	14679 Jul 12 05:27	17°31'38"	evening set	14685 Jun 23 16:32	29°31'20"
retrograde	14679 Oct 08 01:30	19°25'22"		14685 Jul 06 12:13	0°00'

conjunction	14685 Jul 09 05:57	0° $\Omega$ 06'12 -0°14'07	minimum elong	14691 Jul 22 21:16	13° $\Omega$ 20'15 0°20'46
minimum elong	14685 Jul 09 05:57	0° $\Omega$ 06'12 0°15'04	max. Earth dist.	14691 Jul 22 15:04	13° $\Omega$ 19'41 31.10238 AU
behind sun begin	14685 Jul 09 03:34	0° $\Omega$ 05'59	morning rise	14691 Aug 07 09:14	13° $\Omega$ 55'06
behind sun end	14685 Jul 09 08:20	0° $\Omega$ 06'25		14691 Sep 08 23:03	15° $\Omega$
max. Earth dist.	14685 Jul 08 21:50	0° $\Omega$ 05'27 31.16117 AU	retrograde	14691 Nov 03 18:53	15° $\Omega$ 50'04
morning rise	14685 Jul 24 18:24	0° $\Omega$ 41'00		14692 Jan 01 09:07	15° $\Omega$
retrograde	14685 Oct 20 19:51	2° $\Omega$ 35'16	opposition	14692 Jan 22 01:53	14° $\Omega$ 27'00 -0°21'48
opposition	14686 Jan 07 22:47	1° $\Omega$ 12'28 -0°15'40	min. Earth dist.	14692 Jan 22 08:10	14° $\Omega$ 26'34 29.09580 AU
min. Earth dist.	14686 Jan 08 05:52	1° $\Omega$ 11'59 29.15716 AU	direct	14692 Apr 11 03:28	13° $\Omega$ 02'58
	14686 Mar 02 03:46	30° $\Omega$	evening set	14692 Jul 08 19:22	14° $\Omega$ 57'54
direct	14686 Mar 29 06:41	29° $\Omega$ 48'23		14692 Jul 09 18:08	15° $\Omega$
	14686 Apr 24 18:23	0° $\Omega$			
evening set	14686 Jun 26 03:10	1° $\Omega$ 43'19	conjunction	14692 Jul 24 07:48	15° $\Omega$ 32'47 -0°20'49
			minimum elong	14692 Jul 24 07:48	15° $\Omega$ 32'47 0°21'36
conjunction	14686 Jul 11 16:20	2° $\Omega$ 18'11 -0°15'09	max. Earth dist.	14692 Jul 24 01:25	15° $\Omega$ 32'12 31.08897 AU
minimum elong	14686 Jul 11 16:20	2° $\Omega$ 18'11 0°16'04	morning rise	14692 Aug 08 19:52	16° $\Omega$ 07'39
behind sun begin	14686 Jul 11 15:43	2° $\Omega$ 18'07	retrograde	14692 Nov 05 08:03	18° $\Omega$ 02'41
behind sun end	14686 Jul 11 16:58	2° $\Omega$ 18'14	opposition	14693 Jan 23 14:24	16° $\Omega$ 39'32 -0°22'43
max. Earth dist.	14686 Jul 11 08:09	2° $\Omega$ 17'25 31.15310 AU	min. Earth dist.	14693 Jan 23 19:22	16° $\Omega$ 39'11 29.08203 AU
morning rise	14686 Jul 27 04:44	2° $\Omega$ 52'59	direct	14693 Apr 13 16:38	15° $\Omega$ 15'27
retrograde	14686 Oct 23 07:09	4° $\Omega$ 47'23	evening set	14693 Jul 11 06:02	17° $\Omega$ 10'22
opposition	14687 Jan 10 11:10	3° $\Omega$ 24'34 -0°16'46			
min. Earth dist.	14687 Jan 10 18:37	3° $\Omega$ 24'04 29.14913 AU	conjunction	14693 Jul 26 18:24	17° $\Omega$ 45'15 -0°21'39
direct	14687 Mar 31 15:57	2° $\Omega$ 00'31	minimum elong	14693 Jul 26 18:24	17° $\Omega$ 45'15 0°22'25
evening set	14687 Jun 28 13:37	3° $\Omega$ 55'28	max. Earth dist.	14693 Jul 26 12:45	17° $\Omega$ 44'44 31.07501 AU
			morning rise	14693 Aug 11 06:24	18° $\Omega$ 20'08
conjunction	14687 Jul 14 02:45	4° $\Omega$ 30'20 -0°16'10	retrograde	14693 Nov 07 18:38	20° $\Omega$ 15'14
minimum elong	14687 Jul 14 02:45	4° $\Omega$ 30'20 0°17'04	opposition	14694 Jan 26 02:59	18° $\Omega$ 52'00 -0°23'36
max. Earth dist.	14687 Jul 13 19:47	4° $\Omega$ 29'42 31.14490 AU	min. Earth dist.	14694 Jan 26 08:30	18° $\Omega$ 51'37 29.06824 AU
morning rise	14687 Jul 29 14:57	5° $\Omega$ 05'09	direct	14694 Apr 16 04:23	17° $\Omega$ 27'53
retrograde	14687 Oct 25 18:11	6° $\Omega$ 59'41	evening set	14694 Jul 13 16:41	19° $\Omega$ 22'46
opposition	14688 Jan 12 23:35	5° $\Omega$ 36'51 -0°17'50			
min. Earth dist.	14688 Jan 13 06:10	5° $\Omega$ 36'24 29.14057 AU	conjunction	14694 Jul 29 04:59	19° $\Omega$ 57'40 -0°22'28
direct	14688 Apr 02 03:53	4° $\Omega$ 12'50	minimum elong	14694 Jul 29 04:59	19° $\Omega$ 57'40 0°23'12
evening set	14688 Jun 30 00:24	6° $\Omega$ 07'48	max. Earth dist.	14694 Jul 29 00:16	19° $\Omega$ 57'14 31.06155 AU
			morning rise	14694 Aug 13 16:58	20° $\Omega$ 32'33
conjunction	14688 Jul 15 13:13	6° $\Omega$ 42'40 -0°17'09	retrograde	14694 Nov 10 05:29	22° $\Omega$ 27'45
minimum elong	14688 Jul 15 13:13	6° $\Omega$ 42'40 0°18'01	opposition	14695 Jan 28 15:37	21° $\Omega$ 04'26 -0°24'27
max. Earth dist.	14688 Jul 15 05:35	6° $\Omega$ 41'57 31.13600 AU	min. Earth dist.	14695 Jan 28 19:21	21° $\Omega$ 04'11 29.05516 AU
morning rise	14688 Jul 31 01:30	7° $\Omega$ 17'30	direct	14695 Apr 18 17:12	19° $\Omega$ 40'19
retrograde	14688 Oct 27 07:00	9° $\Omega$ 12'09	evening set	14695 Jul 16 03:15	21° $\Omega$ 35'11
opposition	14689 Jan 14 11:59	7° $\Omega$ 49'17 -0°18'52			
min. Earth dist.	14689 Jan 14 18:33	7° $\Omega$ 48'50 29.13131 AU	conjunction	14695 Jul 31 15:23	22° $\Omega$ 10'05 -0°23'14
direct	14689 Apr 04 14:25	6° $\Omega$ 25'17	minimum elong	14695 Jul 31 15:23	22° $\Omega$ 10'05 0°23'57
evening set	14689 Jul 02 11:04	8° $\Omega$ 20'15	max. Earth dist.	14695 Jul 31 10:53	22° $\Omega$ 09'40 31.04896 AU
			morning rise	14695 Aug 16 03:25	22° $\Omega$ 45'00
conjunction	14689 Jul 17 23:57	8° $\Omega$ 55'08 -0°18'06	retrograde	14695 Nov 12 16:58	24° $\Omega$ 40'18
minimum elong	14689 Jul 17 23:57	8° $\Omega$ 55'08 0°18'58	opposition	14696 Jan 31 04:23	23° $\Omega$ 16'56 -0°25'16
max. Earth dist.	14689 Jul 17 17:35	8° $\Omega$ 54'33 31.12611 AU	min. Earth dist.	14696 Jan 31 08:04	23° $\Omega$ 16'41 29.04328 AU
morning rise	14689 Aug 02 12:00	9° $\Omega$ 29'58	direct	14696 Apr 20 03:14	21° $\Omega$ 52'49
retrograde	14689 Oct 29 18:32	11° $\Omega$ 24'44	evening set	14696 Jul 17 13:48	23° $\Omega$ 47'41
opposition	14690 Jan 17 00:35	10° $\Omega$ 01'49 -0°19'53			
min. Earth dist.	14690 Jan 17 07:10	10° $\Omega$ 01'22 29.12073 AU	conjunction	14696 Aug 02 02:01	24° $\Omega$ 22'36 -0°23'59
direct	14690 Apr 07 03:01	8° $\Omega$ 37'49	minimum elong	14696 Aug 02 02:01	24° $\Omega$ 22'36 0°24'40
evening set	14690 Jul 04 21:57	10° $\Omega$ 32'48	max. Earth dist.	14696 Aug 01 23:08	24° $\Omega$ 22'20 31.03770 AU
			morning rise	14696 Aug 17 13:58	24° $\Omega$ 57'31
conjunction	14690 Jul 20 10:30	11° $\Omega$ 07'41 -0°19'02	retrograde	14696 Nov 14 03:59	26° $\Omega$ 52'58
minimum elong	14690 Jul 20 10:30	11° $\Omega$ 07'41 0°19'52	opposition	14697 Feb 01 16:55	25° $\Omega$ 29'33 -0°26'03
max. Earth dist.	14690 Jul 20 03:18	11° $\Omega$ 07'01 31.11491 AU	min. Earth dist.	14697 Feb 01 19:19	25° $\Omega$ 29'23 29.03251 AU
morning rise	14690 Aug 04 22:39	11° $\Omega$ 42'31	direct	14697 Apr 22 15:20	24° $\Omega$ 05'28
retrograde	14690 Nov 01 07:33	13° $\Omega$ 37'23	evening set	14697 Jul 20 00:34	26° $\Omega$ 00'21
opposition	14691 Jan 19 13:09	12° $\Omega$ 14'25 -0°20'52			
min. Earth dist.	14691 Jan 19 18:56	12° $\Omega$ 14'01 29.10889 AU	conjunction	14697 Aug 04 12:35	26° $\Omega$ 35'17 -0°24'42
direct	14691 Apr 09 14:08	10° $\Omega$ 50'24	minimum elong	14697 Aug 04 12:35	26° $\Omega$ 35'17 0°25'21
evening set	14691 Jul 07 08:41	12° $\Omega$ 45'22	max. Earth dist.	14697 Aug 04 09:25	26° $\Omega$ 34'59 31.02750 AU
			morning rise	14697 Aug 20 00:43	27° $\Omega$ 10'13
conjunction	14691 Jul 22 21:16	13° $\Omega$ 20'15 -0°19'56	retrograde	14697 Nov 16 16:50	29° $\Omega$ 05'48



opposition	14698 Feb 04 05:42	27°04'22" -0°26'47"	conjunction	14704 Aug 20 16:54	12°09'43" -0°28'36"
min. Earth dist.	14698 Feb 04 07:37	27°04'21" 29.02281 AU	minimum elong	14704 Aug 20 16:54	12°09'43" 0°29'01"
direct	14698 Apr 25 01:26	26°01'18" 19	max. Earth dist.	14704 Aug 20 17:00	12°09'43" 30.95810 AU
evening set	14698 Jul 22 11:08	28°01'13" 14	morning rise	14704 Sep 05 05:28	12°04'47"
			retrograde	14704 Dec 03 10:05	14°04'13"
conjunction	14698 Aug 06 23:16	28°04'10" -0°25'22"	opposition	14705 Feb 21 00:39	13°07'29" -0°30'48"
minimum elong	14698 Aug 06 23:16	28°04'10" 0°25'59"	min. Earth dist.	14705 Feb 21 00:04	13°07'32" 28.95200 AU
max. Earth dist.	14698 Aug 06 21:55	28°04'02" 31.01811 AU	direct	14705 May 11 14:42	11°05'33" 34
morning rise	14698 Aug 22 11:15	29°02'37" 07	evening set	14705 Aug 07 15:55	13°04'48" 29
	14698 Sep 08 20:40	0°00'			
retrograde	14698 Nov 19 04:28	1°00'18" 51	conjunction	14705 Aug 23 04:05	14°02'33" -0°29'00"
	14699 Feb 03 23:20	30°00'00"	minimum elong	14705 Aug 23 04:05	14°02'33" 0°29'23"
opposition	14699 Feb 06 18:34	29°05'52" -0°27'29"	max. Earth dist.	14705 Aug 23 05:29	14°02'33" 30.94570 AU
min. Earth dist.	14699 Feb 06 20:02	29°05'51" 29.01365 AU	morning rise	14705 Sep 07 16:38	14°05'58" 36
direct	14699 Apr 27 13:07	28°03'12" 24	retrograde	14705 Dec 05 20:45	16°05'55" 06
	14699 Jul 12 15:59	0°00'	opposition	14706 Feb 23 13:42	15°03'11" -0°31'12"
evening set	14699 Jul 24 22:00	0°00'26" 21	min. Earth dist.	14706 Feb 23 11:58	15°03'12" 28.93952 AU
			direct	14706 May 14 04:07	14°07'19"
conjunction	14699 Aug 09 09:56	1°00'01" 18 -0°26'00"	evening set	14706 Aug 10 02:55	16°02'10"
minimum elong	14699 Aug 09 09:56	1°00'01" 18 0°26'36"			
max. Earth dist.	14699 Aug 09 08:13	1°00'01" 08 31.00924 AU	conjunction	14706 Aug 25 14:56	16°03'71" -0°29'21"
morning rise	14699 Aug 24 22:08	1°03'36" 16	minimum elong	14706 Aug 25 14:56	16°03'71" 0°29'41"
retrograde	14699 Nov 21 18:15	3°00'32" 09	max. Earth dist.	14706 Aug 25 16:03	16°03'71" 30.93346 AU
opposition	14700 Feb 09 07:25	2°00'08" 41 -0°28'09"	morning rise	14706 Sep 10 03:45	17°00'12" 19
min. Earth dist.	14700 Feb 09 07:49	2°00'08" 39 29.00493 AU	retrograde	14706 Dec 08 08:36	19°00'08" 53
direct	14700 Apr 29 23:16	0°00'44" 43	opposition	14707 Feb 26 02:50	17°04'45" -0°31'33"
evening set	14700 Jul 27 08:44	2°00'39" 42	min. Earth dist.	14707 Feb 26 00:39	17°04'50" 28.92779 AU
			direct	14707 May 16 14:50	16°02'05" 58
conjunction	14700 Aug 11 20:47	3°00'14" 39 -0°26'36"	evening set	14707 Aug 12 13:51	18°00'15" 47
minimum elong	14700 Aug 11 20:47	3°00'14" 39 0°27'10"			
max. Earth dist.	14700 Aug 11 20:20	3°00'14" 37 31.00038 AU	conjunction	14707 Aug 28 02:04	18°00'50" -0°29'39"
morning rise	14700 Aug 27 08:55	3°00'49" 40	minimum elong	14707 Aug 28 02:05	18°00'50" 0°29'58"
retrograde	14700 Nov 24 06:50	5°00'45" 40	max. Earth dist.	14707 Aug 28 05:05	18°00'51" 30.92219 AU
opposition	14701 Feb 11 20:26	4°00'22" 11 -0°28'46"	morning rise	14707 Sep 12 14:51	19°00'25" 58
min. Earth dist.	14701 Feb 11 21:11	4°00'22" 08 28.99591 AU	retrograde	14707 Dec 10 19:26	21°00'22" 37
direct	14701 May 02 12:25	2°00'58" 16	opposition	14708 Feb 28 15:51	19°00'58" -0°31'51"
evening set	14701 Jul 29 19:45	4°00'53" 16	min. Earth dist.	14708 Feb 28 13:01	19°00'58" 28.91715 AU
			direct	14708 May 18 02:36	18°00'34" 36
conjunction	14701 Aug 14 07:42	5°00'28" 15 -0°27'10"	evening set	14708 Aug 14 00:52	20°00'29" 23
minimum elong	14701 Aug 14 07:42	5°00'28" 15 0°27'41"			
max. Earth dist.	14701 Aug 14 07:05	5°00'28" 11 30.99117 AU	conjunction	14708 Aug 29 13:02	21°00'04" -0°29'55"
morning rise	14701 Aug 29 19:58	6°00'03" 16	minimum elong	14708 Aug 29 13:02	21°00'04" 0°30'11"
retrograde	14701 Nov 26 21:26	7°00'59" 24	max. Earth dist.	14708 Aug 29 15:51	21°00'04" 30.91231 AU
opposition	14702 Feb 14 09:18	6°00'35" 53 -0°29'21"	morning rise	14708 Sep 14 02:08	21°00'39" 36
min. Earth dist.	14702 Feb 14 08:48	6°00'35" 55 28.98632 AU	retrograde	14708 Dec 12 09:07	23°00'36" 20
direct	14702 May 05 01:25	5°00'12" 00	opposition	14709 Mar 02 04:50	22°00'12" -0°32'07"
evening set	14702 Aug 01 06:50	7°00'07" 00	min. Earth dist.	14709 Mar 02 00:44	22°00'12" 28.90799 AU
			direct	14709 May 20 13:18	20°00'48" 16
conjunction	14702 Aug 16 18:47	7°00'42" 00 -0°27'41"	evening set	14709 Aug 16 11:52	22°00'43" 03
minimum elong	14702 Aug 16 18:47	7°00'42" 00 0°28'10"			
max. Earth dist.	14702 Aug 16 18:37	7°00'41" 59 30.98108 AU	conjunction	14709 Sep 01 00:12	23°00'18" -0°30'08"
morning rise	14702 Sep 01 07:04	8°00'17" 02	minimum elong	14709 Sep 01 00:12	23°00'18" 0°30'22"
retrograde	14702 Nov 29 09:12	10°00'13" 18	max. Earth dist.	14709 Sep 01 04:31	23°00'18" 30.90372 AU
opposition	14703 Feb 16 22:33	8°00'49" 44 -0°29'52"	morning rise	14709 Sep 16 13:18	23°00'53" 17
min. Earth dist.	14703 Feb 16 22:47	8°00'49" 43 28.97581 AU	retrograde	14709 Dec 14 21:07	25°00'50" 07
direct	14703 May 07 13:16	7°00'25" 51	opposition	14710 Mar 04 17:54	24°00'26" -0°32'19"
evening set	14703 Aug 03 17:47	9°00'20" 51	min. Earth dist.	14710 Mar 04 13:45	24°00'26" 28.90006 AU
			direct	14710 May 23 01:40	23°00'02" 02
conjunction	14703 Aug 19 05:48	9°00'55" 51 -0°28'10"	evening set	14710 Aug 18 22:57	24°00'56" 49
minimum elong	14703 Aug 19 05:48	9°00'55" 51 0°28'37"			
max. Earth dist.	14703 Aug 19 06:13	9°00'55" 53 30.97011 AU	conjunction	14710 Sep 03 11:19	25°00'31" -0°30'19"
morning rise	14703 Sep 03 18:10	10°00'30" 55	minimum elong	14710 Sep 03 11:20	25°00'31" 0°30'30"
retrograde	14703 Dec 01 21:27	12°00'27" 16	max. Earth dist.	14710 Sep 03 15:54	25°00'32" 30.89654 AU
opposition	14704 Feb 19 11:38	11°00'03" 37 -0°30'22"	morning rise	14710 Sep 19 00:40	26°00'07" 05
min. Earth dist.	14704 Feb 19 10:33	11°00'03" 42 28.96425 AU	retrograde	14710 Dec 17 11:32	28°00'04" 02
direct	14704 May 09 03:07	9°00'39" 44	opposition	14711 Mar 07 06:58	26°00'39" -0°32'29"
evening set	14704 Aug 05 04:57	11°00'34" 42	min. Earth dist.	14711 Mar 07 01:08	26°00'40" 28.89341 AU

direct	14711 May 25 13:39	25° <u>11</u> 15'57		conjunction	14717 Sep 18 20:07	11° <u>13</u> 13'27	-0°30'14
evening set	14711 Aug 21 10:00	27° <u>10</u> 10'44		minimum elong	14717 Sep 18 20:07	11° <u>13</u> 13'27	0°30'08
				max. Earth dist.	14717 Sep 19 03:03	11° <u>14</u> 14'06	30.85032 AU
conjunction	14711 Sep 05 22:29	27° <u>10</u> 45'50	-0°30'27	morning rise	14717 Oct 04 10:54	11° <u>14</u> 48'49	
minimum elong	14711 Sep 05 22:30	27° <u>10</u> 45'50	0°30'36	retrograde	14718 Jan 02 05:56	13° <u>14</u> 46'27	
max. Earth dist.	14711 Sep 06 03:57	27° <u>10</u> 46'21	30.89028 AU	opposition	14718 Mar 23 03:50	12° <u>14</u> 22'07	-0°32'12
morning rise	14711 Sep 21 12:00	28° <u>11</u> 21'03		min. Earth dist.	14718 Mar 22 20:00	12° <u>14</u> 22'40	28.84606 AU
	14711 Nov 16 21:00	0° <u>11</u>		direct	14718 Jun 10 02:26	10° <u>15</u> 58'20	
retrograde	14711 Dec 20 00:09	0° <u>11</u> 18'07		evening set	14718 Sep 05 18:20	12° <u>15</u> 53'04	
	14712 Jan 22 21:19	30° <u>11</u>					
opposition	14712 Mar 08 20:14	28° <u>11</u> 53'58	-0°32'36	conjunction	14718 Sep 21 07:53	13° <u>15</u> 28'17	-0°30'02
min. Earth dist.	14712 Mar 08 14:55	28° <u>11</u> 54'20	28.88754 AU	minimum elong	14718 Sep 21 07:53	13° <u>15</u> 28'17	0°29'54
direct	14712 May 27 01:06	27° <u>11</u> 30'04		max. Earth dist.	14718 Sep 21 16:04	13° <u>15</u> 29'03	30.84162 AU
evening set	14712 Aug 22 21:15	29° <u>11</u> 24'52		morning rise	14718 Oct 06 22:47	14° <u>15</u> 03'40	
				retrograde	14719 Jan 04 17:30	16° <u>15</u> 01'21	
conjunction	14712 Sep 07 09:55	29° <u>11</u> 59'59	-0°30'32	opposition	14719 Mar 25 17:09	14° <u>15</u> 36'57	-0°31'58
minimum elong	14712 Sep 07 09:55	29° <u>11</u> 59'59	0°30'38	min. Earth dist.	14719 Mar 25 09:28	14° <u>15</u> 37'29	28.83757 AU
	14712 Sep 07 10:03	0° <u>15</u>		direct	14719 Jun 12 14:50	13° <u>15</u> 13'09	
max. Earth dist.	14712 Sep 07 16:10	0° <u>15</u> 00'35	30.88471 AU	evening set	14719 Sep 08 05:48	15° <u>15</u> 07'50	
morning rise	14712 Sep 22 23:35	0° <u>15</u> 35'14					
retrograde	14712 Dec 21 13:57	2° <u>15</u> 32'24		conjunction	14719 Sep 23 19:30	15° <u>15</u> 43'04	-0°29'47
opposition	14713 Mar 11 09:13	1° <u>15</u> 08'15	-0°32'39	minimum elong	14719 Sep 23 19:30	15° <u>15</u> 43'04	0°29'37
min. Earth dist.	14713 Mar 11 02:30	1° <u>15</u> 08'43	28.88202 AU	max. Earth dist.	14719 Sep 24 03:46	15° <u>15</u> 43'51	30.83356 AU
	14713 Apr 28 12:17	30° <u>15</u>		morning rise	14719 Oct 09 10:44	16° <u>15</u> 18'28	
direct	14713 May 29 14:42	29° <u>15</u> 44'24		retrograde	14720 Jan 07 07:28	18° <u>15</u> 16'13	
	14713 Jun 28 23:24	0° <u>15</u>		opposition	14720 Mar 27 06:16	16° <u>15</u> 51'45	-0°31'41
evening set	14713 Aug 25 08:43	1° <u>15</u> 39'13		min. Earth dist.	14720 Mar 26 21:05	16° <u>15</u> 52'23	28.82996 AU
				direct	14720 Jun 14 02:27	15° <u>15</u> 27'54	
conjunction	14713 Sep 09 21:22	2° <u>15</u> 14'22	-0°30'34	evening set	14720 Sep 09 17:24	17° <u>15</u> 22'34	
minimum elong	14713 Sep 09 21:23	2° <u>15</u> 14'22	0°30'38				
max. Earth dist.	14713 Sep 10 03:26	2° <u>15</u> 14'56	30.87914 AU	conjunction	14720 Sep 25 07:16	17° <u>15</u> 57'50	-0°29'30
morning rise	14713 Sep 25 11:18	2° <u>15</u> 49'38		minimum elong	14720 Sep 25 07:16	17° <u>15</u> 57'50	0°29'17
retrograde	14713 Dec 24 03:59	4° <u>15</u> 46'55		max. Earth dist.	14720 Sep 25 16:18	17° <u>15</u> 58'41	30.82639 AU
opposition	14714 Mar 13 22:36	3° <u>15</u> 22'46	-0°32'40	morning rise	14720 Oct 10 22:42	18° <u>15</u> 33'15	
min. Earth dist.	14714 Mar 13 16:24	3° <u>15</u> 23'12	28.87642 AU	retrograde	14721 Jan 08 19:59	20° <u>15</u> 31'03	
direct	14714 Jun 01 02:22	1° <u>15</u> 58'58		opposition	14721 Mar 29 19:22	19° <u>15</u> 06'31	-0°31'21
evening set	14714 Aug 27 20:02	3° <u>15</u> 53'47		min. Earth dist.	14721 Mar 29 10:39	19° <u>15</u> 07'07	28.82348 AU
				direct	14721 Jun 16 13:56	17° <u>15</u> 42'41	
conjunction	14714 Sep 12 08:57	4° <u>15</u> 28'57	-0°30'33	evening set	14721 Sep 12 04:58	19° <u>15</u> 37'20	
minimum elong	14714 Sep 12 08:58	4° <u>15</u> 28'57	0°30'35				
max. Earth dist.	14714 Sep 12 16:10	4° <u>15</u> 29'38	30.87326 AU	conjunction	14721 Sep 27 19:05	20° <u>15</u> 12'36	-0°29'10
morning rise	14714 Sep 27 22:56	5° <u>15</u> 04'15		minimum elong	14721 Sep 27 19:06	20° <u>15</u> 12'36	0°28'55
retrograde	14714 Dec 26 15:52	7° <u>15</u> 01'39		max. Earth dist.	14721 Sep 28 05:02	20° <u>15</u> 13'32	30.82065 AU
opposition	14715 Mar 16 11:57	5° <u>15</u> 37'29	-0°32'37	morning rise	14721 Oct 13 10:44	20° <u>15</u> 48'03	
min. Earth dist.	14715 Mar 16 04:48	5° <u>15</u> 37'58	28.87011 AU	retrograde	14722 Jan 11 10:32	22° <u>15</u> 45'53	
direct	14715 Jun 03 15:50	4° <u>15</u> 13'43		opposition	14722 Apr 01 08:28	21° <u>15</u> 21'19	-0°30'58
evening set	14715 Aug 30 07:43	6° <u>15</u> 08'32		min. Earth dist.	14722 Mar 31 22:06	21° <u>15</u> 22'02	28.81837 AU
				direct	14722 Jun 19 04:09	19° <u>15</u> 57'29	
conjunction	14715 Sep 14 20:37	6° <u>15</u> 43'43	-0°30'29	evening set	14722 Sep 14 16:31	21° <u>15</u> 52'07	
minimum elong	14715 Sep 14 20:37	6° <u>15</u> 43'43	0°30'29				
max. Earth dist.	14715 Sep 15 03:00	6° <u>15</u> 44'19	30.86653 AU	conjunction	14722 Sep 30 06:44	22° <u>15</u> 27'25	-0°28'48
morning rise	14715 Sep 30 10:58	7° <u>15</u> 19'02		minimum elong	14722 Sep 30 06:44	22° <u>15</u> 27'25	0°28'31
retrograde	14715 Dec 29 04:50	9° <u>15</u> 16'32		max. Earth dist.	14722 Sep 30 16:46	22° <u>15</u> 28'22	30.81618 AU
opposition	14716 Mar 18 01:16	7° <u>15</u> 52'20	-0°32'32	morning rise	14722 Oct 15 22:44	23° <u>15</u> 02'53	
min. Earth dist.	14716 Mar 17 18:17	7° <u>15</u> 52'49	28.86296 AU	retrograde	14723 Jan 14 00:43	25° <u>15</u> 00'48	
direct	14716 Jun 05 02:46	6° <u>15</u> 28'34		opposition	14723 Apr 03 21:44	23° <u>15</u> 36'12	-0°30'32
evening set	14716 Aug 31 19:14	8° <u>15</u> 23'22		min. Earth dist.	14723 Apr 03 11:38	23° <u>15</u> 36'54	28.81462 AU
				direct	14723 Jun 21 16:07	22° <u>15</u> 12'23	
conjunction	14716 Sep 16 08:29	8° <u>15</u> 58'35	-0°30'23	evening set	14723 Sep 17 04:07	24° <u>15</u> 07'00	
minimum elong	14716 Sep 16 08:29	8° <u>15</u> 58'35	0°30'20				
max. Earth dist.	14716 Sep 16 16:07	8° <u>15</u> 59'18	30.85882 AU	conjunction	14723 Oct 02 18:43	24° <u>15</u> 42'19	-0°28'23
morning rise	14716 Oct 01 22:54	9° <u>15</u> 33'55		minimum elong	14723 Oct 02 18:43	24° <u>15</u> 42'19	0°28'03
retrograde	14716 Dec 30 16:21	11° <u>15</u> 31'29		max. Earth dist.	14723 Oct 03 06:08	24° <u>15</u> 43'24	30.81304 AU
opposition	14717 Mar 20 14:36	10° <u>15</u> 07'14	-0°32'23	morning rise	14723 Oct 18 10:52	25° <u>15</u> 17'49	
min. Earth dist.	14717 Mar 20 07:29	10° <u>15</u> 07'44	28.85471 AU	retrograde	14724 Jan 16 12:59	27° <u>15</u> 15'46	
direct	14717 Jun 07 15:06	8° <u>15</u> 43'28		opposition	14724 Apr 05 10:42	25° <u>15</u> 51'11	-0°30'03
evening set	14717 Sep 03 06:51	10° <u>15</u> 38'14		min. Earth dist.	14724 Apr 04 23:26	25° <u>15</u> 51'58	28.81191 AU

direct	14724 Jun 23 05:23	24° <u>♂</u> 27'24		minimum elong	14730 Oct 18 08:20	10° <u>♂</u> 29'08	0°23'40
evening set	14724 Sep 18 15:58	26° <u>♂</u> 22'01		max. Earth dist.	14730 Oct 18 20:45	10° <u>♂</u> 30'19	30.79319 AU
				morning rise	14730 Nov 03 02:30	11° <u>♂</u> 04'47	
conjunction	14724 Oct 04 06:38	26° <u>♂</u> 57'20	-0°27'55	retrograde	14731 Feb 01 08:30	13° <u>♂</u> 02'58	
minimum elong	14724 Oct 04 06:38	26° <u>♂</u> 57'20	0°27'33	opposition	14731 Apr 22 06:41	11° <u>♂</u> 38'11	-0°25'28
max. Earth dist.	14724 Oct 04 17:28	26° <u>♂</u> 58'22	30.81077 AU	min. Earth dist.	14731 Apr 21 18:16	11° <u>♂</u> 39'02	28.79102 AU
morning rise	14724 Oct 19 23:13	27° <u>♂</u> 32'52		direct	14731 Jul 09 18:53	10° <u>♂</u> 14'22	
retrograde	14725 Jan 18 03:07	29° <u>♂</u> 30'53		evening set	14731 Oct 05 04:12	12° <u>♂</u> 08'48	
opposition	14725 Apr 07 23:51	28° <u>♂</u> 06'17	-0°29'32				
min. Earth dist.	14725 Apr 07 12:37	28° <u>♂</u> 07'03	28.81003 AU	conjunction	14731 Oct 20 20:39	12° <u>♂</u> 44'15	-0°23'30
direct	14725 Jun 25 17:03	26° <u>♂</u> 42'32		minimum elong	14731 Oct 20 20:40	12° <u>♂</u> 44'15	0°22'53
evening set	14725 Sep 21 03:40	28° <u>♂</u> 37'08		max. Earth dist.	14731 Oct 21 08:51	12° <u>♂</u> 45'24	30.78880 AU
				morning rise	14731 Nov 05 15:14	13° <u>♂</u> 19'55	
conjunction	14725 Oct 06 18:42	29° <u>♂</u> 12'30	-0°27'24		14732 Jan 01 17:46	15° <u>♂</u>	
minimum elong	14725 Oct 06 18:42	29° <u>♂</u> 12'30	0°27'00	retrograde	14732 Feb 03 21:51	15° <u>♂</u> 18'05	
max. Earth dist.	14725 Oct 07 07:02	29° <u>♂</u> 13'40	30.80901 AU		14732 Mar 08 17:02	15° <u>♂</u> 18'05	
morning rise	14725 Oct 22 11:21	29° <u>♂</u> 48'02		opposition	14732 Apr 23 19:34	13° <u>♂</u> 53'14	-0°24'39
	14725 Oct 27 22:01	0° <u>♂</u>		min. Earth dist.	14732 Apr 23 07:50	13° <u>♂</u> 54'03	28.78705 AU
retrograde	14726 Jan 20 15:22	1° <u>♂</u> 46'07		direct	14732 Jul 11 06:35	12° <u>♂</u> 29'24	
opposition	14726 Apr 10 13:01	0° <u>♂</u> 21'31	-0°28'58	evening set	14732 Oct 06 16:12	14° <u>♂</u> 23'48	
min. Earth dist.	14726 Apr 10 01:31	0° <u>♂</u> 22'18	28.80828 AU				
	14726 Apr 23 14:53	30° <u>♂</u> 12'30		conjunction	14732 Oct 22 09:05	14° <u>♂</u> 59'16	-0°22'44
direct	14726 Jun 28 06:07	28° <u>♂</u> 57'48		minimum elong	14732 Oct 22 09:05	14° <u>♂</u> 59'16	0°22'05
	14726 Aug 29 06:21	0° <u>♂</u>			14732 Oct 22 16:54	15° <u>♂</u>	
evening set	14726 Sep 23 15:44	0° <u>♂</u> 52'24		max. Earth dist.	14732 Oct 22 22:25	15° <u>♂</u> 00'31	30.78529 AU
				morning rise	14732 Nov 07 03:49	15° <u>♂</u> 34'57	
conjunction	14726 Oct 09 06:51	1° <u>♂</u> 27'46	-0°26'51	retrograde	14733 Feb 05 10:47	17° <u>♂</u> 33'06	
minimum elong	14726 Oct 09 06:51	1° <u>♂</u> 27'46	0°26'25	opposition	14733 Apr 26 08:21	16° <u>♂</u> 08'13	-0°23'48
max. Earth dist.	14726 Oct 09 18:24	1° <u>♂</u> 28'52	30.80730 AU	min. Earth dist.	14733 Apr 25 19:27	16° <u>♂</u> 09'07	28.78405 AU
morning rise	14726 Oct 24 23:56	2° <u>♂</u> 03'20			14733 Jun 12 23:01	15° <u>♂</u> 18'05	
retrograde	14727 Jan 23 04:58	4° <u>♂</u> 01'28		direct	14733 Jul 13 20:15	14° <u>♂</u> 44'21	
opposition	14727 Apr 13 02:11	2° <u>♂</u> 36'52	-0°28'21		14733 Aug 13 02:27	15° <u>♂</u>	
min. Earth dist.	14727 Apr 12 14:17	2° <u>♂</u> 37'41	28.80644 AU	evening set	14733 Oct 09 04:15	16° <u>♂</u> 38'44	
direct	14727 Jun 30 17:29	1° <u>♂</u> 13'10					
evening set	14727 Sep 26 03:42	3° <u>♂</u> 07'45		conjunction	14733 Oct 24 21:13	17° <u>♂</u> 14'13	-0°21'55
				minimum elong	14733 Oct 24 21:13	17° <u>♂</u> 14'13	0°21'14
conjunction	14727 Oct 11 19:12	3° <u>♂</u> 43'08	-0°26'15	max. Earth dist.	14733 Oct 25 10:01	17° <u>♂</u> 15'25	30.78293 AU
minimum elong	14727 Oct 11 19:12	3° <u>♂</u> 43'08	0°25'46	morning rise	14733 Nov 09 16:23	17° <u>♂</u> 49'55	
max. Earth dist.	14727 Oct 12 07:37	3° <u>♂</u> 44'19	30.80500 AU	retrograde	14734 Feb 08 01:16	19° <u>♂</u> 48'05	
morning rise	14727 Oct 27 12:27	4° <u>♂</u> 18'44		opposition	14734 Apr 28 21:15	18° <u>♂</u> 23'10	-0°22'55
retrograde	14728 Jan 25 16:15	6° <u>♂</u> 16'54		min. Earth dist.	14734 Apr 28 08:19	18° <u>♂</u> 24'04	28.78249 AU
opposition	14728 Apr 14 15:26	4° <u>♂</u> 52'17	-0°27'41	direct	14734 Jul 16 08:22	16° <u>♂</u> 59'18	
min. Earth dist.	14728 Apr 14 04:07	4° <u>♂</u> 53'04	28.80368 AU	evening set	14734 Oct 11 16:15	18° <u>♂</u> 53'39	
direct	14728 Jul 02 05:34	3° <u>♂</u> 28'35					
evening set	14728 Sep 27 15:55	5° <u>♂</u> 23'08		conjunction	14734 Oct 27 09:40	19° <u>♂</u> 29'10	-0°21'04
				minimum elong	14734 Oct 27 09:40	19° <u>♂</u> 29'10	0°20'23
conjunction	14728 Oct 13 07:36	5° <u>♂</u> 58'33	-0°25'37	max. Earth dist.	14734 Oct 28 00:02	19° <u>♂</u> 30'31	30.78208 AU
minimum elong	14728 Oct 13 07:36	5° <u>♂</u> 58'33	0°25'07	morning rise	14734 Nov 12 04:58	20° <u>♂</u> 04'52	
max. Earth dist.	14728 Oct 13 19:20	5° <u>♂</u> 59'39	30.80183 AU	retrograde	14735 Feb 10 13:39	22° <u>♂</u> 03'03	
morning rise	14728 Oct 29 01:13	6° <u>♂</u> 34'09		opposition	14735 May 01 09:57	20° <u>♂</u> 38'07	-0°22'00
retrograde	14729 Jan 27 06:22	8° <u>♂</u> 32'20		min. Earth dist.	14735 Apr 30 20:31	20° <u>♂</u> 39'04	28.78236 AU
opposition	14729 Apr 17 04:28	7° <u>♂</u> 07'41	-0°26'59	direct	14735 Jul 18 21:41	19° <u>♂</u> 14'16	
min. Earth dist.	14729 Apr 16 16:17	7° <u>♂</u> 08'31	28.79998 AU	evening set	14735 Oct 14 04:23	21° <u>♂</u> 08'37	
direct	14729 Jul 04 17:09	5° <u>♂</u> 43'57					
evening set	14729 Sep 30 04:06	7° <u>♂</u> 38'29		conjunction	14735 Oct 29 21:59	21° <u>♂</u> 44'08	-0°20'12
				minimum elong	14735 Oct 29 21:59	21° <u>♂</u> 44'08	0°19'28
conjunction	14729 Oct 15 20:02	8° <u>♂</u> 13'54	-0°24'57	max. Earth dist.	14735 Oct 30 11:45	21° <u>♂</u> 45'26	30.78278 AU
minimum elong	14729 Oct 15 20:03	8° <u>♂</u> 13'54	0°24'24	morning rise	14735 Nov 14 17:46	22° <u>♂</u> 19'53	
max. Earth dist.	14729 Oct 16 08:01	8° <u>♂</u> 15'02	30.79767 AU	retrograde	14736 Feb 13 03:07	24° <u>♂</u> 18'04	
morning rise	14729 Oct 31 13:55	8° <u>♂</u> 49'32		opposition	14736 May 02 22:41	22° <u>♂</u> 53'09	-0°21'02
retrograde	14730 Jan 29 18:29	10° <u>♂</u> 47'43		min. Earth dist.	14736 May 02 08:39	22° <u>♂</u> 54'08	28.78379 AU
opposition	14730 Apr 19 17:42	9° <u>♂</u> 23'00	-0°26'15	direct	14736 Jul 20 09:00	21° <u>♂</u> 29'19	
min. Earth dist.	14730 Apr 19 06:27	9° <u>♂</u> 23'46	28.79554 AU	evening set	14736 Oct 15 16:31	23° <u>♂</u> 23'40	
direct	14730 Jul 07 05:02	7° <u>♂</u> 59'14					
evening set	14730 Oct 02 16:02	9° <u>♂</u> 53'42		conjunction	14736 Oct 31 10:29	23° <u>♂</u> 59'13	-0°19'18
				minimum elong	14736 Oct 31 10:29	23° <u>♂</u> 59'13	0°18'32
conjunction	14730 Oct 18 08:20	10° <u>♂</u> 29'08	-0°24'15	max. Earth dist.	14736 Nov 01 01:28	24° <u>♂</u> 00'38	30.78475 AU

morning rise	14736 Nov 16 06:25	24° <del>1</del> 34'59		minimum elong	14742 Nov 14 14:51	7° <del>7</del> 31'42	0°12'24
retrograde	14737 Feb 14 14:19	26° <del>1</del> 33'10		behind sun begin	14742 Nov 14 10:36	7° <del>7</del> 31'19	
opposition	14737 May 05 11:21	25° <del>1</del> 08'18	-0°20'03	behind sun end	14742 Nov 14 19:07	7° <del>7</del> 32'06	
min. Earth dist.	14737 May 04 21:36	25° <del>1</del> 09'16	28.78632 AU	max. Earth dist.	14742 Nov 15 04:33	7° <del>7</del> 32'59	30.80210 AU
direct	14737 Jul 22 20:46	23° <del>1</del> 44'31		morning rise	14742 Nov 30 12:42	8° <del>7</del> 07'33	
evening set	14737 Oct 18 04:47	25° <del>1</del> 38'52		retrograde	14743 Feb 28 23:18	10° <del>7</del> 05'39	
				opposition	14743 May 19 15:07	8° <del>7</del> 40'49	-0°13'32
conjunction	14737 Nov 02 22:59	26° <del>1</del> 14'26	-0°18'22	min. Earth dist.	14743 May 19 01:48	8° <del>7</del> 41'45	28.80297 AU
minimum elong	14737 Nov 02 22:59	26° <del>1</del> 14'26	0°17'34	direct	14743 Aug 05 20:38	7° <del>7</del> 17'00	
max. Earth dist.	14737 Nov 03 13:35	26° <del>1</del> 15'48	30.78792 AU	evening set	14743 Nov 01 07:41	9° <del>7</del> 11'17	
morning rise	14737 Nov 18 19:18	26° <del>1</del> 50'12					
retrograde	14738 Feb 17 04:57	28° <del>1</del> 48'25		conjunction	14743 Nov 17 03:48	9° <del>7</del> 46'55	-0°12'13
min. Earth dist.	14738 May 07 09:16	27° <del>1</del> 24'37	28.78985 AU	minimum elong	14743 Nov 17 03:47	9° <del>7</del> 46'55	0°11'17
opposition	14738 May 08 00:02	27° <del>1</del> 23'35	-0°19'02	behind sun begin	14743 Nov 16 23:01	9° <del>7</del> 46'30	
direct	14738 Jul 25 07:32	25° <del>1</del> 59'49		behind sun end	14743 Nov 17 08:33	9° <del>7</del> 47'21	
evening set	14738 Oct 20 17:03	27° <del>1</del> 54'12		max. Earth dist.	14743 Nov 17 18:32	9° <del>7</del> 48'18	30.80361 AU
				morning rise	14743 Dec 03 01:46	10° <del>7</del> 22'46	
conjunction	14738 Nov 05 11:33	28° <del>1</del> 29'46	-0°17'24	retrograde	14744 Mar 02 11:16	12° <del>7</del> 20'47	
minimum elong	14738 Nov 05 11:33	28° <del>1</del> 29'46	0°16'35	opposition	14744 May 21 03:29	10° <del>7</del> 55'56	-0°12'22
max. Earth dist.	14738 Nov 06 02:35	28° <del>1</del> 31'11	30.79158 AU	min. Earth dist.	14744 May 20 14:02	10° <del>7</del> 56'52	28.80455 AU
morning rise	14738 Nov 21 08:08	29° <del>1</del> 05'35		direct	14744 Aug 07 10:31	9° <del>7</del> 32'04	
	14738 Dec 17 18:48	0° <del>7</del>		evening set	14744 Nov 02 20:14	11° <del>7</del> 26'17	
retrograde	14739 Feb 19 16:22	1° <del>7</del> 03'49					
	14739 Apr 27 20:14	30° <del>8</del>		conjunction	14744 Nov 18 16:27	12° <del>7</del> 01'56	-0°11'07
opposition	14739 May 10 12:50	29° <del>1</del> 39'01	-0°17'59	minimum elong	14744 Nov 18 16:27	12° <del>7</del> 01'56	0°10'11
min. Earth dist.	14739 May 09 23:07	29° <del>1</del> 39'58	28.79360 AU	behind sun begin	14744 Nov 18 11:16	12° <del>7</del> 01'28	
direct	14739 Jul 27 18:50	28° <del>1</del> 15'17		behind sun end	14744 Nov 18 21:38	12° <del>7</del> 02'24	
	14739 Oct 18 19:46	0° <del>7</del>		max. Earth dist.	14744 Nov 19 06:14	12° <del>7</del> 03'14	30.80552 AU
evening set	14739 Oct 23 05:33	0° <del>7</del> 09'40		morning rise	14744 Dec 04 14:51	12° <del>7</del> 37'48	
				retrograde	14745 Mar 05 01:00	14° <del>7</del> 35'44	
conjunction	14739 Nov 08 00:24	0° <del>7</del> 45'15	-0°16'24	opposition	14745 May 23 15:45	13° <del>7</del> 10'50	-0°11'11
minimum elong	14739 Nov 08 00:24	0° <del>7</del> 45'15	0°15'34	min. Earth dist.	14745 May 23 02:05	13° <del>7</del> 11'48	28.80693 AU
behind sun begin	14739 Nov 07 22:51	0° <del>7</del> 45'07		direct	14745 Aug 09 22:22	11° <del>7</del> 46'56	
behind sun end	14739 Nov 08 01:57	0° <del>7</del> 45'24		evening set	14745 Nov 05 08:39	13° <del>7</del> 41'07	
max. Earth dist.	14739 Nov 08 15:26	0° <del>7</del> 46'40	30.79529 AU				
morning rise	14739 Nov 23 21:15	1° <del>7</del> 21'04		conjunction	14745 Nov 21 05:17	14° <del>7</del> 16'46	-0°10'01
retrograde	14740 Feb 22 06:03	3° <del>7</del> 19'18		minimum elong	14745 Nov 21 05:16	14° <del>7</del> 16'46	0°09'03
min. Earth dist.	14740 May 11 10:49	1° <del>7</del> 55'32	28.79702 AU	behind sun begin	14745 Nov 20 23:43	14° <del>7</del> 16'16	
opposition	14740 May 12 01:18	1° <del>7</del> 54'32	-0°16'54	behind sun end	14745 Nov 21 10:49	14° <del>7</del> 17'17	
direct	14740 Jul 29 07:26	0° <del>7</del> 30'48		max. Earth dist.	14745 Nov 21 20:09	14° <del>7</del> 18'10	30.80835 AU
evening set	14740 Oct 24 18:13	2° <del>7</del> 25'11		morning rise	14745 Dec 07 03:48	14° <del>7</del> 52'38	
				retrograde	14746 Mar 07 12:48	16° <del>7</del> 50'30	
conjunction	14740 Nov 09 13:14	3° <del>7</del> 00'48	-0°15'23	opposition	14746 May 26 04:02	15° <del>7</del> 25'35	-0°09'59
minimum elong	14740 Nov 09 13:14	3° <del>7</del> 00'48	0°14'32	min. Earth dist.	14746 May 25 14:41	15° <del>7</del> 26'31	28.81037 AU
behind sun begin	14740 Nov 09 10:26	3° <del>7</del> 00'33		direct	14746 Aug 12 11:23	14° <del>7</del> 01'39	
behind sun end	14740 Nov 09 16:03	3° <del>7</del> 01'03		evening set	14746 Nov 07 21:04	15° <del>7</del> 55'48	
max. Earth dist.	14740 Nov 10 03:34	3° <del>7</del> 02'09	30.79827 AU				
morning rise	14740 Nov 25 10:27	3° <del>7</del> 36'38		conjunction	14746 Nov 23 17:55	16° <del>7</del> 31'28	-0°08'53
retrograde	14741 Feb 23 19:09	5° <del>7</del> 34'51		minimum elong	14746 Nov 23 17:56	16° <del>7</del> 31'28	0°07'56
opposition	14741 May 14 14:05	4° <del>7</del> 10'04	-0°15'48	behind sun begin	14746 Nov 23 12:06	16° <del>7</del> 30'56	
min. Earth dist.	14741 May 14 00:46	4° <del>7</del> 11'00	28.79965 AU	behind sun end	14746 Nov 23 23:46	16° <del>7</del> 32'00	
direct	14741 Jul 31 18:04	2° <del>7</del> 46'20		max. Earth dist.	14746 Nov 24 08:16	16° <del>7</del> 32'49	30.81255 AU
evening set	14741 Oct 27 06:38	4° <del>7</del> 40'42		morning rise	14746 Dec 09 16:51	17° <del>7</del> 07'20	
				retrograde	14747 Mar 10 02:37	19° <del>7</del> 05'08	
conjunction	14741 Nov 12 02:05	5° <del>7</del> 16'19	-0°14'21	opposition	14747 May 28 16:10	17° <del>7</del> 40'13	-0°08'46
minimum elong	14741 Nov 12 02:05	5° <del>7</del> 16'19	0°13'28	min. Earth dist.	14747 May 28 01:51	17° <del>7</del> 41'13	28.81526 AU
behind sun begin	14741 Nov 11 22:27	5° <del>7</del> 15'59		direct	14747 Aug 14 23:13	16° <del>7</del> 16'16	
behind sun end	14741 Nov 12 05:43	5° <del>7</del> 16'39		evening set	14747 Nov 10 09:37	18° <del>7</del> 10'23	
max. Earth dist.	14741 Nov 12 16:56	5° <del>7</del> 17'43	30.80051 AU				
morning rise	14741 Nov 27 23:27	5° <del>7</del> 52'09		conjunction	14747 Nov 26 06:47	18° <del>7</del> 46'04	-0°07'45
retrograde	14742 Feb 26 08:35	7° <del>7</del> 50'19		minimum elong	14747 Nov 26 06:47	18° <del>7</del> 46'04	0°06'46
opposition	14742 May 17 02:39	6° <del>7</del> 25'32	-0°14'40	behind sun begin	14747 Nov 26 00:42	18° <del>7</del> 45'31	
min. Earth dist.	14742 May 16 12:41	6° <del>7</del> 26'30	28.80144 AU	behind sun end	14747 Nov 26 12:51	18° <del>7</del> 46'37	
direct	14742 Aug 03 08:09	5° <del>7</del> 01'45		max. Earth dist.	14747 Nov 26 21:36	18° <del>7</del> 47'27	30.81806 AU
evening set	14742 Oct 29 19:15	6° <del>7</del> 56'05		morning rise	14747 Dec 12 05:54	19° <del>7</del> 21'57	
				retrograde	14748 Mar 11 13:08	21° <del>7</del> 19'41	
conjunction	14742 Nov 14 14:51	7° <del>7</del> 31'42	-0°13'17	opposition	14748 May 30 04:14	19° <del>7</del> 54'48	-0°07'32

min. Earth dist.	14748 May 29 14:45	19° $\mathring{A}$ 55'44	28.82154 AU	evening set	14753 Nov 23 13:51	1° $\mathring{B}$ 39'02	
direct	14748 Aug 16 10:20	18° $\mathring{A}$ 30'50					
evening set	14748 Nov 11 22:07	20° $\mathring{A}$ 24'58		conjunction	14753 Dec 09 12:34	2° $\mathring{B}$ 14'46	-0°00'38
				minimum elong	14753 Dec 09 12:34	2° $\mathring{B}$ 14'46	0°00'24
conjunction	14748 Nov 27 19:36	21° $\mathring{A}$ 00'39	-0°06'37	behind sun begin	14753 Dec 09 06:04	2° $\mathring{B}$ 14'11	
minimum elong	14748 Nov 27 19:37	21° $\mathring{A}$ 00'39	0°05'38	behind sun end	14753 Dec 09 19:04	2° $\mathring{B}$ 15'21	
behind sun begin	14748 Nov 27 13:21	21° $\mathring{A}$ 00'05		max. Earth dist.	14753 Dec 10 01:41	2° $\mathring{B}$ 15'59	30.86890 AU
behind sun end	14748 Nov 28 01:52	21° $\mathring{A}$ 01'12		morning rise	14753 Dec 25 13:13	2° $\mathring{B}$ 50'41	
max. Earth dist.	14748 Nov 28 10:36	21° $\mathring{A}$ 02'03	30.82516 AU	retrograde	14754 Mar 25 21:09	4° $\mathring{B}$ 48'09	
morning rise	14748 Dec 13 18:59	21° $\mathring{A}$ 36'32		asc. node	14754 Jun 09 23:24	3° $\mathring{B}$ 28'59	
retrograde	14749 Mar 14 02:11	23° $\mathring{A}$ 34'13		opposition	14754 Jun 13 04:26	3° $\mathring{B}$ 23'36	0°00'01
opposition	14749 Jun 01 16:16	22° $\mathring{A}$ 09'22	-0°06'18	min. Earth dist.	14754 Jun 12 15:46	3° $\mathring{B}$ 24'29	28.87263 AU
min. Earth dist.	14749 Jun 01 01:41	22° $\mathring{A}$ 10'24	28.82924 AU	direct	14754 Aug 30 09:13	1° $\mathring{B}$ 59'45	
direct	14749 Aug 18 22:05	20° $\mathring{A}$ 45'26		evening set	14754 Nov 26 02:37	3° $\mathring{B}$ 53'58	
evening set	14749 Nov 14 10:36	22° $\mathring{A}$ 39'34					
				conjunction	14754 Dec 12 01:48	4° $\mathring{B}$ 29'43	0°00'35
conjunction	14749 Nov 30 08:17	23° $\mathring{A}$ 15'16	-0°05'27	minimum elong	14754 Dec 12 01:46	4° $\mathring{B}$ 29'43	0°01'36
minimum elong	14749 Nov 30 08:17	23° $\mathring{A}$ 15'15	0°04'27	behind sun begin	14754 Dec 11 19:14	4° $\mathring{B}$ 29'07	
behind sun begin	14749 Nov 30 01:53	23° $\mathring{A}$ 14'41		behind sun end	14754 Dec 12 08:18	4° $\mathring{B}$ 30'18	
behind sun end	14749 Nov 30 14:41	23° $\mathring{A}$ 15'50		max. Earth dist.	14754 Dec 12 15:22	4° $\mathring{B}$ 30'59	30.87586 AU
max. Earth dist.	14749 Nov 30 23:03	23° $\mathring{A}$ 16'38	30.83343 AU	morning rise	14754 Dec 28 02:30	5° $\mathring{B}$ 05'37	
morning rise	14749 Dec 16 07:59	23° $\mathring{A}$ 51'09		retrograde	14755 Mar 28 09:43	7° $\mathring{B}$ 03'00	
retrograde	14750 Mar 16 14:37	25° $\mathring{A}$ 48'49		opposition	14755 Jun 15 16:22	5° $\mathring{B}$ 38'28	0°01'17
opposition	14750 Jun 04 04:27	24° $\mathring{A}$ 24'02	-0°05'03	min. Earth dist.	14755 Jun 15 04:37	5° $\mathring{B}$ 39'17	28.87913 AU
min. Earth dist.	14750 Jun 03 14:51	24° $\mathring{A}$ 24'59	28.83809 AU	direct	14755 Sep 01 22:48	4° $\mathring{B}$ 14'36	
direct	14750 Aug 21 07:48	23° $\mathring{A}$ 00'07		evening set	14755 Nov 28 15:33	6° $\mathring{B}$ 08'47	
evening set	14750 Nov 16 23:12	24° $\mathring{A}$ 54'16					
				conjunction	14755 Dec 14 14:52	6° $\mathring{B}$ 44'32	0°01'47
conjunction	14750 Dec 02 21:17	25° $\mathring{A}$ 29'58	-0°04'17	minimum elong	14755 Dec 14 14:52	6° $\mathring{B}$ 44'32	0°02'49
minimum elong	14750 Dec 02 21:18	25° $\mathring{A}$ 29'59	0°03'17	behind sun begin	14755 Dec 14 08:21	6° $\mathring{B}$ 43'57	
behind sun begin	14750 Dec 02 14:49	25° $\mathring{A}$ 29'23		behind sun end	14755 Dec 14 21:23	6° $\mathring{B}$ 45'07	
behind sun end	14750 Dec 03 03:48	25° $\mathring{A}$ 30'34		max. Earth dist.	14755 Dec 15 03:11	6° $\mathring{B}$ 45'41	30.88217 AU
max. Earth dist.	14750 Dec 03 12:41	25° $\mathring{A}$ 31'25	30.84269 AU	morning rise	14755 Dec 30 15:55	7° $\mathring{B}$ 20'27	
morning rise	14750 Dec 18 21:09	26° $\mathring{A}$ 05'52		retrograde	14756 Mar 29 23:13	9° $\mathring{B}$ 17'43	
retrograde	14751 Mar 19 03:46	28° $\mathring{A}$ 03'30		opposition	14756 Jun 17 03:59	7° $\mathring{B}$ 53'11	0°02'32
opposition	14751 Jun 06 16:19	26° $\mathring{A}$ 38'47	-0°03'47	min. Earth dist.	14756 Jun 16 15:52	7° $\mathring{B}$ 54'02	28.88525 AU
min. Earth dist.	14751 Jun 06 02:10	26° $\mathring{A}$ 39'47	28.84746 AU	direct	14756 Sep 03 11:10	6° $\mathring{B}$ 29'17	
direct	14751 Aug 23 20:55	25° $\mathring{A}$ 14'55		evening set	14756 Nov 30 04:21	8° $\mathring{B}$ 23'27	
evening set	14751 Nov 19 12:06	27° $\mathring{A}$ 09'06					
				conjunction	14756 Dec 16 03:57	8° $\mathring{B}$ 59'11	0°02'58
conjunction	14751 Dec 05 10:19	27° $\mathring{A}$ 44'49	-0°03'05	minimum elong	14756 Dec 16 03:56	8° $\mathring{B}$ 59'11	0°03'58
minimum elong	14751 Dec 05 10:18	27° $\mathring{A}$ 44'49	0°02'04	behind sun begin	14756 Dec 15 21:28	8° $\mathring{B}$ 58'36	
behind sun begin	14751 Dec 05 03:46	27° $\mathring{A}$ 44'14		behind sun end	14756 Dec 16 10:23	8° $\mathring{B}$ 59'46	
behind sun end	14751 Dec 05 16:50	27° $\mathring{A}$ 45'24		max. Earth dist.	14756 Dec 16 16:23	9° $\mathring{B}$ 00'21	30.88819 AU
max. Earth dist.	14751 Dec 06 00:23	27° $\mathring{A}$ 46'08	30.85206 AU	morning rise	14757 Jan 01 05:06	9° $\mathring{B}$ 35'06	
morning rise	14751 Dec 21 10:32	28° $\mathring{A}$ 20'44		retrograde	14757 Apr 01 09:34	11° $\mathring{B}$ 32'16	
	14752 Feb 16 08:41	0° $\mathring{B}$		opposition	14757 Jun 19 15:44	10° $\mathring{B}$ 07'44	0°03'47
retrograde	14752 Mar 20 18:11	0° $\mathring{B}$ 18'19		min. Earth dist.	14757 Jun 19 04:47	10° $\mathring{B}$ 08'30	28.89140 AU
	14752 Apr 23 16:19	30° $\mathring{R}$ $\mathring{A}$		direct	14757 Sep 05 22:42	8° $\mathring{B}$ 43'48	
opposition	14752 Jun 08 04:25	28° $\mathring{A}$ 53'41	-0°02'31	evening set	14757 Dec 02 16:55	10° $\mathring{B}$ 37'55	
min. Earth dist.	14752 Jun 07 15:09	28° $\mathring{A}$ 54'36	28.85675 AU				
direct	14752 Aug 25 08:14	27° $\mathring{A}$ 29'50		conjunction	14757 Dec 18 16:46	11° $\mathring{B}$ 13'40	0°04'07
evening set	14752 Nov 21 00:51	29° $\mathring{A}$ 24'03		minimum elong	14757 Dec 18 16:46	11° $\mathring{B}$ 13'40	0°05'09
				behind sun begin	14757 Dec 18 10:26	11° $\mathring{B}$ 13'06	
conjunction	14752 Dec 06 23:27	29° $\mathring{A}$ 59'46	-0°01'52	behind sun end	14757 Dec 18 23:07	11° $\mathring{B}$ 14'14	
minimum elong	14752 Dec 06 23:28	29° $\mathring{A}$ 59'46	0°00'52	max. Earth dist.	14757 Dec 19 05:00	11° $\mathring{B}$ 14'48	30.89463 AU
behind sun begin	14752 Dec 06 16:56	29° $\mathring{A}$ 59'11		morning rise	14758 Jan 03 18:10	11° $\mathring{B}$ 49'34	
behind sun end	14752 Dec 07 05:59	0° $\mathring{B}$ 00'22		retrograde	14758 Apr 03 22:24	13° $\mathring{B}$ 46'38	
	14752 Dec 07 02:27	0° $\mathring{B}$		opposition	14758 Jun 22 03:14	12° $\mathring{B}$ 22'07	0°05'02
max. Earth dist.	14752 Dec 07 14:11	0° $\mathring{B}$ 01'09	30.86094 AU	min. Earth dist.	14758 Jun 21 15:30	12° $\mathring{B}$ 22'56	28.89809 AU
morning rise	14752 Dec 22 23:43	0° $\mathring{B}$ 35'41		direct	14758 Sep 08 10:36	10° $\mathring{B}$ 58'08	
retrograde	14753 Mar 23 06:33	2° $\mathring{B}$ 33'14		evening set	14758 Dec 05 05:45	12° $\mathring{B}$ 52'14	
opposition	14753 Jun 10 16:26	1° $\mathring{B}$ 08'39	-0°01'15				
min. Earth dist.	14753 Jun 10 03:24	1° $\mathring{B}$ 09'33	28.86512 AU	conjunction	14758 Dec 21 05:46	13° $\mathring{B}$ 27'59	0°05'17
	14753 Jul 28 12:48	30° $\mathring{R}$ $\mathring{A}$		minimum elong	14758 Dec 21 05:45	13° $\mathring{B}$ 27'59	0°06'17
direct	14753 Aug 27 21:25	29° $\mathring{A}$ 44'49		behind sun begin	14758 Dec 20 23:34	13° $\mathring{B}$ 27'25	
	14753 Sep 26 18:18	0° $\mathring{B}$		behind sun end	14758 Dec 21 11:56	13° $\mathring{B}$ 28'32	

max. Earth dist.	14758 Dec 21 17:32	13°329'04	30.90165 AU	conjunction	14765 Jan 03 11:33	26°352'03	0°11'59
morning rise	14759 Jan 06 07:22	14°303'53		minimum elong	14765 Jan 03 11:33	26°352'03	0°12'56
retrograde	14759 Apr 06 09:25	16°300'50		behind sun begin	14765 Jan 03 07:37	26°351'42	
opposition	14759 Jun 24 14:42	14°336'19	0°06'16	behind sun end	14765 Jan 03 15:29	26°352'24	
min. Earth dist.	14759 Jun 24 04:08	14°337'04	28.90568 AU	max. Earth dist.	14765 Jan 03 21:34	26°352'58	30.96491 AU
direct	14759 Sep 10 20:06	13°312'18		morning rise	14765 Jan 19 14:01	27°327'54	
evening set	14759 Dec 07 18:25	15°306'23		retrograde	14765 Apr 19 12:48	29°324'20	
				opposition	14765 Jul 07 10:41	28°300'08	0°13'25
conjunction	14759 Dec 23 18:46	15°342'08	0°06'25	min. Earth dist.	14765 Jul 07 00:56	28°300'49	28.97052 AU
minimum elong	14759 Dec 23 18:46	15°342'08	0°07'26	direct	14765 Sep 23 20:11	26°336'08	
behind sun begin	14759 Dec 23 12:49	15°341'36		evening set	14765 Dec 20 23:09	28°330'17	
behind sun end	14759 Dec 24 00:44	15°342'40					
max. Earth dist.	14759 Dec 24 07:01	15°343'16	30.90979 AU	conjunction	14766 Jan 06 00:36	29°306'01	0°13'03
morning rise	14760 Jan 08 20:28	16°318'02		minimum elong	14766 Jan 06 00:36	29°306'01	0°13'59
retrograde	14760 Apr 07 20:39	18°314'52		behind sun begin	14766 Jan 05 21:24	29°305'43	
opposition	14760 Jun 26 02:04	16°350'23	0°07'30	behind sun end	14766 Jan 06 03:49	29°306'18	
min. Earth dist.	14760 Jun 25 14:45	16°351'11	28.91433 AU	max. Earth dist.	14766 Jan 06 10:24	29°306'55	30.97567 AU
direct	14760 Sep 12 09:18	15°326'21		morning rise	14766 Jan 22 03:06	29°341'51	
evening set	14760 Dec 09 07:07	17°320'26			14766 Jan 30 13:59	0°	
				retrograde	14766 Apr 22 00:17	1°38'11	
conjunction	14760 Dec 25 07:31	17°356'10	0°07'34	opposition	14766 Jul 09 22:04	0°14'02	0°14'32
minimum elong	14760 Dec 25 07:31	17°356'10	0°08'33	min. Earth dist.	14766 Jul 09 13:54	0°14'36	28.98074 AU
behind sun begin	14760 Dec 25 01:49	17°355'39			14766 Jul 18 07:13	30°R3	
behind sun end	14760 Dec 25 13:13	17°356'41		direct	14766 Sep 26 07:59	28°350'01	
max. Earth dist.	14760 Dec 25 18:44	17°357'12	30.91906 AU		14766 Dec 02 02:14	0°	
morning rise	14761 Jan 10 09:29	18°332'03		evening set	14766 Dec 23 12:07	0°44'09	
retrograde	14761 Apr 10 09:05	20°328'49					
opposition	14761 Jun 28 13:33	19°304'22	0°08'43	conjunction	14767 Jan 08 13:46	1°19'53	0°14'05
min. Earth dist.	14761 Jun 28 02:48	19°305'07	28.92432 AU	minimum elong	14767 Jan 08 13:46	1°19'53	0°15'00
direct	14761 Sep 14 19:27	17°340'19		behind sun begin	14767 Jan 08 11:34	1°19'41	
evening set	14761 Dec 11 19:44	19°334'24		behind sun end	14767 Jan 08 15:59	1°20'05	
				max. Earth dist.	14767 Jan 08 22:37	1°20'42	30.98541 AU
conjunction	14761 Dec 27 20:31	20°310'08	0°08'41	morning rise	14767 Jan 24 16:24	1°55'43	
minimum elong	14761 Dec 27 20:32	20°310'08	0°09'41	retrograde	14767 Apr 24 13:31	3°51'55	
behind sun begin	14761 Dec 27 15:10	20°309'39		opposition	14767 Jul 12 09:05	2°27'47	0°15'38
behind sun end	14761 Dec 28 01:54	20°310'37		min. Earth dist.	14767 Jul 12 00:38	2°28'23	28.98986 AU
max. Earth dist.	14761 Dec 28 08:41	20°311'16	30.92965 AU	direct	14767 Sep 28 20:26	1°03'45	
morning rise	14762 Jan 12 22:29	20°346'01		evening set	14767 Dec 26 01:06	2°57'52	
retrograde	14762 Apr 12 20:51	22°342'41					
opposition	14762 Jul 01 00:51	21°318'18	0°09'55	conjunction	14768 Jan 11 02:51	3°33'35	0°15'06
min. Earth dist.	14762 Jun 30 14:03	21°319'03	28.93539 AU	minimum elong	14768 Jan 11 02:51	3°33'35	0°16'01
direct	14762 Sep 17 07:30	19°354'15		max. Earth dist.	14768 Jan 11 10:46	3°34'19	30.99401 AU
evening set	14762 Dec 14 08:33	21°348'21		morning rise	14768 Jan 27 05:35	4°09'25	
				retrograde	14768 Apr 26 00:06	6°05'29	
conjunction	14762 Dec 30 09:24	22°324'05	0°09'48	opposition	14768 Jul 13 20:17	4°41'23	0°16'43
minimum elong	14762 Dec 30 09:24	22°324'05	0°10'46	min. Earth dist.	14768 Jul 13 13:25	4°41'52	28.99815 AU
behind sun begin	14762 Dec 30 04:26	22°323'38		direct	14768 Sep 30 06:38	3°17'18	
behind sun end	14762 Dec 30 14:23	22°324'32		evening set	14768 Dec 27 13:44	5°11'23	
max. Earth dist.	14762 Dec 30 20:15	22°325'05	30.94125 AU				
morning rise	14763 Jan 15 11:42	22°359'57		conjunction	14769 Jan 12 15:44	5°47'06	0°16'06
retrograde	14763 Apr 15 10:59	24°356'33		minimum elong	14769 Jan 12 15:44	5°47'06	0°16'59
opposition	14763 Jul 03 12:10	23°332'13	0°11'06	max. Earth dist.	14769 Jan 12 23:42	5°47'50	31.00207 AU
min. Earth dist.	14763 Jul 03 01:37	23°332'58	28.94730 AU	morning rise	14769 Jan 28 18:28	6°22'55	
direct	14763 Sep 19 19:01	22°308'12		retrograde	14769 Apr 28 10:47	8°18'52	
evening set	14763 Dec 16 21:22	24°302'19		opposition	14769 Jul 16 07:15	6°54'46	0°17'46
				min. Earth dist.	14769 Jul 16 00:02	6°55'17	29.00598 AU
conjunction	14764 Jan 01 22:31	24°338'03	0°10'54	direct	14769 Oct 02 19:31	5°30'39	
minimum elong	14764 Jan 01 22:31	24°338'04	0°11'53	evening set	14769 Dec 30 02:33	7°24'43	
behind sun begin	14764 Jan 01 18:01	24°337'39					
behind sun end	14764 Jan 02 03:01	24°338'28		conjunction	14770 Jan 15 04:33	8°00'25	0°17'04
max. Earth dist.	14764 Jan 02 10:00	24°339'07	30.95319 AU	minimum elong	14770 Jan 15 04:32	8°00'25	0°17'57
morning rise	14764 Jan 18 00:46	25°313'55		max. Earth dist.	14770 Jan 15 11:08	8°01'01	31.00988 AU
retrograde	14764 Apr 16 23:12	27°310'26		morning rise	14770 Jan 31 07:29	8°36'13	
opposition	14764 Jul 04 23:25	25°346'10	0°12'16	retrograde	14770 Apr 30 22:13	10°32'03	
min. Earth dist.	14764 Jul 04 13:52	25°346'51	28.95915 AU	opposition	14770 Jul 18 18:08	9°07'57	0°18'47
direct	14764 Sep 21 08:07	24°322'11		min. Earth dist.	14770 Jul 18 11:52	9°08'24	29.01399 AU
evening set	14764 Dec 18 10:19	26°316'19		direct	14770 Oct 05 05:15	7°43'47	

evening set	14771 Jan 01 15:09	9° $\approx$ 37'50		max. Earth dist.	14777 Jan 31 01:47	23° $\approx$ 30'51	31.08670 AU
				morning rise	14777 Feb 16 00:14	24° $\approx$ 06'08	
conjunction	14771 Jan 17 17:27	10° $\approx$ 13'32	0°18'01	retrograde	14777 May 16 09:21	26° $\approx$ 01'18	
minimum elong	14771 Jan 17 17:27	10° $\approx$ 13'32	0°18'51	opposition	14777 Aug 02 20:55	24° $\approx$ 37'37	0°25'04
max. Earth dist.	14771 Jan 18 00:41	10° $\approx$ 14'12	31.01805 AU	min. Earth dist.	14777 Aug 02 17:17	24° $\approx$ 37'53	29.09325 AU
morning rise	14771 Feb 02 20:18	10° $\approx$ 49'19		direct	14777 Oct 20 14:21	23° $\approx$ 13'30	
retrograde	14771 May 03 08:57	12° $\approx$ 45'01		evening set	14778 Jan 17 07:16	25° $\approx$ 07'41	
opposition	14771 Jul 21 04:57	11° $\approx$ 20'58	0°19'47				
min. Earth dist.	14771 Jul 20 22:48	11° $\approx$ 21'24	29.02236 AU	conjunction	14778 Feb 02 10:06	25° $\approx$ 43'20	0°23'47
direct	14771 Oct 07 17:06	9° $\approx$ 56'45		minimum elong	14778 Feb 02 10:06	25° $\approx$ 43'20	0°24'27
evening set	14772 Jan 04 03:51	11° $\approx$ 50'48		max. Earth dist.	14778 Feb 02 14:24	25° $\approx$ 43'44	31.09944 AU
				morning rise	14778 Feb 18 12:58	26° $\approx$ 19'00	
conjunction	14772 Jan 20 06:05	12° $\approx$ 26'29	0°18'55	retrograde	14778 May 18 20:02	28° $\approx$ 14'04	
minimum elong	14772 Jan 20 06:04	12° $\approx$ 26'29	0°19'45	opposition	14778 Aug 05 07:25	26° $\approx$ 50'29	0°25'49
max. Earth dist.	14772 Jan 20 11:55	12° $\approx$ 27'01	31.02684 AU	min. Earth dist.	14778 Aug 05 03:45	26° $\approx$ 50'44	29.10544 AU
morning rise	14772 Feb 05 09:06	13° $\approx$ 02'15		direct	14778 Oct 23 02:37	25° $\approx$ 26'22	
retrograde	14772 May 04 21:41	14° $\approx$ 57'51		evening set	14779 Jan 19 20:06	27° $\approx$ 20'33	
opposition	14772 Jul 22 15:38	13° $\approx$ 33'49	0°20'44				
min. Earth dist.	14772 Jul 22 09:36	13° $\approx$ 34'14	29.03172 AU	conjunction	14779 Feb 04 22:50	27° $\approx$ 56'11	0°24'29
direct	14772 Oct 09 04:20	12° $\approx$ 09'34		minimum elong	14779 Feb 04 22:50	27° $\approx$ 56'11	0°25'06
evening set	14773 Jan 05 16:20	14° $\approx$ 03'38		max. Earth dist.	14779 Feb 05 01:22	27° $\approx$ 56'25	31.11103 AU
				morning rise	14779 Feb 21 01:48	28° $\approx$ 31'51	
conjunction	14773 Jan 21 18:48	14° $\approx$ 39'19	0°19'49		14779 Apr 10 20:04	0° $\approx$	
minimum elong	14773 Jan 21 18:48	14° $\approx$ 39'19	0°20'36	retrograde	14779 May 21 07:25	0° $\approx$ 26'48	
max. Earth dist.	14773 Jan 22 01:29	14° $\approx$ 39'55	31.03669 AU		14779 Jul 01 12:02	30° $\approx$	
	14773 Jan 31 01:20	15° $\approx$		opposition	14779 Aug 07 18:05	29° $\approx$ 03'15	0°26'32
morning rise	14773 Feb 06 21:41	15° $\approx$ 15'03		min. Earth dist.	14779 Aug 07 15:38	29° $\approx$ 03'26	29.11652 AU
retrograde	14773 May 07 08:53	17° $\approx$ 10'33		direct	14779 Oct 25 11:49	27° $\approx$ 39'07	
opposition	14773 Jul 25 02:24	15° $\approx$ 46'33	0°21'40	evening set	14780 Jan 22 08:40	29° $\approx$ 33'18	
min. Earth dist.	14773 Jul 24 21:00	15° $\approx$ 46'56	29.04219 AU		14780 Feb 03 11:29	0° $\approx$	
	14773 Aug 23 09:51	15° $\approx$					
direct	14773 Oct 11 16:58	14° $\approx$ 22'19		conjunction	14780 Feb 07 11:35	0° $\approx$ 08'55	0°25'08
	14773 Nov 28 19:44	15° $\approx$		minimum elong	14780 Feb 07 11:35	0° $\approx$ 08'55	0°25'44
evening set	14774 Jan 08 04:50	16° $\approx$ 16'23		max. Earth dist.	14780 Feb 07 14:18	0° $\approx$ 09'10	31.12148 AU
				morning rise	14780 Feb 23 14:18	0° $\approx$ 44'33	
conjunction	14774 Jan 24 07:18	16° $\approx$ 52'03	0°20'40	retrograde	14780 May 22 17:11	2° $\approx$ 39'24	
minimum elong	14774 Jan 24 07:18	16° $\approx$ 52'03	0°21'27	opposition	14780 Aug 09 04:37	1° $\approx$ 15'53	0°27'13
max. Earth dist.	14774 Jan 24 12:54	16° $\approx$ 52'34	31.04792 AU	min. Earth dist.	14780 Aug 09 02:41	1° $\approx$ 16'01	29.12635 AU
morning rise	14774 Feb 09 10:22	17° $\approx$ 27'47			14780 Oct 04 13:26	30° $\approx$	
retrograde	14774 May 09 21:48	19° $\approx$ 23'12		direct	14780 Oct 26 23:39	29° $\approx$ 51'43	
opposition	14774 Jul 27 13:01	17° $\approx$ 59'15	0°22'34		14780 Nov 18 06:37	0° $\approx$	
min. Earth dist.	14774 Jul 27 07:01	17° $\approx$ 59'41	29.05403 AU	evening set	14781 Jan 23 21:20	1° $\approx$ 45'53	
direct	14774 Oct 14 04:27	16° $\approx$ 35'02					
evening set	14775 Jan 10 17:24	18° $\approx$ 29'08		conjunction	14781 Feb 09 00:06	2° $\approx$ 21'29	0°25'45
				minimum elong	14781 Feb 09 00:06	2° $\approx$ 21'29	0°26'19
conjunction	14775 Jan 26 20:01	19° $\approx$ 04'48	0°21'30	max. Earth dist.	14781 Feb 09 00:59	2° $\approx$ 21'34	31.13095 AU
minimum elong	14775 Jan 26 20:02	19° $\approx$ 04'48	0°22'14	morning rise	14781 Feb 25 02:57	2° $\approx$ 57'06	
max. Earth dist.	14775 Jan 27 01:50	19° $\approx$ 05'20	31.06025 AU	retrograde	14781 May 25 04:33	4° $\approx$ 51'49	
morning rise	14775 Feb 11 22:59	19° $\approx$ 40'31		opposition	14781 Aug 11 15:04	3° $\approx$ 28'18	0°27'51
retrograde	14775 May 12 09:19	21° $\approx$ 35'50		min. Earth dist.	14781 Aug 11 13:35	3° $\approx$ 28'25	29.13552 AU
opposition	14775 Jul 29 23:36	20° $\approx$ 11'59	0°23'26	direct	14781 Oct 29 10:33	2° $\approx$ 04'06	
min. Earth dist.	14775 Jul 29 18:53	20° $\approx$ 12'19	29.06683 AU	evening set	14782 Jan 26 09:42	3° $\approx$ 58'14	
direct	14775 Oct 16 15:59	18° $\approx$ 47'48					
evening set	14776 Jan 13 06:02	20° $\approx$ 41'56		conjunction	14782 Feb 11 12:40	4° $\approx$ 33'49	0°26'20
				minimum elong	14782 Feb 11 12:40	4° $\approx$ 33'49	0°26'52
conjunction	14776 Jan 29 08:43	21° $\approx$ 17'35	0°22'18	max. Earth dist.	14782 Feb 11 14:01	4° $\approx$ 33'57	31.13978 AU
minimum elong	14776 Jan 29 08:43	21° $\approx$ 17'35	0°23'01	morning rise	14782 Feb 27 15:18	5° $\approx$ 09'24	
max. Earth dist.	14776 Jan 29 13:54	21° $\approx$ 18'04	31.07348 AU	retrograde	14782 May 27 14:26	7° $\approx$ 04'00	
morning rise	14776 Feb 14 11:42	21° $\approx$ 53'17		opposition	14782 Aug 14 01:32	5° $\approx$ 40'30	0°28'27
retrograde	14776 May 13 23:00	23° $\approx$ 48'32		min. Earth dist.	14782 Aug 14 01:10	5° $\approx$ 40'31	29.14409 AU
opposition	14776 Jul 31 10:10	22° $\approx$ 24'46	0°24'16	direct	14782 Oct 31 22:35	4° $\approx$ 16'14	
min. Earth dist.	14776 Jul 31 04:57	22° $\approx$ 25'08	29.08015 AU	evening set	14783 Jan 28 22:14	6° $\approx$ 10'22	
direct	14776 Oct 18 04:18	21° $\approx$ 00'37					
evening set	14777 Jan 14 18:36	22° $\approx$ 54'47		conjunction	14783 Feb 14 01:05	6° $\approx$ 45'55	0°26'52
				minimum elong	14783 Feb 14 01:05	6° $\approx$ 45'55	0°27'21
conjunction	14777 Jan 30 21:15	23° $\approx$ 30'27	0°23'03	max. Earth dist.	14783 Feb 14 00:57	6° $\approx$ 45'55	31.14834 AU
minimum elong	14777 Jan 30 21:16	23° $\approx$ 30'27	0°23'44	morning rise	14783 Mar 02 03:47	7° $\approx$ 21'29	

retrograde	14783 May 30 02:35	9° <del>✕</del> 15'56		minimum elong	14790 Mar 01 14:25	22° <del>✕</del> 07'06	0°29'45
opposition	14783 Aug 16 11:42	7° <del>✕</del> 52'26	0°29'00	max. Earth dist.	14790 Mar 01 11:14	22° <del>✕</del> 06'48	31.22478 AU
min. Earth dist.	14783 Aug 16 11:01	7° <del>✕</del> 52'29	29.15269 AU	morning rise	14790 Mar 17 16:17	22° <del>✕</del> 42'31	
direct	14783 Nov 03 09:59	6° <del>✕</del> 28'08		retrograde	14790 Jun 14 06:34	24° <del>✕</del> 36'23	
evening set	14784 Jan 31 10:35	8° <del>✕</del> 22'15		opposition	14790 Aug 31 11:29	23° <del>✕</del> 13'19	0°31'38
				min. Earth dist.	14790 Aug 31 13:47	23° <del>✕</del> 13'09	29.23050 AU
conjunction	14784 Feb 16 13:28	8° <del>✕</del> 57'47	0°27'22	direct	14790 Nov 18 15:12	21° <del>✕</del> 49'08	
minimum elong	14784 Feb 16 13:29	8° <del>✕</del> 57'47	0°27'50	evening set	14791 Feb 16 00:15	23° <del>✕</del> 43'23	
max. Earth dist.	14784 Feb 16 13:29	8° <del>✕</del> 57'47	31.15698 AU				
morning rise	14784 Mar 03 15:58	9° <del>✕</del> 33'19		conjunction	14791 Mar 04 02:46	24° <del>✕</del> 18'50	0°29'43
retrograde	14784 May 31 13:19	11° <del>✕</del> 27'39		minimum elong	14791 Mar 04 02:46	24° <del>✕</del> 18'50	0°29'55
opposition	14784 Aug 17 22:06	10° <del>✕</del> 04'10	0°29'30	max. Earth dist.	14791 Mar 03 23:49	24° <del>✕</del> 18'34	31.23564 AU
min. Earth dist.	14784 Aug 17 22:40	10° <del>✕</del> 04'07	29.16164 AU	morning rise	14791 Mar 20 04:17	24° <del>✕</del> 54'14	
direct	14784 Nov 04 22:03	8° <del>✕</del> 39'50		retrograde	14791 Jun 16 16:14	26° <del>✕</del> 48'02	
evening set	14785 Feb 01 22:43	10° <del>✕</del> 33'55		opposition	14791 Sep 02 21:47	25° <del>✕</del> 25'02	0°31'50
				min. Earth dist.	14791 Sep 03 01:28	25° <del>✕</del> 24'47	29.24067 AU
conjunction	14785 Feb 18 01:34	11° <del>✕</del> 09'27	0°27'50	direct	14791 Nov 21 02:15	24° <del>✕</del> 00'52	
minimum elong	14785 Feb 18 01:34	11° <del>✕</del> 09'27	0°28'15	evening set	14792 Feb 18 12:36	25° <del>✕</del> 55'09	
max. Earth dist.	14785 Feb 18 01:03	11° <del>✕</del> 09'24	31.16637 AU				
morning rise	14785 Mar 06 04:01	11° <del>✕</del> 44'57		conjunction	14792 Mar 05 14:54	26° <del>✕</del> 30'35	0°29'52
retrograde	14785 Jun 03 01:42	13° <del>✕</del> 39'10		minimum elong	14792 Mar 05 14:54	26° <del>✕</del> 30'35	0°30'03
opposition	14785 Aug 20 08:20	12° <del>✕</del> 15'42	0°29'59	max. Earth dist.	14792 Mar 05 10:14	26° <del>✕</del> 30'09	31.24518 AU
min. Earth dist.	14785 Aug 20 08:08	12° <del>✕</del> 15'43	29.17142 AU	morning rise	14792 Mar 21 16:23	27° <del>✕</del> 05'57	
direct	14785 Nov 07 10:54	10° <del>✕</del> 51'21		retrograde	14792 Jun 18 04:22	28° <del>✕</del> 59'41	
evening set	14786 Feb 04 11:02	12° <del>✕</del> 45'26		opposition	14792 Sep 04 08:03	27° <del>✕</del> 36'44	0°31'59
				min. Earth dist.	14792 Sep 04 11:32	27° <del>✕</del> 36'29	29.24951 AU
conjunction	14786 Feb 20 13:48	13° <del>✕</del> 20'57	0°28'15	direct	14792 Nov 22 13:09	26° <del>✕</del> 12'34	
minimum elong	14786 Feb 20 13:48	13° <del>✕</del> 20'57	0°28'39	evening set	14793 Feb 20 00:41	28° <del>✕</del> 06'51	
max. Earth dist.	14786 Feb 20 12:52	13° <del>✕</del> 20'52	31.17660 AU				
morning rise	14786 Mar 08 16:09	13° <del>✕</del> 56'26		conjunction	14793 Mar 08 02:58	28° <del>✕</del> 42'16	0°29'59
retrograde	14786 Jun 05 11:48	15° <del>✕</del> 50'33		minimum elong	14793 Mar 08 02:58	28° <del>✕</del> 42'16	0°30'07
opposition	14786 Aug 22 18:34	14° <del>✕</del> 27'08	0°30'24	max. Earth dist.	14793 Mar 07 22:05	28° <del>✕</del> 41'49	31.25325 AU
min. Earth dist.	14786 Aug 22 19:34	14° <del>✕</del> 27'04	29.18229 AU	morning rise	14793 Mar 24 04:11	29° <del>✕</del> 17'37	
direct	14786 Nov 09 21:05	13° <del>✕</del> 02'48			14793 Apr 13 20:14	0° <del>✕</del>	
evening set	14787 Feb 06 23:14	14° <del>✕</del> 56'54		retrograde	14793 Jun 20 15:07	1° <del>✕</del> 11'16	
					14793 Aug 30 18:09	30° <del>✕</del>	
conjunction	14787 Feb 23 02:04	15° <del>✕</del> 32'24	0°28'38	opposition	14793 Sep 06 18:25	29° <del>✕</del> 48'21	0°32'05
minimum elong	14787 Feb 23 02:04	15° <del>✕</del> 32'24	0°28'59	min. Earth dist.	14793 Sep 06 23:33	29° <del>✕</del> 47'59	29.25696 AU
max. Earth dist.	14787 Feb 23 01:22	15° <del>✕</del> 32'20	31.18804 AU	direct	14793 Nov 25 01:26	28° <del>✕</del> 24'10	
morning rise	14787 Mar 11 04:14	16° <del>✕</del> 07'52			14794 Feb 13 20:02	0° <del>✕</del>	
retrograde	14787 Jun 07 22:27	18° <del>✕</del> 01'53		evening set	14794 Feb 22 12:53	0° <del>✕</del> 18'27	
opposition	14787 Aug 25 04:45	16° <del>✕</del> 38'33	0°30'47				
min. Earth dist.	14787 Aug 25 05:18	16° <del>✕</del> 38'31	29.19409 AU	conjunction	14794 Mar 10 15:03	0° <del>✕</del> 53'51	0°30'04
direct	14787 Nov 12 09:06	15° <del>✕</del> 14'15		minimum elong	14794 Mar 10 15:03	0° <del>✕</del> 53'51	0°30'09
evening set	14788 Feb 09 11:28	17° <del>✕</del> 08'23		max. Earth dist.	14794 Mar 10 09:11	0° <del>✕</del> 53'18	31.26020 AU
				morning rise	14794 Mar 26 16:10	1° <del>✕</del> 29'10	
conjunction	14788 Feb 25 14:05	17° <del>✕</del> 43'52	0°28'58	retrograde	14794 Jun 23 03:15	3° <del>✕</del> 22'43	
minimum elong	14788 Feb 25 14:05	17° <del>✕</del> 43'52	0°29'17	opposition	14794 Sep 09 04:26	1° <del>✕</del> 59'49	0°32'08
max. Earth dist.	14788 Feb 25 12:11	17° <del>✕</del> 43'42	31.20022 AU	min. Earth dist.	14794 Sep 09 09:17	1° <del>✕</del> 59'28	29.26331 AU
morning rise	14788 Mar 12 16:13	18° <del>✕</del> 19'19		direct	14794 Nov 27 14:42	0° <del>✕</del> 35'36	
retrograde	14788 Jun 09 09:41	20° <del>✕</del> 13'17		evening set	14795 Feb 25 01:03	2° <del>✕</del> 29'53	
opposition	14788 Aug 26 15:02	18° <del>✕</del> 50'03	0°31'07				
min. Earth dist.	14788 Aug 26 16:22	18° <del>✕</del> 49'57	29.20658 AU	conjunction	14795 Mar 13 03:04	3° <del>✕</del> 05'16	0°30'06
direct	14788 Nov 13 18:00	17° <del>✕</del> 25'47		minimum elong	14795 Mar 13 03:04	3° <del>✕</del> 05'16	0°30'09
evening set	14789 Feb 10 23:36	19° <del>✕</del> 19'57		max. Earth dist.	14795 Mar 12 20:23	3° <del>✕</del> 04'39	31.26609 AU
				morning rise	14795 Mar 29 03:58	3° <del>✕</del> 40'34	
conjunction	14789 Feb 27 02:19	19° <del>✕</del> 55'26	0°29'15	retrograde	14795 Jun 25 13:10	5° <del>✕</del> 34'01	
minimum elong	14789 Feb 27 02:19	19° <del>✕</del> 55'26	0°29'32	opposition	14795 Sep 11 14:42	4° <del>✕</del> 11'07	0°32'08
max. Earth dist.	14789 Feb 27 00:56	19° <del>✕</del> 55'18	31.21274 AU	min. Earth dist.	14795 Sep 11 21:01	4° <del>✕</del> 10'41	29.26898 AU
morning rise	14789 Mar 15 04:09	20° <del>✕</del> 30'52		direct	14795 Nov 30 01:24	2° <del>✕</del> 46'52	
retrograde	14789 Jun 11 19:15	22° <del>✕</del> 24'47		evening set	14796 Feb 27 12:52	4° <del>✕</del> 41'08	
opposition	14789 Aug 29 01:13	21° <del>✕</del> 01'38	0°31'24				
min. Earth dist.	14789 Aug 29 03:04	21° <del>✕</del> 01'30	29.21891 AU	conjunction	14796 Mar 14 14:50	5° <del>✕</del> 16'30	0°30'05
direct	14789 Nov 16 05:06	19° <del>✕</del> 37'25		minimum elong	14796 Mar 14 14:50	5° <del>✕</del> 16'30	0°30'06
evening set	14790 Feb 13 11:56	21° <del>✕</del> 31'38		max. Earth dist.	14796 Mar 14 08:17	5° <del>✕</del> 15'54	31.27157 AU
				morning rise	14796 Mar 30 15:29	5° <del>✕</del> 51'46	
conjunction	14790 Mar 01 14:25	22° <del>✕</del> 07'06	0°29'30	retrograde	14796 Jun 26 23:34	7° <del>✕</del> 45'06	



opposition	14796 Sep 13 00:48	6° $\Upsilon$ 22'13	0°32'06	max. Earth dist.	14803 Mar 30 14:38	20° $\Upsilon$ 31'05	31.32071 AU
min. Earth dist.	14796 Sep 13 06:48	6° $\Upsilon$ 21'48	29.27432 AU	morning rise	14803 Apr 15 23:10	21° $\Upsilon$ 07'04	
direct	14796 Dec 01 14:18	4° $\Upsilon$ 57'56		retrograde	14803 Jul 12 22:46	22° $\Upsilon$ 59'59	
evening set	14797 Mar 01 00:49	6° $\Upsilon$ 52'10		opposition	14803 Sep 28 23:38	21° $\Upsilon$ 37'22	0°30'33
				min. Earth dist.	14803 Sep 29 07:47	21° $\Upsilon$ 36'48	29.32389 AU
conjunction	14797 Mar 17 02:29	7° $\Upsilon$ 27'31	0°30'02	direct	14803 Dec 17 17:55	20° $\Upsilon$ 13'08	
minimum elong	14797 Mar 17 02:30	7° $\Upsilon$ 27'31	0°30'00	evening set	14804 Mar 16 10:55	22° $\Upsilon$ 07'29	
max. Earth dist.	14797 Mar 16 18:44	7° $\Upsilon$ 26'49	31.27699 AU				
morning rise	14797 Apr 02 03:03	8° $\Upsilon$ 02'47		conjunction	14804 Apr 01 11:24	22° $\Upsilon$ 42'43	0°28'27
retrograde	14797 Jun 29 10:29	9° $\Upsilon$ 56'01		minimum elong	14804 Apr 01 11:24	22° $\Upsilon$ 42'43	0°28'10
opposition	14797 Sep 15 10:51	8° $\Upsilon$ 33'08	0°32'01	max. Earth dist.	14804 Apr 01 01:13	22° $\Upsilon$ 41'47	31.32650 AU
min. Earth dist.	14797 Sep 15 17:27	8° $\Upsilon$ 32'40	29.28006 AU	morning rise	14804 Apr 17 10:18	23° $\Upsilon$ 17'50	
direct	14797 Dec 04 00:13	7° $\Upsilon$ 08'49		retrograde	14804 Jul 14 09:10	25° $\Upsilon$ 10'42	
evening set	14798 Mar 03 12:32	9° $\Upsilon$ 03'02		opposition	14804 Sep 30 09:59	23° $\Upsilon$ 48'07	0°30'09
				min. Earth dist.	14804 Sep 30 19:34	23° $\Upsilon$ 47'27	29.32909 AU
conjunction	14798 Mar 19 14:14	9° $\Upsilon$ 38'22	0°29'56	direct	14804 Dec 19 04:22	22° $\Upsilon$ 23'53	
minimum elong	14798 Mar 19 14:14	9° $\Upsilon$ 38'22	0°29'52	evening set	14805 Mar 18 22:33	24° $\Upsilon$ 18'14	
max. Earth dist.	14798 Mar 19 07:13	9° $\Upsilon$ 37'43	31.28298 AU				
morning rise	14798 Apr 04 14:28	10° $\Upsilon$ 13'36		conjunction	14805 Apr 03 22:57	24° $\Upsilon$ 53'27	0°28'04
retrograde	14798 Jul 01 18:39	12° $\Upsilon$ 06'45		minimum elong	14805 Apr 03 22:57	24° $\Upsilon$ 53'27	0°27'44
opposition	14798 Sep 17 20:58	10° $\Upsilon$ 43'53	0°31'53	max. Earth dist.	14805 Apr 03 12:43	24° $\Upsilon$ 52'31	31.33100 AU
min. Earth dist.	14798 Sep 18 03:45	10° $\Upsilon$ 43'25	29.28635 AU	morning rise	14805 Apr 19 21:33	25° $\Upsilon$ 28'33	
direct	14798 Dec 06 12:06	9° $\Upsilon$ 19'33		retrograde	14805 Jul 16 19:47	27° $\Upsilon$ 21'21	
evening set	14799 Mar 06 00:24	11° $\Upsilon$ 13'47		opposition	14805 Oct 02 20:07	25° $\Upsilon$ 58'48	0°29'43
				min. Earth dist.	14805 Oct 03 05:42	25° $\Upsilon$ 58'08	29.33279 AU
conjunction	14799 Mar 22 01:45	11° $\Upsilon$ 49'05	0°29'48	direct	14805 Dec 21 17:27	24° $\Upsilon$ 34'33	
minimum elong	14799 Mar 22 01:46	11° $\Upsilon$ 49'05	0°29'41	evening set	14806 Mar 21 10:18	26° $\Upsilon$ 28'54	
max. Earth dist.	14799 Mar 21 17:24	11° $\Upsilon$ 48'19	31.28976 AU				
morning rise	14799 Apr 07 01:54	12° $\Upsilon$ 24'18		conjunction	14806 Apr 06 10:22	27° $\Upsilon$ 04'07	0°27'38
retrograde	14799 Jul 04 04:38	14° $\Upsilon$ 17'23		minimum elong	14806 Apr 06 10:22	27° $\Upsilon$ 04'07	0°27'16
opposition	14799 Sep 20 07:00	12° $\Upsilon$ 54'33	0°31'43	max. Earth dist.	14806 Apr 05 22:35	27° $\Upsilon$ 03'02	31.33404 AU
min. Earth dist.	14799 Sep 20 13:36	12° $\Upsilon$ 54'05	29.29364 AU	morning rise	14806 Apr 22 08:51	27° $\Upsilon$ 39'11	
direct	14799 Dec 08 21:43	11° $\Upsilon$ 30'13		retrograde	14806 Jul 19 06:54	29° $\Upsilon$ 31'57	
evening set	14800 Mar 07 12:02	13° $\Upsilon$ 24'27		opposition	14806 Oct 05 06:23	28° $\Upsilon$ 09'23	0°29'14
				min. Earth dist.	14806 Oct 05 16:44	28° $\Upsilon$ 08'41	29.33527 AU
conjunction	14800 Mar 23 13:24	13° $\Upsilon$ 59'45	0°29'37	direct	14806 Dec 24 03:59	26° $\Upsilon$ 45'08	
minimum elong	14800 Mar 23 13:24	13° $\Upsilon$ 59'45	0°29'28	evening set	14807 Mar 23 21:46	28° $\Upsilon$ 39'29	
max. Earth dist.	14800 Mar 23 05:55	13° $\Upsilon$ 59'04	31.29743 AU				
morning rise	14800 Apr 08 13:09	14° $\Upsilon$ 34'57		conjunction	14807 Apr 08 21:46	29° $\Upsilon$ 14'40	0°27'10
retrograde	14800 Jul 05 13:38	16° $\Upsilon$ 27'58		minimum elong	14807 Apr 08 21:46	29° $\Upsilon$ 14'40	0°26'46
opposition	14800 Sep 21 17:11	15° $\Upsilon$ 05'12	0°31'29	max. Earth dist.	14807 Apr 08 10:29	29° $\Upsilon$ 13'38	31.33590 AU
min. Earth dist.	14800 Sep 22 00:41	15° $\Upsilon$ 04'41	29.30160 AU	morning rise	14807 Apr 24 19:49	29° $\Upsilon$ 49'44	
direct	14800 Dec 10 07:39	13° $\Upsilon$ 40'54			14807 Apr 29 15:03	0° $\mathcal{B}$	
evening set	14801 Mar 09 23:41	15° $\Upsilon$ 35'09		retrograde	14807 Jul 21 15:04	1° $\mathcal{B}$ 42'25	
				opposition	14807 Oct 07 16:37	0° $\mathcal{B}$ 19'52	0°28'42
conjunction	14801 Mar 26 00:46	16° $\Upsilon$ 10'26	0°29'23	min. Earth dist.	14807 Oct 08 03:31	0° $\mathcal{B}$ 19'07	29.33659 AU
minimum elong	14801 Mar 26 00:46	16° $\Upsilon$ 10'26	0°29'12		14807 Oct 19 18:48	30° $\mathcal{R}\Upsilon$	
max. Earth dist.	14801 Mar 25 16:11	16° $\Upsilon$ 09'39	31.30566 AU	direct	14807 Dec 26 16:12	28° $\Upsilon$ 55'35	
morning rise	14801 Apr 11 00:29	16° $\Upsilon$ 45'37			14808 Feb 29 14:25	0° $\mathcal{B}$	
retrograde	14801 Jul 08 01:01	18° $\Upsilon$ 38'36		evening set	14808 Mar 25 09:19	0° $\mathcal{B}$ 49'56	
opposition	14801 Sep 24 03:15	17° $\Upsilon$ 15'53	0°31'14				
min. Earth dist.	14801 Sep 24 10:14	17° $\Upsilon$ 15'24	29.30978 AU	conjunction	14808 Apr 10 08:55	1° $\mathcal{B}$ 25'06	0°26'40
direct	14801 Dec 12 18:05	15° $\Upsilon$ 51'36		minimum elong	14808 Apr 10 08:56	1° $\mathcal{B}$ 25'06	0°26'14
evening set	14802 Mar 12 11:27	17° $\Upsilon$ 45'54		max. Earth dist.	14808 Apr 09 20:10	1° $\mathcal{B}$ 23'55	31.33696 AU
				morning rise	14808 Apr 26 06:54	2° $\mathcal{B}$ 00'08	
conjunction	14802 Mar 28 12:25	18° $\Upsilon$ 21'10	0°29'07	retrograde	14808 Jul 23 00:59	3° $\mathcal{B}$ 52'46	
minimum elong	14802 Mar 28 12:25	18° $\Upsilon$ 21'10	0°28'54	opposition	14808 Oct 09 02:46	2° $\mathcal{B}$ 30'13	0°28'09
max. Earth dist.	14802 Mar 28 03:50	18° $\Upsilon$ 20'23	31.31356 AU	min. Earth dist.	14808 Oct 09 13:33	2° $\mathcal{B}$ 29'29	29.33749 AU
morning rise	14802 Apr 13 11:47	18° $\Upsilon$ 56'19		direct	14808 Dec 28 02:10	1° $\mathcal{B}$ 05'54	
retrograde	14802 Jul 10 11:05	20° $\Upsilon$ 49'17		evening set	14809 Mar 27 20:30	3° $\mathcal{B}$ 00'14	
opposition	14802 Sep 26 13:25	19° $\Upsilon$ 26'37	0°30'55				
min. Earth dist.	14802 Sep 26 21:57	19° $\Upsilon$ 26'02	29.31738 AU	conjunction	14809 Apr 12 20:04	3° $\mathcal{B}$ 35'23	0°26'07
direct	14802 Dec 15 05:23	18° $\Upsilon$ 02'22		minimum elong	14809 Apr 12 20:04	3° $\mathcal{B}$ 35'23	0°25'39
evening set	14803 Mar 14 23:16	19° $\Upsilon$ 56'41		max. Earth dist.	14809 Apr 12 08:09	3° $\mathcal{B}$ 34'18	31.33769 AU
				morning rise	14809 Apr 28 17:38	4° $\mathcal{B}$ 10'25	
conjunction	14803 Mar 31 00:01	20° $\Upsilon$ 31'56	0°28'48	retrograde	14809 Jul 25 09:24	6° $\mathcal{B}$ 03'00	
minimum elong	14803 Mar 31 00:01	20° $\Upsilon$ 31'56	0°28'33	opposition	14809 Oct 11 13:02	4° $\mathcal{B}$ 40'26	0°27'33

min. Earth dist.	14809 Oct 12 00:46	4°8'39"38	29.33823 AU	conjunction	14816 Apr 28 00:39	18°8'47"11	0°21'21
direct	14809 Dec 30 12:17	3°8'16"05		minimum elong	14816 Apr 28 00:39	18°8'47"11	0°20'39
evening set	14810 Mar 30 07:53	5°8'10"25		morning rise	14816 May 13 20:17	19°8'22"06	
				retrograde	14816 Aug 09 10:43	21°8'14"38	
conjunction	14810 Apr 15 07:05	5°8'45"33	0°25'33	opposition	14816 Oct 26 13:11	19°8'52"20	0°22'18
minimum elong	14810 Apr 15 07:05	5°8'45"33	0°25'02	min. Earth dist.	14816 Oct 27 01:37	19°8'51"29	29.35746 AU
max. Earth dist.	14810 Apr 14 18:16	5°8'44"23	31.33868 AU	direct	14817 Jan 14 19:21	18°8'28"09	
morning rise	14810 May 01 04:31	6°8'20"34		evening set	14817 Apr 14 14:03	20°8'22"41	
retrograde	14810 Jul 27 19:54	8°8'13"06					
opposition	14810 Oct 13 23:05	6°8'50"33	0°26'55	conjunction	14817 Apr 30 11:28	20°8'57"44	0°20'32
min. Earth dist.	14810 Oct 14 09:54	6°8'49"48	29.33954 AU	minimum elong	14817 Apr 30 11:28	20°8'57"44	0°19'49
direct	14811 Jan 01 22:47	5°8'26"11		max. Earth dist.	14817 Apr 29 21:15	20°8'56"26	31.35784 AU
evening set	14811 Apr 01 19:06	7°8'20"32		morning rise	14817 May 16 07:02	21°8'32"39	
				retrograde	14817 Aug 11 21:11	23°8'25"10	
conjunction	14811 Apr 17 18:07	7°8'55"39	0°24'56	opposition	14817 Oct 28 23:42	22°8'02"54	0°21'25
minimum elong	14811 Apr 17 18:08	7°8'55"39	0°24'24	min. Earth dist.	14817 Oct 29 12:01	22°8'02"03	29.35811 AU
max. Earth dist.	14811 Apr 17 05:45	7°8'54"31	31.34034 AU	direct	14818 Jan 17 05:57	20°8'38"42	
morning rise	14811 May 03 15:11	8°8'30"38		evening set	14818 Apr 17 01:13	22°8'33"14	
retrograde	14811 Jul 30 05:32	10°8'23"10					
opposition	14811 Oct 16 09:28	9°8'00"38	0°26'14	conjunction	14818 May 02 22:31	23°8'08"17	0°19'41
min. Earth dist.	14811 Oct 16 21:10	8°8'59"49	29.34178 AU	minimum elong	14818 May 02 22:31	23°8'08"17	0°18'56
direct	14812 Jan 04 09:44	7°8'36"16		max. Earth dist.	14818 May 02 08:50	23°8'07"02	31.35767 AU
evening set	14812 Apr 03 06:08	9°8'30"38		morning rise	14818 May 18 17:37	23°8'43"11	
				retrograde	14818 Aug 14 06:03	25°8'35"42	
conjunction	14812 Apr 19 04:54	10°8'05"45	0°24'17	opposition	14818 Oct 31 10:19	24°8'13"25	0°20'30
minimum elong	14812 Apr 19 04:54	10°8'05"45	0°23'43	min. Earth dist.	14818 Oct 31 23:51	24°8'12"29	29.35723 AU
max. Earth dist.	14812 Apr 18 16:30	10°8'04"36	31.34318 AU	direct	14819 Jan 19 16:31	22°8'49"13	
morning rise	14812 May 05 01:44	10°8'40"43		evening set	14819 Apr 19 12:25	24°8'43"45	
retrograde	14812 Jul 31 16:40	12°8'33"14					
opposition	14812 Oct 17 19:41	11°8'10"44	0°25'31	conjunction	14819 May 05 09:20	25°8'18"46	0°18'49
min. Earth dist.	14812 Oct 18 06:23	11°8'10"00	29.34497 AU	minimum elong	14819 May 05 09:20	25°8'18"46	0°18'03
direct	14813 Jan 05 21:32	9°8'46"25		max. Earth dist.	14819 May 04 18:35	25°8'17"25	31.35622 AU
evening set	14813 Apr 05 17:19	11°8'40"49		morning rise	14819 May 21 04:18	25°8'53"39	
				retrograde	14819 Aug 16 16:07	27°8'46"09	
conjunction	14813 Apr 21 15:48	12°8'15"55	0°23'36	opposition	14819 Nov 02 20:53	26°8'23"51	0°19'33
minimum elong	14813 Apr 21 15:48	12°8'15"55	0°23'00	min. Earth dist.	14819 Nov 03 09:41	26°8'22"58	29.35513 AU
max. Earth dist.	14813 Apr 21 03:07	12°8'14"45	31.34672 AU	direct	14820 Jan 22 03:39	24°8'59"37	
morning rise	14813 May 07 12:24	12°8'50"53		evening set	14820 Apr 20 23:17	26°8'54"08	
retrograde	14813 Aug 03 03:15	14°8'43"25					
opposition	14813 Oct 20 05:54	13°8'20"58	0°24'46	conjunction	14820 May 06 20:00	27°8'29"09	0°17'55
min. Earth dist.	14813 Oct 20 17:35	13°8'20"10	29.34880 AU	minimum elong	14820 May 06 20:01	27°8'29"09	0°17'08
direct	14814 Jan 08 07:16	11°8'56"41		max. Earth dist.	14820 May 06 05:24	27°8'27"48	31.35352 AU
evening set	14814 Apr 08 04:28	13°8'51"08		morning rise	14820 May 22 14:39	28°8'04"00	
				retrograde	14820 Aug 18 01:04	29°8'56"29	
conjunction	14814 Apr 24 02:49	14°8'26"14	0°22'53	opposition	14820 Nov 04 07:37	28°8'34"09	0°18'35
minimum elong	14814 Apr 24 02:49	14°8'26"14	0°22'15	min. Earth dist.	14820 Nov 04 21:37	28°8'33"12	29.35203 AU
max. Earth dist.	14814 Apr 23 14:38	14°8'25"06	31.35060 AU	direct	14821 Jan 23 14:15	27°8'09"53	
morning rise	14814 May 09 23:05	15°8'01"10		evening set	14821 Apr 23 10:14	29°8'04"23	
	14814 May 09 10:07	15°8'					
retrograde	14814 Aug 05 14:27	16°8'53"42		conjunction	14821 May 09 06:42	29°8'39"23	0°17'00
opposition	14814 Oct 22 16:14	15°8'31"19	0°23'59	minimum elong	14821 May 09 06:42	29°8'39"23	0°16'12
min. Earth dist.	14814 Oct 23 03:40	15°8'30"32	29.35245 AU	max. Earth dist.	14821 May 08 15:58	29°8'38"01	31.35016 AU
	14814 Nov 11 02:27	15°8'			14821 May 18 13:19	0°8'	
direct	14815 Jan 10 20:30	14°8'07"05		morning rise	14821 May 25 01:07	0°8'14"13	
	14815 Mar 10 07:26	15°8'		retrograde	14821 Aug 20 11:20	2°8'06"40	
evening set	14815 Apr 10 15:43	16°8'01"35		opposition	14821 Nov 06 18:01	0°8'44"19	0°17'35
				min. Earth dist.	14821 Nov 07 07:15	0°8'43"24	29.34839 AU
conjunction	14815 Apr 26 13:37	16°8'36"39	0°22'08		14821 Dec 05 01:20	30°8'	
minimum elong	14815 Apr 26 13:37	16°8'36"39	0°21'28	direct	14822 Jan 26 01:54	29°8'20"00	
max. Earth dist.	14815 Apr 26 00:14	16°8'35"26	31.35397 AU		14822 Mar 17 13:31	0°8'	
morning rise	14815 May 12 09:42	17°8'11"35		evening set	14822 Apr 25 21:11	1°8'14"29	
retrograde	14815 Aug 08 02:13	19°8'04"08					
opposition	14815 Oct 25 02:41	17°8'41"47	0°23'10	conjunction	14822 May 11 17:18	1°8'49"28	0°16'04
min. Earth dist.	14815 Oct 25 14:32	17°8'40"59	29.35554 AU	minimum elong	14822 May 11 17:19	1°8'49"28	0°15'13
direct	14816 Jan 13 07:23	16°8'17"35		behind sun begin	14822 May 11 15:14	1°8'49"17	
evening set	14816 Apr 12 02:50	18°8'12"07		behind sun end	14822 May 11 19:23	1°8'49"39	
max. Earth dist.	14816 Apr 27 11:56	18°8'46"00	31.35651 AU	max. Earth dist.	14822 May 11 02:14	1°8'48"04	31.34647 AU

morning rise	14822 May 27 11:29	2°II24'18		conjunction	14828 May 24 08:10	14°II50'36	0°09'58
retrograde	14822 Aug 22 21:47	4°II16'44		minimum elong	14828 May 24 08:10	14°II50'36	0°09'01
opposition	14822 Nov 09 04:46	2°II54'21	0°16'34	behind sun begin	14828 May 24 02:38	14°II50'06	
min. Earth dist.	14822 Nov 09 18:39	2°II53'23	29.34494 AU	behind sun end	14828 May 24 13:42	14°II51'05	
direct	14823 Jan 28 12:13	1°II30'00		max. Earth dist.	14828 May 23 18:03	14°II49'18	31.33561 AU
evening set	14823 Apr 28 07:51	3°II24'29		morning rise	14828 Jun 09 00:48	15°II25'23	
				retrograde	14828 Sep 04 12:14	17°II18'05	
conjunction	14823 May 14 03:48	3°II59'27	0°15'06	opposition	14828 Nov 21 21:45	15°II55'52	0°09'58
minimum elong	14823 May 14 03:48	3°II59'27	0°14'14	min. Earth dist.	14828 Nov 22 10:14	15°II55'00	29.33441 AU
behind sun begin	14823 May 14 00:43	3°II59'10		direct	14829 Feb 10 08:05	14°II31'43	
behind sun end	14823 May 14 06:52	3°II59'43		evening set	14829 May 11 00:33	16°II26'25	
max. Earth dist.	14823 May 13 13:45	3°II58'09	31.34327 AU				
morning rise	14823 May 29 21:35	4°II34'15		conjunction	14829 May 26 18:49	17°II01'21	0°08'54
retrograde	14823 Aug 25 08:18	6°II26'42		minimum elong	14829 May 26 18:49	17°II01'21	0°07'57
opposition	14823 Nov 11 15:28	5°II04'18	0°15'31	behind sun begin	14829 May 26 13:01	17°II00'50	
min. Earth dist.	14823 Nov 12 04:38	5°II03'24	29.34207 AU	behind sun end	14829 May 27 00:37	17°II01'52	
direct	14824 Jan 31 01:29	3°II39'57		max. Earth dist.	14829 May 26 04:44	17°II00'03	31.33267 AU
evening set	14824 Apr 29 18:42	5°II34'27		morning rise	14829 Jun 11 11:06	17°II36'09	
				retrograde	14829 Sep 06 21:47	19°II28'55	
conjunction	14824 May 15 14:13	6°II09'24	0°14'07	opposition	14829 Nov 24 08:51	18°II06'42	0°08'48
minimum elong	14824 May 15 14:13	6°II09'24	0°13'14	min. Earth dist.	14829 Nov 24 22:32	18°II05'46	29.33087 AU
behind sun begin	14824 May 15 10:26	6°II09'04		direct	14830 Feb 12 18:02	16°II42'35	
behind sun end	14824 May 15 18:00	6°II09'44		evening set	14830 May 13 11:28	18°II37'19	
max. Earth dist.	14824 May 14 23:26	6°II08'02	31.34090 AU				
morning rise	14824 May 31 07:53	6°II44'12		conjunction	14830 May 29 05:28	19°II12'14	0°07'49
retrograde	14824 Aug 26 19:58	8°II36'41		minimum elong	14830 May 29 05:27	19°II12'14	0°06'51
opposition	14824 Nov 13 02:08	7°II14'17	0°14'27	behind sun begin	14830 May 28 23:26	19°II11'42	
min. Earth dist.	14824 Nov 13 15:04	7°II13'24	29.34027 AU	behind sun end	14830 May 29 11:29	19°II12'47	
direct	14825 Feb 01 12:11	5°II49'57		max. Earth dist.	14830 May 28 15:16	19°II10'56	31.32844 AU
evening set	14825 May 02 05:20	7°II44'29		morning rise	14830 Jun 13 21:30	19°II47'01	
max. Earth dist.	14825 May 17 11:15	8°II18'11	31.33947 AU	retrograde	14830 Sep 09 08:33	21°II39'51	
				opposition	14830 Nov 26 20:01	20°II17'38	0°07'38
conjunction	14825 May 18 00:47	8°II19'26	0°13'06	min. Earth dist.	14830 Nov 27 08:59	20°II16'45	29.32580 AU
minimum elong	14825 May 18 00:47	8°II19'26	0°12'12	direct	14831 Feb 15 05:05	18°II53'31	
behind sun begin	14825 May 17 20:26	8°II19'03		evening set	14831 May 15 22:16	20°II48'17	
behind sun end	14825 May 18 05:08	8°II19'49					
morning rise	14825 Jun 02 18:03	8°II54'14		conjunction	14831 May 31 15:54	21°II23'12	0°06'43
retrograde	14825 Aug 29 05:00	10°II46'45		minimum elong	14831 May 31 15:55	21°II23'12	0°05'45
opposition	14825 Nov 15 12:57	9°II24'23	0°13'21	behind sun begin	14831 May 31 09:42	21°II22'39	
min. Earth dist.	14825 Nov 16 02:02	9°II23'30	29.33902 AU	behind sun end	14831 May 31 22:07	21°II23'45	
direct	14826 Feb 04 00:07	8°II00'07		max. Earth dist.	14831 May 31 01:06	21°II21'50	31.32258 AU
evening set	14826 May 04 16:12	9°II54'41		morning rise	14831 Jun 16 07:45	21°II57'59	
				retrograde	14831 Sep 11 19:40	23°II50'51	
conjunction	14826 May 20 11:12	10°II29'38	0°12'05	opposition	14831 Nov 29 07:21	22°II28'37	0°06'27
minimum elong	14826 May 20 11:12	10°II29'38	0°11'09	min. Earth dist.	14831 Nov 29 21:09	22°II27'41	29.31929 AU
behind sun begin	14826 May 20 06:23	10°II29'12		direct	14832 Feb 17 15:26	21°II04'30	
behind sun end	14826 May 20 16:01	10°II30'03		evening set	14832 May 17 09:00	22°II59'16	
max. Earth dist.	14826 May 19 20:44	10°II28'18	31.33847 AU				
morning rise	14826 Jun 05 04:21	11°II04'25		conjunction	14832 Jun 02 02:32	23°II34'10	0°05'37
retrograde	14826 Aug 31 16:03	12°II56'59		minimum elong	14832 Jun 02 02:31	23°II34'10	0°04'38
opposition	14826 Nov 17 23:42	11°II34'41	0°12'15	behind sun begin	14832 Jun 01 20:11	23°II33'36	
min. Earth dist.	14826 Nov 18 12:10	11°II33'49	29.33805 AU	behind sun end	14832 Jun 02 08:51	23°II34'44	
direct	14827 Feb 06 10:45	10°II10'27		max. Earth dist.	14832 Jun 01 12:26	23°II32'52	31.31537 AU
evening set	14827 May 07 02:57	12°II05'04		morning rise	14832 Jun 17 18:02	24°II08'56	
				retrograde	14832 Sep 13 06:48	26°II01'51	
conjunction	14827 May 22 21:48	12°II40'01	0°11'02	opposition	14832 Nov 30 18:29	24°II39'34	0°05'16
minimum elong	14827 May 22 21:48	12°II40'01	0°10'06	min. Earth dist.	14832 Dec 01 08:02	24°II38'39	29.31134 AU
behind sun begin	14827 May 22 16:36	12°II39'33		direct	14833 Feb 19 05:00	23°II15'25	
behind sun end	14827 May 23 03:00	12°II40'29		evening set	14833 May 19 19:50	25°II10'11	
max. Earth dist.	14827 May 22 08:20	12°II38'47	31.33732 AU				
morning rise	14827 Jun 07 14:32	13°II14'48		conjunction	14833 Jun 04 12:58	25°II45'05	0°04'30
retrograde	14827 Sep 03 01:42	15°II07'27		minimum elong	14833 Jun 04 12:58	25°II45'05	0°03'30
opposition	14827 Nov 20 10:47	13°II45'11	0°11'07	behind sun begin	14833 Jun 04 06:32	25°II44'31	
min. Earth dist.	14827 Nov 21 00:10	13°II44'16	29.33666 AU	behind sun end	14833 Jun 04 19:23	25°II45'39	
direct	14828 Feb 08 21:07	12°II21'00		max. Earth dist.	14833 Jun 03 21:48	25°II43'41	31.30693 AU
evening set	14828 May 08 13:41	14°II15'40		morning rise	14833 Jun 20 04:25	26°II19'50	
				retrograde	14833 Sep 15 18:45	28°II12'47	

opposition	14833 Dec 03 05:44	26° $\Pi$ 50'27	0°04'04	min. Earth dist.	14838 Dec 15 02:43	7° $\mathfrak{C}$ 43'09	29.26341 AU
min. Earth dist.	14833 Dec 03 19:14	26° $\Pi$ 49'32	29.30254 AU	direct	14839 Mar 05 01:57	6° $\mathfrak{C}$ 19'45	
direct	14834 Feb 21 16:19	25° $\Pi$ 26'15		evening set	14839 Jun 02 10:48	8° $\mathfrak{C}$ 14'31	
evening set	14834 May 22 06:22	27° $\Pi$ 21'00					
				conjunction	14839 Jun 18 02:33	8° $\mathfrak{C}$ 49'23	-0°02'24
conjunction	14834 Jun 06 23:23	27° $\Pi$ 55'54	0°03'22	minimum elong	14839 Jun 18 02:31	8° $\mathfrak{C}$ 49'23	0°03'24
minimum elong	14834 Jun 06 23:24	27° $\Pi$ 55'54	0°02'22	behind sun begin	14839 Jun 17 20:07	8° $\mathfrak{C}$ 48'48	
behind sun begin	14834 Jun 06 16:56	27° $\Pi$ 55'19		behind sun end	14839 Jun 18 08:56	8° $\mathfrak{C}$ 49'57	
behind sun end	14834 Jun 07 05:51	27° $\Pi$ 56'28		max. Earth dist.	14839 Jun 17 14:29	8° $\mathfrak{C}$ 48'16	31.26028 AU
max. Earth dist.	14834 Jun 06 09:28	27° $\Pi$ 54'36	31.29781 AU	morning rise	14839 Jul 03 16:38	9° $\mathfrak{C}$ 24'07	
morning rise	14834 Jun 22 14:27	28° $\Pi$ 30'39		retrograde	14839 Sep 29 07:21	11° $\mathfrak{C}$ 17'24	
	14834 Aug 11 11:06	0° $\mathfrak{C}$		opposition	14839 Dec 17 02:11	9° $\mathfrak{C}$ 54'54	-0°03'09
retrograde	14834 Sep 18 03:50	0° $\mathfrak{C}$ 23'36		min. Earth dist.	14839 Dec 17 13:05	9° $\mathfrak{C}$ 54'09	29.25718 AU
	14834 Oct 26 20:00	30° $\mathfrak{R}$ $\Pi$		direct	14840 Mar 06 12:54	8° $\mathfrak{C}$ 30'42	
opposition	14834 Dec 05 17:04	29° $\Pi$ 01'13	0°02'52	evening set	14840 Jun 03 21:24	10° $\mathfrak{C}$ 25'30	
min. Earth dist.	14834 Dec 06 06:41	29° $\Pi$ 00'17	29.29330 AU				
direct	14835 Feb 24 04:52	27° $\Pi$ 36'59		conjunction	14840 Jun 19 12:49	11° $\mathfrak{C}$ 00'21	-0°03'32
evening set	14835 May 24 17:02	29° $\Pi$ 31'43		minimum elong	14840 Jun 19 12:49	11° $\mathfrak{C}$ 00'21	0°04'32
	14835 Jun 06 11:03	0° $\mathfrak{C}$		behind sun begin	14840 Jun 19 06:29	10° $\mathfrak{C}$ 59'47	
				behind sun end	14840 Jun 19 19:09	11° $\mathfrak{C}$ 00'55	
conjunction	14835 Jun 09 09:37	0° $\mathfrak{C}$ 06'36	0°02'14	max. Earth dist.	14840 Jun 19 00:29	10° $\mathfrak{C}$ 59'13	31.25393 AU
minimum elong	14835 Jun 09 09:37	0° $\mathfrak{C}$ 06'36	0°01'13	morning rise	14840 Jul 05 02:49	11° $\mathfrak{C}$ 35'07	
behind sun begin	14835 Jun 09 03:10	0° $\mathfrak{C}$ 06'01		retrograde	14840 Sep 30 18:46	13° $\mathfrak{C}$ 28'29	
behind sun end	14835 Jun 09 16:05	0° $\mathfrak{C}$ 07'10		opposition	14840 Dec 18 13:46	12° $\mathfrak{C}$ 05'59	-0°04'21
max. Earth dist.	14835 Jun 08 19:05	0° $\mathfrak{C}$ 05'15	31.28879 AU	min. Earth dist.	14840 Dec 19 01:13	12° $\mathfrak{C}$ 05'12	29.25070 AU
morning rise	14835 Jun 25 00:38	0° $\mathfrak{C}$ 41'20		direct	14841 Mar 08 22:51	10° $\mathfrak{C}$ 41'49	
retrograde	14835 Sep 20 15:25	2° $\mathfrak{C}$ 34'20		evening set	14841 Jun 06 07:59	12° $\mathfrak{C}$ 36'38	
opposition	14835 Dec 08 04:22	1° $\mathfrak{C}$ 11'53	0°01'40				
min. Earth dist.	14835 Dec 08 16:54	1° $\mathfrak{C}$ 11'02	29.28464 AU	conjunction	14841 Jun 21 23:18	13° $\mathfrak{C}$ 11'30	-0°04'39
	14836 Jan 29 14:59	30° $\mathfrak{R}$ $\Pi$		minimum elong	14841 Jun 21 23:18	13° $\mathfrak{C}$ 11'30	0°05'39
direct	14836 Feb 26 17:03	29° $\Pi$ 47'38		behind sun begin	14841 Jun 21 17:06	13° $\mathfrak{C}$ 10'56	
	14836 Mar 25 06:05	0° $\mathfrak{C}$		behind sun end	14841 Jun 22 05:30	13° $\mathfrak{C}$ 12'03	
evening set	14836 May 26 03:21	1° $\mathfrak{C}$ 42'21		max. Earth dist.	14841 Jun 21 12:00	13° $\mathfrak{C}$ 10'27	31.24709 AU
				morning rise	14841 Jul 07 13:00	13° $\mathfrak{C}$ 46'15	
conjunction	14836 Jun 10 19:50	2° $\mathfrak{C}$ 17'14	0°01'04	retrograde	14841 Oct 03 05:54	15° $\mathfrak{C}$ 39'43	
minimum elong	14836 Jun 10 19:51	2° $\mathfrak{C}$ 17'13	0°00'03	opposition	14841 Dec 21 01:31	14° $\mathfrak{C}$ 17'13	-0°05'33
behind sun begin	14836 Jun 10 14:14	2° $\mathfrak{C}$ 16'44		min. Earth dist.	14841 Dec 21 12:33	14° $\mathfrak{C}$ 16'27	29.24334 AU
behind sun end	14836 Jun 11 01:29	2° $\mathfrak{C}$ 17'43		direct	14842 Mar 11 11:24	12° $\mathfrak{C}$ 53'04	
max. Earth dist.	14836 Jun 10 06:40	2° $\mathfrak{C}$ 16'00	31.28043 AU	evening set	14842 Jun 08 18:42	14° $\mathfrak{C}$ 47'55	
morning rise	14836 Jun 26 10:31	2° $\mathfrak{C}$ 51'58					
retrograde	14836 Sep 22 01:10	4° $\mathfrak{C}$ 45'00		conjunction	14842 Jun 24 09:36	15° $\mathfrak{C}$ 22'47	-0°05'45
opposition	14836 Dec 09 15:48	3° $\mathfrak{C}$ 22'31	0°00'28	minimum elong	14842 Jun 24 09:36	15° $\mathfrak{C}$ 22'47	0°06'46
min. Earth dist.	14836 Dec 10 04:46	3° $\mathfrak{C}$ 21'38	29.27673 AU	behind sun begin	14842 Jun 24 03:34	15° $\mathfrak{C}$ 22'14	
direct	14837 Feb 28 04:40	1° $\mathfrak{C}$ 58'16		behind sun end	14842 Jun 24 15:37	15° $\mathfrak{C}$ 23'19	
desc. node	14837 May 19 23:47	3° $\mathfrak{C}$ 34'35		max. Earth dist.	14842 Jun 23 21:22	15° $\mathfrak{C}$ 21'39	31.23922 AU
evening set	14837 May 28 13:55	3° $\mathfrak{C}$ 52'59		morning rise	14842 Jul 09 23:15	15° $\mathfrak{C}$ 57'32	
				retrograde	14842 Oct 05 18:30	17° $\mathfrak{C}$ 51'06	
conjunction	14837 Jun 13 06:05	4° $\mathfrak{C}$ 27'51	-0°00'07	opposition	14842 Dec 23 13:23	16° $\mathfrak{C}$ 28'34	-0°06'45
minimum elong	14837 Jun 13 06:04	4° $\mathfrak{C}$ 27'51	0°01'07	min. Earth dist.	14842 Dec 24 00:13	16° $\mathfrak{C}$ 27'50	29.23499 AU
behind sun begin	14837 Jun 12 23:37	4° $\mathfrak{C}$ 27'16		direct	14843 Mar 13 22:02	15° $\mathfrak{C}$ 04'26	
behind sun end	14837 Jun 13 12:32	4° $\mathfrak{C}$ 28'25		evening set	14843 Jun 11 05:18	16° $\mathfrak{C}$ 59'19	
max. Earth dist.	14837 Jun 12 16:49	4° $\mathfrak{C}$ 26'37	31.27308 AU				
morning rise	14837 Jun 28 20:38	5° $\mathfrak{C}$ 02'35		conjunction	14843 Jun 26 20:09	17° $\mathfrak{C}$ 34'11	-0°06'51
retrograde	14837 Sep 24 11:10	6° $\mathfrak{C}$ 55'41		minimum elong	14843 Jun 26 20:09	17° $\mathfrak{C}$ 34'11	0°07'51
opposition	14837 Dec 12 03:02	5° $\mathfrak{C}$ 33'12	-0°00'45	behind sun begin	14843 Jun 26 14:21	17° $\mathfrak{C}$ 33'39	
min. Earth dist.	14837 Dec 12 14:31	5° $\mathfrak{C}$ 32'25	29.26976 AU	behind sun end	14843 Jun 27 01:58	17° $\mathfrak{C}$ 34'42	
direct	14838 Mar 02 16:06	4° $\mathfrak{C}$ 08'56		max. Earth dist.	14843 Jun 26 09:02	17° $\mathfrak{C}$ 33'09	31.23020 AU
evening set	14838 May 31 00:26	6° $\mathfrak{C}$ 03'41		morning rise	14843 Jul 12 09:28	18° $\mathfrak{C}$ 08'56	
				retrograde	14843 Oct 08 04:55	20° $\mathfrak{C}$ 02'35	
conjunction	14838 Jun 15 16:22	6° $\mathfrak{C}$ 38'33	-0°01'16	opposition	14843 Dec 26 01:20	18° $\mathfrak{C}$ 40'02	-0°07'55
minimum elong	14838 Jun 15 16:22	6° $\mathfrak{C}$ 38'33	0°02'17	min. Earth dist.	14843 Dec 26 12:27	18° $\mathfrak{C}$ 39'17	29.22530 AU
behind sun begin	14838 Jun 15 09:55	6° $\mathfrak{C}$ 37'58		direct	14844 Mar 15 10:32	17° $\mathfrak{C}$ 15'55	
behind sun end	14838 Jun 15 22:50	6° $\mathfrak{C}$ 39'08		evening set	14844 Jun 12 15:59	19° $\mathfrak{C}$ 10'48	
max. Earth dist.	14838 Jun 15 03:41	6° $\mathfrak{C}$ 37'23	31.26643 AU				
morning rise	14838 Jul 01 06:41	7° $\mathfrak{C}$ 13'18		conjunction	14844 Jun 28 06:30	19° $\mathfrak{C}$ 45'39	-0°07'57
retrograde	14838 Sep 26 20:42	9° $\mathfrak{C}$ 06'28		minimum elong	14844 Jun 28 06:29	19° $\mathfrak{C}$ 45'39	0°08'56
opposition	14838 Dec 14 14:39	7° $\mathfrak{C}$ 43'59	-0°01'57	behind sun begin	14844 Jun 28 00:57	19° $\mathfrak{C}$ 45'10	

behind sun end	14844 Jun 28 12:02	19°☾46'09		opposition	14850 Jan 08 01:13	1°♈49'07	-0°14'41
max. Earth dist.	14844 Jun 27 18:28	19°☾44'33	31.21994 AU	min. Earth dist.	14850 Jan 08 09:46	1°♈48'32	29.15649 AU
morning rise	14844 Jul 13 19:50	20°☾20'25		direct	14850 Mar 29 07:26	0°♈24'55	
retrograde	14844 Oct 09 17:36	22°☾14'09		evening set	14850 Jun 26 06:53	2°♈19'48	
opposition	14844 Dec 27 13:13	20°☾51'33	-0°09'05				
min. Earth dist.	14844 Dec 27 23:34	20°☾50'51	29.21439 AU	conjunction	14850 Jul 11 20:25	2°♈54'39	-0°14'13
direct	14845 Mar 17 23:02	19°☾27'25		minimum elong	14850 Jul 11 20:25	2°♈54'39	0°15'07
evening set	14845 Jun 15 02:36	21°☾22'18		behind sun begin	14850 Jul 11 18:06	2°♈54'27	
				behind sun end	14850 Jul 11 22:45	2°♈54'52	
conjunction	14845 Jun 30 17:01	21°☾57'10	-0°09'02	max. Earth dist.	14850 Jul 11 12:27	2°♈53'55	31.15177 AU
minimum elong	14845 Jun 30 17:02	21°☾57'10	0°10'00	morning rise	14850 Jul 27 08:52	3°♈29'27	
behind sun begin	14845 Jun 30 11:48	21°☾56'42		retrograde	14850 Oct 23 09:09	5°♈23'44	
behind sun end	14845 Jun 30 22:15	21°☾57'38		opposition	14851 Jan 10 13:21	4°♈00'50	-0°15'45
max. Earth dist.	14845 Jun 30 05:55	21°☾56'08	31.20837 AU	min. Earth dist.	14851 Jan 10 20:55	4°♈00'19	29.14739 AU
morning rise	14845 Jul 16 06:05	22°☾31'56		direct	14851 Mar 31 19:13	2°♈36'40	
retrograde	14845 Oct 12 04:02	24°☾25'44		evening set	14851 Jun 28 17:26	4°♈31'35	
opposition	14845 Dec 30 01:11	23°☾03'05	-0°10'14				
min. Earth dist.	14845 Dec 30 12:19	23°☾02'20	29.20235 AU	conjunction	14851 Jul 14 06:39	5°♈06'27	-0°15'12
direct	14846 Mar 20 11:17	21°☾38'56		minimum elong	14851 Jul 14 06:39	5°♈06'27	0°16'05
evening set	14846 Jun 17 13:13	23°☾33'48		behind sun begin	14851 Jul 14 06:05	5°♈06'24	
				behind sun end	14851 Jul 14 07:12	5°♈06'30	
conjunction	14846 Jul 03 03:23	24°☾08'40	-0°10'06	max. Earth dist.	14851 Jul 13 22:15	5°♈05'40	31.14315 AU
minimum elong	14846 Jul 03 03:22	24°☾08'40	0°11'04	morning rise	14851 Jul 29 19:10	5°♈41'16	
behind sun begin	14846 Jul 02 22:31	24°☾08'14		retrograde	14851 Oct 25 22:01	7°♈35'40	
behind sun end	14846 Jul 03 08:13	24°☾09'06		opposition	14852 Jan 13 01:29	6°♈12'45	-0°16'47
max. Earth dist.	14846 Jul 02 16:10	24°☾07'37	31.19614 AU	min. Earth dist.	14852 Jan 13 08:24	6°♈12'17	29.13916 AU
morning rise	14846 Jul 18 16:24	24°☾43'26		direct	14852 Apr 02 04:43	4°♈48'38	
retrograde	14846 Oct 14 14:33	26°☾37'18		evening set	14852 Jun 30 03:49	6°♈43'34	
opposition	14847 Jan 01 13:08	25°☾14'35	-0°11'22				
min. Earth dist.	14847 Jan 01 22:49	25°☾13'55	29.18992 AU	conjunction	14852 Jul 15 17:05	7°♈18'27	-0°16'10
direct	14847 Mar 22 23:32	23°☾50'24		minimum elong	14852 Jul 15 17:05	7°♈18'27	0°17'02
evening set	14847 Jun 19 23:34	25°☾45'15		max. Earth dist.	14852 Jul 15 10:14	7°♈17'49	31.13504 AU
				morning rise	14852 Jul 31 05:23	7°♈53'16	
conjunction	14847 Jul 05 13:33	26°☾20'07	-0°11'09	retrograde	14852 Oct 27 09:18	9°♈47'48	
minimum elong	14847 Jul 05 13:33	26°☾20'07	0°12'05	opposition	14853 Jan 14 13:49	8°♈24'53	-0°17'49
behind sun begin	14847 Jul 05 09:08	26°☾19'43		min. Earth dist.	14853 Jan 14 20:42	8°♈24'25	29.13103 AU
behind sun end	14847 Jul 05 17:58	26°☾20'31		direct	14853 Apr 04 17:03	7°♈00'48	
max. Earth dist.	14847 Jul 05 02:57	26°☾19'08	31.18369 AU	evening set	14853 Jul 02 14:30	8°♈55'46	
morning rise	14847 Jul 21 02:26	26°☾54'53					
retrograde	14847 Oct 17 00:14	28°☾48'51		conjunction	14853 Jul 18 03:27	9°♈30'39	-0°17'07
opposition	14848 Jan 04 01:15	27°☾26'03	-0°12'29	minimum elong	14853 Jul 18 03:26	9°♈30'39	0°17'57
min. Earth dist.	14848 Jan 04 11:21	27°☾25'22	29.17781 AU	max. Earth dist.	14853 Jul 17 20:06	9°♈29'58	31.12693 AU
direct	14848 Mar 24 10:06	26°☾01'51		morning rise	14853 Aug 02 15:48	10°♈05'29	
evening set	14848 Jun 21 10:01	27°☾56'41		retrograde	14853 Oct 29 23:18	12°♈00'08	
				opposition	14854 Jan 17 02:06	10°♈37'13	-0°18'48
conjunction	14848 Jul 06 23:52	28°☾31'33	-0°12'11	min. Earth dist.	14854 Jan 17 07:56	10°♈36'49	29.12277 AU
minimum elong	14848 Jul 06 23:52	28°☾31'33	0°13'07	direct	14854 Apr 07 05:33	9°♈13'10	
behind sun begin	14848 Jul 06 19:59	28°☾31'12		evening set	14854 Jul 05 01:08	11°♈08'10	
behind sun end	14848 Jul 07 03:44	28°☾31'54					
max. Earth dist.	14848 Jul 06 14:12	28°☾30'40	31.17199 AU	conjunction	14854 Jul 20 14:02	11°♈43'03	-0°18'02
morning rise	14848 Jul 22 12:35	29°☾06'20		minimum elong	14854 Jul 20 14:02	11°♈43'03	0°18'51
	14848 Aug 17 20:47	0°♈		max. Earth dist.	14854 Jul 20 07:47	11°♈42'28	31.11833 AU
retrograde	14848 Oct 18 10:45	1°♈00'23		morning rise	14854 Aug 05 02:12	12°♈17'54	
	14848 Dec 22 16:18	30°♈		retrograde	14854 Nov 01 10:47	14°♈12'40	
opposition	14849 Jan 05 13:04	29°☾37'32	-0°13'36	opposition	14855 Jan 19 14:45	12°♈49'43	-0°19'47
min. Earth dist.	14849 Jan 05 21:40	29°☾36'57	29.16654 AU	min. Earth dist.	14855 Jan 19 21:13	12°♈49'17	29.11386 AU
direct	14849 Mar 26 21:16	28°☾13'19		direct	14855 Apr 09 17:33	11°♈25'42	
	14849 Jun 20 02:28	0°♈		evening set	14855 Jul 07 11:47	13°♈20'43	
evening set	14849 Jun 23 20:34	0°♈08'11					
				conjunction	14855 Jul 23 00:31	13°♈55'36	-0°18'55
conjunction	14849 Jul 09 10:08	0°♈43'03	-0°13'13	minimum elong	14855 Jul 23 00:31	13°♈55'36	0°19'43
minimum elong	14849 Jul 09 10:08	0°♈43'03	0°14'07	max. Earth dist.	14855 Jul 22 18:13	13°♈55'01	31.10904 AU
behind sun begin	14849 Jul 09 06:54	0°♈42'45		morning rise	14855 Aug 07 12:43	14°♈30'27	
behind sun end	14849 Jul 09 13:22	0°♈43'20			14855 Aug 21 08:35	15°♈	
max. Earth dist.	14849 Jul 09 00:29	0°♈42'09	31.16127 AU	retrograde	14855 Nov 03 22:43	16°♈25'21	
morning rise	14849 Jul 24 22:49	1°♈17'50		opposition	14856 Jan 22 03:15	15°♈02'22	-0°20'43
retrograde	14849 Oct 20 22:06	3°♈11'59		min. Earth dist.	14856 Jan 22 08:26	15°♈02'00	29.10400 AU

	14856 Jan 23 13:50	15° $\mathring{R}\delta\Omega$		max. Earth dist.	14862 Aug 06 23:54	29° $\Omega$ 23'43	31.02555 AU
direct	14856 Apr 11 06:17	13° $\Omega$ 38'21		morning rise	14862 Aug 22 15:15	29° $\Omega$ 58'57	
	14856 Jun 23 05:13	15° $\Omega$			14862 Aug 23 02:42	0° $\mathring{N}\mu$	
evening set	14856 Jul 08 22:37	15° $\Omega$ 33'22		retrograde	14862 Nov 19 09:00	1° $\mathring{N}\mu$ 54'31	
				opposition	14863 Feb 06 20:03	0° $\mathring{N}\mu$ 31'02	-0°26'22
conjunction	14856 Jul 24 11:14	16° $\Omega$ 08'16	-0°19'47	min. Earth dist.	14863 Feb 06 21:36	0° $\mathring{N}\mu$ 30'56	29.02070 AU
minimum elong	14856 Jul 24 11:14	16° $\Omega$ 08'16	0°20'34		14863 Feb 26 03:40	30° $\mathring{R}\delta\Omega$	
max. Earth dist.	14856 Jul 24 05:03	16° $\Omega$ 07'41	31.09851 AU	direct	14863 Apr 27 16:16	29° $\Omega$ 06'57	
morning rise	14856 Aug 08 23:22	16° $\Omega$ 43'08			14863 Jun 24 06:42	0° $\mathring{N}\mu$	
retrograde	14856 Nov 05 09:58	18° $\Omega$ 38'07		evening set	14863 Jul 25 01:34	1° $\mathring{N}\mu$ 01'52	
opposition	14857 Jan 23 15:51	17° $\Omega$ 15'05	-0°21'37				
min. Earth dist.	14857 Jan 23 21:50	17° $\Omega$ 14'40	29.09291 AU	conjunction	14863 Aug 09 13:44	1° $\mathring{N}\mu$ 36'48	-0°24'57
direct	14857 Apr 13 17:58	15° $\Omega$ 51'04		minimum elong	14863 Aug 09 13:44	1° $\mathring{N}\mu$ 36'48	0°25'31
evening set	14857 Jul 11 09:27	17° $\Omega$ 46'04		max. Earth dist.	14863 Aug 09 12:01	1° $\mathring{N}\mu$ 36'39	31.01589 AU
				morning rise	14863 Aug 25 01:51	2° $\mathring{N}\mu$ 11'46	
conjunction	14857 Jul 26 22:02	18° $\Omega$ 20'58	-0°20'37	retrograde	14863 Nov 21 20:47	4° $\mathring{N}\mu$ 07'28	
minimum elong	14857 Jul 26 22:02	18° $\Omega$ 20'58	0°21'22	opposition	14864 Feb 09 08:56	2° $\mathring{N}\mu$ 43'58	-0°27'01
max. Earth dist.	14857 Jul 26 16:25	18° $\Omega$ 20'27	31.08687 AU	min. Earth dist.	14864 Feb 09 10:44	2° $\mathring{N}\mu$ 43'51	29.01148 AU
morning rise	14857 Aug 11 10:05	18° $\Omega$ 55'51		direct	14864 Apr 29 03:53	1° $\mathring{N}\mu$ 19'56	
retrograde	14857 Nov 07 21:17	20° $\Omega$ 50'55		evening set	14864 Jul 26 12:23	3° $\mathring{N}\mu$ 14'52	
opposition	14858 Jan 26 04:30	19° $\Omega$ 27'49	-0°22'30				
min. Earth dist.	14858 Jan 26 09:19	19° $\Omega$ 27'29	29.08061 AU	conjunction	14864 Aug 11 00:29	3° $\mathring{N}\mu$ 49'49	-0°25'33
direct	14858 Apr 16 06:50	18° $\Omega$ 03'46		minimum elong	14864 Aug 11 00:29	3° $\mathring{N}\mu$ 49'49	0°26'06
evening set	14858 Jul 13 20:12	19° $\Omega$ 58'44		max. Earth dist.	14864 Aug 10 23:07	3° $\mathring{N}\mu$ 49'41	31.00713 AU
				morning rise	14864 Aug 26 12:43	4° $\mathring{N}\mu$ 24'48	
conjunction	14858 Jul 29 08:34	20° $\Omega$ 33'38	-0°21'26	retrograde	14864 Nov 23 09:52	6° $\mathring{N}\mu$ 20'38	
minimum elong	14858 Jul 29 08:34	20° $\Omega$ 33'38	0°22'09	opposition	14865 Feb 10 21:36	4° $\mathring{N}\mu$ 57'08	-0°27'39
max. Earth dist.	14858 Jul 29 02:39	20° $\Omega$ 33'05	31.07412 AU	min. Earth dist.	14865 Feb 10 21:48	4° $\mathring{N}\mu$ 57'07	29.00292 AU
morning rise	14858 Aug 13 20:43	21° $\Omega$ 08'32		direct	14865 May 01 16:34	3° $\mathring{N}\mu$ 33'08	
retrograde	14858 Nov 10 08:21	23° $\Omega$ 03'42		evening set	14865 Jul 28 23:18	5° $\mathring{N}\mu$ 28'07	
opposition	14859 Jan 28 17:18	21° $\Omega$ 40'30	-0°23'21				
min. Earth dist.	14859 Jan 28 22:23	21° $\Omega$ 40'09	29.06765 AU	conjunction	14865 Aug 13 11:21	6° $\mathring{N}\mu$ 03'05	-0°26'07
direct	14859 Apr 18 17:38	20° $\Omega$ 16'26		minimum elong	14865 Aug 13 11:21	6° $\mathring{N}\mu$ 03'05	0°26'37
evening set	14859 Jul 16 06:50	22° $\Omega$ 11'21		max. Earth dist.	14865 Aug 13 10:28	6° $\mathring{N}\mu$ 03'00	30.99868 AU
				morning rise	14865 Aug 28 23:37	6° $\mathring{N}\mu$ 38'05	
conjunction	14859 Jul 31 19:17	22° $\Omega$ 46'15	-0°22'12	retrograde	14865 Nov 25 22:35	8° $\mathring{N}\mu$ 34'04	
minimum elong	14859 Jul 31 19:17	22° $\Omega$ 46'15	0°22'53	opposition	14866 Feb 13 10:40	7° $\mathring{N}\mu$ 10'33	-0°28'13
max. Earth dist.	14859 Jul 31 14:54	22° $\Omega$ 45'51	31.06104 AU	min. Earth dist.	14866 Feb 13 11:21	7° $\mathring{N}\mu$ 10'30	28.99460 AU
morning rise	14859 Aug 16 07:18	23° $\Omega$ 21'09		direct	14866 May 04 04:23	5° $\mathring{N}\mu$ 46'37	
retrograde	14859 Nov 12 18:43	25° $\Omega$ 16'24		evening set	14866 Jul 31 10:06	7° $\mathring{N}\mu$ 41'36	
opposition	14860 Jan 31 05:53	23° $\Omega$ 53'06	-0°24'09				
min. Earth dist.	14860 Jan 31 10:06	23° $\Omega$ 52'49	29.05457 AU	conjunction	14866 Aug 15 22:12	8° $\mathring{N}\mu$ 16'36	-0°26'39
direct	14860 Apr 20 05:50	22° $\Omega$ 29'00		minimum elong	14866 Aug 15 22:12	8° $\mathring{N}\mu$ 16'36	0°27'07
evening set	14860 Jul 17 17:36	24° $\Omega$ 23'54		max. Earth dist.	14866 Aug 15 22:16	8° $\mathring{N}\mu$ 16'36	30.99035 AU
				morning rise	14866 Aug 31 10:28	8° $\mathring{N}\mu$ 51'37	
conjunction	14860 Aug 02 05:49	24° $\Omega$ 58'49	-0°22'56	retrograde	14866 Nov 28 11:00	10° $\mathring{N}\mu$ 47'44	
minimum elong	14860 Aug 02 05:49	24° $\Omega$ 58'49	0°23'37	opposition	14867 Feb 15 23:41	9° $\mathring{N}\mu$ 24'13	-0°28'46
max. Earth dist.	14860 Aug 02 01:00	24° $\Omega$ 58'22	31.04823 AU	min. Earth dist.	14867 Feb 15 23:01	9° $\mathring{N}\mu$ 24'16	28.98605 AU
morning rise	14860 Aug 17 18:01	25° $\Omega$ 33'43		direct	14867 May 06 17:23	8° $\mathring{N}\mu$ 00'21	
retrograde	14860 Nov 14 07:34	27° $\Omega$ 29'03		evening set	14867 Aug 02 21:15	9° $\mathring{N}\mu$ 55'21	
opposition	14861 Feb 01 18:34	26° $\Omega$ 05'41	-0°24'56				
min. Earth dist.	14861 Feb 01 22:02	26° $\Omega$ 05'27	29.04222 AU	conjunction	14867 Aug 18 09:13	10° $\mathring{N}\mu$ 30'21	-0°27'08
direct	14861 Apr 22 15:53	24° $\Omega$ 41'34		minimum elong	14867 Aug 18 09:13	10° $\mathring{N}\mu$ 30'21	0°27'33
evening set	14861 Jul 20 04:12	26° $\Omega$ 36'27		max. Earth dist.	14867 Aug 18 08:56	10° $\mathring{N}\mu$ 30'19	30.98150 AU
				morning rise	14867 Sep 02 21:41	11° $\mathring{N}\mu$ 05'24	
conjunction	14861 Aug 04 16:29	27° $\Omega$ 11'22	-0°23'39	retrograde	14867 Nov 30 22:44	13° $\mathring{N}\mu$ 01'40	
minimum elong	14861 Aug 04 16:29	27° $\Omega$ 11'22	0°24'16	opposition	14868 Feb 18 12:43	11° $\mathring{N}\mu$ 38'07	-0°29'15
max. Earth dist.	14861 Aug 04 13:26	27° $\Omega$ 11'05	31.03626 AU	min. Earth dist.	14868 Feb 18 12:30	11° $\mathring{N}\mu$ 38'08	28.97693 AU
morning rise	14861 Aug 20 04:29	27° $\Omega$ 46'17		direct	14868 May 08 03:58	10° $\mathring{N}\mu$ 14'16	
retrograde	14861 Nov 16 18:44	29° $\Omega$ 41'44		evening set	14868 Aug 04 08:18	12° $\mathring{N}\mu$ 09'17	
opposition	14862 Feb 04 07:19	28° $\Omega$ 18'18	-0°25'40				
min. Earth dist.	14862 Feb 04 10:20	28° $\Omega$ 18'06	29.03080 AU	conjunction	14868 Aug 19 20:28	12° $\mathring{N}\mu$ 44'18	-0°27'34
direct	14862 Apr 25 04:26	26° $\Omega$ 54'11		minimum elong	14868 Aug 19 20:28	12° $\mathring{N}\mu$ 44'18	0°27'58
evening set	14862 Jul 22 14:59	28° $\Omega$ 49'05		max. Earth dist.	14868 Aug 19 21:23	12° $\mathring{N}\mu$ 44'24	30.97186 AU
				morning rise	14868 Sep 04 08:51	13° $\mathring{N}\mu$ 19'23	
conjunction	14862 Aug 07 03:05	29° $\Omega$ 24'00	-0°24'19	retrograde	14868 Dec 02 09:41	15° $\mathring{N}\mu$ 15'45	
minimum elong	14862 Aug 07 03:05	29° $\Omega$ 24'00	0°24'56	opposition	14869 Feb 20 01:51	13° $\mathring{N}\mu$ 52'11	-0°29'42

min. Earth dist.	14869 Feb 20 01:02	13° <u>17</u> 52'14	28.96665 AU	morning rise	14875 Sep 20 15:57	28° <u>17</u> 57'27	
direct	14869 May 10 16:15	12° <u>17</u> 28'21			14875 Oct 21 14:29	0° <u>17</u>	
evening set	14869 Aug 06 19:33	14° <u>17</u> 23'21		retrograde	14875 Dec 19 03:27	0° <u>17</u> 54'25	
					14876 Feb 18 12:33	30° <u>17</u>	
conjunction	14869 Aug 22 07:32	14° <u>17</u> 58'23	-0°27'58	opposition	14876 Mar 07 21:43	29° <u>17</u> 30'16	-0°31'34
minimum elong	14869 Aug 22 07:32	14° <u>17</u> 58'23	0°28'19	min. Earth dist.	14876 Mar 07 16:30	29° <u>17</u> 30'38	28.88825 AU
max. Earth dist.	14869 Aug 22 07:36	14° <u>17</u> 58'24	30.96102 AU	direct	14876 May 26 06:18	28° <u>17</u> 06'18	
morning rise	14869 Sep 06 20:11	15° <u>17</u> 33'29			14876 Aug 21 13:16	0° <u>17</u>	
retrograde	14869 Dec 04 23:12	17° <u>17</u> 29'58		evening set	14876 Aug 22 01:18	0° <u>17</u> 01'07	
opposition	14870 Feb 22 15:05	16° <u>17</u> 06'20	-0°30'06				
min. Earth dist.	14870 Feb 22 13:58	16° <u>17</u> 06'24	28.95529 AU	conjunction	14876 Sep 06 13:49	0° <u>17</u> 36'13	-0°29'34
direct	14870 May 13 02:35	14° <u>17</u> 42'29		minimum elong	14876 Sep 06 13:49	0° <u>17</u> 36'13	0°29'41
evening set	14870 Aug 09 06:39	16° <u>17</u> 37'28		max. Earth dist.	14876 Sep 06 18:18	0° <u>17</u> 36'39	30.88432 AU
				morning rise	14876 Sep 22 03:28	1° <u>17</u> 11'27	
conjunction	14870 Aug 24 18:51	17° <u>17</u> 12'30	-0°28'19	retrograde	14876 Dec 20 15:55	3° <u>17</u> 08'30	
minimum elong	14870 Aug 24 18:52	17° <u>17</u> 12'30	0°28'40	opposition	14877 Mar 10 10:56	1° <u>17</u> 44'20	-0°31'39
max. Earth dist.	14870 Aug 24 20:13	17° <u>17</u> 12'38	30.94910 AU	min. Earth dist.	14877 Mar 10 05:48	1° <u>17</u> 44'41	28.88086 AU
morning rise	14870 Sep 09 07:27	17° <u>17</u> 47'37		direct	14877 May 28 17:22	0° <u>17</u> 20'23	
retrograde	14870 Dec 07 10:19	19° <u>17</u> 44'12		evening set	14877 Aug 24 12:22	2° <u>17</u> 15'11	
opposition	14871 Feb 25 04:17	18° <u>17</u> 20'28	-0°30'27				
min. Earth dist.	14871 Feb 25 03:08	18° <u>17</u> 20'33	28.94291 AU	conjunction	14877 Sep 09 01:08	2° <u>17</u> 50'19	-0°29'38
direct	14871 May 15 15:36	16° <u>17</u> 56'36		minimum elong	14877 Sep 09 01:09	2° <u>17</u> 50'19	0°29'41
evening set	14871 Aug 11 17:45	18° <u>17</u> 51'32		max. Earth dist.	14877 Sep 09 07:21	2° <u>17</u> 50'54	30.87738 AU
				morning rise	14877 Sep 24 14:48	3° <u>17</u> 25'34	
conjunction	14871 Aug 27 05:55	19° <u>17</u> 26'35	-0°28'38	retrograde	14877 Dec 23 03:39	5° <u>17</u> 22'44	
minimum elong	14871 Aug 27 05:55	19° <u>17</u> 26'35	0°28'55	opposition	14878 Mar 13 00:07	3° <u>17</u> 58'32	-0°31'41
max. Earth dist.	14871 Aug 27 06:50	19° <u>17</u> 26'40	30.93658 AU	min. Earth dist.	14878 Mar 12 17:58	3° <u>17</u> 58'57	28.87423 AU
morning rise	14871 Sep 11 18:49	20° <u>17</u> 01'43		direct	14878 May 31 06:26	2° <u>17</u> 34'38	
retrograde	14871 Dec 10 00:17	21° <u>17</u> 58'22		evening set	14878 Aug 26 23:46	4° <u>17</u> 29'26	
opposition	14872 Feb 27 17:23	20° <u>17</u> 34'32	-0°30'46				
min. Earth dist.	14872 Feb 27 15:09	20° <u>17</u> 34'41	28.93030 AU	conjunction	14878 Sep 11 12:29	5° <u>17</u> 04'35	-0°29'38
direct	14872 May 17 03:18	19° <u>17</u> 10'36		minimum elong	14878 Sep 11 12:29	5° <u>17</u> 04'35	0°29'40
evening set	14872 Aug 13 04:50	21° <u>17</u> 05'31		max. Earth dist.	14878 Sep 11 18:13	5° <u>17</u> 05'07	30.87111 AU
				morning rise	14878 Sep 27 02:30	5° <u>17</u> 39'51	
conjunction	14872 Aug 28 17:07	21° <u>17</u> 40'34	-0°28'55	retrograde	14878 Dec 25 17:24	7° <u>17</u> 37'07	
minimum elong	14872 Aug 28 17:08	21° <u>17</u> 40'34	0°29'10	opposition	14879 Mar 15 13:20	6° <u>17</u> 12'54	-0°31'40
max. Earth dist.	14872 Aug 28 19:17	21° <u>17</u> 40'47	30.92395 AU	min. Earth dist.	14879 Mar 15 06:48	6° <u>17</u> 13'22	28.86825 AU
morning rise	14872 Sep 13 06:02	22° <u>17</u> 15'43		direct	14879 Jun 02 16:56	4° <u>17</u> 49'03	
retrograde	14872 Dec 11 11:40	24° <u>17</u> 12'26		evening set	14879 Aug 29 11:03	6° <u>17</u> 43'51	
opposition	14873 Mar 01 06:29	22° <u>17</u> 48'30	-0°31'02				
min. Earth dist.	14873 Mar 01 04:33	22° <u>17</u> 48'38	28.91799 AU	conjunction	14879 Sep 14 00:05	7° <u>17</u> 19'01	-0°29'36
direct	14873 May 19 14:46	21° <u>17</u> 24'33		minimum elong	14879 Sep 14 00:05	7° <u>17</u> 19'01	0°29'34
evening set	14873 Aug 15 15:58	23° <u>17</u> 19'25		max. Earth dist.	14879 Sep 14 07:15	7° <u>17</u> 19'41	30.86510 AU
				morning rise	14879 Sep 29 14:09	7° <u>17</u> 54'19	
conjunction	14873 Aug 31 04:16	23° <u>17</u> 54'29	-0°29'08	retrograde	14879 Dec 28 04:36	9° <u>17</u> 51'42	
minimum elong	14873 Aug 31 04:16	23° <u>17</u> 54'29	0°29'20	opposition	14880 Mar 17 02:36	8° <u>17</u> 27'28	-0°31'36
max. Earth dist.	14873 Aug 31 06:54	23° <u>17</u> 54'44	30.91218 AU	min. Earth dist.	14880 Mar 16 19:58	8° <u>17</u> 27'56	28.86211 AU
morning rise	14873 Sep 15 17:22	24° <u>17</u> 29'38		direct	14880 Jun 04 05:24	7° <u>17</u> 03'39	
retrograde	14873 Dec 14 01:37	26° <u>17</u> 26'26		evening set	14880 Aug 30 22:40	8° <u>17</u> 58'27	
opposition	14874 Mar 03 19:34	25° <u>17</u> 02'25	-0°31'16				
min. Earth dist.	14874 Mar 03 15:50	25° <u>17</u> 02'40	28.90677 AU	conjunction	14880 Sep 15 11:40	9° <u>17</u> 33'38	-0°29'31
direct	14874 May 22 04:26	23° <u>17</u> 38'26		minimum elong	14880 Sep 15 11:41	9° <u>17</u> 33'38	0°29'28
evening set	14874 Aug 18 02:58	25° <u>17</u> 33'17		max. Earth dist.	14880 Sep 15 18:12	9° <u>17</u> 34'15	30.85883 AU
				morning rise	14880 Oct 01 02:03	10° <u>17</u> 08'58	
conjunction	14874 Sep 02 15:19	26° <u>17</u> 08'21	-0°29'20	retrograde	14880 Dec 29 18:44	12° <u>17</u> 06'27	
minimum elong	14874 Sep 02 15:19	26° <u>17</u> 08'21	0°29'30	opposition	14881 Mar 19 15:48	10° <u>17</u> 42'12	-0°31'29
max. Earth dist.	14874 Sep 02 18:40	26° <u>17</u> 08'40	30.90152 AU	min. Earth dist.	14881 Mar 19 08:21	10° <u>17</u> 42'43	28.85556 AU
morning rise	14874 Sep 18 04:34	26° <u>17</u> 43'32		direct	14881 Jun 06 16:20	9° <u>17</u> 18'23	
retrograde	14874 Dec 16 14:58	28° <u>17</u> 40'25		evening set	14881 Sep 02 10:17	11° <u>17</u> 13'13	
opposition	14875 Mar 06 08:49	27° <u>17</u> 16'19	-0°31'26				
min. Earth dist.	14875 Mar 06 05:16	27° <u>17</u> 16'34	28.89686 AU	conjunction	14881 Sep 17 23:30	11° <u>17</u> 48'25	-0°29'24
direct	14875 May 24 16:54	25° <u>17</u> 52'20		minimum elong	14881 Sep 17 23:31	11° <u>17</u> 48'25	0°29'17
evening set	14875 Aug 20 14:03	27° <u>17</u> 47'09		max. Earth dist.	14881 Sep 18 06:54	11° <u>17</u> 49'07	30.85179 AU
				morning rise	14881 Oct 03 13:59	12° <u>17</u> 23'46	
conjunction	14875 Sep 05 02:36	28° <u>17</u> 22'15	-0°29'28	retrograde	14882 Jan 01 06:52	14° <u>17</u> 21'21	
minimum elong	14875 Sep 05 02:36	28° <u>17</u> 22'15	0°29'36	opposition	14882 Mar 22 05:16	12° <u>17</u> 57'03	-0°31'19
max. Earth dist.	14875 Sep 05 07:08	28° <u>17</u> 22'41	30.89233 AU	min. Earth dist.	14882 Mar 21 22:27	12° <u>17</u> 57'31	28.84811 AU

direct	14882 Jun 09 03:39	11° <u>♎</u> 33'15			14888 Dec 29 22:58	0° <u>♍</u>
evening set	14882 Sep 04 21:51	13° <u>♎</u> 28'03		retrograde	14889 Jan 17 01:46	0° <u>♍</u> 05'29
					14889 Feb 04 11:30	30° <u>♎</u>
conjunction	14882 Sep 20 11:15	14° <u>♎</u> 03'16 -0°29'13		opposition	14889 Apr 07 01:18	28° <u>♎</u> 40'50 -0°28'54
minimum elong	14882 Sep 20 11:15	14° <u>♎</u> 03'16 0°29'05		min. Earth dist.	14889 Apr 06 14:42	28° <u>♎</u> 41'34 28.80104 AU
max. Earth dist.	14882 Sep 20 18:35	14° <u>♎</u> 03'58 30.84401 AU		direct	14889 Jun 24 20:56	27° <u>♎</u> 16'59
morning rise	14882 Oct 06 02:00	14° <u>♎</u> 38'39		evening set	14889 Sep 20 07:05	29° <u>♎</u> 11'36
retrograde	14883 Jan 03 21:27	16° <u>♎</u> 36'17				
opposition	14883 Mar 24 18:32	15° <u>♎</u> 11'57 -0°31'07		conjunction	14889 Oct 05 21:48	29° <u>♎</u> 46'56 -0°26'50
min. Earth dist.	14883 Mar 24 10:31	15° <u>♎</u> 12'30 28.83987 AU		minimum elong	14889 Oct 05 21:49	29° <u>♎</u> 46'57 0°26'25
direct	14883 Jun 11 17:16	13° <u>♎</u> 48'08		max. Earth dist.	14889 Oct 06 08:36	29° <u>♎</u> 47'58 30.79987 AU
evening set	14883 Sep 07 09:31	15° <u>♎</u> 42'54			14889 Oct 11 15:04	0° <u>♍</u>
				morning rise	14889 Oct 21 14:22	0° <u>♍</u> 22'28
conjunction	14883 Sep 22 23:04	16° <u>♎</u> 18'08 -0°29'01		retrograde	14890 Jan 19 15:47	2° <u>♍</u> 20'28
minimum elong	14883 Sep 22 23:04	16° <u>♎</u> 18'08 0°28'49		opposition	14890 Apr 09 14:24	0° <u>♍</u> 55'49 -0°28'23
max. Earth dist.	14883 Sep 23 06:33	16° <u>♎</u> 18'51 30.83540 AU		min. Earth dist.	14890 Apr 09 02:42	0° <u>♍</u> 56'38 28.79922 AU
morning rise	14883 Oct 08 14:05	16° <u>♎</u> 53'32			14890 May 16 06:35	30° <u>♎</u>
retrograde	14884 Jan 06 10:58	18° <u>♎</u> 51'14		direct	14890 Jun 27 07:23	29° <u>♎</u> 32'00
opposition	14884 Mar 26 07:42	17° <u>♎</u> 26'49 -0°30'51			14890 Aug 07 02:43	0° <u>♍</u>
min. Earth dist.	14884 Mar 26 00:27	17° <u>♎</u> 27'19 28.83116 AU		evening set	14890 Sep 22 18:43	1° <u>♍</u> 26'37
direct	14884 Jun 13 05:41	16° <u>♎</u> 02'58				
evening set	14884 Sep 08 21:05	17° <u>♎</u> 57'42		conjunction	14890 Oct 08 09:47	2° <u>♍</u> 01'59 -0°26'19
				minimum elong	14890 Oct 08 09:47	2° <u>♍</u> 01'59 0°25'53
conjunction	14884 Sep 24 10:55	18° <u>♎</u> 32'58 -0°28'45		max. Earth dist.	14890 Oct 08 21:50	2° <u>♍</u> 03'07 30.79851 AU
minimum elong	14884 Sep 24 10:55	18° <u>♎</u> 32'58 0°28'33		morning rise	14890 Oct 24 02:32	2° <u>♍</u> 37'32
max. Earth dist.	14884 Sep 24 19:14	18° <u>♎</u> 33'45 30.82680 AU		retrograde	14891 Jan 22 03:39	4° <u>♍</u> 35'36
morning rise	14884 Oct 10 02:07	19° <u>♎</u> 08'23		opposition	14891 Apr 12 03:35	3° <u>♍</u> 10'57 -0°27'48
retrograde	14885 Jan 07 24:00	21° <u>♎</u> 06'07		min. Earth dist.	14891 Apr 11 16:19	3° <u>♍</u> 11'44 28.79828 AU
opposition	14885 Mar 28 20:50	19° <u>♎</u> 41'37 -0°30'33		direct	14891 Jun 29 18:28	1° <u>♍</u> 47'11
min. Earth dist.	14885 Mar 28 12:08	19° <u>♎</u> 42'14 28.82269 AU		evening set	14891 Sep 25 06:39	3° <u>♍</u> 41'47
direct	14885 Jun 15 19:25	18° <u>♎</u> 17'45				
evening set	14885 Sep 11 08:38	20° <u>♎</u> 12'28		conjunction	14891 Oct 10 21:55	4° <u>♍</u> 17'10 -0°25'46
				minimum elong	14891 Oct 10 21:55	4° <u>♍</u> 17'10 0°25'17
conjunction	14885 Sep 26 22:29	20° <u>♎</u> 47'44 -0°28'27		max. Earth dist.	14891 Oct 11 10:01	4° <u>♍</u> 18'18 30.79797 AU
minimum elong	14885 Sep 26 22:30	20° <u>♎</u> 47'44 0°28'11		morning rise	14891 Oct 26 15:00	4° <u>♍</u> 52'45
max. Earth dist.	14885 Sep 27 06:42	20° <u>♎</u> 48'30 30.81866 AU		retrograde	14892 Jan 24 17:41	6° <u>♍</u> 50'52
morning rise	14885 Oct 12 14:02	21° <u>♎</u> 23'10		opposition	14892 Apr 13 16:30	5° <u>♍</u> 26'14 -0°27'11
retrograde	14886 Jan 10 13:09	23° <u>♎</u> 20'57		min. Earth dist.	14892 Apr 13 04:06	5° <u>♍</u> 27'05 28.79787 AU
opposition	14886 Mar 31 10:07	21° <u>♎</u> 56'23 -0°30'13		direct	14892 Jul 01 07:01	4° <u>♍</u> 02'29
min. Earth dist.	14886 Mar 31 01:34	21° <u>♎</u> 56'59 28.81518 AU		evening set	14892 Sep 26 18:43	5° <u>♍</u> 57'06
direct	14886 Jun 18 07:20	20° <u>♎</u> 32'31				
evening set	14886 Sep 13 20:08	22° <u>♎</u> 27'11		conjunction	14892 Oct 12 10:10	6° <u>♍</u> 32'30 -0°25'11
				minimum elong	14892 Oct 12 10:10	6° <u>♍</u> 32'30 0°24'41
conjunction	14886 Sep 29 10:21	23° <u>♎</u> 02'28 -0°28'07		max. Earth dist.	14892 Oct 12 22:27	6° <u>♍</u> 33'39 30.79750 AU
minimum elong	14886 Sep 29 10:21	23° <u>♎</u> 02'28 0°27'50		morning rise	14892 Oct 28 03:31	7° <u>♍</u> 08'06
max. Earth dist.	14886 Sep 29 20:15	23° <u>♎</u> 03'24 30.81177 AU		retrograde	14893 Jan 26 06:54	9° <u>♍</u> 06'17
morning rise	14886 Oct 15 02:00	23° <u>♎</u> 37'56		opposition	14893 Apr 16 05:47	7° <u>♍</u> 41'38 -0°26'32
retrograde	14887 Jan 13 01:56	25° <u>♎</u> 35'45		min. Earth dist.	14893 Apr 15 18:16	7° <u>♍</u> 42'26 28.79736 AU
opposition	14887 Apr 02 23:08	24° <u>♎</u> 11'09 -0°29'49		direct	14893 Jul 03 18:08	6° <u>♍</u> 17'55
min. Earth dist.	14887 Apr 02 13:28	24° <u>♎</u> 11'49 28.80896 AU		evening set	14893 Sep 29 06:40	8° <u>♍</u> 12'31
direct	14887 Jun 20 21:14	22° <u>♎</u> 47'16				
evening set	14887 Sep 16 07:48	24° <u>♎</u> 41'55		conjunction	14893 Oct 14 22:27	8° <u>♍</u> 47'57 -0°24'33
				minimum elong	14893 Oct 14 22:27	8° <u>♍</u> 47'57 0°23'59
conjunction	14887 Oct 01 22:04	25° <u>♎</u> 17'13 -0°27'44		max. Earth dist.	14893 Oct 15 11:12	8° <u>♍</u> 49'09 30.79678 AU
minimum elong	14887 Oct 01 22:05	25° <u>♎</u> 17'13 0°27'23		morning rise	14893 Oct 30 16:01	9° <u>♍</u> 23'33
max. Earth dist.	14887 Oct 02 07:32	25° <u>♎</u> 18'07 30.80632 AU		retrograde	14894 Jan 28 20:57	11° <u>♍</u> 21'47
morning rise	14887 Oct 17 14:09	25° <u>♎</u> 52'42		opposition	14894 Apr 18 18:57	9° <u>♍</u> 57'08 -0°25'50
retrograde	14888 Jan 15 15:09	27° <u>♎</u> 50'35		min. Earth dist.	14894 Apr 18 06:21	9° <u>♍</u> 58'00 28.79620 AU
opposition	14888 Apr 04 12:14	26° <u>♎</u> 25'57 -0°29'23		direct	14894 Jul 06 07:31	8° <u>♍</u> 33'25
min. Earth dist.	14888 Apr 04 02:06	26° <u>♎</u> 26'39 28.80433 AU		evening set	14894 Oct 01 18:58	10° <u>♍</u> 28'00
direct	14888 Jun 22 08:20	25° <u>♎</u> 02'04				
evening set	14888 Sep 17 19:20	26° <u>♎</u> 56'42		conjunction	14894 Oct 17 10:53	11° <u>♍</u> 03'26 -0°23'52
				minimum elong	14894 Oct 17 10:53	11° <u>♍</u> 03'26 0°23'19
conjunction	14888 Oct 03 09:58	27° <u>♎</u> 32'02 -0°27'18		max. Earth dist.	14894 Oct 17 22:53	11° <u>♍</u> 04'34 30.79514 AU
minimum elong	14888 Oct 03 09:58	27° <u>♎</u> 32'02 0°26'56		morning rise	14894 Nov 02 04:51	11° <u>♍</u> 39'04
max. Earth dist.	14888 Oct 03 21:05	27° <u>♎</u> 33'05 30.80234 AU		retrograde	14895 Jan 31 11:16	13° <u>♍</u> 37'18
morning rise	14888 Oct 19 02:07	28° <u>♎</u> 07'32		opposition	14895 Apr 21 08:07	12° <u>♍</u> 12'37 -0°25'05



min. Earth dist.	14895 Apr 20 20:23	12° <del>11</del> 13'25	28.79419 AU	conjunction	14901 Nov 03 01:49	26° <del>11</del> 49'32	-0°18'15
direct	14895 Jul 08 19:54	10° <del>11</del> 48'53		minimum elong	14901 Nov 03 01:49	26° <del>11</del> 49'32	0°17'28
evening set	14895 Oct 04 07:06	12° <del>11</del> 43'26		max. Earth dist.	14901 Nov 03 16:08	26° <del>11</del> 50'53	30.78535 AU
				morning rise	14901 Nov 18 21:48	27° <del>11</del> 25'17	
conjunction	14895 Oct 19 23:28	13° <del>11</del> 18'53	-0°23'10	retrograde	14902 Feb 17 04:21	29° <del>11</del> 23'28	
minimum elong	14895 Oct 19 23:28	13° <del>11</del> 18'53	0°22'33	opposition	14902 May 08 02:13	27° <del>11</del> 58'35	-0°18'56
max. Earth dist.	14895 Oct 20 12:24	13° <del>11</del> 20'06	30.79272 AU	min. Earth dist.	14902 May 07 12:48	27° <del>11</del> 59'31	28.78684 AU
morning rise	14895 Nov 04 17:35	13° <del>11</del> 54'32		direct	14902 Jul 25 09:22	26° <del>11</del> 34'45	
	14895 Dec 07 07:02	15° <del>11</del>		evening set	14902 Oct 20 20:08	28° <del>11</del> 29'06	
retrograde	14896 Feb 03 00:47	15° <del>11</del> 52'45					
	14896 Apr 03 04:48	15° <del>11</del> 48'		conjunction	14902 Nov 05 14:26	29° <del>11</del> 04'39	-0°17'19
opposition	14896 Apr 22 21:08	14° <del>11</del> 28'01	-0°24'19	minimum elong	14902 Nov 05 14:26	29° <del>11</del> 04'39	0°16'32
min. Earth dist.	14896 Apr 22 08:51	14° <del>11</del> 28'52	28.79132 AU	max. Earth dist.	14902 Nov 06 05:21	29° <del>11</del> 06'04	30.78837 AU
direct	14896 Jul 10 10:33	13° <del>11</del> 04'15		morning rise	14902 Nov 21 10:40	29° <del>11</del> 40'26	
evening set	14896 Oct 05 19:18	14° <del>11</del> 58'45			14902 Nov 30 10:38	0° <del>11</del> 38'	
	14896 Oct 06 08:44	15° <del>11</del>		retrograde	14903 Feb 19 18:15	1° <del>11</del> 38'36	
				opposition	14903 May 10 14:43	0° <del>11</del> 13'46	-0°17'55
conjunction	14896 Oct 21 11:45	15° <del>11</del> 34'13	-0°22'25	min. Earth dist.	14903 May 10 00:05	0° <del>11</del> 14'47	28.79033 AU
minimum elong	14896 Oct 21 11:45	15° <del>11</del> 34'13	0°21'47		14903 May 18 20:58	30° <del>11</del> 48'	
max. Earth dist.	14896 Oct 21 23:46	15° <del>11</del> 35'21	30.78968 AU	direct	14903 Jul 27 21:52	28° <del>11</del> 49'58	
morning rise	14896 Nov 06 06:19	16° <del>11</del> 09'54			14903 Oct 02 03:39	0° <del>11</del> 38'	
retrograde	14897 Feb 04 14:01	18° <del>11</del> 08'05		evening set	14903 Oct 23 08:33	0° <del>11</del> 44'20	
opposition	14897 Apr 25 10:11	16° <del>11</del> 43'18	-0°23'30				
min. Earth dist.	14897 Apr 24 22:01	16° <del>11</del> 44'08	28.78831 AU	conjunction	14903 Nov 08 03:01	1° <del>11</del> 19'55	-0°16'22
direct	14897 Jul 12 22:18	15° <del>11</del> 19'30		minimum elong	14903 Nov 08 03:00	1° <del>11</del> 19'55	0°15'32
evening set	14897 Oct 08 07:22	17° <del>11</del> 13'57		behind sun begin	14903 Nov 08 01:24	1° <del>11</del> 19'46	
				behind sun end	14903 Nov 08 04:37	1° <del>11</del> 20'03	
conjunction	14897 Oct 24 00:14	17° <del>11</del> 49'25	-0°21'39	max. Earth dist.	14903 Nov 08 17:26	1° <del>11</del> 21'16	30.79228 AU
minimum elong	14897 Oct 24 00:14	17° <del>11</del> 49'25	0°20'58	morning rise	14903 Nov 23 23:39	1° <del>11</del> 55'42	
max. Earth dist.	14897 Oct 24 13:35	17° <del>11</del> 50'41	30.78677 AU	retrograde	14904 Feb 22 08:36	3° <del>11</del> 53'54	
morning rise	14897 Nov 08 18:56	18° <del>11</del> 25'07		opposition	14904 May 12 03:29	2° <del>11</del> 29'05	-0°16'53
retrograde	14898 Feb 07 01:36	20° <del>11</del> 23'17		min. Earth dist.	14904 May 11 13:37	2° <del>11</del> 30'03	28.79463 AU
opposition	14898 Apr 27 23:06	18° <del>11</del> 58'27	-0°22'39	direct	14904 Jul 29 09:37	1° <del>11</del> 05'20	
min. Earth dist.	14898 Apr 27 10:43	18° <del>11</del> 59'18	28.78567 AU	evening set	14904 Oct 24 20:49	2° <del>11</del> 59'43	
direct	14898 Jul 15 11:52	17° <del>11</del> 34'37					
evening set	14898 Oct 10 19:29	19° <del>11</del> 29'01		conjunction	14904 Nov 09 15:42	3° <del>11</del> 35'19	-0°15'23
				minimum elong	14904 Nov 09 15:42	3° <del>11</del> 35'19	0°14'33
conjunction	14898 Oct 26 12:31	20° <del>11</del> 04'30	-0°20'50	behind sun begin	14904 Nov 09 12:54	3° <del>11</del> 35'04	
minimum elong	14898 Oct 26 12:31	20° <del>11</del> 04'30	0°20'09	behind sun end	14904 Nov 09 18:30	3° <del>11</del> 35'34	
max. Earth dist.	14898 Oct 27 01:15	20° <del>11</del> 05'42	30.78462 AU	max. Earth dist.	14904 Nov 10 07:11	3° <del>11</del> 36'46	30.79675 AU
morning rise	14898 Nov 11 07:41	20° <del>11</del> 40'13		morning rise	14904 Nov 25 12:28	4° <del>11</del> 11'07	
retrograde	14899 Feb 09 15:40	22° <del>11</del> 38'22		retrograde	14905 Feb 23 22:34	6° <del>11</del> 09'19	
opposition	14899 Apr 30 11:55	21° <del>11</del> 13'29	-0°21'46	opposition	14905 May 14 16:09	4° <del>11</del> 44'34	-0°15'49
min. Earth dist.	14899 Apr 29 22:45	21° <del>11</del> 14'24	28.78404 AU	min. Earth dist.	14905 May 14 01:43	4° <del>11</del> 45'34	28.79905 AU
direct	14899 Jul 17 23:20	19° <del>11</del> 49'38		direct	14905 Jul 31 23:34	3° <del>11</del> 20'51	
evening set	14899 Oct 13 07:40	21° <del>11</del> 44'00		evening set	14905 Oct 27 09:28	5° <del>11</del> 15'15	
conjunction	14899 Oct 29 01:03	22° <del>11</del> 19'31	-0°20'00	conjunction	14905 Nov 12 04:27	5° <del>11</del> 50'52	-0°14'23
minimum elong	14899 Oct 29 01:03	22° <del>11</del> 19'31	0°19'16	minimum elong	14905 Nov 12 04:27	5° <del>11</del> 50'52	0°13'31
max. Earth dist.	14899 Oct 29 14:51	22° <del>11</del> 20'49	30.78345 AU	behind sun begin	14905 Nov 12 00:51	5° <del>11</del> 50'32	
morning rise	14899 Nov 13 20:22	22° <del>11</del> 55'14		behind sun end	14905 Nov 12 08:03	5° <del>11</del> 51'11	
retrograde	14900 Feb 12 02:40	24° <del>11</del> 53'23		max. Earth dist.	14905 Nov 12 18:49	5° <del>11</del> 52'13	30.80109 AU
min. Earth dist.	14900 May 02 11:52	23° <del>11</del> 29'23	28.78354 AU	morning rise	14905 Nov 28 01:40	6° <del>11</del> 26'41	
opposition	14900 May 03 00:38	23° <del>11</del> 28'30	-0°20'51	retrograde	14906 Feb 26 12:37	8° <del>11</del> 24'54	
direct	14900 Jul 20 11:06	22° <del>11</del> 04'38		opposition	14906 May 17 04:52	7° <del>11</del> 00'10	-0°14'44
evening set	14900 Oct 15 19:50	23° <del>11</del> 58'59		min. Earth dist.	14906 May 16 14:59	7° <del>11</del> 01'08	28.80322 AU
				direct	14906 Aug 03 10:39	5° <del>11</del> 36'27	
conjunction	14900 Oct 31 13:28	24° <del>11</del> 34'30	-0°19'08	evening set	14906 Oct 29 22:01	7° <del>11</del> 30'52	
minimum elong	14900 Oct 31 13:28	24° <del>11</del> 34'30	0°18'24				
max. Earth dist.	14900 Nov 01 03:18	24° <del>11</del> 35'49	30.78374 AU	conjunction	14906 Nov 14 17:28	8° <del>11</del> 06'30	-0°13'22
morning rise	14900 Nov 16 09:08	25° <del>11</del> 10'15		minimum elong	14906 Nov 14 17:28	8° <del>11</del> 06'30	0°12'29
retrograde	14901 Feb 14 15:58	27° <del>11</del> 08'24		behind sun begin	14906 Nov 14 13:16	8° <del>11</del> 06'07	
opposition	14901 May 05 13:21	25° <del>11</del> 43'30	-0°19'54	behind sun end	14906 Nov 14 21:41	8° <del>11</del> 06'53	
min. Earth dist.	14901 May 04 23:17	25° <del>11</del> 44'29	28.78452 AU	max. Earth dist.	14906 Nov 15 08:37	8° <del>11</del> 07'55	30.80477 AU
direct	14901 Jul 22 23:02	24° <del>11</del> 19'39		morning rise	14906 Nov 30 14:49	8° <del>11</del> 42'20	
evening set	14901 Oct 18 07:55	26° <del>11</del> 14'00		retrograde	14907 Mar 01 01:53	10° <del>11</del> 40'31	
				opposition	14907 May 19 17:32	9° <del>11</del> 15'48	-0°13'38

min. Earth dist.	14907 May 19 03:56	9°♊16'44	28.80635 AU	behind sun end	14912 Nov 28 04:41	21°♊38'18	
direct	14907 Aug 06 00:56	7°♊52'05		max. Earth dist.	14912 Nov 28 12:17	21°♊39'02	30.81906 AU
evening set	14907 Nov 01 10:46	9°♊46'28		morning rise	14912 Dec 13 21:36	22°♊13'38	
				retrograde	14913 Mar 14 04:11	24°♊11'22	
conjunction	14907 Nov 17 06:23	10°♊22'07	-0°12'19	opposition	14913 Jun 01 19:36	22°♊46'31	-0°06'39
minimum elong	14907 Nov 17 06:23	10°♊22'07	0°11'25	min. Earth dist.	14913 Jun 01 06:30	22°♊47'26	28.82161 AU
behind sun begin	14907 Nov 17 01:40	10°♊21'41		direct	14913 Aug 19 00:30	21°♊22'33	
behind sun end	14907 Nov 17 11:06	10°♊22'33		evening set	14913 Nov 14 13:50	23°♊16'41	
max. Earth dist.	14907 Nov 17 20:08	10°♊23'25	30.80746 AU				
morning rise	14907 Dec 03 04:09	10°♊57'58		conjunction	14913 Nov 30 11:20	23°♊52'22	-0°05'48
retrograde	14908 Mar 02 16:30	12°♊56'05		minimum elong	14913 Nov 30 11:20	23°♊52'22	0°04'49
opposition	14908 May 21 06:03	11°♊31'22	-0°12'30	behind sun begin	14913 Nov 30 04:58	23°♊51'48	
min. Earth dist.	14908 May 20 16:18	11°♊32'19	28.80860 AU	behind sun end	14913 Nov 30 17:42	23°♊52'56	
direct	14908 Aug 07 13:18	10°♊07'37		max. Earth dist.	14913 Dec 01 02:12	23°♊53'45	30.82426 AU
evening set	14908 Nov 02 23:22	12°♊01'58		morning rise	14913 Dec 16 10:36	24°♊28'15	
				retrograde	14914 Mar 16 16:48	26°♊25'55	
conjunction	14908 Nov 18 19:22	12°♊37'38	-0°11'16	opposition	14914 Jun 04 07:34	25°♊01'04	-0°05'27
minimum elong	14908 Nov 18 19:22	12°♊37'38	0°10'21	min. Earth dist.	14914 Jun 03 17:41	25°♊02'02	28.82747 AU
behind sun begin	14908 Nov 18 14:15	12°♊37'10		direct	14914 Aug 21 13:24	23°♊37'05	
behind sun end	14908 Nov 19 00:30	12°♊38'05		evening set	14914 Nov 17 02:27	25°♊31'13	
max. Earth dist.	14908 Nov 19 09:42	12°♊38'58	30.80931 AU				
morning rise	14908 Dec 04 17:19	13°♊13'29		conjunction	14914 Dec 03 00:05	26°♊06'54	-0°04'41
retrograde	14909 Mar 05 03:14	15°♊11'32		minimum elong	14914 Dec 03 00:05	26°♊06'54	0°03'42
opposition	14909 May 23 18:38	13°♊46'47	-0°11'21	behind sun begin	14914 Dec 02 17:37	26°♊06'20	
min. Earth dist.	14909 May 23 05:44	13°♊47'41	28.81019 AU	behind sun end	14914 Dec 03 06:32	26°♊07'29	
direct	14909 Aug 10 01:56	12°♊23'00		max. Earth dist.	14914 Dec 03 14:03	26°♊08'13	30.83088 AU
evening set	14909 Nov 05 11:51	14°♊17'18		morning rise	14914 Dec 18 23:46	26°♊42'47	
				retrograde	14915 Mar 19 06:37	28°♊40'24	
conjunction	14909 Nov 21 08:08	14°♊52'57	-0°10'12	opposition	14915 Jun 06 19:37	27°♊15'35	-0°04'14
minimum elong	14909 Nov 21 08:08	14°♊52'57	0°09'15	min. Earth dist.	14915 Jun 06 06:03	27°♊16'32	28.83484 AU
behind sun begin	14909 Nov 21 02:39	14°♊52'27		direct	14915 Aug 24 00:14	25°♊51'36	
behind sun end	14909 Nov 21 13:36	14°♊53'27		evening set	14915 Nov 19 14:56	27°♊45'44	
max. Earth dist.	14909 Nov 21 21:57	14°♊54'15	30.81095 AU				
morning rise	14909 Dec 07 06:26	15°♊28'49		conjunction	14915 Dec 05 12:58	28°♊21'26	-0°03'32
retrograde	14910 Mar 07 15:58	17°♊26'48		minimum elong	14915 Dec 05 12:58	28°♊21'26	0°02'32
opposition	14910 May 26 07:00	16°♊02'00	-0°10'12	behind sun begin	14915 Dec 05 06:27	28°♊20'51	
min. Earth dist.	14910 May 25 17:19	16°♊02'58	28.81186 AU	behind sun end	14915 Dec 05 19:29	28°♊22'01	
direct	14910 Aug 12 14:07	14°♊38'10		max. Earth dist.	14915 Dec 06 04:06	28°♊22'51	30.83881 AU
evening set	14910 Nov 08 00:27	16°♊32'25		morning rise	14915 Dec 21 12:43	28°♊57'19	
					14916 Jan 21 18:23	0°♊	
conjunction	14910 Nov 23 21:00	17°♊08'05	-0°09'07	retrograde	14916 Mar 20 19:38	0°♊54'53	
minimum elong	14910 Nov 23 21:00	17°♊08'05	0°08'10		14916 May 21 02:40	30°♊	
behind sun begin	14910 Nov 23 15:14	17°♊07'34		opposition	14916 Jun 08 07:31	29°♊30'07	-0°03'01
behind sun end	14910 Nov 24 02:47	17°♊08'36		min. Earth dist.	14916 Jun 07 17:57	29°♊31'04	28.84326 AU
max. Earth dist.	14910 Nov 24 10:59	17°♊09'23	30.81272 AU	direct	14916 Aug 25 13:56	28°♊06'10	
morning rise	14910 Dec 09 19:35	17°♊43'57		evening set	14916 Nov 21 03:39	0°♊00'19	
retrograde	14911 Mar 10 03:38	19°♊41'51			14916 Nov 21 00:17	0°♊	
opposition	14911 May 28 19:14	18°♊17'01	-0°09'02				
min. Earth dist.	14911 May 28 06:36	18°♊17'54	28.81402 AU	conjunction	14916 Dec 07 01:51	0°♊36'01	-0°02'22
direct	14911 Aug 15 00:31	16°♊53'08		minimum elong	14916 Dec 07 01:49	0°♊36'01	0°01'23
evening set	14911 Nov 10 12:58	18°♊47'20		behind sun begin	14916 Dec 06 19:17	0°♊35'26	
				behind sun end	14916 Dec 07 08:20	0°♊36'36	
conjunction	14911 Nov 26 09:53	19°♊23'00	-0°08'01	max. Earth dist.	14916 Dec 07 15:49	0°♊37'19	30.84779 AU
minimum elong	14911 Nov 26 09:52	19°♊23'00	0°07'03	morning rise	14916 Dec 23 01:57	1°♊11'54	
behind sun begin	14911 Nov 26 03:51	19°♊22'28		retrograde	14917 Mar 23 10:09	3°♊09'25	
behind sun end	14911 Nov 26 15:54	19°♊23'33		opposition	14917 Jun 10 19:28	1°♊44'43	-0°01'48
max. Earth dist.	14911 Nov 27 00:07	19°♊24'20	30.81538 AU	min. Earth dist.	14917 Jun 10 05:41	1°♊45'41	28.85256 AU
morning rise	14911 Dec 12 08:40	19°♊58'53		direct	14917 Aug 28 01:43	0°♊20'48	
retrograde	14912 Mar 11 15:53	21°♊56'41		evening set	14917 Nov 23 16:16	2°♊14'58	
opposition	14912 May 30 07:22	20°♊31'51	-0°07'51				
min. Earth dist.	14912 May 29 17:35	20°♊32'48	28.81715 AU	conjunction	14917 Dec 09 14:48	2°♊50'41	-0°01'11
direct	14912 Aug 16 13:25	19°♊07'55		minimum elong	14917 Dec 09 14:48	2°♊50'41	0°00'11
evening set	14912 Nov 12 01:25	21°♊02'05		behind sun begin	14917 Dec 09 08:20	2°♊50'06	
				behind sun end	14917 Dec 09 21:16	2°♊51'16	
conjunction	14912 Nov 27 22:27	21°♊37'45	-0°06'55	max. Earth dist.	14917 Dec 10 05:27	2°♊52'03	30.85711 AU
minimum elong	14912 Nov 27 22:28	21°♊37'45	0°05'57	morning rise	14917 Dec 25 15:03	3°♊26'35	
behind sun begin	14912 Nov 27 16:15	21°♊37'11		retrograde	14918 Mar 25 21:53	5°♊24'03	

opposition	14918 Jun 13 07:28	3°35'24" -0°00'34"	minimum elong	14923 Dec 23 21:04	16°31'14" 0°06'42"
min. Earth dist.	14918 Jun 12 18:42	4°30'01" 28.86179 AU	behind sun begin	14923 Dec 23 14:58	16°31'74"
direct	14918 Aug 30 13:56	2°33'53"	behind sun end	14923 Dec 24 03:11	16°31'84"
evening set	14918 Nov 26 05:12	4°32'94"	max. Earth dist.	14923 Dec 24 08:21	16°31'91" 30.90184 AU
			morning rise	14924 Jan 08 22:39	16°31'54"
conjunction	14918 Dec 12 03:58	5°30'52" 0°00'00"	retrograde	14924 Apr 07 23:51	18°31'51"
minimum elong	14918 Dec 12 03:57	5°30'52" 0°01'00"	opposition	14924 Jun 26 05:42	17°32'63" 0°06'42"
behind sun begin	14918 Dec 11 21:25	5°30'45"	min. Earth dist.	14924 Jun 25 18:55	17°32'71" 28.90566 AU
behind sun end	14918 Dec 12 10:28	5°30'61"	direct	14924 Sep 12 10:46	16°32'31"
max. Earth dist.	14918 Dec 12 17:32	5°30'64" 30.86618 AU	evening set	14924 Dec 09 09:46	17°32'56"
asc. node	14918 Dec 22 09:21	5°32'28"			
morning rise	14918 Dec 28 04:29	5°34'12"	conjunction	14924 Dec 25 10:03	18°32'21" 0°06'49"
retrograde	14919 Mar 28 11:40	7°33'84"	minimum elong	14924 Dec 25 10:03	18°32'21" 0°07'47"
opposition	14919 Jun 15 19:13	6°31'49" 0°00'39"	behind sun begin	14924 Dec 25 04:10	18°33'15"
min. Earth dist.	14919 Jun 15 06:07	6°31'54" 28.87048 AU	behind sun end	14924 Dec 25 15:56	18°33'25"
direct	14919 Sep 02 01:54	4°35'016"	max. Earth dist.	14924 Dec 25 22:18	18°33'32" 30.90952 AU
evening set	14919 Nov 28 18:08	6°34'428"	morning rise	14925 Jan 10 11:37	19°30'814"
			retrograde	14925 Apr 10 12:19	21°30'505"
conjunction	14919 Dec 14 17:07	7°32'012" 0°01'11"	opposition	14925 Jun 28 17:06	19°34'035" 0°07'53"
minimum elong	14919 Dec 14 17:07	7°32'012" 0°02'11"	min. Earth dist.	14925 Jun 28 06:23	19°34'120" 28.91384 AU
behind sun begin	14919 Dec 14 10:35	7°31'937"	direct	14925 Sep 15 00:32	18°31'631"
behind sun end	14919 Dec 14 23:40	7°32'047"	evening set	14925 Dec 11 22:25	20°31'036"
max. Earth dist.	14919 Dec 15 06:25	7°32'126" 30.87432 AU			
morning rise	14919 Dec 30 17:50	7°35'606"	conjunction	14925 Dec 27 22:47	20°34'620" 0°07'54"
retrograde	14920 Mar 29 23:39	9°35'326"	minimum elong	14925 Dec 27 22:47	20°34'620" 0°08'53"
opposition	14920 Jun 17 07:13	8°32'853" 0°01'53"	behind sun begin	14925 Dec 27 17:10	20°34'550"
min. Earth dist.	14920 Jun 16 19:35	8°32'942" 28.87820 AU	behind sun end	14925 Dec 28 04:23	20°34'650"
direct	14920 Sep 03 12:22	7°30'500"	max. Earth dist.	14925 Dec 28 09:51	20°34'721" 30.91836 AU
evening set	14920 Nov 30 06:49	8°35'910"	morning rise	14926 Jan 13 00:42	21°32'212"
			retrograde	14926 Apr 13 01:43	23°31'857"
conjunction	14920 Dec 16 06:08	9°33'455" 0°02'20"	opposition	14926 Jul 01 04:27	21°35'428" 0°09'03"
minimum elong	14920 Dec 16 06:08	9°33'455" 0°03'19"	min. Earth dist.	14926 Jun 30 17:26	21°35'514" 28.92335 AU
behind sun begin	14920 Dec 15 23:38	9°33'420"	direct	14926 Sep 17 12:15	20°33'023"
behind sun end	14920 Dec 16 12:37	9°33'530"	evening set	14926 Dec 14 11:04	22°32'428"
max. Earth dist.	14920 Dec 16 19:05	9°33'607" 30.88170 AU			
morning rise	14921 Jan 01 07:01	10°31'049"	conjunction	14926 Dec 30 11:45	23°30'012" 0°09'00"
retrograde	14921 Apr 01 11:32	12°30'804"	minimum elong	14926 Dec 30 11:45	23°30'012" 0°09'57"
opposition	14921 Jun 19 18:59	10°34'332" 0°03'06"	behind sun begin	14926 Dec 30 06:28	22°35'944"
min. Earth dist.	14921 Jun 19 06:44	10°34'424" 28.88514 AU	behind sun end	14926 Dec 30 17:02	23°30'040"
direct	14921 Sep 06 01:12	9°31'937"	max. Earth dist.	14926 Dec 30 23:34	23°30'118" 30.92844 AU
evening set	14921 Dec 02 19:42	11°31'347"	morning rise	14927 Jan 15 13:40	23°33'604"
			retrograde	14927 Apr 15 13:18	25°33'3242"
conjunction	14921 Dec 18 19:09	11°34'930" 0°03'28"	opposition	14927 Jul 03 15:41	24°30'817" 0°10'13"
minimum elong	14921 Dec 18 19:10	11°34'931" 0°04'28"	min. Earth dist.	14927 Jul 03 05:25	24°30'900" 28.93409 AU
behind sun begin	14921 Dec 18 12:45	11°34'856"	direct	14927 Sep 20 00:22	22°34'412"
behind sun end	14921 Dec 19 01:35	11°35'005"	evening set	14927 Dec 16 23:45	24°33'817"
max. Earth dist.	14921 Dec 19 07:08	11°35'037" 30.88837 AU			
morning rise	14922 Jan 03 20:21	12°32'525"	conjunction	14928 Jan 02 00:34	25°31'401" 0°10'04"
retrograde	14922 Apr 03 23:04	14°32'234"	minimum elong	14928 Jan 02 00:34	25°31'401" 0°11'00"
opposition	14922 Jun 22 06:41	12°35'803" 0°04'18"	behind sun begin	14928 Jan 01 19:41	25°31'334"
min. Earth dist.	14922 Jun 21 19:41	12°35'849" 28.89176 AU	behind sun end	14928 Jan 02 05:27	25°31'427"
direct	14922 Sep 08 11:41	11°33'405"	max. Earth dist.	14928 Jan 02 11:37	25°31'502" 30.93997 AU
evening set	14922 Dec 05 08:24	13°32'813"	morning rise	14928 Jan 18 02:43	25°34'952"
			retrograde	14928 Apr 17 03:29	27°34'625"
conjunction	14922 Dec 21 08:17	14°30'358" 0°04'35"	opposition	14928 Jul 05 02:55	26°32'2203" 0°11'21"
minimum elong	14922 Dec 21 08:16	14°30'358" 0°05'35"	min. Earth dist.	14928 Jul 04 15:54	26°32'249" 28.94621 AU
behind sun begin	14922 Dec 21 01:59	14°30'324"	direct	14928 Sep 21 12:50	24°35'800"
behind sun end	14922 Dec 21 14:33	14°30'431"	evening set	14928 Dec 18 12:18	26°35'205"
max. Earth dist.	14922 Dec 21 20:43	14°30'507" 30.89499 AU			
morning rise	14923 Jan 06 09:32	14°33'951"	conjunction	14929 Jan 03 13:19	27°32'749" 0°11'07"
retrograde	14923 Apr 06 10:59	16°33'654"	minimum elong	14929 Jan 03 13:19	27°32'749" 0°12'03"
opposition	14923 Jun 24 18:12	15°31'223" 0°05'31"	behind sun begin	14929 Jan 03 08:54	27°32'725"
min. Earth dist.	14923 Jun 24 06:49	15°31'311" 28.89838 AU	behind sun end	14929 Jan 03 17:44	27°32'812"
direct	14923 Sep 10 23:58	13°34'823"	max. Earth dist.	14929 Jan 04 00:35	27°32'851" 30.95255 AU
evening set	14923 Dec 07 21:11	15°34'230"	morning rise	14929 Jan 19 15:33	28°30'340"
				14929 Apr 16 18:58	0°≈
conjunction	14923 Dec 23 21:04	16°31'814" 0°05'42"	retrograde	14929 Apr 19 15:07	0°≈00'08"

	14929 Apr 22 10:25	30° $\overline{\text{R}}\overline{\text{Z}}$		max. Earth dist.	14935 Jan 18 02:08	10° $\approx$ 50'50	31.02154 AU
opposition	14929 Jul 07 14:17	28° $\overline{\text{Z}}$ 35'50 0°12'29		morning rise	14935 Feb 02 22:12	11° $\approx$ 25'59	
min. Earth dist.	14929 Jul 07 04:33	28° $\overline{\text{Z}}$ 36'31 28.95920 AU		retrograde	14935 May 03 13:47	13° $\approx$ 21'49	
direct	14929 Sep 23 23:42	27° $\overline{\text{Z}}$ 11'49		opposition	14935 Jul 21 08:50	11° $\approx$ 57'48 0°18'45	
evening set	14929 Dec 21 01:03	29° $\overline{\text{Z}}$ 05'55		min. Earth dist.	14935 Jul 21 01:57	11° $\approx$ 58'17 29.02607 AU	
				direct	14935 Oct 07 20:27	10° $\approx$ 33'41	
conjunction	14930 Jan 06 02:18	29° $\overline{\text{Z}}$ 41'39 0°12'10		evening set	14936 Jan 04 06:09	12° $\approx$ 27'46	
minimum elong	14930 Jan 06 02:18	29° $\overline{\text{Z}}$ 41'39 0°13'05					
behind sun begin	14930 Jan 05 22:27	29° $\overline{\text{Z}}$ 41'18		conjunction	14936 Jan 20 08:18	13° $\approx$ 03'27 0°17'58	
behind sun end	14930 Jan 06 06:08	29° $\overline{\text{Z}}$ 41'59		minimum elong	14936 Jan 20 08:18	13° $\approx$ 03'27 0°18'45	
max. Earth dist.	14930 Jan 06 13:16	29° $\overline{\text{Z}}$ 42'40 30.96584 AU		max. Earth dist.	14936 Jan 20 15:27	13° $\approx$ 04'06 31.03041 AU	
	14930 Jan 14 06:48	0° $\approx$		morning rise	14936 Feb 05 11:02	13° $\approx$ 39'12	
morning rise	14930 Jan 22 04:39	0° $\approx$ 17'30			14936 Mar 19 14:17	15° $\approx$	
retrograde	14930 Apr 22 02:53	2° $\approx$ 13'52		retrograde	14936 May 05 00:58	15° $\approx$ 34'54	
opposition	14930 Jul 10 01:18	0° $\approx$ 49'40 0°13'35			14936 Jun 21 13:53	15° $\overline{\text{R}}\approx$	
min. Earth dist.	14930 Jul 09 15:05	0° $\approx$ 50'23 28.97245 AU		opposition	14936 Jul 22 19:46	14° $\approx$ 10'54 0°19'42	
	14930 Aug 10 15:42	30° $\overline{\text{R}}\overline{\text{Z}}$		min. Earth dist.	14936 Jul 22 13:57	14° $\approx$ 11'18 29.03492 AU	
direct	14930 Sep 26 11:51	29° $\overline{\text{Z}}$ 25'40		direct	14936 Oct 09 08:48	12° $\approx$ 46'45	
	14930 Nov 11 01:58	0° $\approx$		evening set	14937 Jan 05 18:43	14° $\approx$ 40'48	
evening set	14930 Dec 23 14:00	1° $\approx$ 19'47			14937 Jan 14 12:05	15° $\approx$	
conjunction	14931 Jan 08 15:19	1° $\approx$ 55'31 0°13'11		conjunction	14937 Jan 21 20:54	15° $\approx$ 16'28 0°18'50	
minimum elong	14931 Jan 08 15:19	1° $\approx$ 55'31 0°14'06		minimum elong	14937 Jan 21 20:55	15° $\approx$ 16'28 0°19'36	
behind sun begin	14931 Jan 08 12:12	1° $\approx$ 55'14		max. Earth dist.	14937 Jan 22 02:59	15° $\approx$ 17'01 31.03946 AU	
behind sun end	14931 Jan 08 18:26	1° $\approx$ 55'48		morning rise	14937 Feb 06 23:49	15° $\approx$ 52'12	
max. Earth dist.	14931 Jan 09 01:10	1° $\approx$ 56'25 30.97885 AU		retrograde	14937 May 07 14:30	17° $\approx$ 47'47	
morning rise	14931 Jan 24 17:49	2° $\approx$ 31'21		opposition	14937 Jul 25 06:31	16° $\approx$ 23'48 0°20'37	
retrograde	14931 Apr 24 14:28	4° $\approx$ 27'39		min. Earth dist.	14937 Jul 25 00:13	16° $\approx$ 24'14 29.04415 AU	
opposition	14931 Jul 12 12:36	3° $\approx$ 03'31 0°14'40			14937 Oct 07 03:26	15° $\overline{\text{R}}\approx$	
min. Earth dist.	14931 Jul 12 03:51	3° $\approx$ 04'08 28.98521 AU		direct	14937 Oct 11 21:38	14° $\approx$ 59'37	
direct	14931 Sep 28 21:40	1° $\approx$ 39'32			14937 Oct 16 14:46	15° $\approx$	
evening set	14931 Dec 26 02:48	3° $\approx$ 33'39		evening set	14938 Jan 08 07:22	16° $\approx$ 53'39	
conjunction	14932 Jan 11 04:23	4° $\approx$ 09'23 0°14'12		conjunction	14938 Jan 24 09:42	17° $\approx$ 29'19 0°19'41	
minimum elong	14932 Jan 11 04:23	4° $\approx$ 09'23 0°15'05		minimum elong	14938 Jan 24 09:42	17° $\approx$ 29'19 0°20'25	
behind sun begin	14932 Jan 11 02:16	4° $\approx$ 09'11		max. Earth dist.	14938 Jan 24 15:48	17° $\approx$ 29'52 31.04889 AU	
behind sun end	14932 Jan 11 06:30	4° $\approx$ 09'34		morning rise	14938 Feb 09 12:34	18° $\approx$ 05'02	
max. Earth dist.	14932 Jan 11 14:16	4° $\approx$ 10'17 30.99111 AU		retrograde	14938 May 10 01:17	20° $\approx$ 00'30	
morning rise	14932 Jan 27 06:49	4° $\approx$ 45'12		opposition	14938 Jul 27 17:13	18° $\approx$ 36'32 0°21'30	
retrograde	14932 Apr 26 01:59	6° $\approx$ 41'24		min. Earth dist.	14938 Jul 27 12:16	18° $\approx$ 36'53 29.05402 AU	
opposition	14932 Jul 13 23:46	5° $\approx$ 17'19 0°15'44		direct	14938 Oct 14 08:50	17° $\approx$ 12'20	
min. Earth dist.	14932 Jul 13 14:59	5° $\approx$ 17'56 28.99685 AU		evening set	14939 Jan 10 19:57	19° $\approx$ 06'22	
direct	14932 Sep 30 09:30	3° $\approx$ 53'19					
evening set	14932 Dec 27 15:47	5° $\approx$ 47'27		conjunction	14939 Jan 26 22:24	19° $\approx$ 42'01 0°20'30	
				minimum elong	14939 Jan 26 22:24	19° $\approx$ 42'01 0°21'13	
conjunction	14933 Jan 12 17:21	6° $\approx$ 23'09 0°15'10		max. Earth dist.	14939 Jan 27 04:12	19° $\approx$ 42'33 31.05927 AU	
minimum elong	14933 Jan 12 17:22	6° $\approx$ 23'09 0°16'02		morning rise	14939 Feb 12 01:18	20° $\approx$ 17'44	
max. Earth dist.	14933 Jan 13 01:32	6° $\approx$ 23'54 31.00221 AU		retrograde	14939 May 12 12:48	22° $\approx$ 13'05	
morning rise	14933 Jan 28 20:02	6° $\approx$ 58'58		opposition	14939 Jul 30 03:50	20° $\approx$ 49'10 0°22'21	
retrograde	14933 Apr 28 13:52	8° $\approx$ 55'03		min. Earth dist.	14939 Jul 29 22:06	20° $\approx$ 49'34 29.06485 AU	
opposition	14933 Jul 16 10:55	7° $\approx$ 31'00 0°16'46		direct	14939 Oct 16 21:05	19° $\approx$ 24'58	
min. Earth dist.	14933 Jul 16 03:13	7° $\approx$ 31'33 29.00748 AU		evening set	14940 Jan 13 08:26	21° $\approx$ 19'01	
direct	14933 Oct 02 20:11	6° $\approx$ 06'59					
evening set	14933 Dec 30 04:32	8° $\approx$ 01'05		conjunction	14940 Jan 29 10:52	21° $\approx$ 54'39 0°21'17	
				minimum elong	14940 Jan 29 10:52	21° $\approx$ 54'39 0°21'58	
conjunction	14934 Jan 15 06:29	8° $\approx$ 36'47 0°16'08		max. Earth dist.	14940 Jan 29 16:00	21° $\approx$ 55'07 31.07060 AU	
minimum elong	14934 Jan 15 06:28	8° $\approx$ 36'47 0°16'58		morning rise	14940 Feb 14 13:48	22° $\approx$ 30'21	
max. Earth dist.	14934 Jan 15 15:01	8° $\approx$ 37'34 31.01229 AU		retrograde	14940 May 13 23:57	24° $\approx$ 25'36	
morning rise	14934 Jan 31 09:05	9° $\approx$ 12'34		opposition	14940 Jul 31 14:36	23° $\approx$ 01'46 0°23'11	
retrograde	14934 May 01 00:59	11° $\approx$ 08'32		min. Earth dist.	14940 Jul 31 09:52	23° $\approx$ 02'06 29.07683 AU	
opposition	14934 Jul 18 21:59	9° $\approx$ 44'31 0°17'46		direct	14940 Oct 18 06:37	21° $\approx$ 37'35	
min. Earth dist.	14934 Jul 18 14:54	9° $\approx$ 45'00 29.01701 AU		evening set	14941 Jan 14 20:53	23° $\approx$ 31'38	
direct	14934 Oct 05 09:09	8° $\approx$ 20'27					
evening set	14935 Jan 01 17:28	10° $\approx$ 14'32		conjunction	14941 Jan 30 23:32	24° $\approx$ 07'17 0°22'02	
				minimum elong	14941 Jan 30 23:32	24° $\approx$ 07'17 0°22'43	
conjunction	14935 Jan 17 19:22	10° $\approx$ 50'13 0°17'03		max. Earth dist.	14941 Jan 31 05:05	24° $\approx$ 07'47 31.08314 AU	
minimum elong	14935 Jan 17 19:22	10° $\approx$ 50'13 0°17'53		morning rise	14941 Feb 16 02:23	24° $\approx$ 42'58	

retrograde	14941 May 16 10:53	26° $\approx$ 38'08		evening set	14948 Jan 31 12:55	9° $\mathbb{H}$ 00'14	
opposition	14941 Aug 03 01:07	25° $\approx$ 14'23	0°23'58				
min. Earth dist.	14941 Aug 02 20:06	25° $\approx$ 14'44	29.08969 AU	conjunction	14948 Feb 16 15:43	9° $\mathbb{H}$ 35'47	0°26'19
direct	14941 Oct 20 17:35	23° $\approx$ 50'14		minimum elong	14948 Feb 16 15:43	9° $\mathbb{H}$ 35'47	0°26'46
evening set	14942 Jan 17 09:32	25° $\approx$ 44'19		max. Earth dist.	14948 Feb 16 16:01	9° $\mathbb{H}$ 35'48	31.16042 AU
				morning rise	14948 Mar 03 18:16	10° $\mathbb{H}$ 11'20	
conjunction	14942 Feb 02 12:07	26° $\approx$ 19'57	0°22'45	retrograde	14948 May 31 19:07	12° $\mathbb{H}$ 05'48	
minimum elong	14942 Feb 02 12:07	26° $\approx$ 19'57	0°23'24	opposition	14948 Aug 18 02:49	10° $\mathbb{H}$ 42'23	0°28'23
max. Earth dist.	14942 Feb 02 16:17	26° $\approx$ 20'20	31.09632 AU	min. Earth dist.	14948 Aug 18 02:13	10° $\mathbb{H}$ 42'26	29.16429 AU
morning rise	14942 Feb 18 15:06	26° $\approx$ 55'38		direct	14948 Nov 05 03:04	9° $\mathbb{H}$ 18'11	
retrograde	14942 May 18 22:03	28° $\approx$ 50'44		evening set	14949 Feb 02 01:21	11° $\mathbb{H}$ 12'17	
opposition	14942 Aug 05 11:45	27° $\approx$ 27'04	0°24'43				
min. Earth dist.	14942 Aug 05 07:36	27° $\approx$ 27'22	29.10303 AU	conjunction	14949 Feb 18 04:05	11° $\mathbb{H}$ 47'49	0°26'47
direct	14942 Oct 23 03:32	26° $\approx$ 02'57		minimum elong	14949 Feb 18 04:05	11° $\mathbb{H}$ 47'49	0°27'12
evening set	14943 Jan 19 22:06	27° $\approx$ 57'05		max. Earth dist.	14949 Feb 18 03:24	11° $\mathbb{H}$ 47'45	31.16805 AU
				morning rise	14949 Mar 06 06:35	12° $\mathbb{H}$ 23'20	
conjunction	14943 Feb 05 00:52	28° $\approx$ 32'42	0°23'26	retrograde	14949 Jun 03 06:21	14° $\mathbb{H}$ 17'41	
minimum elong	14943 Feb 05 00:52	28° $\approx$ 32'42	0°24'03	opposition	14949 Aug 20 13:06	12° $\mathbb{H}$ 54'15	0°28'51
max. Earth dist.	14943 Feb 05 05:33	28° $\approx$ 33'08	31.10950 AU	min. Earth dist.	14949 Aug 20 13:48	12° $\mathbb{H}$ 54'13	29.17200 AU
morning rise	14943 Feb 21 03:37	29° $\approx$ 08'21		direct	14949 Nov 07 13:43	11° $\mathbb{H}$ 30'00	
	14943 Mar 18 16:02	0° $\mathbb{H}$		evening set	14950 Feb 04 13:36	13° $\mathbb{H}$ 24'04	
retrograde	14943 May 21 08:23	1° $\mathbb{H}$ 03'24					
	14943 Jul 26 18:35	30° $\mathbb{R}$		conjunction	14950 Feb 20 16:27	13° $\mathbb{H}$ 59'36	0°27'12
opposition	14943 Aug 07 22:18	29° $\approx$ 39'49	0°25'26	minimum elong	14950 Feb 20 16:27	13° $\mathbb{H}$ 59'36	0°27'34
min. Earth dist.	14943 Aug 07 18:51	29° $\approx$ 40'04	29.11590 AU	max. Earth dist.	14950 Feb 20 15:58	13° $\mathbb{H}$ 59'33	31.17585 AU
direct	14943 Oct 25 15:09	28° $\approx$ 15'44		morning rise	14950 Mar 08 18:46	14° $\mathbb{H}$ 35'06	
	14944 Jan 17 20:11	0° $\mathbb{H}$		retrograde	14950 Jun 05 16:02	16° $\mathbb{H}$ 29'18	
evening set	14944 Jan 22 10:51	0° $\mathbb{H}$ 09'54		opposition	14950 Aug 22 23:18	15° $\mathbb{H}$ 05'53	0°29'17
				min. Earth dist.	14950 Aug 22 23:48	15° $\mathbb{H}$ 05'51	29.17990 AU
conjunction	14944 Feb 07 13:28	0° $\mathbb{H}$ 45'30	0°24'05	direct	14950 Nov 10 01:53	13° $\mathbb{H}$ 41'35	
minimum elong	14944 Feb 07 13:28	0° $\mathbb{H}$ 45'31	0°24'40	evening set	14951 Feb 07 01:54	15° $\mathbb{H}$ 35'38	
max. Earth dist.	14944 Feb 07 16:16	0° $\mathbb{H}$ 45'46	31.12201 AU				
morning rise	14944 Feb 23 16:21	1° $\mathbb{H}$ 21'09		conjunction	14951 Feb 23 04:31	16° $\mathbb{H}$ 11'07	0°27'35
retrograde	14944 May 22 21:06	3° $\mathbb{H}$ 16'06		minimum elong	14951 Feb 23 04:32	16° $\mathbb{H}$ 11'07	0°27'55
opposition	14944 Aug 09 08:55	1° $\mathbb{H}$ 52'36	0°26'06	max. Earth dist.	14951 Feb 23 02:46	16° $\mathbb{H}$ 10'58	31.18404 AU
min. Earth dist.	14944 Aug 09 05:44	1° $\mathbb{H}$ 52'49	29.12796 AU	morning rise	14951 Mar 11 06:51	16° $\mathbb{H}$ 46'36	
direct	14944 Oct 27 01:14	0° $\mathbb{H}$ 28'31		retrograde	14951 Jun 08 01:56	18° $\mathbb{H}$ 40'42	
evening set	14945 Jan 23 23:19	2° $\mathbb{H}$ 22'42		opposition	14951 Aug 25 09:30	17° $\mathbb{H}$ 17'17	0°29'40
				min. Earth dist.	14951 Aug 25 10:32	17° $\mathbb{H}$ 17'13	29.18861 AU
conjunction	14945 Feb 09 02:08	2° $\mathbb{H}$ 58'18	0°24'42	direct	14951 Nov 12 11:49	15° $\mathbb{H}$ 52'57	
minimum elong	14945 Feb 09 02:08	2° $\mathbb{H}$ 58'18	0°25'15	evening set	14952 Feb 09 13:57	17° $\mathbb{H}$ 46'59	
max. Earth dist.	14945 Feb 09 05:02	2° $\mathbb{H}$ 58'33	31.13335 AU				
morning rise	14945 Feb 25 04:49	3° $\mathbb{H}$ 33'55		conjunction	14952 Feb 25 16:42	18° $\mathbb{H}$ 22'28	0°27'56
retrograde	14945 May 25 07:59	5° $\mathbb{H}$ 28'47		minimum elong	14952 Feb 25 16:42	18° $\mathbb{H}$ 22'28	0°28'13
opposition	14945 Aug 11 19:35	4° $\mathbb{H}$ 05'19	0°26'44	max. Earth dist.	14952 Feb 25 15:49	18° $\mathbb{H}$ 22'23	31.19322 AU
min. Earth dist.	14945 Aug 11 17:49	4° $\mathbb{H}$ 05'26	29.13861 AU	morning rise	14952 Mar 12 18:44	18° $\mathbb{H}$ 57'55	
direct	14945 Oct 29 13:29	2° $\mathbb{H}$ 41'13		retrograde	14952 Jun 09 10:57	20° $\mathbb{H}$ 51'54	
evening set	14946 Jan 26 12:02	4° $\mathbb{H}$ 35'24		opposition	14952 Aug 26 19:42	19° $\mathbb{H}$ 28'32	0°30'01
				min. Earth dist.	14952 Aug 26 21:00	19° $\mathbb{H}$ 28'27	29.19833 AU
conjunction	14946 Feb 11 14:47	5° $\mathbb{H}$ 10'59	0°25'17	direct	14952 Nov 13 22:45	18° $\mathbb{H}$ 04'12	
minimum elong	14946 Feb 11 14:47	5° $\mathbb{H}$ 10'59	0°25'47	evening set	14953 Feb 11 02:04	19° $\mathbb{H}$ 58'14	
max. Earth dist.	14946 Feb 11 16:03	5° $\mathbb{H}$ 11'06	31.14345 AU				
morning rise	14946 Feb 27 17:32	5° $\mathbb{H}$ 46'34		conjunction	14953 Feb 27 04:37	20° $\mathbb{H}$ 33'42	0°28'14
retrograde	14946 May 27 21:11	7° $\mathbb{H}$ 41'19		minimum elong	14953 Feb 27 04:38	20° $\mathbb{H}$ 33'42	0°28'30
opposition	14946 Aug 14 05:57	6° $\mathbb{H}$ 17'53	0°27'19	max. Earth dist.	14953 Feb 27 02:23	20° $\mathbb{H}$ 33'30	31.20359 AU
min. Earth dist.	14946 Aug 14 04:06	6° $\mathbb{H}$ 18'00	29.14807 AU	morning rise	14953 Mar 15 06:44	21° $\mathbb{H}$ 09'08	
direct	14946 Nov 01 02:41	4° $\mathbb{H}$ 53'45		retrograde	14953 Jun 11 22:44	23° $\mathbb{H}$ 03'03	
evening set	14947 Jan 29 00:37	6° $\mathbb{H}$ 47'55		opposition	14953 Aug 29 05:51	21° $\mathbb{H}$ 39'44	0°30'19
				min. Earth dist.	14953 Aug 29 06:53	21° $\mathbb{H}$ 39'39	29.20923 AU
conjunction	14947 Feb 14 03:25	7° $\mathbb{H}$ 23'30	0°25'49	direct	14953 Nov 16 08:20	20° $\mathbb{H}$ 15'24	
minimum elong	14947 Feb 14 03:25	7° $\mathbb{H}$ 23'30	0°26'18	evening set	14954 Feb 13 14:10	22° $\mathbb{H}$ 09'28	
max. Earth dist.	14947 Feb 14 04:19	7° $\mathbb{H}$ 23'35	31.15228 AU				
morning rise	14947 Mar 02 06:01	7° $\mathbb{H}$ 59'04		conjunction	14954 Mar 01 16:48	22° $\mathbb{H}$ 44'55	0°28'30
retrograde	14947 May 30 07:30	9° $\mathbb{H}$ 53'41		minimum elong	14954 Mar 01 16:48	22° $\mathbb{H}$ 44'55	0°28'43
opposition	14947 Aug 16 16:30	8° $\mathbb{H}$ 30'15	0°27'52	max. Earth dist.	14954 Mar 01 15:08	22° $\mathbb{H}$ 44'46	31.21486 AU
min. Earth dist.	14947 Aug 16 16:20	8° $\mathbb{H}$ 30'16	29.15649 AU	morning rise	14954 Mar 17 18:37	23° $\mathbb{H}$ 20'20	
direct	14947 Nov 03 14:13	7° $\mathbb{H}$ 06'06		retrograde	14954 Jun 14 08:33	25° $\mathbb{H}$ 14'10	

opposition	14954 Aug 31 15:58	23° <del>✕</del> 50'57	0°30'34	conjunction	14961 Mar 17 04:45	8° <del>°</del> 04'16	0°29'09
min. Earth dist.	14954 Aug 31 18:09	23° <del>✕</del> 50'47	29.22076 AU	minimum elong	14961 Mar 17 04:45	8° <del>°</del> 04'16	0°29'08
direct	14954 Nov 18 19:35	22° <del>✕</del> 26'39		max. Earth dist.	14961 Mar 16 22:34	8° <del>°</del> 03'42	31.27861 AU
evening set	14955 Feb 16 02:22	24° <del>✕</del> 20'46		morning rise	14961 Apr 02 05:21	8° <del>°</del> 39'33	
				retrograde	14961 Jun 29 11:14	10° <del>°</del> 32'52	
conjunction	14955 Mar 04 04:50	24° <del>✕</del> 56'12	0°28'43	opposition	14961 Sep 15 15:13	9° <del>°</del> 10'00	0°31'05
minimum elong	14955 Mar 04 04:50	24° <del>✕</del> 56'12	0°28'55	min. Earth dist.	14961 Sep 15 21:31	9° <del>°</del> 09'33	29.28146 AU
max. Earth dist.	14955 Mar 04 01:58	24° <del>✕</del> 55'56	31.22662 AU	direct	14961 Dec 04 02:41	7° <del>°</del> 45'45	
morning rise	14955 Mar 20 06:36	25° <del>✕</del> 31'36		evening set	14962 Mar 03 14:45	9° <del>°</del> 39'56	
retrograde	14955 Jun 16 21:12	27° <del>✕</del> 25'22					
opposition	14955 Sep 03 02:05	26° <del>✕</del> 02'14	0°30'47	conjunction	14962 Mar 19 16:24	10° <del>°</del> 15'16	0°29'05
min. Earth dist.	14955 Sep 03 03:53	26° <del>✕</del> 02'06	29.23245 AU	minimum elong	14962 Mar 19 16:24	10° <del>°</del> 15'16	0°29'00
direct	14955 Nov 21 07:33	24° <del>✕</del> 37'59		max. Earth dist.	14962 Mar 19 08:38	10° <del>°</del> 14'33	31.28413 AU
evening set	14956 Feb 18 14:24	26° <del>✕</del> 32'08		morning rise	14962 Apr 04 16:58	10° <del>°</del> 50'32	
				retrograde	14962 Jul 01 22:13	12° <del>°</del> 43'45	
conjunction	14956 Mar 05 16:48	27° <del>✕</del> 07'33	0°28'54	opposition	14962 Sep 18 01:08	11° <del>°</del> 20'53	0°30'59
minimum elong	14956 Mar 05 16:48	27° <del>✕</del> 07'33	0°29'02	min. Earth dist.	14962 Sep 18 07:17	11° <del>°</del> 20'28	29.28698 AU
max. Earth dist.	14956 Mar 05 13:48	27° <del>✕</del> 07'17	31.23798 AU	direct	14962 Dec 06 12:09	9° <del>°</del> 56'36	
morning rise	14956 Mar 21 18:20	27° <del>✕</del> 42'56		evening set	14963 Mar 06 02:26	11° <del>°</del> 50'47	
retrograde	14956 Jun 18 07:41	29° <del>✕</del> 36'40					
opposition	14956 Sep 04 12:25	28° <del>✕</del> 13'36	0°30'56	conjunction	14963 Mar 22 04:04	12° <del>°</del> 26'06	0°28'58
min. Earth dist.	14956 Sep 04 15:52	28° <del>✕</del> 13'21	29.24350 AU	minimum elong	14963 Mar 22 04:04	12° <del>°</del> 26'06	0°28'52
direct	14956 Nov 22 18:18	26° <del>✕</del> 49'23		max. Earth dist.	14963 Mar 21 20:54	12° <del>°</del> 25'27	31.28965 AU
evening set	14957 Feb 20 02:36	28° <del>✕</del> 43'34		morning rise	14963 Apr 07 04:16	13° <del>°</del> 01'20	
				retrograde	14963 Jul 04 06:41	14° <del>°</del> 54'29	
conjunction	14957 Mar 08 04:55	29° <del>✕</del> 18'59	0°29'02	opposition	14963 Sep 20 11:18	13° <del>°</del> 31'37	0°30'51
minimum elong	14957 Mar 08 04:56	29° <del>✕</del> 18'59	0°29'09	min. Earth dist.	14963 Sep 20 18:27	13° <del>°</del> 31'07	29.29272 AU
max. Earth dist.	14957 Mar 08 01:11	29° <del>✕</del> 18'38	31.24856 AU	direct	14963 Dec 08 23:34	12° <del>°</del> 07'19	
morning rise	14957 Mar 24 06:20	29° <del>✕</del> 54'20		evening set	14964 Mar 07 14:02	14° <del>°</del> 01'29	
	14957 Mar 26 21:33	0° <del>°</del>					
retrograde	14957 Jun 20 19:34	1° <del>°</del> 48'00		conjunction	14964 Mar 23 15:24	14° <del>°</del> 36'46	0°28'49
opposition	14957 Sep 06 22:28	0° <del>°</del> 25'00	0°31'04	minimum elong	14964 Mar 23 15:24	14° <del>°</del> 36'46	0°28'39
min. Earth dist.	14957 Sep 07 01:42	0° <del>°</del> 24'46	29.25343 AU	max. Earth dist.	14964 Mar 23 07:23	14° <del>°</del> 36'02	31.29580 AU
	14957 Sep 22 03:15	30° <del>°</del> 8'8		morning rise	14964 Apr 08 15:31	15° <del>°</del> 11'59	
direct	14957 Nov 25 06:49	29° <del>✕</del> 00'48		retrograde	14964 Jul 05 18:02	17° <del>°</del> 05'03	
	14958 Jan 26 00:40	0° <del>°</del>		opposition	14964 Sep 21 21:18	15° <del>°</del> 42'12	0°30'39
evening set	14958 Feb 22 14:52	0° <del>°</del> 55'01		min. Earth dist.	14964 Sep 22 03:38	15° <del>°</del> 41'46	29.29927 AU
				direct	14964 Dec 10 11:13	14° <del>°</del> 17'53	
conjunction	14958 Mar 10 17:02	1° <del>°</del> 30'25	0°29'07	evening set	14965 Mar 10 01:42	16° <del>°</del> 12'04	
minimum elong	14958 Mar 10 17:02	1° <del>°</del> 30'25	0°29'12				
max. Earth dist.	14958 Mar 10 12:00	1° <del>°</del> 29'57	31.25778 AU	conjunction	14965 Mar 26 02:57	16° <del>°</del> 47'21	0°28'37
morning rise	14958 Mar 26 18:17	2° <del>°</del> 05'45		minimum elong	14965 Mar 26 02:58	16° <del>°</del> 47'21	0°28'27
retrograde	14958 Jun 23 07:16	3° <del>°</del> 59'20		max. Earth dist.	14965 Mar 25 19:07	16° <del>°</del> 46'38	31.30275 AU
opposition	14958 Sep 09 08:47	2° <del>°</del> 36'23	0°31'08	morning rise	14965 Apr 11 02:46	17° <del>°</del> 22'32	
min. Earth dist.	14958 Sep 09 13:27	2° <del>°</del> 36'04	29.26207 AU	retrograde	14965 Jul 08 03:49	19° <del>°</del> 15'32	
direct	14958 Nov 27 17:31	1° <del>°</del> 12'12		opposition	14965 Sep 24 07:21	17° <del>°</del> 52'44	0°30'25
evening set	14959 Feb 25 02:53	3° <del>°</del> 06'25		min. Earth dist.	14965 Sep 24 14:53	17° <del>°</del> 52'13	29.30678 AU
				direct	14965 Dec 12 21:12	16° <del>°</del> 28'25	
conjunction	14959 Mar 13 05:02	3° <del>°</del> 41'48	0°29'10	evening set	14966 Mar 12 13:22	18° <del>°</del> 22'37	
minimum elong	14959 Mar 13 05:02	3° <del>°</del> 41'48	0°29'13				
max. Earth dist.	14959 Mar 12 23:57	3° <del>°</del> 41'21	31.26577 AU	conjunction	14966 Mar 28 14:29	18° <del>°</del> 57'53	0°28'23
morning rise	14959 Mar 29 06:00	4° <del>°</del> 17'07		minimum elong	14966 Mar 28 14:29	18° <del>°</del> 57'53	0°28'09
retrograde	14959 Jun 25 16:51	6° <del>°</del> 10'37		max. Earth dist.	14966 Mar 28 06:30	18° <del>°</del> 57'09	31.31078 AU
opposition	14959 Sep 11 18:57	4° <del>°</del> 47'43	0°31'10	morning rise	14966 Apr 13 14:06	19° <del>°</del> 33'03	
min. Earth dist.	14959 Sep 11 23:44	4° <del>°</del> 47'23	29.26937 AU	retrograde	14966 Jul 10 15:29	21° <del>°</del> 26'00	
direct	14959 Nov 30 05:49	3° <del>°</del> 23'31		opposition	14966 Sep 26 17:22	20° <del>°</del> 03'15	0°30'08
evening set	14960 Feb 27 14:59	5° <del>°</del> 17'44		min. Earth dist.	14966 Sep 27 00:11	20° <del>°</del> 02'47	29.31505 AU
				direct	14966 Dec 15 09:59	18° <del>°</del> 38'59	
conjunction	14960 Mar 14 16:52	5° <del>°</del> 53'06	0°29'11	evening set	14967 Mar 15 00:57	20° <del>°</del> 33'12	
minimum elong	14960 Mar 14 16:52	5° <del>°</del> 53'06	0°29'11				
max. Earth dist.	14960 Mar 14 10:09	5° <del>°</del> 52'29	31.27258 AU	conjunction	14967 Mar 31 01:48	21° <del>°</del> 08'27	0°28'06
morning rise	14960 Mar 30 17:47	6° <del>°</del> 28'24		minimum elong	14967 Mar 31 01:48	21° <del>°</del> 08'27	0°27'51
retrograde	14960 Jun 27 02:45	8° <del>°</del> 21'49		max. Earth dist.	14967 Mar 30 17:07	21° <del>°</del> 07'40	31.31925 AU
opposition	14960 Sep 13 05:04	6° <del>°</del> 58'56	0°31'09	morning rise	14967 Apr 16 01:12	21° <del>°</del> 43'36	
min. Earth dist.	14960 Sep 13 10:39	6° <del>°</del> 58'32	29.27581 AU	retrograde	14967 Jul 13 03:20	23° <del>°</del> 36'31	
direct	14960 Dec 01 15:46	5° <del>°</del> 34'42		opposition	14967 Sep 29 03:33	22° <del>°</del> 13'50	0°29'49
evening set	14961 Mar 01 02:47	7° <del>°</del> 28'54		min. Earth dist.	14967 Sep 29 11:21	22° <del>°</del> 13'18	29.32366 AU

direct	14967 Dec 17 20:54	20° $\Upsilon$ 49'36		conjunction	14974 Apr 15 09:40	6° $\mathcal{B}$ 22'44	0°25'02
evening set	14968 Mar 16 12:32	22° $\Upsilon$ 43'51		minimum elong	14974 Apr 15 09:40	6° $\mathcal{B}$ 22'44	0°24'32
				max. Earth dist.	14974 Apr 14 21:21	6° $\mathcal{B}$ 21'36	31.35319 AU
conjunction	14968 Apr 01 13:18	23° $\Upsilon$ 19'06	0°27'47	morning rise	14974 May 01 07:17	6° $\mathcal{B}$ 57'44	
minimum elong	14968 Apr 01 13:18	23° $\Upsilon$ 19'06	0°27'29	retrograde	14974 Jul 28 00:05	8° $\mathcal{B}$ 50'20	
max. Earth dist.	14968 Apr 01 04:57	23° $\Upsilon$ 18'20	31.32774 AU	opposition	14974 Oct 14 03:08	7° $\mathcal{B}$ 27'50	0°26'23
morning rise	14968 Apr 17 12:23	23° $\Upsilon$ 54'13		min. Earth dist.	14974 Oct 14 14:55	7° $\mathcal{B}$ 27'01	29.35359 AU
retrograde	14968 Jul 14 12:53	25° $\Upsilon$ 47'06		direct	14975 Jan 02 01:07	6° $\mathcal{B}$ 03'34	
opposition	14968 Sep 30 13:36	24° $\Upsilon$ 24'29	0°29'27	evening set	14975 Apr 01 21:24	7° $\mathcal{B}$ 57'52	
min. Earth dist.	14968 Sep 30 21:32	24° $\Upsilon$ 23'56	29.33178 AU				
direct	14968 Dec 19 09:09	23° $\Upsilon$ 00'17		conjunction	14975 Apr 17 20:39	8° $\mathcal{B}$ 32'59	0°24'27
evening set	14969 Mar 19 00:17	24° $\Upsilon$ 54'34		minimum elong	14975 Apr 17 20:39	8° $\mathcal{B}$ 32'59	0°23'56
				max. Earth dist.	14975 Apr 17 08:16	8° $\mathcal{B}$ 31'51	31.35366 AU
conjunction	14969 Apr 04 00:43	25° $\Upsilon$ 29'47	0°27'25	morning rise	14975 May 03 18:01	9° $\mathcal{B}$ 07'58	
minimum elong	14969 Apr 04 00:43	25° $\Upsilon$ 29'47	0°27'06	retrograde	14975 Jul 30 10:58	11° $\mathcal{B}$ 00'31	
max. Earth dist.	14969 Apr 03 14:47	25° $\Upsilon$ 28'53	31.33541 AU	opposition	14975 Oct 16 13:20	9° $\mathcal{B}$ 38'01	0°25'45
morning rise	14969 Apr 19 23:42	26° $\Upsilon$ 04'54		min. Earth dist.	14975 Oct 17 00:23	9° $\mathcal{B}$ 37'15	29.35391 AU
retrograde	14969 Jul 16 23:37	27° $\Upsilon$ 57'44		direct	14976 Jan 04 14:15	8° $\mathcal{B}$ 13'43	
opposition	14969 Oct 02 23:50	26° $\Upsilon$ 35'11	0°29'02	evening set	14976 Apr 03 08:40	10° $\mathcal{B}$ 08'01	
min. Earth dist.	14969 Oct 03 08:26	26° $\Upsilon$ 34'35	29.33894 AU				
direct	14969 Dec 21 19:12	25° $\Upsilon$ 11'00		conjunction	14976 Apr 19 07:37	10° $\mathcal{B}$ 43'07	0°23'50
evening set	14970 Mar 21 11:55	27° $\Upsilon$ 05'18		minimum elong	14976 Apr 19 07:37	10° $\mathcal{B}$ 43'07	0°23'16
				max. Earth dist.	14976 Apr 18 18:36	10° $\mathcal{B}$ 41'56	31.35403 AU
conjunction	14970 Apr 06 12:18	27° $\Upsilon$ 40'30	0°27'01	morning rise	14976 May 05 04:47	11° $\mathcal{B}$ 18'06	
minimum elong	14970 Apr 06 12:19	27° $\Upsilon$ 40'30	0°26'38	retrograde	14976 Jul 31 22:27	13° $\mathcal{B}$ 10'36	
max. Earth dist.	14970 Apr 06 02:50	27° $\Upsilon$ 39'38	31.34180 AU	opposition	14976 Oct 17 23:32	11° $\mathcal{B}$ 48'05	0°25'04
morning rise	14970 Apr 22 10:51	28° $\Upsilon$ 15'36		min. Earth dist.	14976 Oct 18 11:17	11° $\mathcal{B}$ 47'17	29.35463 AU
	14970 Jun 27 01:28	0° $\mathcal{B}$		direct	14977 Jan 06 01:18	10° $\mathcal{B}$ 23'47	
retrograde	14970 Jul 19 08:26	0° $\mathcal{B}$ 08'23		evening set	14977 Apr 05 19:47	12° $\mathcal{B}$ 18'05	
	14970 Aug 10 21:50	30° $\mathcal{R}\Upsilon$					
opposition	14970 Oct 05 10:05	28° $\Upsilon$ 45'52	0°28'35	conjunction	14977 Apr 21 18:37	12° $\mathcal{B}$ 53'11	0°23'11
min. Earth dist.	14970 Oct 05 19:37	28° $\Upsilon$ 45'13	29.34455 AU	minimum elong	14977 Apr 21 18:38	12° $\mathcal{B}$ 53'11	0°22'36
direct	14970 Dec 24 06:31	27° $\Upsilon$ 21'42		max. Earth dist.	14977 Apr 21 06:20	12° $\mathcal{B}$ 52'03	31.35505 AU
evening set	14971 Mar 23 23:41	29° $\Upsilon$ 16'00		morning rise	14977 May 07 15:26	13° $\mathcal{B}$ 28'08	
					14977 Jun 29 02:47	15° $\mathcal{B}$	
conjunction	14971 Apr 08 23:41	29° $\Upsilon$ 51'12	0°26'35	retrograde	14977 Aug 03 07:34	15° $\mathcal{B}$ 20'37	
minimum elong	14971 Apr 08 23:41	29° $\Upsilon$ 51'12	0°26'11		14977 Sep 08 03:23	15° $\mathcal{R}\mathcal{B}$	
max. Earth dist.	14971 Apr 08 12:29	29° $\Upsilon$ 50'10	31.34672 AU	opposition	14977 Oct 20 09:47	13° $\mathcal{B}$ 58'08	0°24'21
	14971 Apr 12 22:56	0° $\mathcal{B}$		min. Earth dist.	14977 Oct 20 21:10	13° $\mathcal{B}$ 57'21	29.35594 AU
morning rise	14971 Apr 24 22:08	0° $\mathcal{B}$ 26'16		direct	14978 Jan 08 13:45	12° $\mathcal{B}$ 33'50	
retrograde	14971 Jul 21 19:26	2° $\mathcal{B}$ 19'00		evening set	14978 Apr 08 07:00	14° $\mathcal{B}$ 28'10	
opposition	14971 Oct 07 20:21	0° $\mathcal{B}$ 56'31	0°28'06		14978 Apr 22 18:20	15° $\mathcal{B}$	
min. Earth dist.	14971 Oct 08 05:45	0° $\mathcal{B}$ 55'52	29.34877 AU				
	14971 Nov 14 05:42	30° $\mathcal{R}\Upsilon$		conjunction	14978 Apr 24 05:25	15° $\mathcal{B}$ 03'15	0°22'31
direct	14971 Dec 26 16:33	29° $\Upsilon$ 32'20		minimum elong	14978 Apr 24 05:25	15° $\mathcal{B}$ 03'15	0°21'52
	14972 Feb 06 07:43	0° $\mathcal{B}$		max. Earth dist.	14978 Apr 23 16:08	15° $\mathcal{B}$ 02'01	31.35681 AU
evening set	14972 Mar 25 11:05	1° $\mathcal{B}$ 26'38		morning rise	14978 May 10 02:05	15° $\mathcal{B}$ 38'11	
				retrograde	14978 Aug 05 18:14	17° $\mathcal{B}$ 30'39	
conjunction	14972 Apr 10 11:02	2° $\mathcal{B}$ 01'49	0°26'06	opposition	14978 Oct 22 20:05	16° $\mathcal{B}$ 08'13	0°23'36
minimum elong	14972 Apr 10 11:03	2° $\mathcal{B}$ 01'49	0°25'39	min. Earth dist.	14978 Oct 23 07:25	16° $\mathcal{B}$ 07'26	29.35816 AU
max. Earth dist.	14972 Apr 10 00:07	2° $\mathcal{B}$ 00'48	31.35013 AU		14978 Dec 09 22:41	15° $\mathcal{R}\mathcal{B}$	
morning rise	14972 Apr 26 09:07	2° $\mathcal{B}$ 36'52		direct	14979 Jan 10 23:54	14° $\mathcal{B}$ 43'57	
retrograde	14972 Jul 23 03:40	4° $\mathcal{B}$ 29'34			14979 Feb 11 11:52	15° $\mathcal{B}$	
opposition	14972 Oct 09 06:43	3° $\mathcal{B}$ 07'05	0°27'34	evening set	14979 Apr 10 18:00	16° $\mathcal{B}$ 38'19	
min. Earth dist.	14972 Oct 09 17:31	3° $\mathcal{B}$ 06'20	29.35145 AU				
direct	14972 Dec 28 03:37	1° $\mathcal{B}$ 42'52		conjunction	14979 Apr 26 16:21	17° $\mathcal{B}$ 13'24	0°21'48
evening set	14973 Mar 27 22:42	3° $\mathcal{B}$ 37'10		minimum elong	14979 Apr 26 16:21	17° $\mathcal{B}$ 13'24	0°21'09
				max. Earth dist.	14979 Apr 26 04:13	17° $\mathcal{B}$ 12'17	31.35933 AU
conjunction	14973 Apr 12 22:21	4° $\mathcal{B}$ 12'20	0°25'35	morning rise	14979 May 12 12:35	17° $\mathcal{B}$ 48'19	
minimum elong	14973 Apr 12 22:22	4° $\mathcal{B}$ 12'20	0°25'08	retrograde	14979 Aug 08 03:15	19° $\mathcal{B}$ 40'48	
max. Earth dist.	14973 Apr 12 10:11	4° $\mathcal{B}$ 11'13	31.35224 AU	opposition	14979 Oct 25 06:27	18° $\mathcal{B}$ 18'25	0°22'49
morning rise	14973 Apr 28 20:19	4° $\mathcal{B}$ 47'22		min. Earth dist.	14979 Oct 25 18:16	18° $\mathcal{B}$ 17'36	29.36082 AU
retrograde	14973 Jul 25 14:30	6° $\mathcal{B}$ 40'00		direct	14980 Jan 13 11:00	16° $\mathcal{B}$ 54'11	
opposition	14973 Oct 11 16:47	5° $\mathcal{B}$ 17'31	0°26'59	evening set	14980 Apr 12 05:04	18° $\mathcal{B}$ 48'35	
min. Earth dist.	14973 Oct 12 03:10	5° $\mathcal{B}$ 16'48	29.35293 AU				
direct	14973 Dec 30 15:00	3° $\mathcal{B}$ 53'17		conjunction	14980 Apr 28 03:02	19° $\mathcal{B}$ 23'40	0°21'03
evening set	14974 Mar 30 10:12	5° $\mathcal{B}$ 47'35		minimum elong	14980 Apr 28 03:02	19° $\mathcal{B}$ 23'40	0°20'21

max. Earth dist.	14980 Apr 27 13:45	19° <b>8</b> 22'26	31.36211 AU	max. Earth dist.	14986 May 11 05:48	2° <b>II</b> 25'21	31.35747 AU
morning rise	14980 May 13 23:11	19° <b>8</b> 58'35		morning rise	14986 May 27 14:35	3° <b>II</b> 01'31	
retrograde	14980 Aug 09 14:20	21° <b>8</b> 51'05		retrograde	14986 Aug 23 02:29	4° <b>II</b> 54'01	
opposition	14980 Oct 26 16:47	20° <b>8</b> 28'45	0°22'00	opposition	14986 Nov 09 08:13	3° <b>II</b> 31'42	0°16'30
min. Earth dist.	14980 Oct 27 04:06	20° <b>8</b> 27'58	29.36345 AU	min. Earth dist.	14986 Nov 09 21:55	3° <b>II</b> 30'46	29.35516 AU
direct	14981 Jan 14 20:57	19° <b>8</b> 04'34		direct	14987 Jan 28 16:26	2° <b>II</b> 07'27	
evening set	14981 Apr 14 16:13	20° <b>8</b> 59'01		evening set	14987 Apr 28 10:43	4° <b>II</b> 01'57	
conjunction	14981 Apr 30 14:02	21° <b>8</b> 34'04	0°20'16	conjunction	14987 May 14 06:48	4° <b>II</b> 36'56	0°15'04
minimum elong	14981 Apr 30 14:03	21° <b>8</b> 34'04	0°19'34	minimum elong	14987 May 14 06:48	4° <b>II</b> 36'56	0°14'14
max. Earth dist.	14981 Apr 30 01:16	21° <b>8</b> 32'54	31.36435 AU	behind sun begin	14987 May 14 03:44	4° <b>II</b> 36'39	
morning rise	14981 May 16 09:46	22° <b>8</b> 09'00		behind sun end	14987 May 14 09:53	4° <b>II</b> 37'12	
retrograde	14981 Aug 11 22:16	24° <b>8</b> 01'30		max. Earth dist.	14987 May 13 15:14	4° <b>II</b> 35'29	31.35257 AU
opposition	14981 Oct 29 03:14	22° <b>8</b> 39'13	0°21'09	morning rise	14987 May 30 01:03	5° <b>II</b> 11'45	
min. Earth dist.	14981 Oct 29 15:50	22° <b>8</b> 38'21	29.36528 AU	retrograde	14987 Aug 25 13:41	7° <b>II</b> 04'14	
direct	14982 Jan 17 07:21	21° <b>8</b> 15'04		opposition	14987 Nov 11 18:48	5° <b>II</b> 41'52	0°15'30
evening set	14982 Apr 17 03:28	23° <b>8</b> 09'33		min. Earth dist.	14987 Nov 12 08:29	5° <b>II</b> 40'56	29.35015 AU
max. Earth dist.	14982 May 02 11:14	23° <b>8</b> 43'20	31.36573 AU	direct	14988 Jan 31 03:42	4° <b>II</b> 17'34	
conjunction	14982 May 03 00:56	23° <b>8</b> 44'36	0°19'28	evening set	14988 Apr 29 21:21	6° <b>II</b> 12'03	
minimum elong	14982 May 03 00:56	23° <b>8</b> 44'36	0°18'43	conjunction	14988 May 15 17:22	6° <b>II</b> 47'01	0°14'08
morning rise	14982 May 18 20:29	24° <b>8</b> 19'30		minimum elong	14988 May 15 17:23	6° <b>II</b> 47'01	0°13'15
retrograde	14982 Aug 14 09:06	26° <b>8</b> 12'01		behind sun begin	14988 May 15 13:36	6° <b>II</b> 46'41	
opposition	14982 Oct 31 13:44	24° <b>8</b> 49'46	0°20'17	behind sun end	14988 May 15 21:09	6° <b>II</b> 47'21	
min. Earth dist.	14982 Nov 01 01:42	24° <b>8</b> 48'57	29.36601 AU	max. Earth dist.	14988 May 15 03:01	6° <b>II</b> 45'42	31.34744 AU
direct	14983 Jan 19 17:48	23° <b>8</b> 25'37		morning rise	14988 May 31 11:13	7° <b>II</b> 21'50	
evening set	14983 Apr 19 14:31	25° <b>8</b> 20'08		retrograde	14988 Aug 26 22:38	9° <b>II</b> 14'17	
conjunction	14983 May 05 11:44	25° <b>8</b> 55'10	0°18'38	opposition	14988 Nov 13 05:31	7° <b>II</b> 51'53	0°14'29
minimum elong	14983 May 05 11:44	25° <b>8</b> 55'10	0°17'53	min. Earth dist.	14988 Nov 13 19:35	7° <b>II</b> 50'55	29.34507 AU
max. Earth dist.	14983 May 04 21:53	25° <b>8</b> 53'54	31.36571 AU	direct	14989 Feb 01 16:15	6° <b>II</b> 27'33	
morning rise	14983 May 21 06:56	26° <b>8</b> 30'04		evening set	14989 May 02 08:14	8° <b>II</b> 22'00	
retrograde	14983 Aug 16 18:53	28° <b>8</b> 22'36		conjunction	14989 May 18 03:49	8° <b>II</b> 56'58	0°13'10
opposition	14983 Nov 03 00:27	27° <b>8</b> 00'21	0°19'22	minimum elong	14989 May 18 03:48	8° <b>II</b> 56'58	0°12'17
min. Earth dist.	14983 Nov 03 13:47	26° <b>8</b> 59'26	29.36538 AU	behind sun begin	14989 May 17 23:30	8° <b>II</b> 56'35	
direct	14984 Jan 22 03:11	25° <b>8</b> 36'12		behind sun end	14989 May 18 08:07	8° <b>II</b> 57'21	
evening set	14984 Apr 21 01:38	27° <b>8</b> 30'43		max. Earth dist.	14989 May 17 12:38	8° <b>II</b> 55'34	31.34268 AU
conjunction	14984 May 06 22:37	28° <b>8</b> 05'44	0°17'47	morning rise	14989 Jun 02 21:32	9° <b>II</b> 31'46	
minimum elong	14984 May 06 22:38	28° <b>8</b> 05'44	0°16'59	retrograde	14989 Aug 29 09:08	11° <b>II</b> 24'12	
max. Earth dist.	14984 May 06 08:37	28° <b>8</b> 04'27	31.36438 AU	opposition	14989 Nov 15 16:05	10° <b>II</b> 01'47	0°13'27
morning rise	14984 May 22 17:34	28° <b>8</b> 40'37		min. Earth dist.	14989 Nov 16 05:06	10° <b>II</b> 00'54	29.34075 AU
retrograde	14984 Jul 04 09:02	0° <b>II</b>		direct	14990 Feb 04 03:08	8° <b>II</b> 37'26	
opposition	14984 Aug 18 05:45	0° <b>II</b> 33'09		evening set	14990 May 04 18:55	10° <b>II</b> 31'54	
min. Earth dist.	14984 Oct 03 12:36	30° <b>R</b> <b>8</b>		conjunction	14990 May 20 14:20	11° <b>II</b> 06'51	0°12'11
direct	14984 Nov 04 10:54	29° <b>8</b> 10'54	0°18'27	minimum elong	14990 May 20 14:20	11° <b>II</b> 06'51	0°11'17
evening set	14984 Nov 04 23:46	29° <b>8</b> 10'01	29.36324 AU	behind sun begin	14990 May 20 09:34	11° <b>II</b> 06'25	
conjunction	14985 Jan 23 16:32	27° <b>8</b> 46'44		behind sun end	14990 May 20 19:06	11° <b>II</b> 07'16	
minimum elong	14985 Apr 23 12:49	29° <b>8</b> 41'15		max. Earth dist.	14990 May 20 00:11	11° <b>II</b> 05'32	31.33877 AU
max. Earth dist.	14985 May 02 01:53	0° <b>II</b>		morning rise	14990 Jun 05 07:39	11° <b>II</b> 41'38	
morning rise	14985 May 09 09:29	0° <b>II</b> 16'16	0°16'54	retrograde	14990 Aug 31 17:10	13° <b>II</b> 34'06	
minimum elong	14985 May 09 09:28	0° <b>II</b> 16'16	0°16'06	opposition	14990 Nov 18 02:58	12° <b>II</b> 11'41	0°12'23
max. Earth dist.	14985 May 08 18:26	0° <b>II</b> 14'53	31.36152 AU	min. Earth dist.	14990 Nov 18 16:34	12° <b>II</b> 10'45	29.33738 AU
morning rise	14985 May 25 04:13	0° <b>II</b> 51'07		direct	14991 Feb 06 13:35	10° <b>II</b> 47'21	
retrograde	14985 Aug 20 17:26	2° <b>II</b> 43'39		evening set	14991 May 07 05:29	12° <b>II</b> 41'49	
opposition	14985 Nov 06 21:35	1° <b>II</b> 21'22	0°17'29	max. Earth dist.	14991 May 22 10:18	13° <b>II</b> 15'27	31.33599 AU
min. Earth dist.	14985 Nov 07 11:19	1° <b>II</b> 20'25	29.35979 AU	conjunction	14991 May 23 00:35	13° <b>II</b> 16'46	0°11'11
direct	14986 Jan 12 22:01	30° <b>R</b> <b>8</b>		minimum elong	14991 May 23 00:34	13° <b>II</b> 16'46	0°10'17
evening set	14986 Jan 26 03:40	29° <b>8</b> 57'10		behind sun begin	14991 May 22 19:26	13° <b>II</b> 16'18	
conjunction	14986 Feb 08 09:12	0° <b>II</b>		behind sun end	14991 May 23 05:43	13° <b>II</b> 17'13	
minimum elong	14986 Apr 25 23:43	1° <b>II</b> 51'41		morning rise	14991 Jun 07 17:45	13° <b>II</b> 51'33	
max. Earth dist.	14986 May 11 20:14	2° <b>II</b> 26'40	0°16'00	retrograde	14991 Sep 03 03:45	15° <b>II</b> 44'03	
behind sun begin	14986 May 11 20:14	2° <b>II</b> 26'40	0°15'09	opposition	14991 Nov 20 13:39	14° <b>II</b> 21'40	0°11'18
behind sun end	14986 May 11 18:05	2° <b>II</b> 26'29		min. Earth dist.	14991 Nov 21 02:02	14° <b>II</b> 20'49	29.33492 AU
	14986 May 11 22:24	2° <b>II</b> 26'52		direct	14992 Feb 08 23:56	12° <b>II</b> 57'21	
				evening set	14992 May 08 16:10	14° <b>II</b> 51'52	



conjunction	14992 May 24 11:01	15°II26'48	0°10'10	opposition	14997 Dec 03 07:56	27°II25'01	0°04'31
minimum elong	14992 May 24 11:01	15°II26'48	0°09'14	min. Earth dist.	14997 Dec 03 21:33	27°II24'05	29.31205 AU
behind sun begin	14992 May 24 05:32	15°II26'19		direct	14998 Feb 21 19:58	26°II00'53	
behind sun end	14992 May 24 16:29	15°II27'17		evening set	14998 May 22 08:43	27°II55'38	
max. Earth dist.	14992 May 23 21:02	15°II25'31	31.33377 AU	max. Earth dist.	14998 Jun 06 11:13	28°II29'11	31.30820 AU
morning rise	14992 Jun 09 03:54	16°II01'35					
retrograde	14992 Sep 04 13:43	17°II54'10		conjunction	14998 Jun 07 01:54	28°II30'32	0°03'49
opposition	14992 Nov 22 00:26	16°II31'48	0°10'13	minimum elong	14998 Jun 07 01:53	28°II30'32	0°02'49
min. Earth dist.	14992 Nov 22 13:45	16°II30'53	29.33290 AU	behind sun begin	14998 Jun 06 19:26	28°II29'58	
direct	14993 Feb 10 08:53	15°II07'31		behind sun end	14998 Jun 07 08:20	28°II31'07	
evening set	14993 May 11 02:53	17°II02'06		morning rise	14998 Jun 22 17:23	29°II05'18	
					14998 Jul 19 20:32	0°00'00	
conjunction	14993 May 26 21:30	17°II37'01	0°09'09	retrograde	14998 Sep 18 08:23	0°00'58'14	
minimum elong	14993 May 26 21:31	17°II37'01	0°08'13		14998 Nov 20 21:56	30°R00'00	
behind sun begin	14993 May 26 15:46	17°II36'31		opposition	14998 Dec 05 19:12	29°II35'56	0°03'21
behind sun end	14993 May 27 03:15	17°II37'32		min. Earth dist.	14998 Dec 06 07:59	29°II35'03	29.30424 AU
max. Earth dist.	14993 May 26 07:58	17°II35'46	31.33178 AU	direct	14999 Feb 24 07:27	28°II11'46	
morning rise	14993 Jun 11 14:08	18°II11'48			14999 May 21 19:07	0°00'00	
retrograde	14993 Sep 07 00:43	20°II04'27		evening set	14999 May 24 19:13	0°00'06'31	
opposition	14993 Nov 24 11:19	18°II42'07	0°09'06				
min. Earth dist.	14993 Nov 24 23:51	18°II41'16	29.33065 AU	conjunction	14999 Jun 09 12:16	0°00'41'25	0°02'42
direct	14994 Feb 12 21:19	17°II17'54		minimum elong	14999 Jun 09 12:16	0°00'41'25	0°01'44
evening set	14994 May 13 13:37	19°II12'31		behind sun begin	14999 Jun 09 05:47	0°00'40'50	
				behind sun end	14999 Jun 09 18:44	0°00'41'59	
conjunction	14994 May 29 07:51	19°II47'26	0°08'06	max. Earth dist.	14999 Jun 08 22:19	0°00'40'07	31.29983 AU
minimum elong	14994 May 29 07:50	19°II47'26	0°07'08	morning rise	14999 Jun 25 03:26	1°00'16'11	
behind sun begin	14994 May 29 01:52	19°II46'54		retrograde	14999 Sep 20 16:29	3°00'09'09	
behind sun end	14994 May 29 13:49	19°II47'58		opposition	14999 Dec 08 06:35	1°00'46'48	0°02'11
max. Earth dist.	14994 May 28 17:37	19°II46'08	31.32922 AU	min. Earth dist.	14999 Dec 08 20:16	1°00'45'52	29.29548 AU
morning rise	14994 Jun 14 00:16	20°II22'13		direct	15000 Feb 26 18:43	0°00'22'37	
retrograde	14994 Sep 09 12:54	22°II14'56		evening set	15000 May 27 05:51	2°00'17'20	
opposition	14994 Nov 26 22:24	20°II52'38	0°07'58				
min. Earth dist.	14994 Nov 27 11:26	20°II51'45	29.32782 AU	conjunction	15000 Jun 11 22:35	2°00'52'14	0°01'35
direct	14995 Feb 15 07:32	19°II28'27		minimum elong	15000 Jun 11 22:36	2°00'52'14	0°00'35
evening set	14995 May 16 00:17	21°II23'07		behind sun begin	15000 Jun 11 16:10	2°00'51'40	
				behind sun end	15000 Jun 12 05:03	2°00'52'48	
conjunction	14995 May 31 18:22	21°II58'02	0°07'03	max. Earth dist.	15000 Jun 11 08:29	2°00'50'55	31.29092 AU
minimum elong	14995 May 31 18:23	21°II58'02	0°06'06	morning rise	15000 Jun 27 13:40	3°00'26'59	
behind sun begin	14995 May 31 12:13	21°II57'29		retrograde	15000 Sep 23 02:57	5°00'20'00	
behind sun end	14995 Jun 01 00:32	21°II58'35		opposition	15000 Dec 10 17:41	3°00'57'36	0°01'01
max. Earth dist.	14995 May 31 04:59	21°II56'48	31.32589 AU	min. Earth dist.	15000 Dec 11 06:12	3°00'56'44	29.28644 AU
morning rise	14995 Jun 16 10:26	22°II32'49		direct	15001 Mar 01 05:46	2°00'33'22	
retrograde	14995 Sep 11 22:47	24°II25'36		evening set	15001 May 29 16:28	4°00'28'05	
opposition	14995 Nov 29 09:29	23°II03'19	0°06'50				
min. Earth dist.	14995 Nov 29 22:28	23°II02'26	29.32388 AU	conjunction	15001 Jun 14 08:57	5°00'02'58	0°00'27
direct	14996 Feb 17 19:36	21°II39'10		minimum elong	15001 Jun 14 08:56	5°00'02'58	0°00'32
evening set	14996 May 17 11:07	23°II33'53		behind sun begin	15001 Jun 14 02:30	5°00'02'24	
				behind sun end	15001 Jun 14 15:23	5°00'03'33	
conjunction	14996 Jun 02 04:49	24°II08'47	0°05'59	max. Earth dist.	15001 Jun 13 19:10	5°00'01'42	31.28193 AU
minimum elong	14996 Jun 02 04:48	24°II08'47	0°05'00	morning rise	15001 Jun 29 23:45	5°00'37'44	
behind sun begin	14996 Jun 01 22:30	24°II08'14		retrograde	15001 Sep 25 12:32	7°00'30'47	
behind sun end	14996 Jun 02 11:06	24°II09'21		desc. node	15001 Oct 30 02:56	7°00'11'46	
max. Earth dist.	14996 Jun 01 14:13	24°II07'26	31.32136 AU	opposition	15001 Dec 13 05:10	6°00'08'19	-0°00'09
morning rise	14996 Jun 17 20:48	24°II43'34		min. Earth dist.	15001 Dec 13 18:14	6°00'07'26	29.27783 AU
retrograde	14996 Sep 13 11:09	26°II36'24		direct	15002 Mar 03 15:26	4°00'44'04	
opposition	14996 Nov 30 20:40	25°II14'08	0°05'41	evening set	15002 Jun 01 02:51	6°00'38'47	
min. Earth dist.	14996 Dec 01 09:36	25°II13'15	29.31872 AU				
direct	14997 Feb 19 07:02	23°II49'59		conjunction	15002 Jun 16 19:07	7°00'13'39	-0°00'41
evening set	14997 May 19 21:51	25°II44'44		minimum elong	15002 Jun 16 19:07	7°00'13'39	0°01'41
				behind sun begin	15002 Jun 16 12:40	7°00'13'05	
conjunction	14997 Jun 04 15:26	26°II19'38	0°04'54	behind sun end	15002 Jun 17 01:35	7°00'14'14	
minimum elong	14997 Jun 04 15:26	26°II19'38	0°03'56	max. Earth dist.	15002 Jun 16 06:20	7°00'12'28	31.27373 AU
behind sun begin	14997 Jun 04 09:02	26°II19'04		morning rise	15002 Jul 02 09:40	7°00'48'25	
behind sun end	14997 Jun 04 21:50	26°II20'13		retrograde	15002 Sep 27 22:40	9°00'41'31	
max. Earth dist.	14997 Jun 04 01:47	26°II18'23	31.31542 AU	opposition	15002 Dec 15 16:34	8°00'19'02	-0°01'19
morning rise	14997 Jun 20 07:00	26°II54'24		min. Earth dist.	15002 Dec 16 04:18	8°00'18'14	29.27004 AU
retrograde	14997 Sep 15 21:13	28°II47'18		direct	15003 Mar 06 03:50	6°00'54'47	

evening set	15003 Jun 03 13:24	8° $\overline{54}$ 9'30		morning rise	15008 Jul 14 22:33	20° $\overline{54}$ 54'46	
				retrograde	15008 Oct 10 18:27	22° $\overline{54}$ 48'25	
conjunction	15003 Jun 19 05:21	9° $\overline{54}$ 24'23	-0°01'48	opposition	15008 Dec 28 14:29	21° $\overline{54}$ 25'54	-0°08'16
minimum elong	15003 Jun 19 05:20	9° $\overline{54}$ 24'23	0°02'46	min. Earth dist.	15008 Dec 29 01:32	21° $\overline{54}$ 25'08	29.22994 AU
behind sun begin	15003 Jun 18 22:53	9° $\overline{54}$ 23'48		direct	15009 Mar 19 00:14	20° $\overline{54}$ 01'48	
behind sun end	15003 Jun 19 11:46	9° $\overline{54}$ 24'57		evening set	15009 Jun 16 04:58	21° $\overline{54}$ 56'42	
max. Earth dist.	15003 Jun 18 16:16	9° $\overline{54}$ 23'10	31.26646 AU				
morning rise	15003 Jul 04 19:46	9° $\overline{54}$ 59'07		conjunction	15009 Jul 01 19:35	22° $\overline{54}$ 31'34	-0°08'16
retrograde	15003 Sep 30 10:32	11° $\overline{54}$ 52'19		minimum elong	15009 Jul 01 19:36	22° $\overline{54}$ 31'34	0°09'12
opposition	15003 Dec 18 03:57	10° $\overline{54}$ 29'49	-0°02'29	behind sun begin	15009 Jul 01 14:08	22° $\overline{54}$ 31'04	
min. Earth dist.	15003 Dec 18 15:39	10° $\overline{54}$ 29'01	29.26335 AU	behind sun end	15009 Jul 02 01:04	22° $\overline{54}$ 32'03	
direct	15004 Mar 07 13:03	9° $\overline{54}$ 05'34		max. Earth dist.	15009 Jul 01 08:22	22° $\overline{54}$ 30'31	31.22532 AU
evening set	15004 Jun 04 23:48	11° $\overline{54}$ 00'19		morning rise	15009 Jul 17 08:57	23° $\overline{54}$ 06'19	
				retrograde	15009 Oct 13 06:05	25° $\overline{54}$ 00'04	
conjunction	15004 Jun 20 15:41	11° $\overline{54}$ 35'11	-0°02'54	opposition	15009 Dec 31 02:26	23° $\overline{54}$ 37'31	-0°09'24
minimum elong	15004 Jun 20 15:41	11° $\overline{54}$ 35'11	0°03'54	min. Earth dist.	15009 Dec 31 12:23	23° $\overline{54}$ 36'50	29.22042 AU
behind sun begin	15004 Jun 20 09:18	11° $\overline{54}$ 34'37		direct	15010 Mar 21 12:14	22° $\overline{54}$ 13'26	
behind sun end	15004 Jun 20 22:04	11° $\overline{54}$ 35'46		evening set	15010 Jun 18 15:36	24° $\overline{54}$ 08'20	
max. Earth dist.	15004 Jun 20 04:00	11° $\overline{54}$ 34'07	31.26014 AU				
morning rise	15004 Jul 06 05:49	12° $\overline{54}$ 09'56		conjunction	15010 Jul 04 06:01	24° $\overline{54}$ 43'12	-0°09'19
retrograde	15004 Oct 01 20:44	14° $\overline{54}$ 03'13		minimum elong	15010 Jul 04 06:00	24° $\overline{54}$ 43'12	0°10'15
opposition	15004 Dec 19 15:29	12° $\overline{54}$ 40'42	-0°03'40	behind sun begin	15010 Jul 04 00:52	24° $\overline{54}$ 42'44	
min. Earth dist.	15004 Dec 20 02:41	12° $\overline{54}$ 39'57	29.25717 AU	behind sun end	15010 Jul 04 11:09	24° $\overline{54}$ 43'39	
direct	15005 Mar 10 01:01	11° $\overline{54}$ 16'30		max. Earth dist.	15010 Jul 03 18:45	24° $\overline{54}$ 42'09	31.21503 AU
evening set	15005 Jun 07 10:26	13° $\overline{54}$ 11'17		morning rise	15010 Jul 19 19:12	25° $\overline{54}$ 17'58	
				retrograde	15010 Oct 15 16:17	27° $\overline{54}$ 11'48	
conjunction	15005 Jun 23 01:53	13° $\overline{54}$ 46'09	-0°03'59	opposition	15011 Jan 02 14:37	25° $\overline{54}$ 49'13	-0°10'31
minimum elong	15005 Jun 23 01:52	13° $\overline{54}$ 46'09	0°04'58	min. Earth dist.	15011 Jan 03 01:25	25° $\overline{54}$ 48'28	29.20952 AU
behind sun begin	15005 Jun 22 19:35	13° $\overline{54}$ 45'35		direct	15011 Mar 23 22:35	24° $\overline{54}$ 25'07	
behind sun end	15005 Jun 23 08:09	13° $\overline{54}$ 46'42		evening set	15011 Jun 21 02:15	26° $\overline{54}$ 20'00	
max. Earth dist.	15005 Jun 22 13:31	13° $\overline{54}$ 45'00	31.25418 AU				
morning rise	15005 Jul 08 15:58	14° $\overline{54}$ 20'54		conjunction	15011 Jul 06 16:33	26° $\overline{54}$ 54'52	-0°10'20
retrograde	15005 Oct 04 09:50	16° $\overline{54}$ 14'16		minimum elong	15011 Jul 06 16:33	26° $\overline{54}$ 54'52	0°11'15
opposition	15005 Dec 22 03:04	14° $\overline{54}$ 51'46	-0°04'49	behind sun begin	15011 Jul 06 11:47	26° $\overline{54}$ 54'26	
min. Earth dist.	15005 Dec 22 13:45	14° $\overline{54}$ 51'02	29.25129 AU	behind sun end	15011 Jul 06 21:20	26° $\overline{54}$ 55'18	
direct	15006 Mar 12 12:25	13° $\overline{54}$ 27'35		max. Earth dist.	15011 Jul 06 05:58	26° $\overline{54}$ 53'53	31.20352 AU
evening set	15006 Jun 09 20:57	15° $\overline{54}$ 22'25		morning rise	15011 Jul 22 05:35	27° $\overline{54}$ 29'39	
				retrograde	15011 Oct 18 02:33	29° $\overline{54}$ 23'33	
conjunction	15006 Jun 25 12:19	15° $\overline{54}$ 57'16	-0°05'04	opposition	15012 Jan 05 02:29	28° $\overline{54}$ 00'54	-0°11'37
minimum elong	15006 Jun 25 12:19	15° $\overline{54}$ 57'16	0°06'03	min. Earth dist.	15012 Jan 05 12:25	28° $\overline{54}$ 00'13	29.19734 AU
behind sun begin	15006 Jun 25 06:10	15° $\overline{54}$ 56'43		direct	15012 Mar 25 11:02	26° $\overline{54}$ 36'46	
behind sun end	15006 Jun 25 18:28	15° $\overline{54}$ 57'49		evening set	15012 Jun 22 12:57	28° $\overline{54}$ 31'39	
max. Earth dist.	15006 Jun 25 01:20	15° $\overline{54}$ 56'16	31.24816 AU				
morning rise	15006 Jul 11 02:04	16° $\overline{54}$ 32'01		conjunction	15012 Jul 08 02:59	29° $\overline{54}$ 06'31	-0°11'21
retrograde	15006 Oct 06 20:40	18° $\overline{54}$ 25'29		minimum elong	15012 Jul 08 02:58	29° $\overline{54}$ 06'31	0°12'16
opposition	15006 Dec 24 14:52	17° $\overline{54}$ 02'59	-0°05'59	behind sun begin	15012 Jul 07 22:39	29° $\overline{54}$ 06'08	
min. Earth dist.	15006 Dec 25 01:57	17° $\overline{54}$ 02'14	29.24505 AU	behind sun end	15012 Jul 08 07:18	29° $\overline{54}$ 06'55	
direct	15007 Mar 15 01:02	15° $\overline{54}$ 38'51		max. Earth dist.	15012 Jul 07 15:46	29° $\overline{54}$ 05'29	31.19093 AU
evening set	15007 Jun 12 07:31	17° $\overline{54}$ 33'42		morning rise	15012 Jul 23 16:00	29° $\overline{54}$ 41'18	
					15012 Aug 01 08:01	0° $\overline{54}$	
conjunction	15007 Jun 27 22:32	18° $\overline{54}$ 08'34	-0°06'08	retrograde	15012 Oct 19 14:27	1° $\overline{54}$ 35'17	
minimum elong	15007 Jun 27 22:32	18° $\overline{54}$ 08'34	0°07'06	opposition	15013 Jan 06 14:36	0° $\overline{54}$ 12'34	-0°12'41
behind sun begin	15007 Jun 27 16:34	18° $\overline{54}$ 08'02		min. Earth dist.	15013 Jan 07 00:40	0° $\overline{54}$ 11'53	29.18456 AU
behind sun end	15007 Jun 28 04:30	18° $\overline{54}$ 09'06			15013 Jan 14 07:06	30° $\overline{54}$	
max. Earth dist.	15007 Jun 27 10:55	18° $\overline{54}$ 07'29	31.24166 AU	direct	15013 Mar 27 20:42	28° $\overline{54}$ 48'24	
morning rise	15007 Jul 13 12:17	18° $\overline{54}$ 43'19			15013 Jun 04 03:14	0° $\overline{54}$	
retrograde	15007 Oct 09 08:43	20° $\overline{54}$ 36'53		evening set	15013 Jun 24 23:24	0° $\overline{54}$ 43'17	
opposition	15007 Dec 27 02:37	19° $\overline{54}$ 14'22	-0°07'08				
min. Earth dist.	15007 Dec 27 12:42	19° $\overline{54}$ 13'41	29.23810 AU	conjunction	15013 Jul 10 13:23	1° $\overline{54}$ 18'08	-0°12'21
direct	15008 Mar 16 12:32	17° $\overline{54}$ 50'16		minimum elong	15013 Jul 10 13:23	1° $\overline{54}$ 18'08	0°13'14
evening set	15008 Jun 13 18:12	19° $\overline{54}$ 45'08		behind sun begin	15013 Jul 10 09:34	1° $\overline{54}$ 17'48	
				behind sun end	15013 Jul 10 17:11	1° $\overline{54}$ 18'29	
conjunction	15008 Jun 29 09:06	20° $\overline{54}$ 20'00	-0°07'12	max. Earth dist.	15013 Jul 10 03:39	1° $\overline{54}$ 17'14	31.17802 AU
minimum elong	15008 Jun 29 09:06	20° $\overline{54}$ 20'00	0°08'10	morning rise	15013 Jul 26 02:08	1° $\overline{54}$ 52'55	
behind sun begin	15008 Jun 29 03:21	20° $\overline{54}$ 19'29		retrograde	15013 Oct 22 00:42	3° $\overline{54}$ 46'59	
behind sun end	15008 Jun 29 14:50	20° $\overline{54}$ 20'31		opposition	15014 Jan 09 02:44	2° $\overline{54}$ 24'12	-0°13'45
max. Earth dist.	15008 Jun 28 22:05	20° $\overline{54}$ 18'59	31.23407 AU	min. Earth dist.	15014 Jan 09 12:09	2° $\overline{54}$ 23'33	29.17170 AU

direct	15014 Mar 30 09:07	1°Ω00'01			15020 Feb 15 00:30	15°κΩ	
evening set	15014 Jun 27 10:01	2°Ω54'53		direct	15020 Apr 12 07:41	14°Ω12'14	
					15020 Jun 05 23:46	15°Ω	
conjunction	15014 Jul 12 23:38	3°Ω29'44 -0°13'20		evening set	15020 Jul 10 01:19	16°Ω07'15	
minimum elong	15014 Jul 12 23:38	3°Ω29'44 0°14'13					
behind sun begin	15014 Jul 12 20:29	3°Ω29'27		conjunction	15020 Jul 25 14:13	16°Ω42'09 -0°18'47	
behind sun end	15014 Jul 13 02:47	3°Ω30'01		minimum elong	15020 Jul 25 14:13	16°Ω42'09 0°19'32	
max. Earth dist.	15014 Jul 12 13:29	3°Ω28'48 31.16552 AU		max. Earth dist.	15020 Jul 25 08:22	16°Ω41'36 31.10609 AU	
morning rise	15014 Jul 28 12:26	4°Ω04'32		morning rise	15020 Aug 10 02:26	17°Ω17'01	
retrograde	15014 Oct 24 14:06	5°Ω58'42		retrograde	15020 Nov 06 10:04	19°Ω11'54	
opposition	15015 Jan 11 14:52	4°Ω35'50 -0°14'47		opposition	15021 Jan 24 16:45	17°Ω48'56 -0°20'32	
min. Earth dist.	15015 Jan 11 23:21	4°Ω35'15 29.15973 AU		min. Earth dist.	15021 Jan 24 22:11	17°Ω48'33 29.10108 AU	
direct	15015 Apr 01 20:33	3°Ω11'38		direct	15021 Apr 14 20:00	16°Ω24'55	
evening set	15015 Jun 29 20:22	5°Ω06'31		evening set	15021 Jul 12 12:08	18°Ω19'57	
conjunction	15015 Jul 15 10:00	5°Ω41'23 -0°14'18		conjunction	15021 Jul 28 00:45	18°Ω54'51 -0°19'36	
minimum elong	15015 Jul 15 10:00	5°Ω41'23 0°15'09		minimum elong	15021 Jul 28 00:45	18°Ω54'51 0°20'19	
behind sun begin	15015 Jul 15 07:42	5°Ω41'11		max. Earth dist.	15021 Jul 27 18:19	18°Ω54'15 31.09576 AU	
behind sun end	15015 Jul 15 12:18	5°Ω41'36		morning rise	15021 Aug 12 13:02	19°Ω29'44	
max. Earth dist.	15015 Jul 15 01:34	5°Ω40'37 31.15397 AU		retrograde	15021 Nov 08 22:20	21°Ω24'45	
morning rise	15015 Jul 30 22:33	6°Ω16'11		opposition	15022 Jan 27 05:27	20°Ω01'44 -0°21'24	
retrograde	15015 Oct 27 01:14	8°Ω10'28		min. Earth dist.	15022 Jan 27 11:01	20°Ω01'21 29.09036 AU	
opposition	15016 Jan 14 03:05	6°Ω47'33 -0°15'48		direct	15022 Apr 17 05:23	18°Ω37'44	
min. Earth dist.	15016 Jan 14 11:30	6°Ω46'59 29.14866 AU		evening set	15022 Jul 14 22:54	20°Ω32'46	
direct	15016 Apr 03 09:07	5°Ω23'23					
evening set	15016 Jul 01 06:57	7°Ω18'17		conjunction	15022 Jul 30 11:35	21°Ω07'40 -0°20'23	
				minimum elong	15022 Jul 30 11:35	21°Ω07'40 0°21'06	
conjunction	15016 Jul 16 20:18	7°Ω53'09 -0°15'14		max. Earth dist.	15022 Jul 30 06:22	21°Ω07'11 31.08446 AU	
minimum elong	15016 Jul 16 20:18	7°Ω53'09 0°16'05		morning rise	15022 Aug 14 23:40	21°Ω42'34	
behind sun begin	15016 Jul 16 19:44	7°Ω53'06		retrograde	15022 Nov 11 09:13	23°Ω37'42	
behind sun end	15016 Jul 16 20:52	7°Ω53'12		opposition	15023 Jan 29 18:07	22°Ω14'37 -0°22'14	
max. Earth dist.	15016 Jul 16 11:42	7°Ω52'21 31.14349 AU		min. Earth dist.	15023 Jan 29 23:19	22°Ω14'16 29.07842 AU	
morning rise	15016 Aug 01 08:54	8°Ω27'58		direct	15023 Apr 19 18:13	20°Ω50'36	
retrograde	15016 Oct 28 13:42	10°Ω22'21		evening set	15023 Jul 17 09:48	22°Ω45'37	
opposition	15017 Jan 15 15:07	8°Ω59'26 -0°16'48					
min. Earth dist.	15017 Jan 15 22:03	8°Ω58'57 29.13862 AU		conjunction	15023 Aug 01 22:15	23°Ω20'32 -0°21'09	
direct	15017 Apr 05 20:30	7°Ω35'16		minimum elong	15023 Aug 01 22:15	23°Ω20'32 0°21'49	
evening set	15017 Jul 03 17:28	9°Ω30'13		max. Earth dist.	15023 Aug 01 16:10	23°Ω19'58 31.07201 AU	
				morning rise	15023 Aug 17 10:30	23°Ω55'26	
conjunction	15017 Jul 19 06:45	10°Ω05'06 -0°16'09		retrograde	15023 Nov 13 22:35	25°Ω50'40	
minimum elong	15017 Jul 19 06:44	10°Ω05'06 0°16'58		opposition	15024 Feb 01 06:47	24°Ω27'30 -0°23'01	
max. Earth dist.	15017 Jul 18 23:16	10°Ω04'24 31.13379 AU		min. Earth dist.	15024 Feb 01 11:30	24°Ω27'10 29.06543 AU	
morning rise	15017 Aug 03 19:09	10°Ω39'55		direct	15024 Apr 21 05:20	23°Ω03'27	
retrograde	15017 Oct 31 00:28	12°Ω34'26		evening set	15024 Jul 18 20:32	24°Ω58'27	
opposition	15018 Jan 18 03:33	11°Ω11'30 -0°17'46					
min. Earth dist.	15018 Jan 18 10:51	11°Ω11'00 29.12924 AU		conjunction	15024 Aug 03 09:04	25°Ω33'22 -0°21'53	
direct	15018 Apr 08 08:48	9°Ω47'24		minimum elong	15024 Aug 03 09:04	25°Ω33'22 0°22'32	
evening set	15018 Jul 06 03:56	11°Ω42'21		max. Earth dist.	15024 Aug 03 04:18	25°Ω32'55 31.05848 AU	
				morning rise	15024 Aug 18 21:08	26°Ω08'16	
conjunction	15018 Jul 21 17:02	12°Ω17'14 -0°17'03		retrograde	15024 Nov 15 09:30	28°Ω03'35	
minimum elong	15018 Jul 21 17:02	12°Ω17'14 0°17'51		opposition	15025 Feb 02 19:28	26°Ω40'19 -0°23'47	
max. Earth dist.	15018 Jul 21 10:00	12°Ω16'35 31.12469 AU		min. Earth dist.	15025 Feb 03 00:27	26°Ω39'58 29.05155 AU	
morning rise	15018 Aug 06 05:26	12°Ω52'05		direct	15025 Apr 23 17:44	25°Ω16'14	
retrograde	15018 Nov 02 13:16	14°Ω46'43		evening set	15025 Jul 21 07:21	27°Ω11'11	
opposition	15019 Jan 20 15:51	13°Ω23'46 -0°18'43					
min. Earth dist.	15019 Jan 20 21:39	13°Ω23'23 29.12016 AU		conjunction	15025 Aug 05 19:41	27°Ω46'06 -0°22'35	
direct	15019 Apr 10 21:17	11°Ω59'43		minimum elong	15025 Aug 05 19:42	27°Ω46'06 0°23'11	
evening set	15019 Jul 08 14:36	13°Ω54'42		max. Earth dist.	15025 Aug 05 14:42	27°Ω45'39 31.04460 AU	
				morning rise	15025 Aug 21 07:55	28°Ω21'02	
conjunction	15019 Jul 24 03:33	14°Ω29'36 -0°17'56			15025 Oct 17 12:21	0°η	
minimum elong	15019 Jul 24 03:33	14°Ω29'36 0°18'42		retrograde	15025 Nov 17 22:39	0°η16'24	
max. Earth dist.	15019 Jul 23 20:46	14°Ω28'58 31.11553 AU			15025 Dec 20 01:10	30°κΩ	
	15019 Aug 06 15:39	15°Ω		opposition	15026 Feb 05 08:09	28°Ω53'02 -0°24'31	
morning rise	15019 Aug 08 15:54	15°Ω04'27		min. Earth dist.	15026 Feb 05 11:40	28°Ω52'48 29.03774 AU	
retrograde	15019 Nov 04 23:35	16°Ω59'13		direct	15026 Apr 26 05:46	27°Ω28'55	
opposition	15020 Jan 23 04:14	15°Ω36'16 -0°19'39		evening set	15026 Jul 23 17:54	29°Ω23'50	
min. Earth dist.	15020 Jan 23 10:43	15°Ω35'49 29.11095 AU					

conjunction	15026 Aug 08 06:15	29°05'46" -0°23'15"	retrograde	15032 Dec 03 11:02	15°04'47"44"	
minimum elong	15026 Aug 08 06:15	29°05'46" 0°23'50"	opposition	15033 Feb 21 01:53	14°04'24"06"	-0°28'34"
max. Earth dist.	15026 Aug 08 02:25	29°05'46" 31.03093 AU	min. Earth dist.	15033 Feb 21 00:57	14°04'24"10"	28.96745 AU
	15026 Aug 08 19:26	0°00'00"	direct	15033 May 11 15:43	13°00'00"10"	
morning rise	15026 Aug 23 18:24	0°00'33"42"	evening set	15033 Aug 07 21:38	14°00'55"10"	
retrograde	15026 Nov 20 10:15	2°00'29"09"				
opposition	15027 Feb 07 20:57	1°00'05"41" -0°25'13"	conjunction	15033 Aug 23 09:51	15°00'30"11"	-0°26'55"
min. Earth dist.	15027 Feb 08 00:42	1°00'05"26" 29.02455 AU	minimum elong	15033 Aug 23 09:51	15°00'30"11"	0°27'16"
	15027 Mar 25 14:22	30°00'00"00"	max. Earth dist.	15033 Aug 23 11:02	15°00'30"18"	30.96316 AU
direct	15027 Apr 28 18:46	29°05'41"33"	morning rise	15033 Sep 07 22:20	16°00'05"16"	
	15027 Jun 01 03:37	0°00'00"	retrograde	15033 Dec 05 22:49	18°00'01"38"	
evening set	15027 Jul 26 04:37	1°00'36"27"	opposition	15034 Feb 23 15:05	16°00'37"59"	-0°28'59"
			min. Earth dist.	15034 Feb 23 14:21	16°00'38"02"	28.95889 AU
conjunction	15027 Aug 10 16:53	2°00'11"23" -0°23'53"	direct	15034 May 14 03:08	15°00'14"05"	
minimum elong	15027 Aug 10 16:54	2°00'11"23" 0°24'25"	evening set	15034 Aug 10 08:45	17°00'09"06"	
max. Earth dist.	15027 Aug 10 13:44	2°00'11"05" 31.01834 AU				
morning rise	15027 Aug 26 05:07	2°00'46"19"	conjunction	15034 Aug 25 20:53	17°00'44"08"	-0°27'18"
retrograde	15027 Nov 22 23:12	4°00'41"52"	minimum elong	15034 Aug 25 20:53	17°00'44"08"	0°27'36"
opposition	15028 Feb 10 09:28	3°00'18"21" -0°25'52"	max. Earth dist.	15034 Aug 25 21:40	17°00'44"13"	30.95431 AU
min. Earth dist.	15028 Feb 10 11:25	3°00'18"12" 29.01253 AU	morning rise	15034 Sep 10 09:35	18°00'19"14"	
direct	15028 Apr 30 07:51	1°00'54"11"	retrograde	15034 Dec 08 13:12	20°00'15"44"	
evening set	15028 Jul 27 15:24	3°00'49"05"	opposition	15035 Feb 26 04:12	18°00'52"03"	-0°29'22"
			min. Earth dist.	15035 Feb 26 02:22	18°00'52"11"	28.94958 AU
conjunction	15028 Aug 12 03:35	4°00'24"02" -0°24'29"	direct	15035 May 16 14:59	17°00'28"11"	
minimum elong	15028 Aug 12 03:35	4°00'24"02" 0°25'00"	evening set	15035 Aug 12 19:59	19°00'23"13"	
max. Earth dist.	15028 Aug 12 00:55	4°00'23"47" 31.00692 AU				
morning rise	15028 Aug 27 15:51	4°00'59"00"	conjunction	15035 Aug 28 08:13	19°00'58"15"	-0°27'37"
retrograde	15028 Nov 24 10:10	6°00'54"40"	minimum elong	15035 Aug 28 08:13	19°00'58"15"	0°27'53"
opposition	15029 Feb 11 22:20	5°00'31"05" -0°26'29"	max. Earth dist.	15035 Aug 28 09:35	19°00'58"23"	30.94436 AU
min. Earth dist.	15029 Feb 12 00:28	5°00'30"56" 29.00184 AU	morning rise	15035 Sep 12 20:57	20°00'33"23"	
direct	15029 May 02 18:47	4°00'06"57"	retrograde	15035 Dec 11 02:13	22°00'29"59"	
evening set	15029 Jul 30 02:00	6°00'01"51"	opposition	15036 Feb 28 17:22	21°00'06"15"	-0°29'41"
			min. Earth dist.	15036 Feb 28 16:15	21°00'06"20"	28.93912 AU
conjunction	15029 Aug 14 14:15	6°00'36"49" -0°25'03"	direct	15036 May 18 04:17	19°00'42"23"	
minimum elong	15029 Aug 14 14:15	6°00'36"49" 0°25'31"	evening set	15036 Aug 14 07:15	21°00'37"24"	
max. Earth dist.	15029 Aug 14 13:05	6°00'36"42" 30.99689 AU				
morning rise	15029 Aug 30 02:28	7°00'11"48"	conjunction	15036 Aug 29 19:32	22°00'12"27"	-0°27'54"
retrograde	15029 Nov 26 21:18	9°00'07"35"	minimum elong	15036 Aug 29 19:32	22°00'12"28"	0°28'09"
opposition	15030 Feb 14 11:09	7°00'43"59" -0°27'04"	max. Earth dist.	15036 Aug 29 21:05	22°00'12"36"	30.93351 AU
min. Earth dist.	15030 Feb 14 11:44	7°00'43"57" 28.99228 AU	morning rise	15036 Sep 14 08:24	22°00'47"36"	
direct	15030 May 05 07:28	6°00'19"54"	retrograde	15036 Dec 12 16:14	24°00'44"17"	
evening set	15030 Aug 01 12:52	8°00'14"49"	opposition	15037 Mar 02 06:31	23°00'20"29"	-0°29'58"
			min. Earth dist.	15037 Mar 02 04:01	23°00'20"39"	28.92778 AU
conjunction	15030 Aug 17 00:57	8°00'49"47" -0°25'34"	direct	15037 May 20 17:54	21°00'56"36"	
minimum elong	15030 Aug 17 00:58	8°00'49"47" 0°26'02"	evening set	15037 Aug 16 18:23	23°00'51"35"	
max. Earth dist.	15030 Aug 16 23:37	8°00'49"40" 30.98785 AU				
morning rise	15030 Sep 01 13:23	9°00'24"48"	conjunction	15037 Sep 01 06:40	24°00'26"39"	-0°28'09"
retrograde	15030 Nov 29 10:04	11°00'20"44"	minimum elong	15037 Sep 01 06:40	24°00'26"39"	0°28'21"
opposition	15031 Feb 16 23:59	9°00'57"07" -0°27'37"	max. Earth dist.	15037 Sep 01 08:23	24°00'26"49"	30.92187 AU
min. Earth dist.	15031 Feb 17 00:24	9°00'57"05" 28.98374 AU	morning rise	15037 Sep 16 19:43	25°00'01"49"	
direct	15031 May 07 16:56	8°00'33"04"	retrograde	15037 Dec 15 03:49	26°00'58"35"	
evening set	15031 Aug 03 23:37	10°00'28"00"	opposition	15038 Mar 04 19:51	25°00'34"41"	-0°30'12"
			min. Earth dist.	15038 Mar 04 17:53	25°00'34"49"	28.91612 AU
conjunction	15031 Aug 19 11:53	11°00'03"00" -0°26'04"	direct	15038 May 23 05:47	24°00'10"46"	
minimum elong	15031 Aug 19 11:53	11°00'03"00" 0°26'28"	evening set	15038 Aug 19 05:30	26°00'05"42"	
max. Earth dist.	15031 Aug 19 12:09	11°00'03"01" 30.97956 AU				
morning rise	15031 Sep 04 00:13	11°00'38"02"	conjunction	15038 Sep 03 17:58	26°00'40"47"	-0°28'21"
retrograde	15031 Dec 01 21:17	13°00'34"06"	minimum elong	15038 Sep 03 17:58	26°00'40"47"	0°28'31"
opposition	15032 Feb 19 12:55	12°00'10"29" -0°28'07"	max. Earth dist.	15038 Sep 03 20:59	26°00'41"04"	30.91033 AU
min. Earth dist.	15032 Feb 19 12:37	12°00'10"30" 28.97554 AU	morning rise	15038 Sep 19 07:04	27°00'15"58"	
direct	15032 May 09 05:30	10°00'46"30"	retrograde	15038 Dec 17 16:01	29°00'12"47"	
evening set	15032 Aug 05 10:38	12°00'41"28"	opposition	15039 Mar 07 08:49	27°00'48"49"	-0°30'24"
			min. Earth dist.	15039 Mar 07 05:29	27°00'49"03"	28.90480 AU
conjunction	15032 Aug 20 22:43	13°00'16"28" -0°26'31"	direct	15039 May 25 19:51	26°00'24"52"	
minimum elong	15032 Aug 20 22:43	13°00'16"28" 0°26'54"	evening set	15039 Aug 21 16:44	28°00'19"46"	
max. Earth dist.	15032 Aug 20 22:28	13°00'16"26" 30.97147 AU				
morning rise	15032 Sep 05 11:16	13°00'51"31"	conjunction	15039 Sep 06 05:08	28°00'54"53"	-0°28'31"

minimum elong	15039 Sep 06 05:08	28° <u>0</u> 54'53	0°28'38	opposition	15046 Mar 23 05:11	13° <u>0</u> 29'12	-0°30'27
max. Earth dist.	15039 Sep 06 07:54	28° <u>0</u> 55'08	30.89940 AU	min. Earth dist.	15046 Mar 22 21:21	13° <u>0</u> 29'44	28.85464 AU
morning rise	15039 Sep 21 18:32	29° <u>0</u> 30'04		direct	15046 Jun 10 06:05	12° <u>0</u> 05'24	
	15039 Oct 05 16:27	0° <u>0</u>		evening set	15046 Sep 05 24:00	14° <u>0</u> 00'14	
retrograde	15039 Dec 20 04:58	1° <u>0</u> 26'58					
opposition	15040 Mar 08 21:59	0° <u>0</u> 02'55	-0°30'33	conjunction	15046 Sep 21 13:14	14° <u>0</u> 35'27	-0°28'25
min. Earth dist.	15040 Mar 08 18:28	0° <u>0</u> 03'09	28.89449 AU	minimum elong	15046 Sep 21 13:15	14° <u>0</u> 35'27	0°28'17
	15040 Mar 10 16:20	30° <u>0</u> 38'00		max. Earth dist.	15046 Sep 21 20:26	14° <u>0</u> 36'07	30.85169 AU
direct	15040 May 27 06:57	28° <u>0</u> 38'57		morning rise	15046 Oct 07 03:52	15° <u>0</u> 10'48	
	15040 Aug 07 07:27	0° <u>0</u>		retrograde	15047 Jan 04 22:26	17° <u>0</u> 08'23	
evening set	15040 Aug 23 03:48	0° <u>0</u> 33'50		opposition	15047 Mar 25 18:31	15° <u>0</u> 44'07	-0°30'16
				min. Earth dist.	15047 Mar 25 11:33	15° <u>0</u> 44'36	28.84881 AU
conjunction	15040 Sep 07 16:26	1° <u>0</u> 08'56	-0°28'38	direct	15047 Jun 12 17:57	14° <u>0</u> 20'20	
minimum elong	15040 Sep 07 16:26	1° <u>0</u> 08'56	0°28'43	evening set	15047 Sep 08 11:42	16° <u>0</u> 15'10	
max. Earth dist.	15040 Sep 07 20:57	1° <u>0</u> 09'22	30.88963 AU				
morning rise	15040 Sep 23 05:47	1° <u>0</u> 44'09		conjunction	15047 Sep 24 01:13	16° <u>0</u> 50'24	-0°28'14
retrograde	15040 Dec 21 15:20	3° <u>0</u> 41'08		minimum elong	15047 Sep 24 01:14	16° <u>0</u> 50'24	0°28'02
opposition	15041 Mar 11 11:06	2° <u>0</u> 17'01	-0°30'39	max. Earth dist.	15047 Sep 24 09:12	16° <u>0</u> 51'09	30.84543 AU
min. Earth dist.	15041 Mar 11 06:32	2° <u>0</u> 17'20	28.88533 AU	morning rise	15047 Oct 09 15:58	17° <u>0</u> 25'47	
direct	15041 May 29 20:07	0° <u>0</u> 53'04		retrograde	15048 Jan 07 12:23	19° <u>0</u> 23'26	
evening set	15041 Aug 25 15:04	2° <u>0</u> 47'55		opposition	15048 Mar 27 07:51	17° <u>0</u> 59'08	-0°30'02
				min. Earth dist.	15048 Mar 26 23:54	17° <u>0</u> 59'41	28.84196 AU
conjunction	15041 Sep 10 03:37	3° <u>0</u> 23'02	-0°28'42	direct	15048 Jun 14 08:21	16° <u>0</u> 35'22	
minimum elong	15041 Sep 10 03:37	3° <u>0</u> 23'02	0°28'45	evening set	15048 Sep 09 23:29	18° <u>0</u> 30'11	
max. Earth dist.	15041 Sep 10 07:51	3° <u>0</u> 23'26	30.88123 AU				
morning rise	15041 Sep 25 17:19	3° <u>0</u> 58'16		conjunction	15048 Sep 25 13:01	19° <u>0</u> 05'26	-0°27'59
retrograde	15041 Dec 24 04:11	5° <u>0</u> 55'21		minimum elong	15048 Sep 25 13:01	19° <u>0</u> 05'26	0°27'46
opposition	15042 Mar 14 00:14	4° <u>0</u> 31'11	-0°30'42	max. Earth dist.	15048 Sep 25 20:14	19° <u>0</u> 06'07	30.83803 AU
min. Earth dist.	15042 Mar 13 18:47	4° <u>0</u> 31'34	28.87766 AU	morning rise	15048 Oct 11 04:06	19° <u>0</u> 40'50	
direct	15042 Jun 01 06:20	3° <u>0</u> 07'15		retrograde	15049 Jan 09 01:59	21° <u>0</u> 38'34	
evening set	15042 Aug 28 02:09	5° <u>0</u> 02'05		opposition	15049 Mar 29 21:19	20° <u>0</u> 14'12	-0°29'45
				min. Earth dist.	15049 Mar 29 13:47	20° <u>0</u> 14'43	28.83415 AU
conjunction	15042 Sep 12 14:59	5° <u>0</u> 37'13	-0°28'44	direct	15049 Jun 16 20:15	18° <u>0</u> 50'25	
minimum elong	15042 Sep 12 14:59	5° <u>0</u> 37'13	0°28'45	evening set	15049 Sep 12 11:09	20° <u>0</u> 45'13	
max. Earth dist.	15042 Sep 12 20:57	5° <u>0</u> 37'47	30.87409 AU				
morning rise	15042 Sep 28 04:44	6° <u>0</u> 12'29		conjunction	15049 Sep 28 01:02	21° <u>0</u> 20'29	-0°27'43
retrograde	15042 Dec 26 15:48	8° <u>0</u> 09'39		minimum elong	15049 Sep 28 01:03	21° <u>0</u> 20'29	0°27'27
opposition	15043 Mar 16 13:27	6° <u>0</u> 45'28	-0°30'43	max. Earth dist.	15049 Sep 28 09:29	21° <u>0</u> 21'16	30.82985 AU
min. Earth dist.	15043 Mar 16 07:52	6° <u>0</u> 45'51	28.87101 AU	morning rise	15049 Oct 13 16:13	21° <u>0</u> 55'54	
direct	15043 Jun 03 17:44	5° <u>0</u> 21'33		retrograde	15050 Jan 11 13:15	23° <u>0</u> 53'40	
evening set	15043 Aug 30 13:31	7° <u>0</u> 16'22		opposition	15050 Apr 01 10:36	22° <u>0</u> 29'15	-0°29'26
				min. Earth dist.	15050 Apr 01 02:28	22° <u>0</u> 29'48	28.82564 AU
conjunction	15043 Sep 15 02:23	7° <u>0</u> 51'32	-0°28'43	direct	15050 Jun 19 09:58	21° <u>0</u> 05'26	
minimum elong	15043 Sep 15 02:23	7° <u>0</u> 51'32	0°28'41	evening set	15050 Sep 14 22:52	23° <u>0</u> 00'11	
max. Earth dist.	15043 Sep 15 08:13	7° <u>0</u> 52'05	30.86800 AU				
morning rise	15043 Sep 30 16:25	8° <u>0</u> 26'49		conjunction	15050 Sep 30 12:49	23° <u>0</u> 35'28	-0°27'24
retrograde	15043 Dec 29 05:50	10° <u>0</u> 24'05		minimum elong	15050 Sep 30 12:49	23° <u>0</u> 35'28	0°27'06
opposition	15044 Mar 18 02:29	8° <u>0</u> 59'52	-0°30'40	max. Earth dist.	15050 Sep 30 20:34	23° <u>0</u> 36'12	30.82133 AU
min. Earth dist.	15044 Mar 17 19:36	9° <u>0</u> 00'21	28.86528 AU	morning rise	15050 Oct 16 04:27	24° <u>0</u> 10'55	
direct	15044 Jun 05 05:18	7° <u>0</u> 35'59		retrograde	15051 Jan 14 02:22	26° <u>0</u> 08'43	
evening set	15044 Sep 01 00:55	9° <u>0</u> 30'49		opposition	15051 Apr 03 23:50	24° <u>0</u> 44'13	-0°29'04
				min. Earth dist.	15051 Apr 03 15:16	24° <u>0</u> 44'49	28.81726 AU
conjunction	15044 Sep 16 13:56	10° <u>0</u> 06'00	-0°28'40	direct	15051 Jun 21 21:07	23° <u>0</u> 20'23	
minimum elong	15044 Sep 16 13:56	10° <u>0</u> 06'00	0°28'36	evening set	15051 Sep 17 10:30	25° <u>0</u> 15'05	
max. Earth dist.	15044 Sep 16 20:45	10° <u>0</u> 06'38	30.86247 AU				
morning rise	15044 Oct 02 04:06	10° <u>0</u> 41'18		conjunction	15051 Oct 03 00:46	25° <u>0</u> 50'23	-0°27'02
retrograde	15044 Dec 30 18:47	12° <u>0</u> 38'41		minimum elong	15051 Oct 03 00:46	25° <u>0</u> 50'23	0°26'42
opposition	15045 Mar 20 15:54	11° <u>0</u> 14'27	-0°30'35	max. Earth dist.	15051 Oct 03 10:01	25° <u>0</u> 51'16	30.81309 AU
min. Earth dist.	15045 Mar 20 09:27	11° <u>0</u> 14'54	28.85995 AU	morning rise	15051 Oct 18 16:27	26° <u>0</u> 25'51	
direct	15045 Jun 07 17:23	9° <u>0</u> 50'37		retrograde	15052 Jan 16 13:48	28° <u>0</u> 23'42	
evening set	15045 Sep 03 12:18	11° <u>0</u> 45'27		opposition	15052 Apr 05 12:59	26° <u>0</u> 59'09	-0°28'40
				min. Earth dist.	15052 Apr 05 04:21	26° <u>0</u> 59'44	28.80941 AU
conjunction	15045 Sep 19 01:28	12° <u>0</u> 20'38	-0°28'34	direct	15052 Jun 23 09:12	25° <u>0</u> 35'17	
minimum elong	15045 Sep 19 01:28	12° <u>0</u> 20'38	0°28'27	evening set	15052 Sep 18 22:15	27° <u>0</u> 29'57	
max. Earth dist.	15045 Sep 19 08:40	12° <u>0</u> 21'19	30.85728 AU				
morning rise	15045 Oct 04 15:51	12° <u>0</u> 55'58		conjunction	15052 Oct 04 12:36	28° <u>0</u> 05'16	-0°26'39
retrograde	15046 Jan 02 09:08	14° <u>0</u> 53'27		minimum elong	15052 Oct 04 12:37	28° <u>0</u> 05'16	0°26'16

max. Earth dist.	15052 Oct 04 21:44	28° <u>06</u> '08	30.80590 AU	min. Earth dist.	15059 Apr 21 20:31	12° <u>45</u> '58	28.78866 AU
morning rise	15052 Oct 20 04:40	28° <u>04</u> '46		direct	15059 Jul 09 23:25	11° <u>21</u> '24	
	15052 Nov 30 05:27	0° <u>11</u>		evening set	15059 Oct 05 09:17	13° <u>16</u> '02	
retrograde	15053 Jan 18 03:10	0° <u>11</u> '38'39					
	15053 Mar 09 20:25	30° <u>08</u> ' <u>01</u>		conjunction	15059 Oct 21 01:13	13° <u>11</u> '51'29	-0°22'46
opposition	15053 Apr 08 02:09	29° <u>01</u> '14'03	-0°28'13	minimum elong	15059 Oct 21 01:13	13° <u>11</u> '51'29	0°22'10
min. Earth dist.	15053 Apr 07 16:10	29° <u>01</u> '14'44	28.80289 AU	max. Earth dist.	15059 Oct 21 13:07	13° <u>11</u> '52'36	30.78799 AU
direct	15053 Jun 25 20:55	27° <u>01</u> '50'10		morning rise	15059 Nov 05 19:11	14° <u>11</u> '27'08	
evening set	15053 Sep 21 09:49	29° <u>01</u> '44'50			15059 Nov 21 03:04	15° <u>11</u>	
	15053 Sep 28 04:00	0° <u>11</u>		retrograde	15060 Feb 04 02:43	16° <u>11</u> '25'22	
				opposition	15060 Apr 23 21:47	15° <u>11</u> '00'41	-0°23'55
conjunction	15053 Oct 07 00:26	0° <u>11</u> '20'09	-0°26'12	min. Earth dist.	15060 Apr 23 09:37	15° <u>11</u> '01'32	28.78742 AU
minimum elong	15053 Oct 07 00:26	0° <u>11</u> '20'09	0°25'48		15060 Apr 24 07:41	15° <u>08</u> ' <u>11</u>	
max. Earth dist.	15053 Oct 07 10:42	0° <u>11</u> '21'07	30.79996 AU	direct	15060 Jul 11 11:35	13° <u>11</u> '36'57	
morning rise	15053 Oct 22 16:41	0° <u>11</u> '55'40			15060 Sep 22 03:42	15° <u>11</u>	
retrograde	15054 Jan 20 15:18	2° <u>11</u> '53'38		evening set	15060 Oct 06 21:29	15° <u>11</u> '31'34	
opposition	15054 Apr 10 15:22	1° <u>11</u> '28'58	-0°27'44				
min. Earth dist.	15054 Apr 10 05:40	1° <u>11</u> '29'39	28.79771 AU	conjunction	15060 Oct 22 13:49	16° <u>11</u> '07'03	-0°22'04
direct	15054 Jun 28 08:28	0° <u>11</u> '05'06		minimum elong	15060 Oct 22 13:49	16° <u>11</u> '07'03	0°21'26
evening set	15054 Sep 23 21:34	1° <u>11</u> '59'45		max. Earth dist.	15060 Oct 23 02:43	16° <u>11</u> '08'16	30.78630 AU
				morning rise	15060 Nov 07 07:54	16° <u>11</u> '42'43	
conjunction	15054 Oct 09 12:26	2° <u>11</u> '35'06	-0°25'44	retrograde	15061 Feb 05 14:28	18° <u>11</u> '40'57	
minimum elong	15054 Oct 09 12:26	2° <u>11</u> '35'06	0°25'18	opposition	15061 Apr 26 10:59	17° <u>11</u> '16'15	-0°23'08
max. Earth dist.	15054 Oct 09 23:08	2° <u>11</u> '36'06	30.79559 AU	min. Earth dist.	15061 Apr 25 23:09	17° <u>11</u> '17'04	28.78529 AU
morning rise	15054 Oct 25 04:58	3° <u>11</u> '10'38		direct	15061 Jul 14 00:39	15° <u>11</u> '52'30	
retrograde	15055 Jan 23 05:14	5° <u>11</u> '08'38		evening set	15061 Oct 09 09:41	17° <u>11</u> '47'04	
opposition	15055 Apr 13 04:15	3° <u>11</u> '43'58	-0°27'12				
min. Earth dist.	15055 Apr 12 16:58	3° <u>11</u> '44'45	28.79400 AU	conjunction	15061 Oct 25 02:13	18° <u>11</u> '22'33	-0°21'20
direct	15055 Jun 30 20:05	2° <u>11</u> '20'06		minimum elong	15061 Oct 25 02:13	18° <u>11</u> '22'33	0°20'40
evening set	15055 Sep 26 09:24	4° <u>11</u> '14'45		max. Earth dist.	15061 Oct 25 14:21	18° <u>11</u> '23'41	30.78391 AU
				morning rise	15061 Nov 09 20:45	18° <u>11</u> '58'14	
conjunction	15055 Oct 12 00:26	4° <u>11</u> '50'07	-0°25'13	retrograde	15062 Feb 08 03:26	20° <u>11</u> '56'28	
minimum elong	15055 Oct 12 00:26	4° <u>11</u> '50'07	0°24'45	min. Earth dist.	15062 Apr 28 11:34	19° <u>11</u> '32'34	28.78257 AU
max. Earth dist.	15055 Oct 12 11:25	4° <u>11</u> '51'09	30.79249 AU	opposition	15062 Apr 29 00:02	19° <u>11</u> '31'42	-0°22'20
morning rise	15055 Oct 27 17:16	5° <u>11</u> '25'41		direct	15062 Jul 16 12:42	18° <u>11</u> '07'55	
retrograde	15056 Jan 25 18:48	7° <u>11</u> '23'45		evening set	15062 Oct 11 21:55	20° <u>11</u> '02'26	
opposition	15056 Apr 14 17:26	5° <u>11</u> '59'04	-0°26'37				
min. Earth dist.	15056 Apr 14 06:39	5° <u>11</u> '59'49	28.79159 AU	conjunction	15062 Oct 27 14:47	20° <u>11</u> '37'56	-0°20'34
direct	15056 Jul 02 08:06	4° <u>11</u> '35'14		minimum elong	15062 Oct 27 14:47	20° <u>11</u> '37'56	0°19'52
evening set	15056 Sep 27 21:04	6° <u>11</u> '29'52		max. Earth dist.	15062 Oct 28 03:31	20° <u>11</u> '39'08	30.78093 AU
				morning rise	15062 Nov 12 09:33	21° <u>11</u> '13'38	
conjunction	15056 Oct 13 12:25	7° <u>11</u> '05'16	-0°24'40	retrograde	15063 Feb 10 14:43	23° <u>11</u> '11'50	
minimum elong	15056 Oct 13 12:26	7° <u>11</u> '05'16	0°24'09	opposition	15063 May 01 12:56	21° <u>11</u> '47'01	-0°21'30
max. Earth dist.	15056 Oct 14 00:37	7° <u>11</u> '06'25	30.79068 AU	min. Earth dist.	15063 May 01 01:15	21° <u>11</u> '47'50	28.77957 AU
morning rise	15056 Oct 29 05:26	7° <u>11</u> '40'50		direct	15063 Jul 19 00:18	20° <u>11</u> '23'11	
retrograde	15057 Jan 27 09:33	9° <u>11</u> '38'57		evening set	15063 Oct 14 10:06	22° <u>11</u> '17'38	
opposition	15057 Apr 17 06:30	8° <u>11</u> '14'17	-0°26'00				
min. Earth dist.	15057 Apr 16 18:25	8° <u>11</u> '15'07	28.79016 AU	conjunction	15063 Oct 30 03:15	22° <u>11</u> '53'09	-0°19'46
direct	15057 Jul 04 22:16	6° <u>11</u> '50'29		minimum elong	15063 Oct 30 03:15	22° <u>11</u> '53'09	0°19'03
evening set	15057 Sep 30 09:06	8° <u>11</u> '45'08		max. Earth dist.	15063 Oct 30 16:00	22° <u>11</u> '54'21	30.77817 AU
				morning rise	15063 Nov 14 22:19	23° <u>11</u> '28'51	
conjunction	15057 Oct 16 00:33	9° <u>11</u> '20'33	-0°24'04	retrograde	15064 Feb 13 04:15	25° <u>11</u> '27'02	
minimum elong	15057 Oct 16 00:33	9° <u>11</u> '20'33	0°23'32	opposition	15064 May 03 01:45	24° <u>11</u> '02'10	-0°20'38
max. Earth dist.	15057 Oct 16 12:17	9° <u>11</u> '21'39	30.78964 AU	min. Earth dist.	15064 May 02 12:47	24° <u>11</u> '03'04	28.77708 AU
morning rise	15057 Oct 31 17:59	9° <u>11</u> '56'09		direct	15064 Jul 20 12:18	22° <u>11</u> '38'17	
retrograde	15058 Jan 29 23:23	11° <u>11</u> '54'19		evening set	15064 Oct 15 22:11	24° <u>11</u> '32'42	
opposition	15058 Apr 19 19:36	10° <u>11</u> '29'39	-0°25'21				
min. Earth dist.	15058 Apr 19 07:58	10° <u>11</u> '30'27	28.78946 AU	conjunction	15064 Oct 31 15:31	25° <u>11</u> '08'12	-0°18'57
direct	15058 Jul 07 09:44	9° <u>11</u> '05'53		minimum elong	15064 Oct 31 15:31	25° <u>11</u> '08'12	0°18'12
evening set	15058 Oct 02 21:02	11° <u>11</u> '00'32		max. Earth dist.	15064 Nov 01 04:29	25° <u>11</u> '09'26	30.77604 AU
				morning rise	15064 Nov 16 10:55	25° <u>11</u> '43'56	
conjunction	15058 Oct 18 12:54	11° <u>11</u> '35'58	-0°23'26	retrograde	15065 Feb 14 16:37	27° <u>11</u> '42'06	
minimum elong	15058 Oct 18 12:54	11° <u>11</u> '35'58	0°22'52	opposition	15065 May 05 14:42	26° <u>11</u> '17'10	-0°19'44
max. Earth dist.	15058 Oct 19 01:52	11° <u>11</u> '37'11	30.78898 AU	min. Earth dist.	15065 May 02 02:22	26° <u>11</u> '18'02	28.77560 AU
morning rise	15058 Nov 03 06:28	12° <u>11</u> '11'35		direct	15065 Jul 23 00:18	24° <u>11</u> '53'16	
retrograde	15059 Feb 01 12:06	14° <u>11</u> '09'48		evening set	15065 Oct 18 10:18	26° <u>11</u> '47'38	
opposition	15059 Apr 22 08:40	12° <u>11</u> '45'08	-0°24'39				

conjunction	15065 Nov 03 04:01	27° <del>1</del> 23'10	-0°18'06	min. Earth dist.	15071 May 19 03:49	9° <del>7</del> 48'32	28.79532 AU
minimum elong	15065 Nov 03 04:01	27° <del>1</del> 23'10	0°17'20	direct	15071 Aug 06 02:39	8° <del>7</del> 23'45	
max. Earth dist.	15065 Nov 03 17:59	27° <del>1</del> 24'29	30.77525 AU	evening set	15071 Nov 01 12:14	10° <del>7</del> 18'09	
morning rise	15065 Nov 18 23:38	27° <del>1</del> 58'54					
retrograde	15066 Feb 17 06:17	29° <del>1</del> 57'02		conjunction	15071 Nov 17 07:36	10° <del>7</del> 53'47	-0°12'27
opposition	15066 May 08 03:17	28° <del>1</del> 32'06	-0°18'48	minimum elong	15071 Nov 17 07:35	10° <del>7</del> 53'47	0°11'34
min. Earth dist.	15066 May 07 13:41	28° <del>1</del> 33'02	28.77548 AU	behind sun begin	15071 Nov 17 02:56	10° <del>7</del> 53'21	
direct	15066 Jul 25 13:39	27° <del>1</del> 08'10		behind sun end	15071 Nov 17 12:15	10° <del>7</del> 54'12	
evening set	15066 Oct 20 22:33	29° <del>1</del> 02'31		max. Earth dist.	15071 Nov 17 22:52	10° <del>7</del> 55'13	30.79799 AU
				morning rise	15071 Dec 03 04:56	11° <del>7</del> 29'37	
conjunction	15066 Nov 05 16:25	29° <del>1</del> 38'04	-0°17'13	retrograde	15072 Mar 02 14:03	13° <del>7</del> 27'46	
minimum elong	15066 Nov 05 16:25	29° <del>1</del> 38'04	0°16'25	opposition	15072 May 21 07:09	12° <del>7</del> 03'01	-0°12'39
max. Earth dist.	15066 Nov 06 05:57	29° <del>1</del> 39'20	30.77585 AU	min. Earth dist.	15072 May 20 17:32	12° <del>7</del> 03'58	28.80084 AU
	15066 Nov 15 08:14	0° <del>7</del>		direct	15072 Aug 07 13:49	10° <del>7</del> 39'17	
morning rise	15066 Nov 21 12:28	0° <del>7</del> 13'49		evening set	15072 Nov 03 00:46	12° <del>7</del> 33'41	
retrograde	15067 Feb 19 19:51	2° <del>7</del> 11'57					
opposition	15067 May 10 16:02	0° <del>7</del> 47'00	-0°17'50	conjunction	15072 Nov 18 20:24	13° <del>7</del> 09'19	-0°11'25
min. Earth dist.	15067 May 10 02:47	0° <del>7</del> 47'55	28.77693 AU	minimum elong	15072 Nov 18 20:25	13° <del>7</del> 09'19	0°10'31
	15067 Jun 09 10:45	30° <del>8</del> 11		behind sun begin	15072 Nov 18 15:21	13° <del>7</del> 08'52	
direct	15067 Jul 28 00:47	29° <del>1</del> 23'04		behind sun end	15072 Nov 19 01:29	13° <del>7</del> 09'47	
	15067 Sep 13 03:05	0° <del>7</del>		max. Earth dist.	15072 Nov 19 11:10	13° <del>7</del> 10'43	30.80327 AU
evening set	15067 Oct 23 10:37	1° <del>7</del> 17'25		morning rise	15072 Dec 04 18:04	13° <del>7</del> 45'11	
				retrograde	15073 Mar 05 03:47	15° <del>7</del> 43'18	
conjunction	15067 Nov 08 04:56	1° <del>7</del> 52'59	-0°16'19	opposition	15073 May 23 19:44	14° <del>7</del> 18'35	-0°11'33
minimum elong	15067 Nov 08 04:56	1° <del>7</del> 52'59	0°15'30	min. Earth dist.	15073 May 23 05:20	14° <del>7</del> 19'36	28.80567 AU
behind sun begin	15067 Nov 08 03:15	1° <del>7</del> 52'50		direct	15073 Aug 10 01:31	12° <del>7</del> 54'51	
behind sun end	15067 Nov 08 06:37	1° <del>7</del> 53'08		evening set	15073 Nov 05 13:31	14° <del>7</del> 49'15	
max. Earth dist.	15067 Nov 08 19:51	1° <del>7</del> 54'23	30.77803 AU				
morning rise	15067 Nov 24 01:05	2° <del>7</del> 28'45		conjunction	15073 Nov 21 09:24	15° <del>7</del> 24'54	-0°10'23
retrograde	15068 Feb 22 09:01	4° <del>7</del> 26'52		minimum elong	15073 Nov 21 09:24	15° <del>7</del> 24'54	0°09'29
opposition	15068 May 12 04:38	3° <del>7</del> 01'56	-0°16'51	behind sun begin	15073 Nov 21 03:59	15° <del>7</del> 24'24	
min. Earth dist.	15068 May 11 14:33	3° <del>7</del> 02'55	28.77980 AU	behind sun end	15073 Nov 21 14:49	15° <del>7</del> 25'23	
direct	15068 Jul 29 14:29	1° <del>7</del> 38'02		max. Earth dist.	15073 Nov 21 23:42	15° <del>7</del> 26'14	30.80756 AU
evening set	15068 Oct 24 22:57	3° <del>7</del> 32'23		morning rise	15073 Dec 07 07:22	16° <del>7</del> 00'46	
				retrograde	15074 Mar 07 15:19	17° <del>7</del> 58'51	
conjunction	15068 Nov 09 17:22	4° <del>7</del> 07'58	-0°15'23	opposition	15074 May 26 08:16	16° <del>7</del> 34'08	-0°10'26
minimum elong	15068 Nov 09 17:22	4° <del>7</del> 07'58	0°14'33	min. Earth dist.	15074 May 25 19:11	16° <del>7</del> 35'03	28.80956 AU
behind sun begin	15068 Nov 09 14:34	4° <del>7</del> 07'43		direct	15074 Aug 12 13:11	15° <del>7</del> 10'23	
behind sun end	15068 Nov 09 20:11	4° <del>7</del> 08'13		evening set	15074 Nov 08 02:09	17° <del>7</del> 04'45	
max. Earth dist.	15068 Nov 10 07:33	4° <del>7</del> 09'18	30.78172 AU				
morning rise	15068 Nov 25 13:59	4° <del>7</del> 43'45		conjunction	15074 Nov 23 22:28	17° <del>7</del> 40'25	-0°09'20
retrograde	15069 Feb 24 00:11	6° <del>7</del> 41'53		minimum elong	15074 Nov 23 22:28	17° <del>7</del> 40'25	0°08'24
opposition	15069 May 14 17:19	5° <del>7</del> 16'59	-0°15'50	behind sun begin	15074 Nov 23 16:45	17° <del>7</del> 39'54	
min. Earth dist.	15069 May 14 03:00	5° <del>7</del> 17'59	28.78421 AU	behind sun end	15074 Nov 24 04:11	17° <del>7</del> 40'56	
direct	15069 Aug 01 02:23	3° <del>7</del> 53'07		max. Earth dist.	15074 Nov 24 12:57	17° <del>7</del> 41'46	30.81115 AU
evening set	15069 Oct 27 11:08	5° <del>7</del> 47'28		morning rise	15074 Dec 09 20:39	18° <del>7</del> 16'17	
				retrograde	15075 Mar 10 04:20	20° <del>7</del> 14'18	
conjunction	15069 Nov 12 06:01	6° <del>7</del> 23'05	-0°14'25	opposition	15075 May 28 20:38	18° <del>7</del> 49'34	-0°09'18
minimum elong	15069 Nov 12 06:01	6° <del>7</del> 23'05	0°13'34	min. Earth dist.	15075 May 28 06:53	18° <del>7</del> 50'32	28.81278 AU
behind sun begin	15069 Nov 12 02:27	6° <del>7</del> 22'45		direct	15075 Aug 15 01:52	17° <del>7</del> 25'47	
behind sun end	15069 Nov 12 09:35	6° <del>7</del> 23'24		evening set	15075 Nov 10 14:47	19° <del>7</del> 20'06	
max. Earth dist.	15069 Nov 12 21:32	6° <del>7</del> 24'32	30.78664 AU				
morning rise	15069 Nov 28 02:48	6° <del>7</del> 58'53		conjunction	15075 Nov 26 11:13	19° <del>7</del> 55'46	-0°08'17
retrograde	15070 Feb 26 12:10	8° <del>7</del> 57'01		minimum elong	15075 Nov 26 11:13	19° <del>7</del> 55'46	0°07'21
opposition	15070 May 17 05:59	7° <del>7</del> 32'10	-0°14'48	behind sun begin	15075 Nov 26 05:15	19° <del>7</del> 55'14	
min. Earth dist.	15070 May 16 15:49	7° <del>7</del> 33'09	28.78950 AU	behind sun end	15075 Nov 26 17:11	19° <del>7</del> 56'19	
direct	15070 Aug 03 15:09	6° <del>7</del> 08'21		max. Earth dist.	15075 Nov 27 00:51	19° <del>7</del> 57'03	30.81422 AU
evening set	15070 Oct 29 23:40	8° <del>7</del> 02'44		morning rise	15075 Dec 12 09:47	20° <del>7</del> 31'39	
				retrograde	15076 Mar 11 17:21	22° <del>7</del> 29'36	
conjunction	15070 Nov 14 18:43	8° <del>7</del> 38'21	-0°13'27	opposition	15076 May 30 09:05	21° <del>7</del> 04'51	-0°08'09
minimum elong	15070 Nov 14 18:43	8° <del>7</del> 38'21	0°12'34	min. Earth dist.	15076 May 29 20:12	21° <del>7</del> 05'45	28.81594 AU
behind sun begin	15070 Nov 14 14:33	8° <del>7</del> 37'58		direct	15076 Aug 16 12:46	19° <del>7</del> 41'00	
behind sun end	15070 Nov 14 22:53	8° <del>7</del> 38'43		evening set	15076 Nov 12 03:18	21° <del>7</del> 35'17	
max. Earth dist.	15070 Nov 15 09:27	8° <del>7</del> 39'44	30.79231 AU				
morning rise	15070 Nov 30 15:53	9° <del>7</del> 14'10		conjunction	15076 Nov 28 00:11	22° <del>7</del> 10'58	-0°07'13
retrograde	15071 Mar 01 01:53	11° <del>7</del> 12'18		minimum elong	15076 Nov 28 00:11	22° <del>7</del> 10'58	0°06'15
opposition	15071 May 19 18:26	9° <del>7</del> 47'31	-0°13'44	behind sun begin	15076 Nov 27 18:01	22° <del>7</del> 10'24	

behind sun end	15076 Nov 28 06:21	22° $\mathring{A}$ 11'31		opposition	15082 Jun 13 09:27	4° $\mathring{B}$ 33'23	-0°01'06
max. Earth dist.	15076 Nov 28 14:47	22° $\mathring{A}$ 12'20	30.81755 AU	min. Earth dist.	15082 Jun 12 19:27	4° $\mathring{B}$ 34'22	28.85417 AU
morning rise	15076 Dec 13 22:52	22° $\mathring{A}$ 46'50		direct	15082 Aug 30 16:29	3° $\mathring{B}$ 09'28	
retrograde	15077 Mar 14 06:27	24° $\mathring{A}$ 44'42		evening set	15082 Nov 26 06:53	5° $\mathring{B}$ 03'37	
opposition	15077 Jun 01 21:17	23° $\mathring{A}$ 19'56	-0°07'00				
min. Earth dist.	15077 Jun 01 07:54	23° $\mathring{A}$ 20'52	28.81949 AU	conjunction	15082 Dec 12 05:20	5° $\mathring{B}$ 39'20	-0°00'31
direct	15077 Aug 19 03:01	21° $\mathring{A}$ 56'02		minimum elong	15082 Dec 12 05:19	5° $\mathring{B}$ 39'20	0°00'28
evening set	15077 Nov 14 15:55	23° $\mathring{A}$ 50'17		behind sun begin	15082 Dec 11 22:48	5° $\mathring{B}$ 38'45	
				behind sun end	15082 Dec 12 11:49	5° $\mathring{B}$ 39'55	
conjunction	15077 Nov 30 12:57	24° $\mathring{A}$ 25'58	-0°06'08	max. Earth dist.	15082 Dec 12 19:29	5° $\mathring{B}$ 40'39	30.85903 AU
minimum elong	15077 Nov 30 12:57	24° $\mathring{A}$ 25'58	0°05'10	morning rise	15082 Dec 28 05:34	6° $\mathring{B}$ 15'14	
behind sun begin	15077 Nov 30 06:37	24° $\mathring{A}$ 25'24		retrograde	15083 Mar 28 11:04	8° $\mathring{B}$ 12'39	
behind sun end	15077 Nov 30 19:16	24° $\mathring{A}$ 26'32		asc. node	15083 May 20 01:42	7° $\mathring{B}$ 30'55	
max. Earth dist.	15077 Dec 01 02:27	24° $\mathring{A}$ 27'14	30.82153 AU	opposition	15083 Jun 15 21:29	6° $\mathring{B}$ 48'01	0°00'05
morning rise	15077 Dec 16 12:04	25° $\mathring{A}$ 01'51		min. Earth dist.	15083 Jun 15 08:41	6° $\mathring{B}$ 48'55	28.86418 AU
retrograde	15078 Mar 16 21:01	26° $\mathring{A}$ 59'37		direct	15083 Sep 02 03:06	5° $\mathring{B}$ 24'08	
opposition	15078 Jun 04 09:29	25° $\mathring{A}$ 34'50	-0°05'50	evening set	15083 Nov 28 19:30	7° $\mathring{B}$ 18'18	
min. Earth dist.	15078 Jun 03 20:11	25° $\mathring{A}$ 35'45	28.82400 AU				
direct	15078 Aug 21 15:28	24° $\mathring{A}$ 10'54		conjunction	15083 Dec 14 18:15	7° $\mathring{B}$ 54'01	0°00'37
evening set	15078 Nov 17 04:27	26° $\mathring{A}$ 05'07		minimum elong	15083 Dec 14 18:15	7° $\mathring{B}$ 54'01	0°01'36
				behind sun begin	15083 Dec 14 11:44	7° $\mathring{B}$ 53'26	
conjunction	15078 Dec 03 01:55	26° $\mathring{A}$ 40'48	-0°05'03	behind sun end	15083 Dec 15 00:47	7° $\mathring{B}$ 54'36	
minimum elong	15078 Dec 03 01:54	26° $\mathring{A}$ 40'48	0°04'04	max. Earth dist.	15083 Dec 15 08:37	7° $\mathring{B}$ 55'21	30.86916 AU
behind sun begin	15078 Dec 02 19:27	26° $\mathring{A}$ 40'13		morning rise	15083 Dec 30 18:39	8° $\mathring{B}$ 29'55	
behind sun end	15078 Dec 03 08:20	26° $\mathring{A}$ 41'23		retrograde	15084 Mar 30 00:00	10° $\mathring{B}$ 27'18	
max. Earth dist.	15078 Dec 03 16:32	26° $\mathring{A}$ 42'10	30.82648 AU	opposition	15084 Jun 17 09:22	9° $\mathring{B}$ 02'44	0°01'17
morning rise	15078 Dec 19 01:05	27° $\mathring{A}$ 16'41		min. Earth dist.	15084 Jun 16 20:00	9° $\mathring{B}$ 03'40	28.87415 AU
retrograde	15079 Mar 19 08:21	29° $\mathring{A}$ 14'22		direct	15084 Sep 03 14:55	7° $\mathring{B}$ 38'51	
opposition	15079 Jun 06 21:30	27° $\mathring{A}$ 49'35	-0°04'39	evening set	15084 Nov 30 08:29	9° $\mathring{B}$ 33'02	
min. Earth dist.	15079 Jun 06 08:20	27° $\mathring{A}$ 50'30	28.82953 AU				
direct	15079 Aug 24 04:17	26° $\mathring{A}$ 25'38		conjunction	15084 Dec 16 07:21	10° $\mathring{B}$ 08'46	0°01'45
evening set	15079 Nov 19 17:05	28° $\mathring{A}$ 19'49		minimum elong	15084 Dec 16 07:20	10° $\mathring{B}$ 08'46	0°02'44
				behind sun begin	15084 Dec 16 00:49	10° $\mathring{B}$ 08'11	
conjunction	15079 Dec 05 14:40	28° $\mathring{A}$ 55'30	-0°03'56	behind sun end	15084 Dec 16 13:52	10° $\mathring{B}$ 09'21	
minimum elong	15079 Dec 05 14:40	28° $\mathring{A}$ 55'30	0°02'59	max. Earth dist.	15084 Dec 16 20:34	10° $\mathring{B}$ 10'00	30.87883 AU
behind sun begin	15079 Dec 05 08:10	28° $\mathring{A}$ 54'55		morning rise	15085 Jan 01 08:03	10° $\mathring{B}$ 44'40	
behind sun end	15079 Dec 05 21:10	28° $\mathring{A}$ 56'06		retrograde	15085 Apr 01 12:41	12° $\mathring{B}$ 42'00	
max. Earth dist.	15079 Dec 06 04:31	28° $\mathring{A}$ 56'48	30.83276 AU	opposition	15085 Jun 19 21:20	11° $\mathring{B}$ 17'29	0°02'28
morning rise	15079 Dec 21 14:14	29° $\mathring{A}$ 31'23		min. Earth dist.	15085 Jun 19 09:16	11° $\mathring{B}$ 18'19	28.88353 AU
	15080 Jan 03 23:18	0° $\mathring{B}$		direct	15085 Sep 06 01:10	9° $\mathring{B}$ 53'36	
retrograde	15080 Mar 20 22:38	1° $\mathring{B}$ 29'00		evening set	15085 Dec 02 21:19	11° $\mathring{B}$ 47'48	
opposition	15080 Jun 08 09:33	0° $\mathring{B}$ 04'13	-0°03'29				
min. Earth dist.	15080 Jun 07 19:45	0° $\mathring{B}$ 05'11	28.83653 AU	conjunction	15085 Dec 18 20:36	12° $\mathring{B}$ 23'31	0°02'52
	15080 Jun 10 21:57	30° $\mathring{R}$ $\mathring{A}$		minimum elong	15085 Dec 18 20:37	12° $\mathring{B}$ 23'31	0°03'50
direct	15080 Aug 25 16:36	28° $\mathring{A}$ 40'16		behind sun begin	15085 Dec 18 14:09	12° $\mathring{B}$ 22'57	
	15080 Nov 04 22:45	0° $\mathring{B}$		behind sun end	15085 Dec 19 03:05	12° $\mathring{B}$ 24'06	
evening set	15080 Nov 21 05:30	0° $\mathring{B}$ 34'25		max. Earth dist.	15085 Dec 19 10:11	12° $\mathring{B}$ 24'47	30.88768 AU
				morning rise	15086 Jan 03 21:24	12° $\mathring{B}$ 59'25	
conjunction	15080 Dec 07 03:28	1° $\mathring{B}$ 10'08	-0°02'49	retrograde	15086 Apr 04 01:17	14° $\mathring{B}$ 56'40	
minimum elong	15080 Dec 07 03:26	1° $\mathring{B}$ 10'08	0°01'51	opposition	15086 Jun 22 09:10	13° $\mathring{B}$ 32'12	0°03'39
behind sun begin	15080 Dec 06 20:55	1° $\mathring{B}$ 09'32		min. Earth dist.	15086 Jun 21 21:07	13° $\mathring{B}$ 33'02	28.89173 AU
behind sun end	15080 Dec 07 09:58	1° $\mathring{B}$ 10'43		direct	15086 Sep 08 14:46	12° $\mathring{B}$ 08'19	
max. Earth dist.	15080 Dec 07 18:09	1° $\mathring{B}$ 11'30	30.84035 AU	evening set	15086 Dec 05 10:21	14° $\mathring{B}$ 02'30	
morning rise	15080 Dec 23 03:10	1° $\mathring{B}$ 46'01					
retrograde	15081 Mar 23 10:43	3° $\mathring{B}$ 43'33		conjunction	15086 Dec 21 09:42	14° $\mathring{B}$ 38'14	0°03'58
opposition	15081 Jun 10 21:40	2° $\mathring{B}$ 18'48	-0°02'17	minimum elong	15086 Dec 21 09:42	14° $\mathring{B}$ 38'14	0°04'56
min. Earth dist.	15081 Jun 10 08:35	2° $\mathring{B}$ 19'43	28.84477 AU	behind sun begin	15086 Dec 21 03:20	14° $\mathring{B}$ 37'39	
direct	15081 Aug 28 04:35	0° $\mathring{B}$ 54'52		behind sun end	15086 Dec 21 16:04	14° $\mathring{B}$ 38'48	
evening set	15081 Nov 23 18:08	2° $\mathring{B}$ 49'00		max. Earth dist.	15086 Dec 21 21:31	14° $\mathring{B}$ 39'19	30.89537 AU
				morning rise	15087 Jan 06 10:49	15° $\mathring{B}$ 14'07	
conjunction	15081 Dec 09 16:21	3° $\mathring{B}$ 24'43	-0°01'41	retrograde	15087 Apr 06 15:07	17° $\mathring{B}$ 11'17	
minimum elong	15081 Dec 09 16:21	3° $\mathring{B}$ 24'43	0°00'43	opposition	15087 Jun 24 20:56	15° $\mathring{B}$ 46'49	0°04'49
behind sun begin	15081 Dec 09 09:50	3° $\mathring{B}$ 24'08		min. Earth dist.	15087 Jun 24 09:31	15° $\mathring{B}$ 47'37	28.89901 AU
behind sun end	15081 Dec 09 22:52	3° $\mathring{B}$ 25'18		direct	15087 Sep 11 02:34	14° $\mathring{B}$ 22'54	
max. Earth dist.	15081 Dec 10 06:41	3° $\mathring{B}$ 26'03	30.84930 AU	evening set	15087 Dec 07 23:07	16° $\mathring{B}$ 17'05	
morning rise	15081 Dec 25 16:23	4° $\mathring{B}$ 00'36					
retrograde	15082 Mar 25 23:48	5° $\mathring{B}$ 58'05		conjunction	15087 Dec 23 22:51	16° $\mathring{B}$ 52'48	0°05'03



minimum elong	15087 Dec 23 22:52	16°35'24.8	0°06'00			15093 Jun 06 17:42	30°R3		
behind sun begin	15087 Dec 23 16:38	16°35'21.5		opposition		15093 Jul 07 17:23	29°31'11.1	0°11'35	
behind sun end	15087 Dec 24 05:05	16°35'32.2		min. Earth dist.		15093 Jul 07 06:51	29°31'15.6	28.94602 AU	
max. Earth dist.	15087 Dec 24 11:17	16°35'53.8	30.90227 AU	direct		15093 Sep 24 02:40	27°34'7.06		
morning rise	15088 Jan 08 24:00	17°32'8.41		evening set		15093 Dec 21 03:13	29°34'11.0		
retrograde	15088 Apr 08 02:43	19°32'54.5				15093 Dec 29 15:18	0°≈		
opposition	15088 Jun 26 08:37	18°30'11.8	0°05'59						
min. Earth dist.	15088 Jun 25 21:47	18°30'20.3	28.90562 AU	conjunction		15094 Jan 06 04:07	0°≈16'54	0°11'19	
direct	15088 Sep 12 15:11	16°33'7.21		minimum elong		15094 Jan 06 04:06	0°≈16'54	0°12'12	
evening set	15088 Dec 09 11:50	18°33'12.9		behind sun begin		15094 Jan 05 23:46	0°≈16'30		
				behind sun end		15094 Jan 06 08:27	0°≈17'17		
conjunction	15088 Dec 25 11:43	19°30'7.13	0°06'07	max. Earth dist.		15094 Jan 06 14:26	0°≈17'51	30.95155 AU	
minimum elong	15088 Dec 25 11:43	19°30'7.13	0°07'05	morning rise		15094 Jan 22 06:20	0°≈52'45		
behind sun begin	15088 Dec 25 05:41	19°30'6.40		retrograde		15094 Apr 22 03:21	2°≈49'10		
behind sun end	15088 Dec 25 17:45	19°30'7.45		opposition		15094 Jul 10 04:40	1°≈24'52	0°12'40	
max. Earth dist.	15088 Dec 25 22:51	19°30'8.15	30.90889 AU	min. Earth dist.		15094 Jul 09 19:05	1°≈25'32	28.95757 AU	
morning rise	15089 Jan 10 13:12	19°34'3.06		direct		15094 Sep 26 12:32	0°≈00'47		
retrograde	15089 Apr 10 17:06	21°34'0.03		evening set		15094 Dec 23 15:47	1°≈54'52		
opposition	15089 Jun 28 20:10	20°31'5.35	0°07'08						
min. Earth dist.	15089 Jun 28 09:11	20°31'6.21	28.91224 AU	conjunction		15095 Jan 08 16:59	2°≈30'35	0°12'19	
direct	15089 Sep 15 04:00	18°35'13.6		minimum elong		15095 Jan 08 16:59	2°≈30'35	0°13'12	
evening set	15089 Dec 12 00:37	20°34'54.3		behind sun begin		15095 Jan 08 13:13	2°≈30'14		
				behind sun end		15095 Jan 08 20:45	2°≈30'55		
conjunction	15089 Dec 28 00:48	21°32'12.7	0°07'11	max. Earth dist.		15095 Jan 09 04:03	2°≈31'36	30.96364 AU	
minimum elong	15089 Dec 28 00:48	21°32'12.7	0°08'07	morning rise		15095 Jan 24 19:10	3°≈06'25		
behind sun begin	15089 Dec 27 18:59	21°32'0.56		retrograde		15095 Apr 24 14:24	5°≈02'46		
behind sun end	15089 Dec 28 06:36	21°32'15.8		opposition		15095 Jul 12 15:45	3°≈38'32	0°13'43	
max. Earth dist.	15089 Dec 28 12:25	21°32'22.32	30.91554 AU	min. Earth dist.		15095 Jul 12 05:55	3°≈39'13	28.97000 AU	
morning rise	15090 Jan 13 02:20	21°35'7.19		direct		15095 Sep 29 00:55	2°≈14'29		
retrograde	15090 Apr 13 04:49	23°35'4.09		evening set		15095 Dec 26 04:34	4°≈08'34		
opposition	15090 Jul 01 07:33	22°32'9.42	0°08'16						
min. Earth dist.	15090 Jun 30 21:39	22°33'0.24	28.91915 AU	conjunction		15096 Jan 11 05:47	4°≈44'17	0°13'18	
direct	15090 Sep 17 16:27	21°35'0.41		minimum elong		15096 Jan 11 05:46	4°≈44'17	0°14'09	
evening set	15090 Dec 14 13:20	22°35'9.47		behind sun begin		15096 Jan 11 02:42	4°≈44'01		
				behind sun end		15096 Jan 11 08:51	4°≈44'34		
conjunction	15090 Dec 30 13:41	23°33'5.30	0°08'15	max. Earth dist.		15096 Jan 11 15:25	4°≈45'10	30.97644 AU	
minimum elong	15090 Dec 30 13:41	23°33'5.30	0°09'11	morning rise		15096 Jan 27 08:13	5°≈20'07		
behind sun begin	15090 Dec 30 08:10	23°33'5.01		retrograde		15096 Apr 26 03:28	7°≈16'23		
behind sun end	15090 Dec 30 19:12	23°33'6.00		opposition		15096 Jul 14 02:54	5°≈52'13	0°14'45	
max. Earth dist.	15090 Dec 31 00:38	23°33'6.31	30.92288 AU	min. Earth dist.		15096 Jul 13 17:37	5°≈52'52	28.98300 AU	
morning rise	15091 Jan 15 15:27	24°31'1.23		direct		15096 Sep 30 10:59	4°≈28'11		
retrograde	15091 Apr 15 17:20	26°30'8.06		evening set		15096 Dec 27 17:13	6°≈22'19		
opposition	15091 Jul 03 18:51	24°34'3.40	0°09'23						
min. Earth dist.	15091 Jul 03 08:07	24°34'4.25	28.92692 AU	conjunction		15097 Jan 12 18:45	6°≈58'01	0°14'15	
direct	15091 Sep 20 04:47	23°31'9.36		minimum elong		15097 Jan 12 18:45	6°≈58'01	0°15'06	
evening set	15091 Dec 17 01:53	25°31'3.41		behind sun begin		15097 Jan 12 16:40	6°≈57'50		
				behind sun end		15097 Jan 12 20:50	6°≈58'12		
conjunction	15092 Jan 02 02:25	25°34'9.24	0°09'17	max. Earth dist.		15097 Jan 13 04:58	6°≈58'58	30.98929 AU	
minimum elong	15092 Jan 02 02:24	25°34'9.24	0°10'12	morning rise		15097 Jan 28 21:08	7°≈33'50		
behind sun begin	15092 Jan 01 21:12	25°34'8.56		retrograde		15097 Apr 28 15:00	9°≈30'02		
behind sun end	15092 Jan 02 07:36	25°34'9.52		opposition		15097 Jul 16 14:04	8°≈05'56	0°15'46	
max. Earth dist.	15092 Jan 02 13:18	25°35'0.25	30.93109 AU	min. Earth dist.		15097 Jul 16 05:34	8°≈06'32	28.99554 AU	
morning rise	15092 Jan 18 04:17	26°32'5.16		direct		15097 Oct 02 22:52	6°≈41'55		
retrograde	15092 Apr 17 03:55	28°32'1.53		evening set		15097 Dec 30 06:12	8°≈36'02		
opposition	15092 Jul 05 06:17	26°35'7.28	0°10'30						
min. Earth dist.	15092 Jul 04 20:35	26°35'8.09	28.93580 AU	conjunction		15098 Jan 15 07:45	9°≈11'44	0°15'11	
direct	15092 Sep 21 15:29	25°33'3.24		minimum elong		15098 Jan 15 07:45	9°≈11'44	0°16'00	
evening set	15092 Dec 18 14:29	27°32'7.28		max. Earth dist.		15098 Jan 15 16:11	9°≈12'31	31.00148 AU	
				morning rise		15098 Jan 31 10:21	9°≈47'32		
conjunction	15093 Jan 03 15:17	28°30'3.11	0°10'19	retrograde		15098 May 01 05:10	11°≈43'38		
minimum elong	15093 Jan 03 15:17	28°30'3.11	0°11'13	opposition		15098 Jul 19 01:02	10°≈19'35	0°16'45	
behind sun begin	15093 Jan 03 10:30	28°30'2.46		min. Earth dist.		15098 Jul 18 16:45	10°≈20'10	29.00726 AU	
behind sun end	15093 Jan 03 20:05	28°30'3.37		direct		15098 Oct 05 11:32	8°≈55'33		
max. Earth dist.	15093 Jan 04 02:24	28°30'4.13	30.94069 AU	evening set		15099 Jan 01 19:02	10°≈49'40		
morning rise	15093 Jan 19 17:16	28°33'9.02							
	15093 Mar 03 16:32	0°≈		conjunction		15099 Jan 17 20:48	11°≈25'22	0°16'06	
retrograde	15093 Apr 19 16:25	0°≈35'33		minimum elong		15099 Jan 17 20:49	11°≈25'22	0°16'54	

max. Earth dist.	15099 Jan 18 05:20	11° $\approx$ 26'09	31.01257 AU
morning rise	15099 Feb 02 23:21	12° $\approx$ 01'09	
retrograde	15099 May 03 16:21	13° $\approx$ 57'08	
opposition	15099 Jul 21 12:13	12° $\approx$ 33'06	0°17'43
min. Earth dist.	15099 Jul 21 05:20	12° $\approx$ 33'35	29.01783 AU
direct	15099 Oct 08 00:00	11° $\approx$ 09'03	
evening set	15100 Jan 04 07:41	13° $\approx$ 03'09	
conjunction	15100 Jan 20 09:34	13° $\approx$ 38'50	0°16'59
minimum elong	15100 Jan 20 09:34	13° $\approx$ 38'50	0°17'45
max. Earth dist.	15100 Jan 20 16:55	13° $\approx$ 39'30	31.02277 AU
morning rise	15100 Feb 05 12:16	14° $\approx$ 14'36	
	15100 Feb 27 13:48	15° $\approx$	
retrograde	15100 May 06 05:17	16° $\approx$ 10'27	
	15100 Jul 15 20:42	15° $\approx$	
opposition	15100 Jul 23 23:10	14° $\approx$ 46'26	0°18'39
min. Earth dist.	15100 Jul 23 15:54	14° $\approx$ 46'57	29.02758 AU
direct	15100 Oct 10 12:38	13° $\approx$ 22'21	
	15100 Dec 30 04:32	15° $\approx$	
evening set	15101 Jan 06 20:27	15° $\approx$ 16'25	
conjunction	15101 Jan 22 22:27	15° $\approx$ 52'05	0°17'51
minimum elong	15101 Jan 22 22:27	15° $\approx$ 52'05	0°18'36
max. Earth dist.	15101 Jan 23 05:16	15° $\approx$ 52'43	31.03215 AU
morning rise	15101 Feb 08 01:12	16° $\approx$ 27'51	
retrograde	15101 May 08 16:21	18° $\approx$ 23'33	
opposition	15101 Jul 26 10:02	16° $\approx$ 59'33	0°19'33
min. Earth dist.	15101 Jul 26 04:19	16° $\approx$ 59'57	29.03680 AU
direct	15101 Oct 12 23:54	15° $\approx$ 35'25	
evening set	15102 Jan 09 09:06	17° $\approx$ 29'27	