

retrograde	4600 Jan 19 03:45	9°♂53'27		conjunction	4605 Dec 10 01:14	17°♂57'18	1°50'18
opposition	4600 Mar 26 21:05	6°♂28'08	2°02'42	minimum elong	4605 Dec 10 01:16	17°♂57'19	1°50'19
min. Earth dist.	4600 Mar 26 19:43	6°♂28'24	8.21901 AU	max. Earth dist.	4605 Dec 09 23:27	17°♂56'45	10.67751 AU
direct	4600 Jun 02 23:49	2°♂59'32		morning rise	4605 Dec 26 23:39	20°♂00'45	
evening set	4600 Sep 17 01:14	11°♂05'29		retrograde	4606 Apr 06 00:48	27°♂17'35	
				opposition	4606 Jun 13 10:47	23°♂58'21	2°06'13
conjunction	4600 Oct 04 21:16	13°♂20'45	1°47'56	min. Earth dist.	4606 Jun 13 12:18	23°♂58'04	8.71848 AU
minimum elong	4600 Oct 04 21:13	13°♂20'44	1°47'56	direct	4606 Aug 22 23:21	20°♂34'28	
max. Earth dist.	4600 Oct 04 22:22	13°♂21'06	10.25178 AU	evening set	4606 Dec 05 11:27	28°♂04'47	
morning rise	4600 Oct 22 13:49	15°♂34'58			4606 Dec 21 09:51	0°♂	
retrograde	4601 Feb 01 17:36	23°♂24'11					
opposition	4601 Apr 09 13:09	20°♂00'01	2°23'12	conjunction	4606 Dec 22 11:25	0°♂07'46	1°33'39
min. Earth dist.	4601 Apr 09 12:40	20°♂00'06	8.28996 AU	minimum elong	4606 Dec 22 11:27	0°♂07'46	1°33'40
direct	4601 Jun 17 03:00	16°♂31'46		max. Earth dist.	4606 Dec 22 09:25	0°♂07'09	10.75573 AU
evening set	4601 Oct 01 08:20	24°♂33'51		morning rise	4607 Jan 08 07:50	2°♂09'42	
				retrograde	4607 Apr 18 06:32	9°♂21'59	
conjunction	4601 Oct 19 00:32	26°♂46'55	2°01'24	opposition	4607 Jun 26 03:30	6°♂03'15	1°43'04
minimum elong	4601 Oct 19 00:30	26°♂46'55	2°01'24	min. Earth dist.	4607 Jun 26 05:34	6°♂02'52	8.79168 AU
max. Earth dist.	4601 Oct 19 00:28	26°♂46'54	10.32875 AU	direct	4607 Sep 04 20:06	2°♂40'20	
morning rise	4601 Nov 05 12:45	28°♂58'49		evening set	4607 Dec 17 17:08	10°♂04'14	
	4601 Nov 13 21:09	0°♂					
retrograde	4602 Feb 15 00:44	6°♂40'58		conjunction	4608 Jan 03 14:58	12°♂05'47	1°13'08
opposition	4602 Apr 23 01:39	3°♂17'57	2°35'34	minimum elong	4608 Jan 03 15:00	12°♂05'47	1°13'09
min. Earth dist.	4602 Apr 23 02:21	3°♂17'48	8.37206 AU	max. Earth dist.	4608 Jan 03 12:21	12°♂04'59	10.82367 AU
	4602 Jun 17 11:10	30°♂		morning rise	4608 Jan 20 10:01	14°♂06'30	
direct	4602 Jul 01 03:08	29°♂50'16		retrograde	4608 Apr 29 09:31	21°♂15'23	
	4602 Jul 14 19:14	0°♂		opposition	4608 Jul 07 17:07	17°♂56'54	1°15'51
evening set	4602 Oct 15 07:05	7°♂47'08		min. Earth dist.	4608 Jul 07 19:06	17°♂56'32	8.85313 AU
				direct	4608 Sep 16 13:34	14°♂34'53	
conjunction	4602 Nov 01 19:18	9°♂57'56	2°08'12	evening set	4608 Dec 28 17:01	21°♂53'04	
minimum elong	4602 Nov 01 19:17	9°♂57'55	2°08'12				
max. Earth dist.	4602 Nov 01 17:43	9°♂57'26	10.41420 AU	conjunction	4609 Jan 14 13:07	23°♂53'27	0°49'44
morning rise	4602 Nov 19 03:25	12°♂07'27		minimum elong	4609 Jan 14 13:08	23°♂53'28	0°49'45
	4602 Dec 13 17:42	15°♂		max. Earth dist.	4609 Jan 14 10:54	23°♂52'47	10.87852 AU
retrograde	4603 Feb 28 02:14	19°♂42'35		morning rise	4609 Jan 31 07:04	25°♂53'13	
opposition	4603 May 06 10:02	16°♂20'42	2°39'34		4609 Mar 10 22:56	0°♂	
min. Earth dist.	4603 May 06 11:30	16°♂20'25	8.45991 AU	retrograde	4609 May 11 12:11	2°♂59'58	
	4603 May 23 23:03	15°♂			4609 Jul 16 01:07	30°♂	
direct	4603 Jul 14 22:17	12°♂53'49		opposition	4609 Jul 20 04:12	29°♂41'31	0°45'47
	4603 Sep 03 19:07	15°♂		min. Earth dist.	4609 Jul 20 05:14	29°♂41'19	8.90042 AU
evening set	4603 Oct 28 21:06	20°♂44'37		direct	4609 Sep 29 01:15	26°♂20'21	
					4609 Dec 07 15:07	0°♂	
conjunction	4603 Nov 15 05:38	22°♂53'11	2°08'19	evening set	4610 Jan 09 12:29	3°♂33'41	
minimum elong	4603 Nov 15 05:38	22°♂53'11	2°08'19				
max. Earth dist.	4603 Nov 15 03:06	22°♂52'24	10.50326 AU	conjunction	4610 Jan 26 07:15	5°♂33'13	0°24'30
morning rise	4603 Dec 02 10:02	25°♂00'30		minimum elong	4610 Jan 26 07:16	5°♂33'13	0°24'30
	4604 Jan 17 21:12	0°♂		max. Earth dist.	4610 Jan 26 06:14	5°♂32'55	10.91818 AU
retrograde	4604 Mar 11 21:46	2°♂28'55		morning rise	4610 Feb 12 00:23	7°♂32'19	
	4604 May 07 08:37	30°♂		retrograde	4610 May 23 13:06	14°♂38'15	
opposition	4604 May 18 14:08	29°♂08'04	2°35'31	opposition	4610 Aug 01 13:29	11°♂19'38	0°14'08
min. Earth dist.	4604 May 18 15:36	29°♂07'47	8.54926 AU	min. Earth dist.	4610 Aug 01 13:49	11°♂19'34	8.93186 AU
direct	4604 Jul 27 12:38	25°♂42'08		direct	4610 Oct 11 08:04	7°♂59'11	
	4604 Oct 10 16:47	0°♂		desc. node	4611 Jan 14 14:44	14°♂23'10	
evening set	4604 Nov 10 02:16	3°♂26'18			4611 Jan 19 22:33	15°♂	
				evening set	4611 Jan 21 04:57	15°♂08'51	
conjunction	4604 Nov 27 07:34	5°♂32'48	2°02'08				
minimum elong	4604 Nov 27 07:36	5°♂32'49	2°02'09	conjunction	4611 Feb 06 22:34	17°♂07'47	-0°01'40
max. Earth dist.	4604 Nov 27 05:10	5°♂32'04	10.59221 AU	minimum elong	4611 Feb 06 22:35	17°♂07'47	0°01'40
morning rise	4604 Dec 14 08:42	7°♂38'04		behind sun begin	4611 Feb 06 15:35	17°♂05'44	
retrograde	4605 Mar 24 12:53	15°♂00'20		behind sun end	4611 Feb 07 05:35	17°♂09'51	
opposition	4605 May 31 14:21	11°♂40'23	2°24'04	max. Earth dist.	4611 Feb 06 22:03	17°♂07'40	10.94122 AU
min. Earth dist.	4605 May 31 15:35	11°♂40'09	8.63658 AU	morning rise	4611 Feb 23 15:19	19°♂06'30	
direct	4605 Aug 09 21:28	8°♂15'28		retrograde	4611 Jun 04 15:18	26°♂13'00	
evening set	4605 Nov 22 22:46	15°♂52'41		opposition	4611 Aug 13 21:48	22°♂54'03	-0°17'56
				min. Earth dist.	4611 Aug 13 22:15	22°♂53'58	8.94624 AU

direct	4611 Oct 23 12:27	19° \approx 34'12	conjunction	4618 Apr 29 08:04	9° \approx 41'03 -2°08'30
evening set	4612 Feb 01 20:03	26° \approx 41'25	minimum elong	4618 Apr 29 08:04	9° \approx 41'03 2°08'31
			max. Earth dist.	4618 Apr 29 10:17	9° \approx 41'44 10.64534 AU
conjunction	4612 Feb 18 12:41	28° \approx 40'03 -0°27'36	morning rise	4618 May 16 09:58	11° \approx 46'00
minimum elong	4612 Feb 18 12:40	28° \approx 40'02 0°27'36		4618 Jun 13 22:58	15° \approx
max. Earth dist.	4612 Feb 18 11:35	28° \approx 39'43 10.94672 AU	retrograde	4618 Aug 29 18:02	19° \approx 27'00
	4612 Feb 29 17:41	0° \approx	opposition	4618 Nov 07 20:58	16° \approx 02'03 -2°39'22
morning rise	4612 Mar 06 05:27	0° \approx 38'42	min. Earth dist.	4618 Nov 07 18:54	16° \approx 02'27 8.60395 AU
retrograde	4612 Jun 15 17:15	7° \approx 47'04		4618 Nov 21 11:11	15° \approx
opposition	4612 Aug 25 05:51	4° \approx 27'37 -0°49'14	direct	4619 Jan 14 22:08	12° \approx 41'30
min. Earth dist.	4612 Aug 25 06:25	4° \approx 27'31 8.94299 AU		4619 Mar 08 02:39	15° \approx
direct	4612 Nov 03 13:58	1° \approx 08'13	evening set	4619 Apr 25 02:55	20° \approx 05'16
evening set	4613 Feb 12 10:58	8° \approx 14'17			
			conjunction	4619 May 12 04:14	22° \approx 11'02 -2°08'36
conjunction	4613 Mar 01 03:06	10° \approx 12'54 -0°52'27	minimum elong	4619 May 12 04:15	22° \approx 11'02 2°08'37
minimum elong	4613 Mar 01 03:04	10° \approx 12'53 0°52'27	max. Earth dist.	4619 May 12 07:11	22° \approx 11'56 10.55897 AU
max. Earth dist.	4613 Mar 01 02:28	10° \approx 12'43 10.93449 AU	morning rise	4619 May 29 09:40	24° \approx 18'06
morning rise	4613 Mar 17 20:10	12° \approx 11'47		4619 Jul 23 06:26	0° \approx
retrograde	4613 Jun 27 21:59	19° \approx 23'23	retrograde	4619 Sep 12 05:11	2° \approx 05'50
opposition	4613 Sep 06 14:37	16° \approx 03'14 -1°18'37		4619 Nov 03 09:59	30° \approx
min. Earth dist.	4613 Sep 06 14:23	16° \approx 03'16 8.92221 AU	opposition	4619 Nov 20 23:12	28° \approx 39'55 -2°35'54
direct	4613 Nov 15 16:50	12° \approx 44'06	min. Earth dist.	4619 Nov 20 20:35	28° \approx 40'26 8.51627 AU
evening set	4614 Feb 24 03:01	19° \approx 50'16	direct	4620 Jan 27 15:13	25° \approx 18'34
				4620 Apr 13 00:53	0° \approx
conjunction	4614 Mar 12 19:12	21° \approx 49'14 -1°15'15	evening set	4620 May 07 03:11	2° \approx 48'15
minimum elong	4614 Mar 12 19:10	21° \approx 49'13 1°15'15			
max. Earth dist.	4614 Mar 12 19:51	21° \approx 49'26 10.90488 AU	conjunction	4620 May 24 08:26	4° \approx 56'16 -2°02'27
morning rise	4614 Mar 29 12:52	23° \approx 48'40	minimum elong	4620 May 24 08:28	4° \approx 56'17 2°02'28
	4614 Jun 03 18:04	0° \approx	max. Earth dist.	4620 May 24 11:14	4° \approx 57'09 10.47109 AU
retrograde	4614 Jul 10 08:01	1° \approx 04'38	morning rise	4620 Jun 10 18:01	7° \approx 05'40
	4614 Aug 16 14:18	30° \approx	retrograde	4620 Sep 24 22:15	14° \approx 59'38
opposition	4614 Sep 19 00:45	27° \approx 43'39 -1°44'59	opposition	4620 Dec 03 05:33	11° \approx 32'53 -2°24'36
min. Earth dist.	4614 Sep 18 23:29	27° \approx 43'53 8.88451 AU	min. Earth dist.	4620 Dec 03 03:09	11° \approx 33'21 8.42886 AU
direct	4614 Nov 27 18:06	24° \approx 24'38	direct	4621 Feb 08 12:20	8° \approx 10'30
	4615 Feb 22 13:07	0° \approx	evening set	4621 May 20 11:35	15° \approx 46'31
evening set	4615 Mar 07 21:54	1° \approx 32'10			
			conjunction	4621 Jun 06 21:16	17° \approx 56'57 -1°50'00
conjunction	4615 Mar 24 14:31	3° \approx 31'47 -1°35'06	minimum elong	4621 Jun 06 21:19	17° \approx 56'58 1°50'01
minimum elong	4615 Mar 24 14:29	3° \approx 31'46 1°35'05	max. Earth dist.	4621 Jun 06 23:06	17° \approx 57'31 10.38548 AU
max. Earth dist.	4615 Mar 24 15:41	3° \approx 32'08 10.85893 AU	morning rise	4621 Jun 24 11:21	20° \approx 08'45
morning rise	4615 Apr 10 09:17	5° \approx 32'06	retrograde	4621 Oct 08 18:24	28° \approx 08'06
retrograde	4615 Jul 22 20:58	12° \approx 53'23	opposition	4621 Dec 16 15:40	24° \approx 40'39 -2°05'35
opposition	4615 Oct 01 12:57	9° \approx 31'30 -2°07'14	min. Earth dist.	4621 Dec 16 14:13	24° \approx 40'57 8.34539 AU
min. Earth dist.	4615 Oct 01 11:28	9° \approx 31'46 8.83134 AU	direct	4622 Feb 21 16:52	21° \approx 17'09
direct	4615 Dec 09 19:35	6° \approx 12'23	evening set	4622 Jun 03 04:04	28° \approx 59'45
evening set	4616 Mar 18 20:42	13° \approx 22'31		4622 Jun 11 04:51	0° \approx
conjunction	4616 Apr 04 14:13	15° \approx 23'08 -1°51'07	conjunction	4622 Jun 20 18:27	1° \approx 12'37 -1°31'33
minimum elong	4616 Apr 04 14:11	15° \approx 23'08 1°51'07	minimum elong	4622 Jun 20 18:30	1° \approx 12'37 1°31'34
max. Earth dist.	4616 Apr 04 15:05	15° \approx 23'24 10.79858 AU	max. Earth dist.	4622 Jun 20 19:25	1° \approx 12'55 10.30572 AU
morning rise	4616 Apr 21 10:48	17° \approx 24'40	morning rise	4622 Jul 08 12:54	3° \approx 26'43
retrograde	4616 Aug 03 14:43	24° \approx 52'06	retrograde	4622 Oct 22 18:26	11° \approx 30'29
opposition	4616 Oct 13 04:14	21° \approx 29'13 -2°24'19	opposition	4622 Dec 30 05:26	8° \approx 02'34 -1°39'28
min. Earth dist.	4616 Oct 13 02:57	21° \approx 29'28 8.76492 AU	min. Earth dist.	4622 Dec 30 04:42	8° \approx 02'43 8.26979 AU
direct	4616 Dec 21 01:00	18° \approx 09'49	direct	4623 Mar 07 03:12	4° \approx 37'55
evening set	4617 Mar 31 00:19	25° \approx 23'35	evening set	4623 Jun 17 04:20	12° \approx 27'01
conjunction	4617 Apr 16 19:36	27° \approx 25'34 -2°02'29	conjunction	4623 Jul 04 23:13	14° \approx 42'09 -1°07'50
minimum elong	4617 Apr 16 19:35	27° \approx 25'34 2°02'29	minimum elong	4623 Jul 04 23:16	14° \approx 42'10 1°07'51
max. Earth dist.	4617 Apr 16 20:42	27° \approx 25'54 10.72638 AU	max. Earth dist.	4623 Jul 05 00:11	14° \approx 42'28 10.23619 AU
morning rise	4617 May 03 18:35	29° \approx 28'40	morning rise	4623 Jul 22 21:26	16° \approx 58'19
	4617 May 08 04:22	0° \approx	retrograde	4623 Nov 05 21:57	25° \approx 05'13
retrograde	4617 Aug 16 13:42	7° \approx 02'46	opposition	4624 Jan 12 22:24	21° \approx 37'01 -1°07'23
opposition	4617 Oct 25 22:51	3° \approx 38'52 -2°35'19	min. Earth dist.	4624 Jan 12 21:34	21° \approx 37'12 8.20704 AU
min. Earth dist.	4617 Oct 25 21:30	3° \approx 39'08 8.68804 AU	direct	4624 Mar 19 18:12	18° \approx 11'16
direct	4618 Jan 02 09:15	0° \approx 18'58	evening set	4624 Jun 30 11:59	26° \approx 06'26
evening set	4618 Apr 12 10:08	7° \approx 37'21			

conjunction	4624 Jul 18 10:40	28° $\overline{23}$ '25 -0°40'02	min. Earth dist.	4630 Apr 03 21:33	14° $\underline{16}$ '00 8.25552 AU
minimum elong	4624 Jul 18 10:42	28° $\overline{23}$ '26 0°40'02	direct	4630 Jun 11 08:10	10° $\underline{47}$ '16
max. Earth dist.	4624 Jul 18 11:53	28° $\overline{23}$ '49 10.18193 AU	evening set	4630 Sep 25 09:30	18° $\underline{45}$ '52
	4624 Jul 31 01:05	0° Ω			
morning rise	4624 Aug 05 11:41	0° Ω 41'11	conjunction	4630 Oct 13 03:24	21° $\underline{04}$ '54 1°56'16
retrograde	4624 Nov 19 03:50	8° Ω 49'34	minimum elong	4630 Oct 13 03:22	21° $\underline{04}$ '53 1°56'17
opposition	4625 Jan 25 17:44	5° Ω 21'19 -0°31'03	max. Earth dist.	4630 Oct 13 02:13	21° $\underline{04}$ '31 10.28969 AU
min. Earth dist.	4625 Jan 25 16:37	5° Ω 21'33 8.16181 AU	morning rise	4630 Oct 30 17:43	23° $\underline{17}$ '50
direct	4625 Apr 02 14:14	1° Ω 54'32		4631 Jan 06 08:39	0° $\overline{18}$
evening set	4625 Jul 15 01:36	9° Ω 54'54	retrograde	4631 Feb 09 10:22	1° $\overline{10}$ '02'58
				4631 Mar 16 00:30	30° \overline{R} $\underline{1}$
conjunction	4625 Aug 02 02:57	12° Ω 13'10 -0°09'43	opposition	4631 Apr 17 10:33	27° $\underline{39}$ '00 2°31'10
minimum elong	4625 Aug 02 02:57	12° Ω 13'10 0°09'43	min. Earth dist.	4631 Apr 17 10:40	27° $\underline{38}$ '59 8.32931 AU
behind sun begin	4625 Aug 01 20:58	12° Ω 11'16	direct	4631 Jun 25 08:51	24° $\underline{10}$ '37
behind sun end	4625 Aug 02 08:55	12° Ω 15'04		4631 Sep 21 08:28	0° $\overline{18}$
max. Earth dist.	4625 Aug 02 04:14	12° Ω 13'34 10.14682 AU	evening set	4631 Oct 09 11:19	2° $\overline{10}$ '09'44
morning rise	4625 Aug 20 05:27	14° Ω 31'51			
	4625 Aug 23 23:28	15° Ω	conjunction	4631 Oct 27 01:29	4° $\overline{11}$ '21'35 2°06'02
asc. node	4625 Nov 28 03:33	22° Ω 38'27	minimum elong	4631 Oct 27 01:28	4° $\overline{11}$ '21'35 2°06'02
retrograde	4625 Dec 03 09:15	22° Ω 39'58	max. Earth dist.	4631 Oct 27 00:47	4° $\overline{11}$ '21'22 10.36904 AU
opposition	4626 Feb 08 14:41	19° Ω 11'57 0°07'24	morning rise	4631 Nov 13 11:29	6° $\overline{11}$ '32'12
min. Earth dist.	4626 Feb 08 13:32	19° Ω 12'11 8.13724 AU	retrograde	4632 Feb 22 15:31	14° $\overline{11}$ '10'24
direct	4626 Apr 16 14:33	15° Ω 44'16	opposition	4632 Apr 29 20:13	10° $\overline{11}$ '47'31 2°38'53
evening set	4626 Jul 29 19:18	23° Ω 48'38	min. Earth dist.	4632 Apr 29 20:34	10° $\overline{11}$ '47'27 8.41341 AU
			direct	4632 Jul 08 04:03	7° $\overline{11}$ '19'49
conjunction	4626 Aug 16 21:44	26° Ω 07'25 0°21'24		4632 Oct 20 09:21	15° $\overline{11}$
minimum elong	4626 Aug 16 21:43	26° Ω 07'24 0°21'25	evening set	4632 Oct 22 04:54	15° $\overline{11}$ '13'16
max. Earth dist.	4626 Aug 16 22:38	26° Ω 07'42 10.13322 AU			
morning rise	4626 Sep 04 00:12	28° Ω 26'15	conjunction	4632 Nov 08 15:17	17° $\overline{11}$ '22'52 2°09'07
	4626 Sep 16 16:01	0° $\overline{10}$	minimum elong	4632 Nov 08 15:16	17° $\overline{11}$ '22'52 2°09'07
retrograde	4626 Dec 17 13:04	6° $\overline{10}$ '32'25	max. Earth dist.	4632 Nov 08 14:25	17° $\overline{11}$ '22'36 10.45657 AU
opposition	4627 Feb 22 12:11	3° $\overline{10}$ '04'52 0°45'32	morning rise	4632 Nov 25 21:13	19° $\overline{11}$ '31'10
min. Earth dist.	4627 Feb 22 11:33	3° $\overline{10}$ '05'00 8.13498 AU	retrograde	4633 Mar 06 13:36	27° $\overline{11}$ '02'25
	4627 Apr 10 00:13	30° \overline{R} $\underline{1}$	opposition	4633 May 13 01:46	23° $\overline{11}$ '40'39 2°38'22
direct	4627 Apr 30 17:34	29° Ω 36'29	min. Earth dist.	4633 May 13 02:45	23° $\overline{11}$ '40'28 8.50331 AU
	4627 May 21 11:03	0° $\overline{10}$	direct	4633 Jul 21 19:30	20° $\overline{11}$ '13'50
evening set	4627 Aug 13 14:39	7° $\overline{10}$ '43'19	evening set	4633 Nov 04 13:35	28° $\overline{11}$ '00'49
				4633 Nov 20 17:46	0° $\overline{11}$
conjunction	4627 Aug 31 16:39	10° $\overline{10}$ '01'51 0°51'13			
minimum elong	4627 Aug 31 16:37	10° $\overline{10}$ '01'50 0°51'13	conjunction	4633 Nov 21 20:21	0° $\overline{11}$ '08'14 2°05'42
max. Earth dist.	4627 Aug 31 16:42	10° $\overline{10}$ '01'52 10.14208 AU	minimum elong	4633 Nov 21 20:22	0° $\overline{11}$ '08'14 2°05'42
morning rise	4627 Sep 18 17:40	12° $\overline{10}$ '20'05	max. Earth dist.	4633 Nov 21 18:54	0° $\overline{11}$ '07'47 10.54780 AU
retrograde	4627 Dec 31 14:06	20° $\overline{10}$ '22'41	morning rise	4633 Dec 08 22:52	2° $\overline{11}$ '14'23
opposition	4628 Mar 07 09:06	16° $\overline{10}$ '55'49 1°20'55	retrograde	4634 Mar 19 05:17	9° $\overline{11}$ '39'03
min. Earth dist.	4628 Mar 07 09:10	16° $\overline{10}$ '55'49 8.15518 AU	opposition	4634 May 26 03:19	6° $\overline{11}$ '18'21 2°30'09
direct	4628 May 13 21:52	13° $\overline{10}$ '27'00	min. Earth dist.	4634 May 26 04:47	6° $\overline{11}$ '18'04 8.59458 AU
evening set	4628 Aug 27 09:04	21° $\overline{10}$ '34'33	direct	4634 Aug 04 06:45	2° $\overline{11}$ '52'36
			evening set	4634 Nov 17 13:15	10° $\overline{11}$ '32'37
conjunction	4628 Sep 14 09:19	23° $\overline{10}$ '52'08 1°17'56			
minimum elong	4628 Sep 14 09:16	23° $\overline{10}$ '52'07 1°17'57	conjunction	4634 Dec 04 16:52	12° $\overline{11}$ '38'00 1°56'20
max. Earth dist.	4628 Sep 14 08:34	23° $\overline{10}$ '51'53 10.17271 AU	minimum elong	4634 Dec 04 16:54	12° $\overline{11}$ '38'01 1°56'20
morning rise	4628 Oct 02 07:37	26° $\overline{10}$ '09'04	max. Earth dist.	4634 Dec 04 14:47	12° $\overline{11}$ '37'22 10.63830 AU
	4628 Nov 04 04:58	0° $\underline{1}$	morning rise	4634 Dec 21 16:37	14° $\overline{11}$ '42'13
retrograde	4629 Jan 13 10:52	4° $\underline{1}$ 06'46	retrograde	4635 Mar 31 17:13	22° $\overline{11}$ '01'02
opposition	4629 Mar 21 04:24	0° $\underline{1}$ 40'46 1°51'22	opposition	4635 Jun 08 00:44	18° $\overline{11}$ '41'14 2°15'03
min. Earth dist.	4629 Mar 21 04:55	0° $\underline{1}$ 40'40 8.19627 AU	min. Earth dist.	4635 Jun 08 01:54	18° $\overline{11}$ '41'00 8.68281 AU
	4629 Mar 29 13:50	30° \overline{R} $\overline{10}$	direct	4635 Aug 17 11:46	15° $\overline{11}$ '16'38
direct	4629 May 28 03:36	27° $\overline{10}$ '11'47	evening set	4635 Nov 30 04:49	22° $\overline{11}$ '49'39
	4629 Jul 25 02:16	0° $\underline{1}$			
evening set	4629 Sep 11 00:09	5° $\underline{1}$ 18'15	conjunction	4635 Dec 17 05:51	24° $\overline{11}$ '53'16 1°41'46
			minimum elong	4635 Dec 17 05:53	24° $\overline{11}$ '53'17 1°41'46
conjunction	4629 Sep 28 21:33	7° $\underline{1}$ 34'16 1°40'01	max. Earth dist.	4635 Dec 17 04:07	24° $\overline{11}$ '52'44 10.72377 AU
minimum elong	4629 Sep 28 21:30	7° $\underline{1}$ 34'15 1°40'01	morning rise	4636 Jan 03 03:17	26° $\overline{11}$ '55'49
max. Earth dist.	4629 Sep 28 20:16	7° $\underline{1}$ 33'51 10.22294 AU		4636 Jan 30 11:06	0° $\overline{12}$
morning rise	4629 Oct 16 16:07	9° $\underline{1}$ 49'22	retrograde	4636 Apr 12 01:01	4° $\overline{12}$ '09'35
retrograde	4630 Jan 27 00:54	17° $\underline{1}$ 41'07	opposition	4636 Jun 19 18:18	0° $\overline{12}$ '50'32 1°54'10
opposition	4630 Apr 03 21:05	14° $\underline{1}$ 16'06 2°15'09	min. Earth dist.	4636 Jun 19 18:55	0° $\overline{12}$ '50'25 8.76397 AU



























































































































	4636 Jun 30 23:16	30°R♄		conjunction	4642 Feb 24 04:55	5°♄10'34 -0°41'12
direct	4636 Aug 29 10:30	27°♄27'08		minimum elong	4642 Feb 24 04:54	5°♄10'33 0°41'12
	4636 Oct 25 14:35	0°♄		max. Earth dist.	4642 Feb 24 04:41	5°♄10'30 10.95984 AU
evening set	4636 Dec 11 13:08	4°♄53'29		morning rise	4642 Mar 12 21:35	7°♄09'07
				retrograde	4642 Jun 22 18:06	14°♄18'34
conjunction	4636 Dec 28 12:00	6°♄55'33 1°22'53		opposition	4642 Sep 01 07:27	10°♄59'19 -1°05'22
minimum elong	4636 Dec 28 12:02	6°♄55'34 1°22'54		min. Earth dist.	4642 Sep 01 07:40	10°♄59'17 8.95066 AU
max. Earth dist.	4636 Dec 28 11:05	6°♄55'17 10.80038 AU		direct	4642 Nov 10 12:12	7°♄40'37
morning rise	4637 Jan 14 07:34	8°♄56'42		evening set	4643 Feb 19 04:06	14°♄46'11
retrograde	4637 Apr 24 06:28	16°♄06'33				
opposition	4637 Jul 02 08:54	12°♄48'03 1°28'39		conjunction	4643 Mar 07 20:04	16°♄44'48 -1°05'02
min. Earth dist.	4637 Jul 02 09:18	12°♄47'59 8.83465 AU		minimum elong	4643 Mar 07 20:02	16°♄44'47 1°05'02
direct	4637 Sep 11 04:29	9°♄25'49		max. Earth dist.	4643 Mar 07 18:54	16°♄44'27 10.93600 AU
evening set	4637 Dec 23 15:12	16°♄46'03		morning rise	4643 Mar 24 13:21	18°♄43'48
				retrograde	4643 Jul 05 01:03	25°♄57'10
conjunction	4638 Jan 09 12:08	18°♄46'50 1°00'42		opposition	4643 Sep 13 16:55	22°♄37'08 -1°33'13
minimum elong	4638 Jan 09 12:10	18°♄46'51 1°00'43		min. Earth dist.	4643 Sep 13 17:42	22°♄36'59 8.91748 AU
max. Earth dist.	4638 Jan 09 11:32	18°♄46'39 10.86498 AU		direct	4643 Nov 22 13:02	19°♄18'31
morning rise	4638 Jan 26 06:23	20°♄46'52		evening set	4644 Mar 01 21:37	26°♄25'03
retrograde	4638 May 06 09:38	27°♄54'00				
opposition	4638 Jul 14 20:54	24°♄35'51 0°59'46		conjunction	4644 Mar 18 13:46	28°♄24'11 -1°26'20
min. Earth dist.	4638 Jul 14 21:48	24°♄35'40 8.89209 AU		minimum elong	4644 Mar 18 13:43	28°♄24'11 1°26'20
direct	4638 Sep 23 16:38	21°♄14'38		max. Earth dist.	4644 Mar 18 12:27	28°♄23'48 10.89351 AU
evening set	4639 Jan 04 12:32	28°♄29'38			4644 Mar 31 22:40	0°♄
	4639 Jan 17 05:28	0°♄		morning rise	4644 Apr 04 08:00	0°♄23'58
				retrograde	4644 Jul 16 10:51	7°♄42'25
conjunction	4639 Jan 21 07:47	0°♄29'24 0°36'11		opposition	4644 Sep 25 04:17	4°♄21'23 -1°57'29
minimum elong	4639 Jan 21 07:48	0°♄29'24 0°36'12		min. Earth dist.	4644 Sep 25 04:50	4°♄21'17 8.86673 AU
max. Earth dist.	4639 Jan 21 06:28	0°♄29'01 10.91508 AU		direct	4644 Dec 03 16:08	1°♄02'38
morning rise	4639 Feb 07 01:16	2°♄28'38		evening set	4645 Mar 13 18:27	8°♄11'20
retrograde	4639 May 18 09:26	9°♄34'17				
opposition	4639 Jul 27 06:39	6°♄16'14 0°28'43		conjunction	4645 Mar 30 11:29	10°♄11'23 -1°44'13
min. Earth dist.	4639 Jul 27 07:41	6°♄16'03 8.93405 AU		minimum elong	4645 Mar 30 11:27	10°♄11'23 1°44'13
direct	4639 Oct 06 01:22	2°♄55'55		max. Earth dist.	4645 Mar 30 11:21	10°♄11'21 10.83465 AU
evening set	4640 Jan 16 06:16	10°♄06'45		morning rise	4645 Apr 16 07:04	12°♄12'15
				retrograde	4645 Jul 29 03:20	19°♄36'42
conjunction	4640 Feb 02 00:14	12°♄05'46 0°10'24		opposition	4645 Oct 07 18:11	16°♄14'29 -2°17'05
minimum elong	4640 Feb 02 00:14	12°♄05'46 0°10'25		min. Earth dist.	4645 Oct 07 17:43	16°♄14'35 8.80096 AU
behind sun begin	4640 Feb 01 18:42	12°♄04'08		direct	4645 Dec 15 21:00	12°♄55'23
behind sun end	4640 Feb 02 05:46	12°♄07'24		evening set	4646 Mar 25 19:45	20°♄07'20
max. Earth dist.	4640 Feb 01 23:00	12°♄05'24 10.94862 AU				
morning rise	4640 Feb 18 17:11	14°♄04'28		conjunction	4646 Apr 11 14:16	22°♄08'39 -1°57'50
	4640 Feb 26 18:02	15°♄		minimum elong	4646 Apr 11 14:15	22°♄08'39 1°57'50
retrograde	4640 May 29 11:09	21°♄10'02		max. Earth dist.	4646 Apr 11 14:47	22°♄08'49 10.76216 AU
desc. node	4640 Jun 30 06:02	20°♄22'06		morning rise	4646 Apr 28 11:54	24°♄10'59
opposition	4640 Aug 07 15:10	17°♄51'48 -0°03'16			4646 Jun 25 21:26	0°♄
min. Earth dist.	4640 Aug 07 15:34	17°♄51'44 8.95864 AU		retrograde	4646 Aug 11 00:57	1°♄42'00
	4640 Sep 23 05:17	15°♄			4646 Sep 27 05:28	30°♄
direct	4640 Oct 17 08:23	14°♄32'14		opposition	4646 Oct 20 11:10	28°♄18'34 -2°31'01
	4640 Nov 10 02:42	15°♄		min. Earth dist.	4646 Oct 20 10:15	28°♄18'45 8.72299 AU
evening set	4641 Jan 26 21:43	21°♄39'59		direct	4646 Dec 28 02:07	24°♄58'52
					4647 Mar 18 14:01	0°♄
conjunction	4641 Feb 12 14:46	23°♄38'33 -0°15'47		evening set	4647 Apr 07 02:45	2°♄15'08
minimum elong	4641 Feb 12 14:45	23°♄38'33 0°15'47				
behind sun begin	4641 Feb 12 13:02	23°♄38'02		conjunction	4647 Apr 23 23:19	4°♄18'03 -2°06'25
behind sun end	4641 Feb 12 16:29	23°♄39'03		minimum elong	4647 Apr 23 23:19	4°♄18'03 2°06'25
max. Earth dist.	4641 Feb 12 14:31	23°♄38'29 10.96392 AU		max. Earth dist.	4647 Apr 23 23:36	4°♄18'08 10.67919 AU
morning rise	4641 Mar 01 07:21	25°♄37'01		morning rise	4647 May 10 23:43	6°♄22'09
	4641 Apr 12 08:51	0°♄		retrograde	4647 Aug 24 02:15	14°♄00'07
retrograde	4641 Jun 10 13:41	2°♄43'51		opposition	4647 Nov 02 07:43	10°♄35'29 -2°38'24
	4641 Aug 12 02:43	30°♄		min. Earth dist.	4647 Nov 02 06:58	10°♄35'37 8.63623 AU
opposition	4641 Aug 19 23:13	29°♄25'13 -0°35'00		direct	4648 Jan 09 13:01	7°♄14'59
min. Earth dist.	4641 Aug 19 22:58	29°♄25'15 8.96446 AU		evening set	4648 Apr 18 16:10	14°♄36'28
direct	4641 Oct 29 10:55	26°♄06'12			4648 Apr 21 21:50	15°♄
	4642 Jan 09 03:45	0°♄				
evening set	4642 Feb 07 12:34	3°♄12'09		conjunction	4648 May 05 15:40	16°♄41'19 -2°09'19
				minimum elong	4648 May 05 15:41	16°♄41'19 2°09'20

max. Earth dist.	4648 May 05 15:53	16° ♁ 41'23	10.58947 AU	max. Earth dist.	4654 Jul 26 20:35	6° ♁ 12'12	10.14445 AU
morning rise	4648 May 22 19:31	18° ♁ 47'29		morning rise	4654 Aug 13 21:51	8° ♁ 30'28	
retrograde	4648 Sep 05 09:57	26° ♁ 32'29			4654 Oct 14 18:44	15° ♁	
opposition	4648 Nov 14 08:16	23° ♁ 06'40	-2°38'30	retrograde	4654 Nov 27 07:32	16° ♁ 39'35	
min. Earth dist.	4648 Nov 14 07:42	23° ♁ 06'46	8.54457 AU		4655 Jan 10 08:33	15° ♁	
direct	4649 Jan 21 04:27	19° ♁ 45'14		opposition	4655 Feb 02 17:13	13° ♁ 10'59	-0°10'13
evening set	4649 May 01 12:45	27° ♁ 12'35		min. Earth dist.	4655 Feb 02 16:13	13° ♁ 11'12	8.13146 AU
				direct	4655 Apr 10 15:33	9° ♁ 43'17	
conjunction	4649 May 18 16:06	29° ♁ 19'41	-2°06'04	asc. node	4655 May 13 15:08	10° ♁ 42'39	
minimum elong	4649 May 18 16:07	29° ♁ 19'41	2°06'05		4655 Jun 30 12:02	15° ♁	
max. Earth dist.	4649 May 18 17:08	29° ♁ 20'00	10.49694 AU	evening set	4655 Jul 23 11:37	17° ♁ 46'36	
	4649 May 24 01:42	0° ♁					
morning rise	4649 Jun 04 23:53	1° ♁ 28'10		conjunction	4655 Aug 10 13:42	20° ♁ 05'24	0°07'21
retrograde	4649 Sep 18 23:41	9° ♁ 19'53		minimum elong	4655 Aug 10 13:42	20° ♁ 05'24	0°07'21
opposition	4649 Nov 27 12:49	5° ♁ 53'00	-2°30'50	behind sun begin	4655 Aug 10 07:00	20° ♁ 03'16	
min. Earth dist.	4649 Nov 27 11:48	5° ♁ 53'12	8.45205 AU	behind sun end	4655 Aug 10 20:23	20° ♁ 07'32	
direct	4650 Feb 03 00:16	2° ♁ 30'31		max. Earth dist.	4655 Aug 10 14:48	20° ♁ 05'45	10.12403 AU
evening set	4650 May 14 17:24	10° ♁ 04'15		morning rise	4655 Aug 28 16:38	22° ♁ 24'28	
					4655 Nov 17 05:20	0° ♁	
conjunction	4650 Jun 01 01:11	12° ♁ 13'47	-1°56'30	retrograde	4655 Dec 11 12:07	0° ♁ 32'23	
minimum elong	4650 Jun 01 01:13	12° ♁ 13'48	1°56'31		4656 Jan 04 22:07	30° ♁	
max. Earth dist.	4650 Jun 01 03:04	12° ♁ 14'22	10.40579 AU	opposition	4656 Feb 16 15:02	27° ♁ 04'18	0°28'25
morning rise	4650 Jun 18 13:12	14° ♁ 24'41		min. Earth dist.	4656 Feb 16 13:45	27° ♁ 04'34	8.12228 AU
retrograde	4650 Oct 02 17:49	22° ♁ 22'27		direct	4656 Apr 23 18:01	23° ♁ 36'00	
opposition	4650 Dec 10 21:15	18° ♁ 54'41	-2°15'19		4656 Jul 23 10:28	0° ♁	
min. Earth dist.	4650 Dec 10 19:37	18° ♁ 55'00	8.36307 AU	evening set	4656 Aug 06 06:57	1° ♁ 42'28	
direct	4651 Feb 16 02:27	15° ♁ 31'05					
evening set	4651 May 28 06:18	23° ♁ 11'28		conjunction	4656 Aug 24 09:28	4° ♁ 01'22	0°37'58
				minimum elong	4656 Aug 24 09:26	4° ♁ 01'22	0°37'58
conjunction	4651 Jun 14 18:44	25° ♁ 23'29	-1°40'44	max. Earth dist.	4656 Aug 24 10:59	4° ♁ 01'52	10.12616 AU
minimum elong	4651 Jun 14 18:47	25° ♁ 23'30	1°40'44	morning rise	4656 Sep 11 11:30	6° ♁ 20'08	
max. Earth dist.	4651 Jun 14 21:02	25° ♁ 24'13	10.32058 AU	retrograde	4656 Dec 24 15:29	14° ♁ 25'11	
morning rise	4651 Jul 02 11:07	27° ♁ 36'47		opposition	4657 Mar 01 12:42	10° ♁ 57'52	1°05'22
	4651 Jul 22 10:23	0° ♁		min. Earth dist.	4657 Mar 01 11:07	10° ♁ 58'11	8.13594 AU
retrograde	4651 Oct 16 17:29	5° ♁ 39'36		direct	4657 May 07 21:56	7° ♁ 29'12	
opposition	4651 Dec 24 09:45	2° ♁ 11'11	-1°52'19	evening set	4657 Aug 21 02:49	15° ♁ 37'11	
min. Earth dist.	4651 Dec 24 07:42	2° ♁ 11'36	8.28227 AU				
	4652 Jan 22 22:21	30° ♁		conjunction	4657 Sep 08 04:14	17° ♁ 55'26	1°06'19
direct	4652 Feb 29 09:11	28° ♁ 46'28		minimum elong	4657 Sep 08 04:12	17° ♁ 55'25	1°06'20
	4652 Apr 06 06:20	0° ♁		max. Earth dist.	4657 Sep 08 05:51	17° ♁ 55'57	10.15074 AU
evening set	4652 Jun 10 03:14	6° ♁ 33'24		morning rise	4657 Sep 26 03:55	20° ♁ 13'10	
				retrograde	4658 Jan 07 16:00	28° ♁ 13'49	
conjunction	4652 Jun 27 20:13	8° ♁ 47'47	-1°19'17	opposition	4658 Mar 15 09:29	24° ♁ 47'29	1°38'18
minimum elong	4652 Jun 27 20:16	8° ♁ 47'48	1°19'17	min. Earth dist.	4658 Mar 15 08:06	24° ♁ 47'46	8.17156 AU
max. Earth dist.	4652 Jun 27 22:08	8° ♁ 48'24	10.24590 AU	direct	4658 May 22 02:54	21° ♁ 18'45	
morning rise	4652 Jul 15 16:47	11° ♁ 03'19		evening set	4658 Sep 04 20:26	29° ♁ 26'24	
retrograde	4652 Oct 29 21:08	19° ♁ 09'51			4658 Sep 09 07:15	0° ♁	
opposition	4653 Jan 06 01:44	15° ♁ 41'04	-1°22'44				
min. Earth dist.	4653 Jan 06 00:03	15° ♁ 41'24	8.21415 AU	conjunction	4658 Sep 22 19:23	1° ♁ 43'17	1°30'40
direct	4653 Mar 13 21:08	12° ♁ 15'13		minimum elong	4658 Sep 22 19:20	1° ♁ 43'16	1°30'41
evening set	4653 Jun 24 08:02	20° ♁ 08'25		max. Earth dist.	4658 Sep 22 20:41	1° ♁ 43'42	10.19625 AU
				morning rise	4658 Oct 10 15:37	3° ♁ 59'21	
conjunction	4653 Jul 12 05:05	22° ♁ 24'50	-0°53'09	retrograde	4659 Jan 21 10:37	11° ♁ 54'25	
minimum elong	4653 Jul 12 05:07	22° ♁ 24'51	0°53'09	opposition	4659 Mar 29 04:15	8° ♁ 29'11	2°05'16
max. Earth dist.	4653 Jul 12 06:23	22° ♁ 25'15	10.18598 AU	min. Earth dist.	4659 Mar 29 03:28	8° ♁ 29'21	8.22689 AU
morning rise	4653 Jul 30 05:06	24° ♁ 42'12		direct	4659 Jun 05 08:06	5° ♁ 00'37	
	4653 Sep 15 19:08	0° ♁		evening set	4659 Sep 19 09:26	13° ♁ 06'04	
retrograde	4653 Nov 13 02:48	2° ♁ 50'51					
	4654 Jan 12 01:19	30° ♁		conjunction	4659 Oct 07 05:02	15° ♁ 21'05	1°49'39
opposition	4654 Jan 19 20:26	29° ♁ 22'01	-0°48'03	minimum elong	4659 Oct 07 04:59	15° ♁ 21'04	1°49'39
min. Earth dist.	4654 Jan 19 19:15	29° ♁ 22'15	8.16279 AU	max. Earth dist.	4659 Oct 07 05:30	15° ♁ 21'14	10.25987 AU
direct	4654 Mar 27 15:34	25° ♁ 55'07		morning rise	4659 Oct 24 21:14	17° ♁ 35'04	
	4654 Jun 05 12:34	0° ♁		retrograde	4660 Feb 03 23:22	25° ♁ 23'36	
evening set	4654 Jul 08 19:25	3° ♁ 53'56		opposition	4660 Apr 10 19:53	21° ♁ 59'33	2°24'51
				min. Earth dist.	4660 Apr 10 20:03	21° ♁ 59'31	8.29837 AU
conjunction	4654 Jul 26 19:37	6° ♁ 11'53	-0°23'43	direct	4660 Jun 18 10:53	18° ♁ 31'21	
minimum elong	4654 Jul 26 19:38	6° ♁ 11'54	0°23'44	evening set	4660 Oct 02 15:43	26° ♁ 32'54	

conjunction	4660 Oct 20 07:30	28° Ω 45'45	2°02'22	conjunction	4667 Jan 04 18:10	13° \mathfrak{Z} 57'40	1°10'27
minimum elong	4660 Oct 20 07:28	28° Ω 45'44	2°02'22	minimum elong	4667 Jan 04 18:13	13° \mathfrak{Z} 57'41	1°10'28
max. Earth dist.	4660 Oct 20 06:38	28° Ω 45'29	10.33741 AU	max. Earth dist.	4667 Jan 04 15:14	13° \mathfrak{Z} 56'47	10.82620 AU
	4660 Oct 30 03:12	0° \mathbb{M}		morning rise	4667 Jan 21 13:13	15° \mathfrak{Z} 58'22	
morning rise	4660 Nov 06 19:30	0° \mathbb{M} 57'25		retrograde	4667 May 01 14:03	23° \mathfrak{Z} 07'18	
retrograde	4661 Feb 16 06:12	8° \mathbb{M} 38'54		opposition	4667 Jul 09 21:30	19° \mathfrak{Z} 48'52	1°12'22
opposition	4661 Apr 24 07:52	5° \mathbb{M} 16'00	2°36'16	min. Earth dist.	4667 Jul 09 23:06	19° \mathfrak{Z} 48'34	8.85433 AU
min. Earth dist.	4661 Apr 24 08:34	5° \mathbb{M} 15'51	8.38109 AU	direct	4667 Sep 18 17:42	16° \mathfrak{Z} 26'59	
direct	4661 Jul 02 10:17	1° \mathbb{M} 48'24		evening set	4667 Dec 30 20:13	23° \mathfrak{Z} 45'00	
evening set	4661 Oct 16 13:42	9° \mathbb{M} 44'39					
conjunction	4661 Nov 03 01:36	11° \mathbb{M} 55'14	2°08'24	conjunction	4668 Jan 16 16:23	25° \mathfrak{Z} 45'25	0°46'47
minimum elong	4661 Nov 03 01:35	11° \mathbb{M} 55'13	2°08'24	minimum elong	4668 Jan 16 16:25	25° \mathfrak{Z} 45'26	0°46'48
max. Earth dist.	4661 Nov 02 23:53	11° \mathbb{M} 54'41	10.42354 AU	max. Earth dist.	4668 Jan 16 14:35	25° \mathfrak{Z} 44'53	10.87840 AU
morning rise	4661 Nov 20 09:27	14° \mathbb{M} 04'33		morning rise	4668 Feb 02 10:16	27° \mathfrak{Z} 45'12	
	4661 Nov 28 00:25	15° \mathbb{M}			4668 Feb 22 07:38	0° \approx	
retrograde	4662 Mar 01 06:37	21° \mathbb{M} 38'58		retrograde	4668 May 12 16:06	4° \approx 52'11	
opposition	4662 May 07 15:43	18° \mathbb{M} 17'11	2°39'20	opposition	4668 Jul 21 08:38	1° \approx 33'45	0°42'03
min. Earth dist.	4662 May 07 16:38	18° \mathbb{M} 17'00	8.46946 AU	min. Earth dist.	4668 Jul 21 09:39	1° \approx 33'33	8.89890 AU
	4662 Jul 02 12:15	15° \mathbb{R} \mathbb{M}			4668 Aug 12 02:59	30° \mathbb{R} \mathfrak{Z}	
direct	4662 Jul 16 05:36	14° \mathbb{M} 50'24		direct	4668 Sep 30 04:45	28° \mathfrak{Z} 12'39	
	4662 Jul 29 21:21	15° \mathbb{M}			4668 Nov 16 17:51	0° \approx	
evening set	4662 Oct 30 02:46	22° \mathbb{M} 40'28		evening set	4669 Jan 10 15:53	5° \approx 26'03	
conjunction	4662 Nov 16 11:07	24° \mathbb{M} 48'50	2°07'48	conjunction	4669 Jan 27 10:38	7° \approx 25'37	0°21'23
minimum elong	4662 Nov 16 11:07	24° \mathbb{M} 48'51	2°07'48	minimum elong	4669 Jan 27 10:38	7° \approx 25'37	0°21'23
max. Earth dist.	4662 Nov 16 09:07	24° \mathbb{M} 48'13	10.51282 AU	max. Earth dist.	4669 Jan 27 09:21	7° \approx 25'14	10.91533 AU
morning rise	4662 Dec 03 15:12	26° \mathbb{M} 55'57		morning rise	4669 Feb 13 03:45	9° \approx 24'45	
	4662 Dec 30 06:52	0° \mathfrak{X}			4669 Apr 11 12:34	15° \approx	
retrograde	4663 Mar 14 02:23	4° \mathfrak{X} 23'44		retrograde	4669 May 24 18:47	16° \approx 31'05	
opposition	4663 May 20 19:23	1° \mathfrak{X} 02'58	2°34'25		4669 Jul 08 07:38	15° \mathbb{R} \approx	
min. Earth dist.	4663 May 20 20:29	1° \mathfrak{X} 02'45	8.55851 AU	opposition	4669 Aug 02 18:18	13° \approx 12'28	0°10'16
	4663 Jun 03 12:22	30° \mathbb{R} \mathbb{M}		min. Earth dist.	4669 Aug 02 19:21	13° \approx 12'16	8.92765 AU
direct	4663 Jul 29 18:54	27° \mathbb{M} 37'09		direct	4669 Oct 12 12:15	9° \approx 52'02	
	4663 Sep 22 09:34	0° \mathfrak{X}		desc. node	4669 Dec 01 05:02	11° \approx 49'12	
evening set	4663 Nov 12 06:58	5° \mathfrak{X} 20'35			4670 Jan 04 08:22	15° \approx	
conjunction	4663 Nov 29 12:09	7° \mathfrak{X} 26'56	2°00'56	conjunction	4670 Jan 22 08:37	17° \approx 01'53	
minimum elong	4663 Nov 29 12:11	7° \mathfrak{X} 26'56	2°00'57				
max. Earth dist.	4663 Nov 29 10:13	7° \mathfrak{X} 26'20	10.60096 AU	conjunction	4670 Feb 08 02:07	19° \approx 00'54	-0°04'51
morning rise	4663 Dec 16 13:02	9° \mathfrak{X} 32'01		minimum elong	4670 Feb 08 02:06	19° \approx 00'54	0°04'52
retrograde	4664 Mar 25 18:13	16° \mathfrak{X} 53'46		behind sun begin	4670 Feb 07 19:17	18° \approx 58'53	
opposition	4664 Jun 01 19:11	13° \mathfrak{X} 33'55	2°22'12	behind sun end	4670 Feb 08 08:55	19° \approx 02'54	
min. Earth dist.	4664 Jun 01 20:53	13° \mathfrak{X} 33'36	8.64457 AU	max. Earth dist.	4670 Feb 08 00:36	19° \approx 00'29	10.93574 AU
direct	4664 Aug 11 01:35	10° \mathfrak{X} 09'08		morning rise	4670 Feb 24 18:58	20° \approx 59'43	
evening set	4664 Nov 24 02:55	17° \mathfrak{X} 45'45		retrograde	4670 Jun 05 19:26	28° \approx 06'44	
conjunction	4664 Dec 11 05:11	19° \mathfrak{X} 50'15	1°48'31	opposition	4670 Aug 15 03:01	24° \approx 47'43	-0°21'48
minimum elong	4664 Dec 11 05:13	19° \mathfrak{X} 50'15	1°48'31	min. Earth dist.	4670 Aug 15 04:10	24° \approx 47'30	8.93955 AU
max. Earth dist.	4664 Dec 11 02:50	19° \mathfrak{X} 49'32	10.68460 AU	direct	4670 Oct 24 16:08	21° \approx 27'50	
morning rise	4664 Dec 28 03:30	21° \mathfrak{X} 53'36		evening set	4671 Feb 03 00:03	28° \approx 35'24	
retrograde	4665 Apr 07 04:01	29° \mathfrak{X} 10'03			4671 Feb 14 22:22	0° \mathfrak{H}	
opposition	4665 Jun 14 15:16	25° \mathfrak{X} 50'56	2°03'41	conjunction	4671 Feb 19 16:42	0° \mathfrak{H} 34'07	-0°30'42
min. Earth dist.	4665 Jun 14 17:41	25° \mathfrak{X} 50'28	8.72455 AU	minimum elong	4671 Feb 19 16:41	0° \mathfrak{H} 34'06	0°30'42
direct	4665 Aug 24 03:22	22° \mathfrak{X} 27'09		max. Earth dist.	4671 Feb 19 15:18	0° \mathfrak{H} 33'42	10.93887 AU
evening set	4665 Dec 06 15:08	29° \mathfrak{X} 57'05		morning rise	4671 Mar 08 09:34	2° \mathfrak{H} 32'53	
	4665 Dec 07 00:58	0° \mathfrak{Z}		retrograde	4671 Jun 17 22:02	9° \mathfrak{H} 41'57	
conjunction	4665 Dec 23 14:53	1° \mathfrak{Z} 59'57	1°31'22	opposition	4671 Aug 27 11:20	6° \mathfrak{H} 22'22	-0°52'56
minimum elong	4665 Dec 23 14:55	1° \mathfrak{Z} 59'58	1°31'23	min. Earth dist.	4671 Aug 27 11:47	6° \mathfrak{H} 22'17	8.93403 AU
max. Earth dist.	4665 Dec 23 11:48	1° \mathfrak{Z} 59'01	10.76069 AU	direct	4671 Nov 05 20:00	3° \mathfrak{H} 02'52	
morning rise	4666 Jan 09 11:20	4° \mathfrak{Z} 01'51		evening set	4672 Feb 14 15:26	10° \mathfrak{H} 09'25	
retrograde	4666 Apr 19 09:53	11° \mathfrak{Z} 13'59		conjunction	4672 Mar 02 07:42	12° \mathfrak{H} 08'11	-0°55'21
opposition	4666 Jun 27 07:56	7° \mathfrak{Z} 55'20	1°40'00	minimum elong	4672 Mar 02 07:40	12° \mathfrak{H} 08'10	0°55'21
min. Earth dist.	4666 Jun 27 10:20	7° \mathfrak{Z} 54'53	8.79544 AU	max. Earth dist.	4672 Mar 02 07:36	12° \mathfrak{H} 08'09	10.92442 AU
direct	4666 Sep 06 01:49	4° \mathfrak{Z} 32'31		morning rise	4672 Mar 19 00:45	14° \mathfrak{H} 07'12	
evening set	4666 Dec 18 20:24	11° \mathfrak{Z} 56'09		retrograde	4672 Jun 29 05:41	21° \mathfrak{H} 19'35	
				opposition	4672 Sep 07 20:34	17° \mathfrak{H} 59'16	-1°22'02
				min. Earth dist.	4672 Sep 07 19:54	17° \mathfrak{H} 59'24	8.91117 AU

direct	4672 Nov 16 21:58	14° H 40'03	min. Earth dist.	4678 Nov 22 06:39	0° II 47'39	8.50245 AU
evening set	4673 Feb 25 08:08	21° H 46'47		4678 Dec 02 12:24	30° R S	
			direct	4679 Jan 28 23:07	27° S 25'36	
conjunction	4673 Mar 14 00:22	23° H 45'54 -1°17'51		4679 Mar 24 23:32	0° II	
minimum elong	4673 Mar 14 00:20	23° H 45'53 1°17'50	evening set	4679 May 09 13:36	4° II 56'13	
max. Earth dist.	4673 Mar 14 01:07	23° H 46'07 10.89290 AU				
morning rise	4673 Mar 30 18:05	25° H 45'31	conjunction	4679 May 26 19:12	7° II 04'31 -2°01'06	
	4673 May 09 18:06	0° Y	minimum elong	4679 May 26 19:14	7° II 04'32 2°01'07	
retrograde	4673 Jul 11 14:47	3° Y 02'21	max. Earth dist.	4679 May 26 21:38	7° II 05'17 10.45811 AU	
	4673 Sep 16 02:59	30° R H	morning rise	4679 Jun 13 05:19	9° II 14'13	
opposition	4673 Sep 20 07:24	29° H 41'11 -1°47'57	retrograde	4679 Sep 27 09:20	17° II 08'58	
min. Earth dist.	4673 Sep 20 06:13	29° H 41'24 8.87179 AU	opposition	4679 Dec 05 16:16	13° II 42'07 -2°22'28	
direct	4673 Nov 28 22:46	26° H 22'03	min. Earth dist.	4679 Dec 05 14:07	13° II 42'33 8.41690 AU	
	4674 Feb 05 02:25	0° Y	direct	4680 Feb 10 22:57	10° II 19'36	
evening set	4674 Mar 09 03:45	3° Y 30'16	evening set	4680 May 21 22:53	17° II 56'30	
conjunction	4674 Mar 25 20:22	5° Y 30'04 -1°37'16	conjunction	4680 Jun 08 09:01	20° II 07'13 -1°47'51	
minimum elong	4674 Mar 25 20:19	5° Y 30'03 1°37'15	minimum elong	4680 Jun 08 09:04	20° II 07'14 1°47'52	
max. Earth dist.	4674 Mar 25 20:49	5° Y 30'12 10.84552 AU	max. Earth dist.	4680 Jun 08 11:10	20° II 07'53 10.37490 AU	
morning rise	4674 Apr 11 15:23	7° Y 30'35	morning rise	4680 Jun 25 23:34	22° II 19'16	
retrograde	4674 Jul 24 04:29	14° Y 52'50		4680 Sep 21 01:02	0° S	
opposition	4674 Oct 02 20:18	11° Y 30'44 -2°09'36	retrograde	4680 Oct 10 05:50	0° S 19'15	
min. Earth dist.	4674 Oct 02 19:27	11° Y 30'54 8.81742 AU		4680 Oct 29 12:17	30° R II	
direct	4674 Dec 11 02:16	8° Y 11'27	opposition	4680 Dec 18 02:56	26° II 51'44 -2°02'30	
evening set	4675 Mar 21 03:17	15° Y 22'21	min. Earth dist.	4680 Dec 18 01:18	26° II 52'04 8.33637 AU	
			direct	4681 Feb 23 04:16	23° II 28'07	
conjunction	4675 Apr 06 20:58	17° Y 23'11 -1°52'44		4681 May 25 22:26	0° S	
minimum elong	4675 Apr 06 20:56	17° Y 23'11 1°52'44	evening set	4681 Jun 04 16:06	1° S 11'23	
max. Earth dist.	4675 Apr 06 21:35	17° Y 23'22 10.78419 AU				
morning rise	4675 Apr 23 17:49	19° Y 24'58	conjunction	4681 Jun 22 07:01	3° S 24'29 -1°28'43	
retrograde	4675 Aug 05 22:57	26° Y 53'24	minimum elong	4681 Jun 22 07:04	3° S 24'30 1°28'43	
opposition	4675 Oct 15 12:11	23° Y 30'18 -2°25'59	max. Earth dist.	4681 Jun 22 09:08	3° S 25'09 10.29845 AU	
min. Earth dist.	4675 Oct 15 11:06	23° Y 30'30 8.75021 AU	morning rise	4681 Jul 10 01:49	5° S 38'49	
direct	4675 Dec 23 07:46	20° Y 10'42	retrograde	4681 Oct 24 06:56	13° S 42'54	
evening set	4676 Apr 01 07:45	27° Y 25'19	opposition	4681 Dec 31 17:00	10° S 14'55 -1°35'35	
			min. Earth dist.	4681 Dec 31 15:31	10° S 15'13 8.26423 AU	
conjunction	4676 Apr 18 03:21	29° Y 27'33 -2°03'28	direct	4682 Mar 08 14:27	6° S 50'11	
minimum elong	4676 Apr 18 03:20	29° Y 27'33 2°03'28	evening set	4682 Jun 18 17:09	14° S 39'47	
max. Earth dist.	4676 Apr 18 05:08	29° Y 28'06 10.71138 AU				
	4676 Apr 22 13:42	0° S	conjunction	4682 Jul 06 12:30	16° S 55'05 -1°04'27	
morning rise	4676 May 05 02:31	1° S 30'54	minimum elong	4682 Jul 06 12:32	16° S 55'05 1°04'27	
retrograde	4676 Aug 17 22:22	9° S 06'04	max. Earth dist.	4682 Jul 06 14:34	16° S 55'44 10.23226 AU	
opposition	4676 Oct 27 07:28	5° S 41'54 -2°36'07	morning rise	4682 Jul 24 10:54	19° S 11'23	
min. Earth dist.	4676 Oct 27 05:30	5° S 42'17 8.67299 AU	retrograde	4682 Nov 07 11:01	27° S 18'19	
direct	4677 Jan 03 17:47	2° S 21'50	opposition	4683 Jan 14 10:00	23° S 50'08 -1°02'55	
evening set	4677 Apr 13 18:28	9° S 41'05	min. Earth dist.	4683 Jan 14 08:23	23° S 50'27 8.20461 AU	
			direct	4683 Mar 22 05:49	20° S 24'20	
conjunction	4677 Apr 30 16:46	11° S 45'05 -2°08'45	evening set	4683 Jul 03 01:16	28° S 19'51	
minimum elong	4677 Apr 30 16:46	11° S 45'05 2°08'46		4683 Jul 16 04:53	0° Q	
max. Earth dist.	4677 Apr 30 19:41	11° S 45'59 10.63029 AU				
morning rise	4677 May 17 18:55	13° S 50'19	conjunction	4683 Jul 21 00:13	0° Q 36'56 -0°36'16	
	4677 May 27 14:09	15° S	minimum elong	4683 Jul 21 00:15	0° Q 36'56 0°36'16	
retrograde	4677 Aug 31 05:08	21° S 32'20	max. Earth dist.	4683 Jul 21 01:57	0° Q 37'29 10.18092 AU	
opposition	4677 Nov 09 06:22	18° S 07'10 -2°39'14	morning rise	4683 Aug 08 01:19	2° Q 54'44	
min. Earth dist.	4677 Nov 09 03:37	18° S 07'42 8.58915 AU	retrograde	4683 Nov 21 16:17	11° Q 02'58	
	4677 Dec 31 05:22	15° R S	opposition	4684 Jan 28 05:28	7° Q 34'48 -0°26'15	
direct	4678 Jan 16 06:22	14° S 46'27	min. Earth dist.	4684 Jan 28 04:01	7° Q 35'06 8.16217 AU	
	4678 Feb 01 04:01	15° S	direct	4684 Apr 04 02:06	4° Q 08'00	
evening set	4678 Apr 26 12:16	22° S 11'06	evening set	4684 Jul 16 15:04	12° Q 08'34	
conjunction	4678 May 13 13:55	24° S 17'09 -2°08'04	conjunction	4684 Aug 03 16:27	14° Q 26'50 -0°05'50	
minimum elong	4678 May 13 13:55	24° S 17'10 2°08'05	minimum elong	4684 Aug 03 16:28	14° Q 26'50 0°05'49	
max. Earth dist.	4678 May 13 16:47	24° S 18'03 10.54457 AU	behind sun begin	4684 Aug 03 09:27	14° Q 24'37	
morning rise	4678 May 30 19:48	26° S 24'33	behind sun end	4684 Aug 03 23:28	14° Q 29'04	
	4678 Jul 01 11:34	0° II	max. Earth dist.	4684 Aug 03 17:35	14° Q 27'11 10.14850 AU	
retrograde	4678 Sep 13 17:24	4° II 13'12		4684 Aug 07 23:43	15° Q	
opposition	4678 Nov 22 09:19	0° II 47'08 -2°34'46	morning rise	4684 Aug 21 18:59	16° Q 45'30	

asc. node	4684 Oct 13 03:17	22°♏29'31	morning rise	4690 Nov 14 21:04	8°♑38'45	
retrograde	4684 Dec 04 21:46	24°♏53'18		4691 Jan 17 05:00	15°♑	
opposition	4685 Feb 10 02:24	21°♏25'24 0°12'14	retrograde	4691 Feb 24 00:10	16°♑16'06	
min. Earth dist.	4685 Feb 10 01:32	21°♏25'34 8.14019 AU		4691 Apr 03 10:38	15°♑	
direct	4685 Apr 18 01:56	17°♏57'43	opposition	4691 May 02 05:33	12°♑53'21	2°39'07
evening set	4685 Jul 31 08:52	26°♏02'08	min. Earth dist.	4691 May 02 06:32	12°♑53'09	8.42417 AU
			direct	4691 Jul 10 14:12	9°♑25'44	
conjunction	4685 Aug 18 11:11	28°♏20'51 0°25'12		4691 Oct 05 00:14	15°♑	
minimum elong	4685 Aug 18 11:10	28°♏20'51 0°25'13	evening set	4691 Oct 24 14:17	17°♑18'22	
max. Earth dist.	4685 Aug 18 11:20	28°♏20'54 10.13738 AU				
	4685 Aug 31 08:33	0°♑	conjunction	4691 Nov 11 00:16	19°♑27'43	2°08'56
morning rise	4685 Sep 05 13:37	0°♑39'36	minimum elong	4691 Nov 11 00:15	19°♑27'43	2°08'55
retrograde	4685 Dec 19 01:21	8°♑45'14	max. Earth dist.	4691 Nov 10 22:42	19°♑27'14	10.46714 AU
opposition	4686 Feb 23 23:40	5°♑17'51 0°50'05	morning rise	4691 Nov 28 05:58	21°♑35'48	
min. Earth dist.	4686 Feb 23 23:35	5°♑17'52 8.14031 AU	retrograde	4692 Mar 07 20:25	29°♑06'14	
direct	4686 May 02 05:20	1°♑49'30	opposition	4692 May 14 10:28	25°♑44'34	2°37'38
evening set	4686 Aug 15 04:00	9°♑56'14	min. Earth dist.	4692 May 14 12:01	25°♑44'16	8.51358 AU
			direct	4692 Jul 23 06:06	22°♑17'48	
conjunction	4686 Sep 02 05:48	12°♑14'37 0°54'41	evening set	4692 Nov 05 22:00	0°♑03'57	
minimum elong	4686 Sep 02 05:45	12°♑14'36 0°54'42		4692 Nov 05 08:56	0°♑	
max. Earth dist.	4686 Sep 02 05:12	12°♑14'26 10.14843 AU				
morning rise	4686 Sep 20 06:37	14°♑32'42	conjunction	4692 Nov 23 04:27	2°♑11'08	2°04'45
retrograde	4687 Jan 02 01:18	22°♑34'39	minimum elong	4692 Nov 23 04:28	2°♑11'09	2°04'45
opposition	4687 Mar 09 20:18	19°♑07'58 1°24'55	max. Earth dist.	4692 Nov 23 02:11	2°♑10'26	10.55760 AU
min. Earth dist.	4687 Mar 09 20:27	19°♑07'56 8.16255 AU	morning rise	4692 Dec 10 06:50	4°♑17'05	
direct	4687 May 16 10:52	15°♑39'13	retrograde	4693 Mar 20 12:26	11°♑41'03	
evening set	4687 Aug 29 21:49	23°♑46'28	opposition	4693 May 27 11:23	8°♑20'22	2°28'31
			min. Earth dist.	4693 May 27 12:49	8°♑20'06	8.60376 AU
conjunction	4687 Sep 16 21:48	26°♑03'50 1°20'53	direct	4693 Aug 05 15:55	4°♑54'40	
minimum elong	4687 Sep 16 21:45	26°♑03'49 1°20'53	evening set	4693 Nov 18 20:46	12°♑33'52	
max. Earth dist.	4687 Sep 16 21:02	26°♑03'35 10.18091 AU				
morning rise	4687 Oct 04 19:46	28°♑20'34	conjunction	4693 Dec 06 00:13	14°♑39'05	1°54'42
	4687 Oct 18 07:55	0°♑	minimum elong	4693 Dec 06 00:15	14°♑39'06	1°54'42
retrograde	4688 Jan 15 20:06	6°♑17'33	max. Earth dist.	4693 Dec 05 22:06	14°♑38'26	10.64678 AU
opposition	4688 Mar 22 15:11	2°♑51'42 1°54'35	morning rise	4693 Dec 22 23:46	16°♑43'08	
min. Earth dist.	4688 Mar 22 15:15	2°♑51'41 8.20529 AU	retrograde	4694 Apr 01 23:38	24°♑01'20	
	4688 May 03 03:40	30°♑	opposition	4694 Jun 09 08:19	20°♑41'31	2°12'39
direct	4688 May 29 16:35	29°♑22'50	min. Earth dist.	4694 Jun 09 09:04	20°♑41'23	8.69042 AU
	4688 Jun 25 01:59	0°♑	direct	4694 Aug 18 20:06	17°♑16'59	
evening set	4688 Sep 12 12:13	7°♑28'49	evening set	4694 Dec 01 11:30	24°♑49'15	
conjunction	4688 Sep 30 09:22	9°♑44'35 1°42'15	conjunction	4694 Dec 18 12:28	26°♑52'43	1°39'33
minimum elong	4688 Sep 30 09:19	9°♑44'34 1°42'16	minimum elong	4694 Dec 18 12:30	26°♑52'44	1°39'34
max. Earth dist.	4688 Sep 30 08:37	9°♑44'21 10.23259 AU	max. Earth dist.	4694 Dec 18 11:16	26°♑52'22	10.73052 AU
morning rise	4688 Oct 18 03:29	11°♑59'26	morning rise	4695 Jan 04 09:41	28°♑55'08	
retrograde	4689 Jan 28 10:48	19°♑50'25		4695 Jan 13 14:58	0°♑	
opposition	4689 Apr 05 07:19	16°♑25'33 2°17'26	retrograde	4695 Apr 14 07:54	6°♑08'28	
min. Earth dist.	4689 Apr 05 07:18	16°♑25'33 8.26568 AU	opposition	4695 Jun 22 01:31	2°♑49'24	1°51'08
direct	4689 Jun 12 18:59	12°♑56'50	min. Earth dist.	4695 Jun 22 02:17	2°♑49'15	8.76972 AU
evening set	4689 Sep 26 20:48	20°♑59'47		4695 Aug 05 04:33	30°♑	
			direct	4695 Aug 31 18:25	29°♑26'01	
conjunction	4689 Oct 14 14:26	23°♑13'35 1°57'44		4695 Sep 27 01:45	0°♑	
minimum elong	4689 Oct 14 14:23	23°♑13'34 1°57'44	evening set	4695 Dec 13 19:11	6°♑51'44	
max. Earth dist.	4689 Oct 14 13:52	23°♑13'24 10.30021 AU				
morning rise	4689 Nov 01 04:14	25°♑26'13	conjunction	4695 Dec 30 17:57	8°♑53'43	1°20'13
	4689 Dec 11 18:15	0°♑	minimum elong	4695 Dec 30 17:59	8°♑53'44	1°20'14
retrograde	4690 Feb 10 20:52	3°♑10'32	max. Earth dist.	4695 Dec 30 16:51	8°♑53'23	10.80511 AU
	4690 Apr 16 01:56	30°♑	morning rise	4696 Jan 16 13:26	10°♑54'46	
opposition	4690 Apr 18 20:20	29°♑46'43 2°32'26	retrograde	4696 Apr 25 12:55	18°♑04'19	
min. Earth dist.	4690 Apr 18 20:34	29°♑46'40 8.34004 AU	opposition	4696 Jul 03 15:48	14°♑45'49	1°25'09
direct	4690 Jun 26 18:19	26°♑18'26	min. Earth dist.	4696 Jul 03 17:02	14°♑45'35	8.83828 AU
	4690 Sep 02 23:56	0°♑	direct	4696 Sep 12 10:18	11°♑23'33	
evening set	4690 Oct 10 21:43	4°♑16'48	evening set	4696 Dec 24 20:54	18°♑43'22	
conjunction	4690 Oct 28 11:31	6°♑28'24 2°06'40	conjunction	4697 Jan 10 17:39	20°♑44'05	0°57'41
minimum elong	4690 Oct 28 11:29	6°♑28'24 2°06'40	minimum elong	4697 Jan 10 17:41	20°♑44'06	0°57'42
max. Earth dist.	4690 Oct 28 10:50	6°♑28'11 10.37984 AU	max. Earth dist.	4697 Jan 10 16:00	20°♑43'36	10.86747 AU

morning rise	4697 Jan 27 11:58	22°  44'05		minimum elong	4703 Mar 21 20:26	0°  24'30	1°28'46
retrograde	4697 May 07 14:12	29°  51'06		max. Earth dist.	4703 Mar 21 19:54	0°  24'21	10.88566 AU
opposition	4697 Jul 16 03:36	26°  32'55	0°55'55	morning rise	4703 Apr 07 14:43	2°  24'25	
min. Earth dist.	4697 Jul 16 05:01	26°  32'39	8.89343 AU	retrograde	4703 Jul 19 20:14	9°  43'39	
direct	4697 Sep 24 23:34	23°  11'42		opposition	4703 Sep 28 12:17	6°  22'32	-2°00'12
	4698 Jan 01 22:52	0° 		min. Earth dist.	4703 Sep 28 12:10	6°  22'33	8.85834 AU
evening set	4698 Jan 05 17:53	0°  26'28		direct	4703 Dec 06 23:51	3°  03'47	
				evening set	4704 Mar 16 01:41	10°  13'01	
conjunction	4698 Jan 22 13:04	2°  26'11	0°32'58				
minimum elong	4698 Jan 22 13:05	2°  26'12	0°32'59	conjunction	4704 Apr 01 18:50	12°  13'14	-1°46'09
max. Earth dist.	4698 Jan 22 11:24	2°  25'42	10.91525 AU	minimum elong	4704 Apr 01 18:48	12°  13'14	1°46'08
morning rise	4698 Feb 08 06:35	4°  25'25		max. Earth dist.	4704 Apr 01 18:58	12°  13'17	10.82561 AU
retrograde	4698 May 19 16:06	11°  31'13		morning rise	4704 Apr 18 14:30	14°  14'17	
opposition	4698 Jul 28 13:21	8°  13'05	0°24'42	retrograde	4704 Jul 31 13:26	21°  39'34	
min. Earth dist.	4698 Jul 28 14:02	8°  12'57	8.93305 AU	opposition	4704 Oct 10 02:46	18°  17'18	-2°19'06
direct	4698 Oct 07 09:08	4°  52'47		min. Earth dist.	4704 Oct 10 02:06	18°  17'25	8.79143 AU
evening set	4699 Jan 17 11:26	12°  03'30		direct	4704 Dec 18 03:02	14°  58'12	
				evening set	4705 Mar 28 03:44	22°  10'48	
conjunction	4699 Feb 03 05:29	14°  02'33	0°07'06				
minimum elong	4699 Feb 03 05:29	14°  02'33	0°07'06	conjunction	4705 Apr 13 22:18	24°  12'18	-1°59'08
behind sun begin	4699 Feb 02 23:01	14°  00'38		minimum elong	4705 Apr 13 22:17	24°  12'18	1°59'08
behind sun end	4699 Feb 03 11:57	14°  04'27		max. Earth dist.	4705 Apr 13 22:14	24°  12'17	10.75217 AU
max. Earth dist.	4699 Feb 03 04:49	14°  02'21	10.94648 AU	morning rise	4705 Apr 30 20:12	26°  14'50	
	4699 Feb 11 06:20	15° 			4705 Jun 03 21:51	0° 	
morning rise	4699 Feb 19 22:23	16°  01'17		retrograde	4705 Aug 13 10:14	3°  46'45	
desc. node	4699 May 15 16:23	22°  54'17		opposition	4705 Oct 22 20:28	0°  23'16	-2°32'14
retrograde	4699 May 31 17:53	23°  07'10		min. Earth dist.	4705 Oct 22 20:00	0°  23'22	8.71266 AU
opposition	4699 Aug 09 21:57	19°  48'51	-0°07'20		4705 Oct 27 22:37	30°  Y	
min. Earth dist.	4699 Aug 09 21:55	19°  48'52	8.95541 AU	direct	4705 Dec 30 10:28	27°  03'32	
direct	4699 Oct 19 13:44	16°  29'19			4706 Feb 28 08:01	0° 	
evening set	4700 Jan 29 03:08	23°  37'09		evening set	4706 Apr 09 11:33	4°  20'33	
conjunction	4700 Feb 14 20:10	25°  35'46	-0°19'03	conjunction	4706 Apr 26 08:21	6°  23'42	-2°07'00
minimum elong	4700 Feb 14 20:09	25°  35'46	0°19'04	minimum elong	4706 Apr 26 08:20	6°  23'42	2°07'00
max. Earth dist.	4700 Feb 14 20:04	25°  35'44	10.95970 AU	max. Earth dist.	4706 Apr 26 08:10	6°  23'38	10.66867 AU
morning rise	4700 Mar 03 12:45	27°  34'18		morning rise	4706 May 13 09:08	8°  28'02	
	4700 Mar 25 07:06	0° 			4706 Jul 20 15:02	15° 	
retrograde	4700 Jun 12 20:48	4°  41'36		retrograde	4706 Aug 26 13:08	16°  06'53	
opposition	4700 Aug 22 06:12	1°  22'55	-0°38'57		4706 Oct 02 22:57	15°  B	
min. Earth dist.	4700 Aug 22 06:14	1°  22'54	8.95941 AU	opposition	4706 Nov 04 17:35	12°  42'11	-2°38'41
	4700 Sep 10 11:27	30°  R		min. Earth dist.	4706 Nov 04 17:17	12°  42'15	8.62556 AU
direct	4700 Oct 31 17:00	28°  03'54		direct	4707 Jan 11 22:04	9°  21'38	
	4700 Dec 20 00:10	0° 			4707 Apr 07 09:07	15° 	
evening set	4701 Feb 09 18:20	5°  10'06		evening set	4707 Apr 22 01:50	16°  43'53	
conjunction	4701 Feb 26 10:34	7°  08'36	-0°44'20	conjunction	4707 May 09 01:46	18°  49'00	-2°09'07
minimum elong	4701 Feb 26 10:32	7°  08'35	0°44'21	minimum elong	4707 May 09 01:47	18°  49'00	2°09'08
max. Earth dist.	4701 Feb 26 09:41	7°  08'20	10.95410 AU	max. Earth dist.	4707 May 09 02:25	18°  49'12	10.57880 AU
morning rise	4701 Mar 15 03:21	9°  07'15		morning rise	4707 May 26 05:57	20°  55'26	
retrograde	4701 Jun 25 01:33	16°  17'17		retrograde	4707 Sep 08 21:22	28°  41'15	
opposition	4701 Sep 03 14:53	12°  57'58	-1°09'03	opposition	4707 Nov 17 18:42	25°  15'22	-2°37'47
min. Earth dist.	4701 Sep 03 15:34	12°  57'50	8.94441 AU	min. Earth dist.	4707 Nov 17 17:53	25°  15'31	8.53400 AU
direct	4701 Nov 12 18:18	9°  39'16		direct	4708 Jan 24 13:58	21°  53'52	
evening set	4702 Feb 21 10:08	16°  45'09		evening set	4708 May 03 23:19	29°  22'00	
					4708 May 09 03:20	0° 	
conjunction	4702 Mar 10 02:05	18°  43'51	-1°07'53				
minimum elong	4702 Mar 10 02:03	18°  43'50	1°07'53	conjunction	4708 May 21 03:10	1°  29'21	-2°05'04
max. Earth dist.	4702 Mar 10 00:52	18°  43'29	10.92924 AU	minimum elong	4708 May 21 03:11	1°  29'22	2°05'05
morning rise	4702 Mar 26 19:29	20°  42'58		max. Earth dist.	4708 May 21 05:02	1°  29'56	10.48663 AU
retrograde	4702 Jul 07 07:36	27°  57'02		morning rise	4708 Jun 07 11:15	3°  38'05	
opposition	4702 Sep 16 00:40	24°  36'53	-1°36'29	retrograde	4708 Sep 21 11:13	11°  30'33	
min. Earth dist.	4702 Sep 16 01:17	24°  36'46	8.91025 AU	opposition	4708 Nov 29 23:51	8°  03'35	-2°29'06
direct	4702 Nov 24 20:16	21°  18'16		min. Earth dist.	4708 Nov 29 22:08	8°  03'56	8.44216 AU
evening set	4703 Mar 05 04:11	28°  25'14		direct	4709 Feb 05 11:16	4°  41'03	
	4703 Mar 18 10:48	0°  Y		evening set	4709 May 17 04:56	12°  15'30	
conjunction	4703 Mar 21 20:28	0°  Y24'31	-1°28'47	conjunction	4709 Jun 03 13:10	14°  25'18	-1°54'41

minimum elong	4709 Jun 03 13:12	14° Π 25'19	1°54'42	min. Earth dist.	4715 Feb 19 01:08	29° Ω 18'44	8.12516 AU
max. Earth dist.	4709 Jun 03 15:24	14° Π 26'00	10.39651 AU	direct	4715 Apr 27 06:10	25° Ω 49'58	
morning rise	4709 Jun 21 01:35	16° Π 36'27			4715 Jul 07 07:14	0° Π	
retrograde	4709 Oct 05 07:17	24° Π 34'47		evening set	4715 Aug 09 20:51	3° Π 56'19	
opposition	4709 Dec 13 08:51	21° Π 06'57	-2°12'36				
min. Earth dist.	4709 Dec 13 06:52	21° Π 07'21	8.35448 AU	conjunction	4715 Aug 27 23:16	6° Π 15'06	0°41'39
direct	4710 Feb 18 12:40	17° Π 43'16		minimum elong	4715 Aug 27 23:14	6° Π 15'06	0°41'39
evening set	4710 May 30 18:45	25° Π 24'17		max. Earth dist.	4715 Aug 28 01:18	6° Π 15'46	10.13010 AU
				morning rise	4715 Sep 15 00:58	8° Π 33'43	
conjunction	4710 Jun 17 07:35	27° Π 36'33	-1°38'09	retrograde	4715 Dec 28 03:54	16° Π 38'07	
minimum elong	4710 Jun 17 07:37	27° Π 36'34	1°38'10	opposition	4716 Mar 04 00:23	13° Π 10'49	1°09'42
max. Earth dist.	4710 Jun 17 09:27	27° Π 37'08	10.31290 AU	min. Earth dist.	4716 Mar 03 22:43	13° Π 11'10	8.14097 AU
morning rise	4710 Jul 05 00:28	29° Π 50'06		direct	4716 May 10 10:20	9° Π 42'06	
	4710 Jul 06 08:30	0° Ξ		evening set	4716 Aug 23 16:12	17° Π 49'49	
retrograde	4710 Oct 19 07:39	7° Ξ 53'14					
opposition	4710 Dec 26 21:46	4° Ξ 24'48	-1°48'44	conjunction	4716 Sep 10 17:20	20° Π 07'52	1°09'33
min. Earth dist.	4710 Dec 26 20:02	4° Ξ 25'09	8.27549 AU	minimum elong	4716 Sep 10 17:17	20° Π 07'51	1°09'34
direct	4711 Mar 03 19:58	0° Ξ 59'56		max. Earth dist.	4716 Sep 10 18:50	20° Π 08'20	10.15669 AU
evening set	4711 Jun 13 16:26	8° Ξ 47'26		morning rise	4716 Sep 28 16:40	22° Π 25'23	
					4716 Dec 19 17:27	0° Ξ	
conjunction	4711 Jul 01 09:44	11° Ξ 02'00	-1°16'04	retrograde	4717 Jan 10 02:48	0° Ξ 25'19	
minimum elong	4711 Jul 01 09:47	11° Ξ 02'01	1°16'05		4717 Jan 31 13:00	30° \mathbb{R} Π	
max. Earth dist.	4711 Jul 01 11:07	11° Ξ 02'26	10.24026 AU	opposition	4717 Mar 17 20:43	26° Π 59'03	1°41'57
morning rise	4711 Jul 19 06:45	13° Ξ 17'43		min. Earth dist.	4717 Mar 17 19:49	26° Π 59'14	8.17842 AU
retrograde	4711 Nov 02 10:11	21° Ξ 24'21		direct	4717 May 24 15:25	23° Π 30'16	
opposition	4712 Jan 09 14:02	17° Ξ 55'33	-1°18'26		4717 Aug 25 02:44	0° Ξ	
min. Earth dist.	4712 Jan 09 12:47	17° Ξ 55'49	8.20963 AU	evening set	4717 Sep 07 09:15	1° Ξ 37'32	
direct	4712 Mar 16 10:07	14° Ξ 29'34					
evening set	4712 Jun 26 21:40	22° Ξ 23'11		conjunction	4717 Sep 25 07:47	3° Ξ 54'11	1°33'16
				minimum elong	4717 Sep 25 07:43	3° Ξ 54'10	1°33'17
conjunction	4712 Jul 14 19:03	24° Ξ 39'44	-0°49'28	max. Earth dist.	4717 Sep 25 08:21	3° Ξ 54'22	10.20382 AU
minimum elong	4712 Jul 14 19:05	24° Ξ 39'45	0°49'29	morning rise	4717 Oct 13 03:40	6° Ξ 10'01	
max. Earth dist.	4712 Jul 14 20:24	24° Ξ 40'10	10.18273 AU	retrograde	4718 Jan 23 20:51	14° Ξ 04'17	
morning rise	4712 Aug 01 19:20	26° Ξ 57'12		opposition	4718 Mar 31 14:56	10° Ξ 39'10	2°08'01
	4712 Aug 27 07:27	0° Ω		min. Earth dist.	4718 Mar 31 14:42	10° Ξ 39'13	8.23517 AU
retrograde	4712 Nov 15 14:17	5° Ω 05'45		direct	4718 Jun 07 19:36	7° Ξ 10'36	
opposition	4713 Jan 22 08:48	1° Ω 36'53	-0°43'17	evening set	4718 Sep 21 21:23	15° Ξ 15'33	
min. Earth dist.	4713 Jan 22 07:35	1° Ω 37'08	8.16079 AU				
	4713 Feb 11 22:39	30° \mathbb{R} Ξ		conjunction	4718 Oct 09 16:32	17° Ξ 30'20	1°51'29
direct	4713 Mar 30 05:35	28° Ξ 09'53		minimum elong	4718 Oct 09 16:29	17° Ξ 30'19	1°51'30
	4713 May 14 15:10	0° Ω		max. Earth dist.	4718 Oct 09 16:15	17° Ξ 30'14	10.26867 AU
evening set	4713 Jul 11 09:21	6° Ω 08'55		morning rise	4718 Oct 27 08:24	19° Ξ 44'04	
				retrograde	4719 Feb 06 08:54	27° Ξ 31'49	
conjunction	4713 Jul 29 09:51	8° Ω 26'56	-0°19'48	opposition	4719 Apr 14 06:03	24° Ξ 07'52	2°26'35
minimum elong	4713 Jul 29 09:52	8° Ω 26'56	0°19'48	min. Earth dist.	4719 Apr 14 06:11	24° Ξ 07'51	8.30773 AU
max. Earth dist.	4713 Jul 29 11:25	8° Ω 27'26	10.14372 AU	direct	4719 Jun 21 22:22	20° Ξ 39'45	
morning rise	4713 Aug 16 12:08	10° Ω 45'31		evening set	4719 Oct 06 02:33	28° Ξ 40'41	
	4713 Sep 22 00:17	15° Ω			4719 Oct 16 16:53	0° \mathbb{M}	
retrograde	4713 Nov 29 19:39	18° Ω 54'20					
opposition	4714 Feb 05 05:27	15° Ω 25'43	-0°05'17	conjunction	4719 Oct 23 17:59	0° \mathbb{M} .53'18	2°03'22
min. Earth dist.	4714 Feb 05 03:56	15° Ω 26'01	8.13198 AU	minimum elong	4719 Oct 23 17:57	0° \mathbb{M} .53'17	2°03'23
	4714 Feb 10 11:11	15° \mathbb{R} Ω		max. Earth dist.	4719 Oct 23 17:08	0° \mathbb{M} .53'02	10.34722 AU
asc. node	4714 Mar 29 00:01	12° Ω 10'40		morning rise	4719 Nov 10 05:38	3° \mathbb{M} .04'44	
direct	4714 Apr 13 04:12	11° Ω 57'54		retrograde	4720 Feb 19 14:24	10° \mathbb{M} .45'28	
	4714 Jun 11 15:59	15° Ω		opposition	4720 Apr 26 17:27	7° \mathbb{M} .22'41	2°36'58
evening set	4714 Jul 26 01:44	20° Ω 01'16		min. Earth dist.	4720 Apr 26 17:28	7° \mathbb{M} .22'40	8.39137 AU
				direct	4720 Jul 04 21:47	3° \mathbb{M} .55'13	
conjunction	4714 Aug 13 03:58	22° Ω 20'03	0°11'16	evening set	4720 Oct 18 23:37	11° \mathbb{M} .50'45	
minimum elong	4714 Aug 13 03:57	22° Ω 20'03	0°11'16				
behind sun begin	4714 Aug 12 22:38	22° Ω 18'22		conjunction	4720 Nov 05 11:18	14° \mathbb{M} .01'05	2°08'34
behind sun end	4714 Aug 13 09:15	22° Ω 21'45		minimum elong	4720 Nov 05 11:17	14° \mathbb{M} .01'05	2°08'34
max. Earth dist.	4714 Aug 13 05:52	22° Ω 20'39	10.12572 AU	max. Earth dist.	4720 Nov 05 10:22	14° \mathbb{M} .00'48	10.43434 AU
morning rise	4714 Aug 31 06:41	24° Ω 39'02			4720 Nov 13 07:47	15° \mathbb{M}	
	4714 Oct 18 03:46	0° Π		morning rise	4720 Nov 22 18:45	16° \mathbb{M} .10'09	
retrograde	4714 Dec 14 01:04	2° Π 46'27		retrograde	4721 Mar 03 14:53	23° \mathbb{M} .43'49	
	4715 Feb 10 14:45	30° \mathbb{R} Ω		opposition	4721 May 10 00:40	20° \mathbb{M} .22'08	2°39'02
opposition	4715 Feb 19 02:59	29° Ω 18'22	0°33'12	min. Earth dist.	4721 May 10 01:03	20° \mathbb{M} .22'03	8.48069 AU

direct	4721 Jul 18 15:43	16° \mathbb{M} 55'29		direct	4727 Oct 03 11:00	0° \approx 10'02	
evening set	4721 Nov 01 11:43	24° \mathbb{M} 44'42		evening set	4728 Jan 13 21:12	7° \approx 23'16	
conjunction	4721 Nov 18 19:50	26° \mathbb{M} 52'50	2°07'10	conjunction	4728 Jan 30 15:49	9° \approx 22'50	0°18'06
minimum elong	4721 Nov 18 19:51	26° \mathbb{M} 52'50	2°07'10	minimum elong	4728 Jan 30 15:49	9° \approx 22'50	0°18'07
max. Earth dist.	4721 Nov 18 18:35	26° \mathbb{M} 52'27	10.52445 AU	max. Earth dist.	4728 Jan 30 13:27	9° \approx 22'08	10.91522 AU
morning rise	4721 Dec 05 23:32	28° \mathbb{M} 59'41		morning rise	4728 Feb 16 09:03	11° \approx 22'00	
	4721 Dec 14 08:50	0° \mathbb{A}			4728 Mar 21 00:34	15° \approx	
retrograde	4722 Mar 16 11:16	6° \mathbb{A} 26'38		retrograde	4728 May 27 00:11	18° \approx 28'32	
opposition	4722 May 23 03:51	3° \mathbb{A} 06'00	2°33'10	opposition	4728 Aug 05 01:00	15° \approx 09'54	0°06'12
min. Earth dist.	4722 May 23 05:08	3° \mathbb{A} 05'45	8.57023 AU	min. Earth dist.	4728 Aug 05 02:58	15° \approx 09'32	8.92596 AU
	4722 Jul 12 07:07	30° \mathbb{R} \mathbb{M}			4728 Aug 07 06:09	15° \mathbb{R} \approx	
direct	4722 Aug 01 02:29	29° \mathbb{M} 40'18		direct	4728 Oct 14 17:33	11° \approx 49'30	
	4722 Aug 20 22:21	0° \mathbb{A}		desc. node	4728 Oct 16 20:58	11° \approx 49'44	
evening set	4722 Nov 14 14:50	7° \mathbb{A} 22'48			4728 Dec 18 01:26	15° \approx	
				evening set	4729 Jan 24 14:02	18° \approx 59'24	
conjunction	4722 Dec 01 19:43	9° \mathbb{A} 28'55	1°59'36	conjunction	4729 Feb 10 07:28	20° \approx 58'26	-0°08'09
minimum elong	4722 Dec 01 19:44	9° \mathbb{A} 28'55	1°59'36	minimum elong	4729 Feb 10 07:27	20° \approx 58'25	0°08'09
max. Earth dist.	4722 Dec 01 17:36	9° \mathbb{A} 28'16	10.61256 AU	behind sun begin	4729 Feb 10 01:13	20° \approx 56'35	
morning rise	4722 Dec 18 20:22	11° \mathbb{A} 33'48		behind sun end	4729 Feb 10 13:41	21° \approx 00'16	
retrograde	4723 Mar 29 00:16	18° \mathbb{A} 54'46		max. Earth dist.	4729 Feb 10 05:15	20° \approx 57'47	10.93248 AU
opposition	4723 Jun 05 03:02	15° \mathbb{A} 35'02	2°20'08	morning rise	4729 Feb 27 00:25	22° \approx 57'18	
min. Earth dist.	4723 Jun 05 05:27	15° \mathbb{A} 34'35	8.65574 AU		4729 May 29 07:24	0° \mathbb{H}	
direct	4723 Aug 14 09:53	12° \mathbb{A} 10'22		retrograde	4729 Jun 08 01:40	0° \mathbb{H} 04'47	
evening set	4723 Nov 27 09:50	19° \mathbb{A} 46'08			4729 Jun 17 22:22	30° \mathbb{R} \approx	
conjunction	4723 Dec 14 11:50	21° \mathbb{A} 50'25	1°46'34	opposition	4729 Aug 17 09:58	26° \approx 45'40	-0°25'49
minimum elong	4723 Dec 14 11:52	21° \mathbb{A} 50'26	1°46'34	min. Earth dist.	4729 Aug 17 11:13	26° \approx 45'26	8.93473 AU
max. Earth dist.	4723 Dec 14 08:29	21° \mathbb{A} 49'24	10.69509 AU	direct	4729 Oct 26 23:48	23° \approx 25'46	
morning rise	4723 Dec 31 10:07	23° \mathbb{A} 53'37			4730 Jan 31 09:56	0° \mathbb{H}	
	4724 Mar 03 15:16	0° \mathbb{B}		evening set	4730 Feb 05 05:40	0° \mathbb{H} 33'33	
retrograde	4724 Apr 09 09:21	1° \mathbb{B} 09'28		conjunction	4730 Feb 21 22:24	2° \mathbb{H} 32'21	-0°33'54
	4724 May 17 01:22	30° \mathbb{R} \mathbb{A}		minimum elong	4730 Feb 21 22:23	2° \mathbb{H} 32'21	0°33'54
opposition	4724 Jun 16 22:26	27° \mathbb{A} 50'26	2°00'55	max. Earth dist.	4730 Feb 21 21:24	2° \mathbb{H} 32'03	10.93252 AU
min. Earth dist.	4724 Jun 17 01:09	27° \mathbb{A} 49'55	8.73414 AU	morning rise	4730 Mar 10 15:15	4° \mathbb{H} 31'13	
direct	4724 Aug 26 12:27	24° \mathbb{A} 26'47		retrograde	4730 Jun 20 06:37	11° \mathbb{H} 40'55	
	4724 Nov 22 02:08	0° \mathbb{B}		opposition	4730 Aug 29 18:42	8° \mathbb{H} 21'11	-0°56'46
evening set	4724 Dec 08 21:17	1° \mathbb{B} 56'00		min. Earth dist.	4730 Aug 29 18:45	8° \mathbb{H} 21'11	8.92625 AU
conjunction	4724 Dec 25 20:54	3° \mathbb{B} 58'43	1°28'54	direct	4730 Nov 08 02:43	5° \mathbb{H} 01'40	
minimum elong	4724 Dec 25 20:57	3° \mathbb{B} 58'44	1°28'55	evening set	4731 Feb 16 21:33	12° \mathbb{H} 08'34	
max. Earth dist.	4724 Dec 25 17:24	3° \mathbb{B} 57'40	10.76921 AU	conjunction	4731 Mar 05 13:53	14° \mathbb{H} 07'27	-0°58'21
morning rise	4725 Jan 11 17:18	6° \mathbb{B} 00'29		minimum elong	4731 Mar 05 13:51	14° \mathbb{H} 07'26	0°58'21
retrograde	4725 Apr 21 16:25	13° \mathbb{B} 12'13		max. Earth dist.	4731 Mar 05 13:50	14° \mathbb{H} 07'26	10.91521 AU
opposition	4725 Jun 29 14:42	9° \mathbb{B} 53'39	1°36'42	morning rise	4731 Mar 22 06:58	16° \mathbb{H} 06'37	
min. Earth dist.	4725 Jun 29 16:50	9° \mathbb{B} 53'15	8.80266 AU	retrograde	4731 Jul 02 13:24	23° \mathbb{H} 19'46	
direct	4725 Sep 08 08:38	6° \mathbb{B} 30'59		opposition	4731 Sep 11 04:26	19° \mathbb{H} 59'17	-1°25'32
evening set	4725 Dec 21 01:59	13° \mathbb{B} 54'02		min. Earth dist.	4731 Sep 11 04:00	19° \mathbb{H} 59'22	8.90069 AU
conjunction	4726 Jan 06 23:45	15° \mathbb{B} 55'28	1°07'36	direct	4731 Nov 20 03:42	16° \mathbb{H} 39'59	
minimum elong	4726 Jan 06 23:47	15° \mathbb{B} 55'28	1°07'37	evening set	4732 Feb 28 14:58	23° \mathbb{H} 47'17	
max. Earth dist.	4726 Jan 06 21:08	15° \mathbb{B} 54'41	10.83211 AU	conjunction	4732 Mar 16 07:09	25° \mathbb{H} 46'33	-1°20'30
morning rise	4726 Jan 23 18:39	17° \mathbb{B} 56'05		minimum elong	4732 Mar 16 07:06	25° \mathbb{H} 46'32	1°20'30
retrograde	4726 May 03 20:00	25° \mathbb{B} 04'51		max. Earth dist.	4732 Mar 16 07:03	25° \mathbb{H} 46'31	10.88118 AU
opposition	4726 Jul 12 04:09	21° \mathbb{B} 46'28	1°08'41	morning rise	4732 Apr 02 01:02	27° \mathbb{H} 46'20	
min. Earth dist.	4726 Jul 12 05:42	21° \mathbb{B} 46'10	8.85875 AU		4732 Apr 21 17:41	0° \mathbb{Y}	
direct	4726 Sep 21 00:10	18° \mathbb{B} 24'41		retrograde	4732 Jul 13 23:48	5° \mathbb{Y} 04'06	
evening set	4727 Jan 02 01:33	25° \mathbb{B} 42'21		opposition	4732 Sep 22 15:53	1° \mathbb{Y} 42'46	-1°50'58
conjunction	4727 Jan 18 21:41	27° \mathbb{B} 42'43	0°43'39	min. Earth dist.	4732 Sep 22 15:29	1° \mathbb{Y} 42'50	8.85902 AU
minimum elong	4727 Jan 18 21:43	27° \mathbb{B} 42'43	0°43'40	direct	4732 Oct 16 15:18	30° \mathbb{R} \mathbb{H}	
max. Earth dist.	4727 Jan 18 19:45	27° \mathbb{B} 42'08	10.88138 AU		4732 Dec 01 06:22	28° \mathbb{H} 23'29	
morning rise	4727 Feb 04 15:30	29° \mathbb{B} 42'27		evening set	4733 Jan 14 10:55	0° \mathbb{Y}	
	4727 Feb 07 03:30	0° \approx			4733 Mar 11 11:17	5° \mathbb{Y} 32'25	
retrograde	4727 May 15 23:06	6° \approx 49'27		conjunction	4733 Mar 28 03:56	7° \mathbb{Y} 32'24	-1°39'28
opposition	4727 Jul 24 15:14	3° \approx 31'03	0°38'06	minimum elong	4733 Mar 28 03:54	7° \mathbb{Y} 32'24	1°39'28
min. Earth dist.	4727 Jul 24 17:02	3° \approx 30'43	8.90033 AU				

max. Earth dist.	4733 Mar 28 03:52	7°♈32'23	10.83177 AU		4739 Aug 18 08:17	0°♊	
morning rise	4733 Apr 13 23:10	9°♈33'10		retrograde	4739 Oct 13 21:06	2°♊36'55	
retrograde	4733 Jul 26 13:40	16°♈56'28			4739 Dec 11 00:22	30°♊	
opposition	4733 Oct 05 05:32	13°♈34'09	-2°12'00	opposition	4739 Dec 21 16:35	29°♊09'19	-1°59'10
min. Earth dist.	4733 Oct 05 04:59	13°♈34'15	8.80287 AU	min. Earth dist.	4739 Dec 21 14:06	29°♊09'49	8.32485 AU
direct	4733 Dec 13 10:14	10°♈14'42		direct	4740 Feb 26 17:07	25°♊45'35	
evening set	4734 Mar 23 11:33	17°♈26'26			4740 May 08 07:07	0°♊	
				evening set	4740 Jun 07 06:47	3°♊29'45	
conjunction	4734 Apr 09 05:30	19°♈27'31	-1°54'22				
minimum elong	4734 Apr 09 05:28	19°♈27'31	1°54'22	conjunction	4740 Jun 24 22:15	5°♊43'08	-1°25'38
max. Earth dist.	4734 Apr 09 06:38	19°♈27'52	10.76887 AU	minimum elong	4740 Jun 24 22:18	5°♊43'09	1°25'39
morning rise	4734 Apr 26 02:31	21°♈29'33		max. Earth dist.	4740 Jun 25 01:42	5°♊44'14	10.28874 AU
retrograde	4734 Aug 08 08:45	28°♈59'09		morning rise	4740 Jul 12 17:22	7°♊57'43	
opposition	4734 Oct 17 22:04	25°♈35'48	-2°27'37	retrograde	4740 Oct 26 22:14	16°♊02'18	
min. Earth dist.	4734 Oct 17 20:31	25°♈36'06	8.73434 AU	opposition	4741 Jan 03 07:09	12°♊34'16	-1°31'24
direct	4734 Dec 25 17:27	22°♈16'03		min. Earth dist.	4741 Jan 03 04:36	12°♊34'47	8.25649 AU
evening set	4735 Apr 04 17:06	29°♈31'36		direct	4741 Mar 11 04:31	9°♊09'27	
	4735 Apr 08 15:37	0°♉		evening set	4741 Jun 21 08:44	16°♊59'41	
conjunction	4735 Apr 21 13:01	1°♉34'09	-2°04'25	conjunction	4741 Jul 09 04:29	19°♊15'11	-1°00'48
minimum elong	4735 Apr 21 13:00	1°♉34'08	2°04'25	minimum elong	4741 Jul 09 04:31	19°♊15'12	1°00'48
max. Earth dist.	4735 Apr 21 15:18	1°♉34'51	10.69498 AU	max. Earth dist.	4741 Jul 09 07:13	19°♊16'04	10.22655 AU
morning rise	4735 May 08 12:22	3°♉37'47		morning rise	4741 Jul 27 03:11	21°♊31'39	
retrograde	4735 Aug 21 11:19	11°♉14'07		retrograde	4741 Nov 10 02:15	29°♊38'42	
opposition	4735 Oct 30 18:01	7°♉49'45	-2°36'52	opposition	4742 Jan 17 00:24	26°♊10'31	-0°58'07
min. Earth dist.	4735 Oct 30 15:34	7°♉50'13	8.65632 AU	min. Earth dist.	4742 Jan 16 22:23	26°♊10'55	8.20080 AU
direct	4736 Jan 07 02:47	4°♉29'31		direct	4742 Mar 24 20:08	22°♊44'38	
evening set	4736 Apr 16 04:54	11°♉49'47			4742 Jun 30 07:02	0°♋	
				evening set	4742 Jul 05 17:29	0°♋40'35	
conjunction	4736 May 03 03:28	13°♉54'05	-2°08'55				
minimum elong	4736 May 03 03:28	13°♉54'05	2°08'57	conjunction	4742 Jul 23 16:37	2°♋57'46	-0°32'15
max. Earth dist.	4736 May 03 06:06	13°♉54'54	10.61349 AU	minimum elong	4742 Jul 23 16:39	2°♋57'47	0°32'15
	4736 May 12 01:51	15°♉		max. Earth dist.	4742 Jul 23 18:11	2°♋58'16	10.17893 AU
morning rise	4736 May 20 05:59	15°♉59'39		morning rise	4742 Aug 10 17:56	5°♋15'39	
retrograde	4736 Sep 02 18:16	23°♉42'49		retrograde	4742 Nov 24 08:00	13°♋23'43	
opposition	4736 Nov 11 17:52	20°♉17'29	-2°39'00	opposition	4743 Jan 30 20:00	9°♋55'37	-0°21'08
min. Earth dist.	4736 Nov 11 15:10	20°♉18'00	8.57242 AU	min. Earth dist.	4743 Jan 30 18:47	9°♋55'52	8.16184 AU
direct	4737 Jan 18 15:36	16°♉56'35		direct	4743 Apr 07 15:57	6°♋28'46	
evening set	4737 Apr 28 23:42	24°♉22'19		evening set	4743 Jul 20 07:30	14°♋29'34	
					4743 Jul 24 07:53	15°♋	
conjunction	4737 May 16 01:41	26°♉28'42	-2°07'24				
minimum elong	4737 May 16 01:42	26°♉28'42	2°07'26	conjunction	4743 Aug 07 08:53	16°♋47'50	-0°01'40
max. Earth dist.	4737 May 16 04:00	26°♉29'25	10.52817 AU	minimum elong	4743 Aug 07 08:53	16°♋47'50	0°01'40
morning rise	4737 Jun 02 08:06	28°♉36'26		behind sun begin	4743 Aug 07 01:32	16°♋45'30	
	4737 Jun 14 00:18	0°♊		behind sun end	4743 Aug 07 16:14	16°♋50'10	
retrograde	4737 Sep 16 05:56	6°♊26'12		max. Earth dist.	4743 Aug 07 09:32	16°♋48'00	10.14978 AU
opposition	4737 Nov 24 21:41	2°♊59'58	-2°33'28	morning rise	4743 Aug 25 11:29	19°♋06'29	
min. Earth dist.	4737 Nov 24 19:24	3°♊00'25	8.48651 AU	asc. node	4743 Aug 27 04:13	19°♋19'15	
	4738 Jan 11 06:17	30°♋		retrograde	4743 Dec 08 13:24	27°♋13'54	
direct	4738 Jan 31 11:01	29°♋38'15		opposition	4744 Feb 13 16:53	23°♋46'07	0°17'21
	4738 Feb 20 12:19	0°♊		min. Earth dist.	4744 Feb 13 16:22	23°♋46'13	8.14301 AU
evening set	4738 May 12 02:12	7°♊09'57		direct	4744 Apr 20 17:12	20°♋18'25	
				evening set	4744 Aug 03 01:15	28°♋22'53	
conjunction	4738 May 29 08:19	9°♊18'38	-1°59'35		4744 Aug 15 18:22	0°♋	
minimum elong	4738 May 29 08:21	9°♊18'39	1°59'36				
max. Earth dist.	4738 May 29 10:53	9°♊19'26	10.44295 AU	conjunction	4744 Aug 21 03:30	0°♋41'30	0°29'13
morning rise	4738 Jun 15 18:58	11°♊28'41		minimum elong	4744 Aug 21 03:28	0°♋41'30	0°29'13
retrograde	4738 Sep 29 22:59	19°♊24'25		max. Earth dist.	4744 Aug 21 03:25	0°♋41'29	10.14164 AU
opposition	4738 Dec 08 05:15	15°♊57'27	-2°20'06	morning rise	4744 Sep 08 05:51	3°♋00'09	
min. Earth dist.	4738 Dec 08 03:03	15°♊57'53	8.40266 AU	retrograde	4744 Dec 21 15:08	11°♋05'13	
direct	4739 Feb 13 11:29	12°♊34'46		opposition	4745 Feb 26 13:52	7°♋37'58	0°54'53
evening set	4739 May 25 12:34	20°♊12'42		min. Earth dist.	4745 Feb 26 13:44	7°♋38'00	8.14595 AU
				direct	4745 May 04 21:39	4°♋09'39	
conjunction	4739 Jun 11 23:19	22°♊23'46	-1°45'31	evening set	4745 Aug 17 20:12	12°♋16'14	
minimum elong	4739 Jun 11 23:22	22°♊23'47	1°45'32				
max. Earth dist.	4739 Jun 12 02:30	22°♊24'46	10.36190 AU	conjunction	4745 Sep 04 21:51	14°♋34'27	0°58'20
morning rise	4739 Jun 29 14:18	24°♊36'10		minimum elong	4745 Sep 04 21:48	14°♋34'26	0°58'20

max. Earth dist.	4745 Sep 04 21:30	14° \mathring{M} 34'20	10.15529 AU	conjunction	4751 Nov 26 15:00	4° \mathring{A} 19'45	2°03'39
morning rise	4745 Sep 22 22:23	16° \mathring{M} 52'19		minimum elong	4751 Nov 26 15:02	4° \mathring{A} 19'46	2°03'40
retrograde	4746 Jan 04 13:58	24° \mathring{M} 53'35		max. Earth dist.	4751 Nov 26 12:46	4° \mathring{A} 19'04	10.56906 AU
opposition	4746 Mar 12 10:08	21° \mathring{M} 27'02	1°29'05	morning rise	4751 Dec 13 17:08	6° \mathring{A} 25'28	
min. Earth dist.	4746 Mar 12 09:49	21° \mathring{M} 27'06	8.17055 AU	retrograde	4752 Mar 22 21:30	13° \mathring{A} 48'38	
direct	4746 May 19 02:38	17° \mathring{M} 58'22		opposition	4752 May 29 21:49	10° \mathring{A} 28'01	2°26'41
evening set	4746 Sep 01 13:33	26° \mathring{M} 05'15		min. Earth dist.	4752 May 29 22:50	10° \mathring{A} 27'49	8.61458 AU
				direct	4752 Aug 08 03:45	7° \mathring{A} 02'24	
conjunction	4746 Sep 19 13:17	28° \mathring{M} 22'24	1°23'56	evening set	4752 Nov 21 06:36	14° \mathring{A} 40'43	
minimum elong	4746 Sep 19 13:14	28° \mathring{M} 22'23	1°23'56				
max. Earth dist.	4746 Sep 19 13:12	28° \mathring{M} 22'22	10.18990 AU	conjunction	4752 Dec 08 09:56	16° \mathring{A} 45'44	1°52'54
	4746 Oct 02 07:21	0° \mathring{A}		minimum elong	4752 Dec 08 09:58	16° \mathring{A} 45'44	1°52'54
morning rise	4746 Oct 07 10:44	0° \mathring{A} 38'50		max. Earth dist.	4752 Dec 08 08:19	16° \mathring{A} 45'14	10.65690 AU
retrograde	4747 Jan 18 09:28	8° \mathring{A} 35'02		morning rise	4752 Dec 25 09:11	18° \mathring{A} 49'34	
opposition	4747 Mar 26 04:36	5° \mathring{A} 09'20	1°57'54	retrograde	4753 Apr 04 09:08	26° \mathring{A} 07'06	
min. Earth dist.	4747 Mar 26 04:11	5° \mathring{A} 09'25	8.21520 AU	opposition	4753 Jun 11 18:12	22° \mathring{A} 47'21	2°10'02
direct	4747 Jun 02 06:11	1° \mathring{A} 40'34		min. Earth dist.	4753 Jun 11 19:06	22° \mathring{A} 47'10	8.69966 AU
evening set	4747 Sep 16 03:12	9° \mathring{A} 45'58		direct	4753 Aug 21 06:42	19° \mathring{A} 22'52	
				evening set	4753 Dec 03 20:30	26° \mathring{A} 54'20	
conjunction	4747 Oct 04 00:00	12° \mathring{A} 01'29	1°44'34				
minimum elong	4747 Oct 03 23:57	12° \mathring{A} 01'28	1°44'34	conjunction	4753 Dec 20 21:17	28° \mathring{A} 57'39	1°37'10
max. Earth dist.	4747 Oct 03 23:53	12° \mathring{A} 01'27	10.24326 AU	minimum elong	4753 Dec 20 21:19	28° \mathring{A} 57'40	1°37'10
morning rise	4747 Oct 21 17:34	14° \mathring{A} 16'02		max. Earth dist.	4753 Dec 20 19:58	28° \mathring{A} 57'15	10.73887 AU
retrograde	4748 Feb 01 00:42	22° \mathring{A} 06'07			4753 Dec 29 10:45	0° \mathring{B}	
opposition	4748 Apr 07 20:16	18° \mathring{A} 41'24	2°19'45	morning rise	4754 Jan 06 18:19	0° \mathring{B} 59'54	
min. Earth dist.	4748 Apr 07 20:19	18° \mathring{A} 41'24	8.27703 AU	retrograde	4754 Apr 16 17:01	8° \mathring{B} 12'42	
direct	4748 Jun 15 07:59	15° \mathring{A} 12'48		opposition	4754 Jun 24 11:06	4° \mathring{B} 53'40	1°47'53
evening set	4748 Sep 29 10:55	23° \mathring{A} 15'03		min. Earth dist.	4754 Jun 24 12:34	4° \mathring{B} 53'23	8.77708 AU
				direct	4754 Sep 03 03:09	1° \mathring{B} 30'21	
conjunction	4748 Oct 17 04:07	25° \mathring{A} 28'33	1°59'11	evening set	4754 Dec 16 03:23	8° \mathring{B} 55'22	
minimum elong	4748 Oct 17 04:05	25° \mathring{A} 28'32	1°59'12				
max. Earth dist.	4748 Oct 17 03:31	25° \mathring{A} 28'22	10.31202 AU	conjunction	4755 Jan 02 01:55	10° \mathring{B} 57'13	1°17'21
morning rise	4748 Nov 03 17:27	27° \mathring{A} 40'54		minimum elong	4755 Jan 02 01:57	10° \mathring{B} 57'14	1°17'22
	4748 Nov 23 02:44	0° \mathring{M}		max. Earth dist.	4755 Jan 01 23:57	10° \mathring{B} 56'38	10.81145 AU
retrograde	4749 Feb 13 08:26	5° \mathring{M} 24'15		morning rise	4755 Jan 18 21:26	12° \mathring{B} 58'12	
opposition	4749 Apr 21 08:42	2° \mathring{M} 00'36	2°33'39	retrograde	4755 Apr 28 19:46	20° \mathring{B} 07'24	
min. Earth dist.	4749 Apr 21 09:38	2° \mathring{M} 00'25	8.35221 AU	opposition	4755 Jul 07 00:56	16° \mathring{B} 48'53	1°21'24
	4749 May 18 05:45	30° \mathring{R} \mathring{A}		min. Earth dist.	4755 Jul 07 02:41	16° \mathring{B} 48'33	8.84351 AU
direct	4749 Jun 29 08:05	28° \mathring{A} 32'25		direct	4755 Sep 15 20:06	13° \mathring{B} 26'40	
	4749 Aug 10 00:36	0° \mathring{M}		evening set	4755 Dec 28 04:32	20° \mathring{B} 45'58	
evening set	4749 Oct 13 10:54	6° \mathring{M} 30'00					
conjunction	4749 Oct 31 00:11	8° \mathring{M} 41'17	2°07'14	conjunction	4756 Jan 14 01:11	22° \mathring{B} 46'36	0°54'29
minimum elong	4749 Oct 31 00:10	8° \mathring{M} 41'17	2°07'15	minimum elong	4756 Jan 14 01:13	22° \mathring{B} 46'36	0°54'30
max. Earth dist.	4749 Oct 30 22:42	8° \mathring{M} 40'49	10.39214 AU	max. Earth dist.	4756 Jan 13 22:58	22° \mathring{B} 45'56	10.87156 AU
morning rise	4749 Nov 17 09:23	10° \mathring{M} 51'21		morning rise	4756 Jan 30 19:33	24° \mathring{B} 46'32	
	4749 Dec 24 02:58	15° \mathring{M}			4756 Mar 22 19:26	0° \mathring{A}	
retrograde	4750 Feb 26 10:10	18° \mathring{M} 27'45		retrograde	4756 May 09 22:29	1° \mathring{A} 53'25	
opposition	4750 May 04 17:18	15° \mathring{M} 05'10	2°39'15		4756 Jun 28 23:24	30° \mathring{R} \mathring{B}	
min. Earth dist.	4750 May 04 18:50	15° \mathring{M} 04'52	8.43652 AU	opposition	4756 Jul 18 12:17	28° \mathring{B} 35'11	0°51'51
	4750 May 05 19:23	15° \mathring{R} \mathring{M}		min. Earth dist.	4756 Jul 18 13:30	28° \mathring{B} 34'58	8.89627 AU
direct	4750 Jul 13 03:57	11° \mathring{M} 37'38		direct	4756 Sep 27 09:14	25° \mathring{B} 14'01	
	4750 Sep 16 12:46	15° \mathring{M}			4756 Dec 16 22:33	0° \mathring{A}	
evening set	4750 Oct 27 02:18	19° \mathring{M} 29'24		evening set	4757 Jan 08 01:08	2° \mathring{A} 28'25	
conjunction	4750 Nov 13 11:51	21° \mathring{M} 38'27	2°08'38	conjunction	4757 Jan 24 20:21	4° \mathring{A} 28'08	0°29'34
minimum elong	4750 Nov 13 11:51	21° \mathring{M} 38'27	2°08'38	minimum elong	4757 Jan 24 20:22	4° \mathring{A} 28'08	0°29'34
max. Earth dist.	4750 Nov 13 09:33	21° \mathring{M} 37'45	10.47932 AU	max. Earth dist.	4757 Jan 24 19:05	4° \mathring{A} 27'45	10.91687 AU
morning rise	4750 Nov 30 17:18	23° \mathring{M} 46'16		morning rise	4757 Feb 10 13:46	6° \mathring{A} 27'20	
	4751 Feb 01 08:50	0° \mathring{A}		retrograde	4757 May 22 00:25	13° \mathring{A} 33'11	
retrograde	4751 Mar 11 06:36	1° \mathring{A} 15'50		opposition	4757 Jul 30 22:00	10° \mathring{A} 14'59	0°20'27
	4751 Apr 18 23:26	30° \mathring{R} \mathring{M}		min. Earth dist.	4757 Jul 30 22:18	10° \mathring{A} 14'56	8.93337 AU
opposition	4751 May 17 21:34	27° \mathring{M} 54'15	2°36'44	direct	4757 Oct 09 16:51	6° \mathring{A} 54'45	
min. Earth dist.	4751 May 17 23:01	27° \mathring{M} 53'58	8.52548 AU	evening set	4758 Jan 19 18:31	14° \mathring{A} 05'17	
direct	4751 Jul 26 18:15	24° \mathring{M} 27'36			4758 Jan 27 12:29	15° \mathring{A}	
	4751 Oct 21 09:46	0° \mathring{A}		conjunction	4758 Feb 05 12:32	16° \mathring{A} 04'19	0°03'38
evening set	4751 Nov 09 08:46	2° \mathring{A} 12'47		minimum elong	4758 Feb 05 12:32	16° \mathring{A} 04'19	0°03'38

behind sun begin	4758 Feb 05 05:36	16° \approx 02'16		max. Earth dist.	4764 Apr 15 07:19	26° Υ 19'44	10.74296 AU
behind sun end	4758 Feb 05 19:28	16° \approx 06'21		morning rise	4764 May 02 06:08	28° Υ 22'38	
max. Earth dist.	4758 Feb 05 12:06	16° \approx 04'12	10.94561 AU		4764 May 16 04:55	0° \mathcal{B}	
morning rise	4758 Feb 22 05:23	18° \approx 03'04		retrograde	4764 Aug 14 21:54	5° \mathcal{B} 55'23	
desc. node	4758 Mar 28 20:43	21° \approx 46'06		opposition	4764 Oct 24 07:21	2° \mathcal{B} 31'50	-2°33'23
retrograde	4758 Jun 03 02:45	25° \approx 09'13		min. Earth dist.	4764 Oct 24 07:20	2° \mathcal{B} 31'50	8.70306 AU
opposition	4758 Aug 12 06:42	21° \approx 50'51	-0°11'35		4764 Nov 30 22:44	30° $\mathcal{R}\Upsilon$	
min. Earth dist.	4758 Aug 12 06:58	21° \approx 50'48	8.95338 AU	direct	4764 Dec 31 20:37	29° Υ 12'03	
direct	4758 Oct 21 21:56	18° \approx 31'20			4765 Jan 31 05:42	0° \mathcal{B}	
evening set	4759 Jan 31 10:22	25° \approx 39'10		evening set	4765 Apr 10 21:46	6° \mathcal{B} 29'43	
conjunction	4759 Feb 17 03:17	27° \approx 37'49	-0°22'29	conjunction	4765 Apr 27 18:54	8° \mathcal{B} 33'04	-2°07'32
minimum elong	4759 Feb 17 03:16	27° \approx 37'49	0°22'29	minimum elong	4765 Apr 27 18:54	8° \mathcal{B} 33'04	2°07'33
max. Earth dist.	4759 Feb 17 02:27	27° \approx 37'35	10.95660 AU	max. Earth dist.	4765 Apr 27 19:08	8° \mathcal{B} 33'09	10.65875 AU
morning rise	4759 Mar 05 19:59	29° \approx 36'25		morning rise	4765 May 14 19:58	10° \mathcal{B} 37'38	
	4759 Mar 09 05:17	0° \mathcal{H}			4765 Jun 23 22:38	15° \mathcal{B}	
retrograde	4759 Jun 15 05:26	6° \mathcal{H} 44'07		retrograde	4765 Aug 28 00:54	18° \mathcal{B} 17'21	
opposition	4759 Aug 24 15:02	3° \mathcal{H} 25'23	-0°43'04		4765 Nov 04 14:27	15° $\mathcal{R}\mathcal{B}$	
min. Earth dist.	4759 Aug 24 15:44	3° \mathcal{H} 25'15	8.95536 AU	opposition	4765 Nov 06 05:02	14° \mathcal{B} 52'33	-2°38'52
direct	4759 Nov 03 00:15	0° \mathcal{H} 06'22		min. Earth dist.	4765 Nov 06 04:30	14° \mathcal{B} 52'40	8.61546 AU
evening set	4760 Feb 12 01:45	7° \mathcal{H} 12'46		direct	4766 Jan 13 08:30	11° \mathcal{B} 31'57	
					4766 Mar 19 09:07	15° \mathcal{B}	
conjunction	4760 Feb 28 17:56	9° \mathcal{H} 11'18	-0°47'35	evening set	4766 Apr 23 12:56	18° \mathcal{B} 54'55	
minimum elong	4760 Feb 28 17:55	9° \mathcal{H} 11'18	0°47'35				
max. Earth dist.	4760 Feb 28 16:43	9° \mathcal{H} 10'56	10.94922 AU	conjunction	4766 May 10 13:20	21° \mathcal{B} 00'17	-2°08'50
morning rise	4760 Mar 16 10:51	11° \mathcal{H} 10'03		minimum elong	4766 May 10 13:21	21° \mathcal{B} 00'17	2°08'51
retrograde	4760 Jun 26 09:04	18° \mathcal{H} 20'38		max. Earth dist.	4766 May 10 14:45	21° \mathcal{B} 00'43	10.56856 AU
opposition	4760 Sep 04 23:58	15° \mathcal{H} 01'14	-1°12'52	morning rise	4766 May 27 17:48	23° \mathcal{B} 06'56	
min. Earth dist.	4760 Sep 05 00:33	11° \mathcal{H} 01'08	8.93885 AU		4766 Aug 08 16:24	0° \mathcal{H}	
direct	4760 Nov 14 02:53	11° \mathcal{H} 42'32		retrograde	4766 Sep 10 10:04	0° \mathcal{H} 53'35	
evening set	4761 Feb 22 17:50	18° \mathcal{H} 48'43			4766 Oct 13 11:55	30° $\mathcal{R}\mathcal{B}$	
				opposition	4766 Nov 19 06:41	27° \mathcal{B} 27'36	-2°36'57
conjunction	4761 Mar 11 09:53	20° \mathcal{H} 47'30	-1°10'49	min. Earth dist.	4766 Nov 19 05:13	27° \mathcal{B} 27'53	8.52378 AU
minimum elong	4761 Mar 11 09:51	20° \mathcal{H} 47'29	1°10'49	direct	4767 Jan 26 01:37	24° \mathcal{B} 06'03	
max. Earth dist.	4761 Mar 11 09:25	20° \mathcal{H} 47'22	10.92308 AU		4767 Apr 23 05:24	0° \mathcal{H}	
morning rise	4761 Mar 28 03:16	22° \mathcal{H} 46'42		evening set	4767 May 06 11:28	1° \mathcal{H} 34'54	
	4761 Jul 03 09:54	0° Υ					
retrograde	4761 Jul 08 18:19	0° Υ 01'25		conjunction	4767 May 23 15:43	3° \mathcal{H} 42'32	-2°03'56
	4761 Jul 14 02:39	30° $\mathcal{R}\mathcal{H}$		minimum elong	4767 May 23 15:44	3° \mathcal{H} 42'32	2°03'57
opposition	4761 Sep 17 10:05	26° \mathcal{H} 41'10	-1°39'51	max. Earth dist.	4767 May 23 17:41	3° \mathcal{H} 43'09	10.47654 AU
min. Earth dist.	4761 Sep 17 09:59	26° \mathcal{H} 41'11	8.90362 AU	morning rise	4767 Jun 10 00:11	5° \mathcal{H} 51'31	
direct	4761 Nov 26 06:00	23° \mathcal{H} 22'34		retrograde	4767 Sep 24 01:45	13° \mathcal{H} 44'42	
	4762 Mar 02 06:07	0° Υ		opposition	4767 Dec 02 12:25	10° \mathcal{H} 17'40	-2°27'13
evening set	4762 Mar 06 12:22	0° Υ 29'51		min. Earth dist.	4767 Dec 02 10:29	10° \mathcal{H} 18'03	8.43235 AU
				direct	4768 Feb 07 22:20	6° \mathcal{H} 55'02	
conjunction	4762 Mar 23 04:45	2° Υ 29'15	-1°31'17	evening set	4768 May 18 18:00	14° \mathcal{H} 30'12	
minimum elong	4762 Mar 23 04:43	2° Υ 29'14	1°31'16				
max. Earth dist.	4762 Mar 23 04:46	2° Υ 29'15	10.87848 AU	conjunction	4768 Jun 05 02:35	16° \mathcal{H} 40'15	-1°52'43
morning rise	4762 Apr 08 23:03	4° Υ 29'16		minimum elong	4768 Jun 05 02:37	16° \mathcal{H} 40'16	1°52'44
retrograde	4762 Jul 21 07:00	11° Υ 49'11		max. Earth dist.	4768 Jun 05 04:18	16° \mathcal{H} 40'48	10.38720 AU
opposition	4762 Sep 29 22:05	8° Υ 27'59	-2°02'57	morning rise	4768 Jun 22 15:31	18° \mathcal{H} 51'41	
min. Earth dist.	4762 Sep 29 21:40	8° Υ 28'03	8.85069 AU	retrograde	4768 Oct 06 22:25	26° \mathcal{H} 50'35	
direct	4762 Dec 08 07:09	5° Υ 09'13		opposition	4768 Dec 14 22:03	23° \mathcal{H} 22'42	-2°09'43
evening set	4763 Mar 18 10:32	12° Υ 18'56		min. Earth dist.	4768 Dec 14 20:23	23° \mathcal{H} 23'02	8.34573 AU
				direct	4769 Feb 20 00:28	19° \mathcal{H} 58'54	
conjunction	4763 Apr 04 03:43	14° Υ 19'16	-1°48'05	evening set	4769 Jun 01 08:38	27° \mathcal{H} 40'37	
minimum elong	4763 Apr 04 03:41	14° Υ 19'16	1°48'05				
max. Earth dist.	4763 Apr 04 03:20	14° Υ 19'10	10.81737 AU	conjunction	4769 Jun 18 21:53	29° \mathcal{H} 53'06	-1°35'26
morning rise	4763 Apr 20 23:37	16° Υ 20'28		minimum elong	4769 Jun 18 21:56	29° \mathcal{H} 53'07	1°35'26
retrograde	4763 Aug 02 23:31	23° Υ 46'31		max. Earth dist.	4769 Jun 18 23:17	29° \mathcal{H} 53'33	10.30497 AU
opposition	4763 Oct 12 13:03	20° Υ 24'11	-2°21'07		4769 Jun 19 19:39	0° \mathcal{B}	
min. Earth dist.	4763 Oct 12 12:54	20° Υ 24'13	8.78269 AU	morning rise	4769 Jul 06 15:19	2° \mathcal{B} 06'54	
direct	4763 Dec 20 12:12	17° Υ 05'02		retrograde	4769 Oct 20 21:28	10° \mathcal{B} 10'26	
evening set	4764 Mar 29 13:15	24° Υ 18'15		opposition	4769 Dec 28 11:23	6° \mathcal{B} 41'57	-1°44'56
				min. Earth dist.	4769 Dec 28 10:05	6° \mathcal{B} 42'13	8.26835 AU
conjunction	4764 Apr 15 07:56	26° Υ 19'55	-2°00'25	direct	4770 Mar 05 10:13	3° \mathcal{B} 16'58	
minimum elong	4764 Apr 15 07:54	26° Υ 19'54	2°00'25	evening set	4770 Jun 15 07:11	11° \mathcal{B} 05'06	

conjunction	4770 Jul 03 00:57	13°♊19'53	-1°12'42	retrograde	4776 Jan 12 15:58	2°♋42'12	
minimum elong	4770 Jul 03 01:00	13°♊19'54	1°12'43		4776 Mar 10 08:24	30°♋	
max. Earth dist.	4770 Jul 03 02:25	13°♊20'21	10.23409 AU	opposition	4776 Mar 19 10:01	29°♋16'00	1°45'39
morning rise	4770 Jul 20 22:20	15°♊35'47		min. Earth dist.	4776 Mar 19 09:33	29°♋16'06	8.18410 AU
retrograde	4770 Nov 03 23:49	23°♊42'37		direct	4776 May 26 05:27	25°♋47'11	
opposition	4771 Jan 11 03:49	20°♊13'48	-1°13'57		4776 Aug 06 12:14	0°♋	
min. Earth dist.	4771 Jan 11 02:32	20°♊14'04	8.20445 AU	evening set	4776 Sep 09 00:07	3°♋54'09	
direct	4771 Mar 19 00:43	16°♊47'42					
evening set	4771 Jun 29 13:01	24°♊41'49		conjunction	4776 Sep 26 22:16	6°♋10'36	1°35'54
				minimum elong	4776 Sep 26 22:13	6°♋10'35	1°35'55
conjunction	4771 Jul 17 10:48	26°♊58'32	-0°45'39	max. Earth dist.	4776 Sep 26 22:12	6°♋10'35	10.21025 AU
minimum elong	4771 Jul 17 10:50	26°♊58'33	0°45'39	morning rise	4776 Oct 14 17:51	8°♋26'14	
max. Earth dist.	4771 Jul 17 12:50	26°♊59'11	10.17865 AU	retrograde	4777 Jan 25 09:02	16°♋19'48	
morning rise	4771 Aug 04 11:14	29°♊16'06		opposition	4777 Apr 02 03:40	12°♋54'46	2°10'47
	4771 Aug 10 08:28	0°♋		min. Earth dist.	4777 Apr 02 03:23	12°♋54'49	8.24233 AU
retrograde	4771 Nov 18 04:56	7°♋24'40		direct	4777 Jun 09 10:14	9°♋26'12	
opposition	4772 Jan 24 22:44	3°♋55'47	-0°38'20	evening set	4777 Sep 23 11:30	17°♋30'45	
min. Earth dist.	4772 Jan 24 20:58	3°♋56'09	8.15785 AU				
direct	4772 Mar 31 19:24	0°♋28'42		conjunction	4777 Oct 11 06:19	19°♋45'18	1°53'19
evening set	4772 Jul 13 01:03	8°♋28'04		minimum elong	4777 Oct 11 06:16	19°♋45'17	1°53'20
				max. Earth dist.	4777 Oct 11 06:02	19°♋45'13	10.27640 AU
conjunction	4772 Jul 31 01:49	10°♋46'10	-0°15'44	morning rise	4777 Oct 28 21:46	21°♋58'49	
minimum elong	4772 Jul 31 01:50	10°♋46'10	0°15'44	retrograde	4778 Feb 07 19:42	29°♋45'51	
behind sun begin	4772 Jul 31 01:16	10°♋45'59		opposition	4778 Apr 15 18:22	26°♋22'00	2°28'19
behind sun end	4772 Jul 31 02:24	10°♋46'21		min. Earth dist.	4778 Apr 15 17:55	26°♋22'06	8.31596 AU
max. Earth dist.	4772 Jul 31 04:10	10°♋46'55	10.14194 AU	direct	4778 Jun 23 12:47	22°♋53'58	
morning rise	4772 Aug 18 04:06	13°♋04'47			4778 Sep 30 05:35	0°♋	
	4772 Sep 02 19:56	15°♋		evening set	4778 Oct 07 15:44	0°♋54'21	
retrograde	4772 Dec 01 11:06	21°♋13'26					
opposition	4773 Feb 06 19:23	17°♋44'48	-0°00'11	conjunction	4778 Oct 25 06:52	3°♋06'44	2°04'20
min. Earth dist.	4773 Feb 06 17:22	17°♋45'12	8.13138 AU	minimum elong	4778 Oct 25 06:50	3°♋06'43	2°04'21
asc. node	4773 Feb 08 14:59	17°♋35'52		max. Earth dist.	4778 Oct 25 06:45	3°♋06'41	10.35591 AU
	4773 Mar 17 14:38	15°♋		morning rise	4778 Nov 11 18:01	5°♋17'54	
direct	4773 Apr 14 18:20	14°♋16'53		retrograde	4779 Feb 21 02:03	12°♋57'59	
	4773 May 12 19:18	15°♋		opposition	4779 Apr 29 05:20	9°♋35'18	2°37'35
evening set	4773 Jul 27 17:46	22°♋20'28		min. Earth dist.	4779 Apr 29 04:55	9°♋35'23	8.40049 AU
				direct	4779 Jul 07 10:11	6°♋07'57	
conjunction	4773 Aug 14 20:01	24°♋39'14	0°15'19	evening set	4779 Oct 21 11:53	14°♋02'49	
minimum elong	4773 Aug 14 20:01	24°♋39'14	0°15'20		4779 Oct 29 05:23	15°♋	
behind sun begin	4773 Aug 14 18:15	24°♋38'41					
behind sun end	4773 Aug 14 21:46	24°♋39'48		conjunction	4779 Nov 07 23:17	16°♋12'57	2°08'40
max. Earth dist.	4773 Aug 14 22:11	24°♋39'56	10.12626 AU	minimum elong	4779 Nov 07 23:17	16°♋12'56	2°08'40
morning rise	4773 Sep 01 22:37	26°♋58'11		max. Earth dist.	4779 Nov 07 23:08	16°♋12'54	10.44395 AU
	4773 Sep 27 03:57	0°♋		morning rise	4779 Nov 25 06:19	18°♋21'46	
retrograde	4773 Dec 15 15:30	5°♋05'13		retrograde	4780 Mar 05 02:47	25°♋54'43	
opposition	4774 Feb 20 16:47	1°♋37'09	0°38'08	opposition	4780 May 11 12:04	22°♋33'10	2°38'35
min. Earth dist.	4774 Feb 20 14:58	1°♋37'31	8.12684 AU	min. Earth dist.	4780 May 11 12:34	22°♋33'04	8.49079 AU
	4774 Mar 13 05:46	30°♋		direct	4780 Jul 20 02:26	19°♋06'38	
direct	4774 Apr 28 20:40	28°♋08'40		evening set	4780 Nov 02 23:08	26°♋55'05	
	4774 Jun 13 19:44	0°♋					
evening set	4774 Aug 11 12:49	6°♋15'04		conjunction	4780 Nov 20 06:55	29°♋03'00	2°06'26
				minimum elong	4780 Nov 20 06:55	29°♋03'00	2°06'26
conjunction	4774 Aug 29 15:02	8°♋33'46	0°45'27	max. Earth dist.	4780 Nov 20 05:43	29°♋02'38	10.53511 AU
minimum elong	4774 Aug 29 15:00	8°♋33'45	0°45'28		4780 Nov 27 23:05	0°♋	
max. Earth dist.	4774 Aug 29 16:40	8°♋34'17	10.13283 AU	morning rise	4780 Dec 07 10:20	1°♋09'38	
morning rise	4774 Sep 16 16:29	10°♋52'15		retrograde	4781 Mar 17 20:19	8°♋35'47	
retrograde	4774 Dec 29 17:36	18°♋56'07		opposition	4781 May 24 14:43	5°♋15'16	2°31'45
opposition	4775 Mar 06 14:02	15°♋28'53	1°14'09	min. Earth dist.	4781 May 24 16:25	5°♋14'56	8.58135 AU
min. Earth dist.	4775 Mar 06 12:53	15°♋29'07	8.14477 AU	direct	4781 Aug 02 14:38	1°♋49'40	
direct	4775 May 13 00:39	12°♋00'06		evening set	4781 Nov 16 01:16	9°♋31'17	
evening set	4775 Aug 26 07:40	20°♋07'40					
				conjunction	4781 Dec 03 05:46	11°♋37'09	1°58'07
conjunction	4775 Sep 13 08:27	22°♋25'33	1°12'52	minimum elong	4781 Dec 03 05:48	11°♋37'10	1°58'07
minimum elong	4775 Sep 13 08:24	22°♋25'32	1°12'53	max. Earth dist.	4781 Dec 03 03:09	11°♋36'21	10.62399 AU
max. Earth dist.	4775 Sep 13 09:09	22°♋25'47	10.16142 AU	morning rise	4781 Dec 20 06:17	13°♋41'49	
morning rise	4775 Oct 01 07:30	24°♋42'54		retrograde	4782 Mar 30 08:56	21°♋02'01	
	4775 Nov 17 19:00	0°♋		opposition	4782 Jun 06 13:19	17°♋42'22	2°17'51

min. Earth dist.	4782 Jun 06 15:45	17° \mathbb{A} 41'54	8.66720 AU	behind sun end	4788 Feb 12 19:35	23° \approx 01'22	
direct	4782 Aug 15 21:59	14° \mathbb{A} 17'48		max. Earth dist.	4788 Feb 12 12:33	22° \approx 59'17	10.93298 AU
evening set	4782 Nov 28 19:10	21° \mathbb{A} 52'37		morning rise	4788 Feb 29 07:26	24° \approx 58'44	
					4788 Apr 18 23:11	0° \mathbb{H}	
conjunction	4782 Dec 15 20:57	23° \mathbb{A} 56'43	1°44'25	retrograde	4788 Jun 09 10:56	2° \mathbb{H} 06'25	
minimum elong	4782 Dec 15 20:59	23° \mathbb{A} 56'43	1°44'26		4788 Aug 02 02:16	30° \mathbb{R} \approx	
max. Earth dist.	4782 Dec 15 17:30	23° \mathbb{A} 55'40	10.70637 AU	opposition	4788 Aug 18 18:26	28° \approx 47'16	-0°29'58
morning rise	4783 Jan 01 19:07	25° \mathbb{A} 59'42		min. Earth dist.	4788 Aug 18 19:21	28° \approx 47'06	8.93376 AU
	4783 Feb 07 11:35	0° \mathbb{B}		direct	4788 Oct 28 07:53	25° \approx 27'26	
retrograde	4783 Apr 11 18:17	3° \mathbb{B} 14'51			4789 Jan 14 07:28	0° \mathbb{H}	
	4783 Jun 18 10:25	30° \mathbb{R} \mathbb{A}		evening set	4789 Feb 06 12:49	2° \mathbb{H} 35'09	
opposition	4783 Jun 19 08:02	29° \mathbb{A} 55'53	1°57'56				
min. Earth dist.	4783 Jun 19 10:13	29° \mathbb{A} 55'28	8.74488 AU	conjunction	4789 Feb 23 05:34	4° \mathbb{H} 33'59	-0°37'13
direct	4783 Aug 28 22:35	26° \mathbb{A} 32'22		minimum elong	4789 Feb 23 05:32	4° \mathbb{H} 33'59	0°37'13
	4783 Nov 04 06:33	0° \mathbb{B}		max. Earth dist.	4789 Feb 23 04:45	4° \mathbb{H} 33'45	10.93007 AU
evening set	4783 Dec 11 05:43	4° \mathbb{B} 00'42		morning rise	4789 Mar 11 22:21	6° \mathbb{H} 32'54	
				retrograde	4789 Jun 21 15:15	13° \mathbb{H} 42'59	
conjunction	4783 Dec 28 05:18	6° \mathbb{B} 03'16	1°26'15	opposition	4789 Aug 31 03:31	10° \mathbb{H} 23'11	-1°00'42
minimum elong	4783 Dec 28 05:20	6° \mathbb{B} 03'17	1°26'16	min. Earth dist.	4789 Aug 31 03:43	10° \mathbb{H} 23'09	8.92240 AU
max. Earth dist.	4783 Dec 28 02:21	6° \mathbb{B} 02'22	10.77930 AU	direct	4789 Nov 09 09:57	7° \mathbb{H} 03'40	
morning rise	4784 Jan 14 01:31	8° \mathbb{B} 04'52		evening set	4790 Feb 18 04:57	14° \mathbb{H} 10'43	
retrograde	4784 Apr 23 00:16	15° \mathbb{B} 16'03					
opposition	4784 Jun 30 23:47	11° \mathbb{B} 57'32	1°33'10	conjunction	4790 Mar 06 21:11	16° \mathbb{H} 09'39	-1°01'24
min. Earth dist.	4784 Jul 01 01:42	11° \mathbb{B} 57'11	8.81182 AU	minimum elong	4790 Mar 06 21:09	16° \mathbb{H} 09'38	1°01'24
direct	4784 Sep 09 18:04	8° \mathbb{B} 35'01		max. Earth dist.	4790 Mar 06 20:23	16° \mathbb{H} 09'25	10.90996 AU
evening set	4784 Dec 22 09:53	15° \mathbb{B} 57'21		morning rise	4790 Mar 23 14:25	18° \mathbb{H} 08'54	
				retrograde	4790 Jul 03 22:44	25° \mathbb{H} 22'38	
conjunction	4785 Jan 08 07:32	17° \mathbb{B} 58'38	1°04'33	opposition	4790 Sep 12 13:34	22° \mathbb{H} 02'03	-1°29'04
minimum elong	4785 Jan 08 07:34	17° \mathbb{B} 58'38	1°04'34	min. Earth dist.	4790 Sep 12 13:57	22° \mathbb{H} 01'59	8.89414 AU
max. Earth dist.	4785 Jan 08 05:06	17° \mathbb{B} 57'53	10.84028 AU	direct	4790 Nov 21 12:08	18° \mathbb{H} 42'42	
morning rise	4785 Jan 25 02:17	19° \mathbb{B} 59'07		evening set	4791 Mar 01 22:49	25° \mathbb{H} 50'20	
retrograde	4785 May 05 05:03	27° \mathbb{B} 07'30					
opposition	4785 Jul 13 12:58	23° \mathbb{B} 49'12	1°04'45	conjunction	4791 Mar 18 14:59	27° \mathbb{H} 49'42	-1°23'11
min. Earth dist.	4785 Jul 13 15:05	23° \mathbb{B} 48'48	8.86580 AU	minimum elong	4791 Mar 18 14:57	27° \mathbb{H} 49'41	1°23'10
direct	4785 Sep 22 08:43	20° \mathbb{B} 27'32		max. Earth dist.	4791 Mar 18 14:06	27° \mathbb{H} 49'26	10.87332 AU
evening set	4786 Jan 03 09:02	27° \mathbb{B} 44'38		morning rise	4791 Apr 04 09:04	29° \mathbb{H} 49'38	
					4791 Apr 05 20:24	0° \mathbb{Y}	
conjunction	4786 Jan 20 04:58	29° \mathbb{B} 44'54	0°40'21	retrograde	4791 Jul 16 08:32	7° \mathbb{Y} 08'06	
minimum elong	4786 Jan 20 04:59	29° \mathbb{B} 44'54	0°40'22	opposition	4791 Sep 25 01:16	3° \mathbb{Y} 46'37	-1°53'59
max. Earth dist.	4786 Jan 20 02:12	29° \mathbb{B} 44'04	10.88726 AU	min. Earth dist.	4791 Sep 25 01:24	3° \mathbb{Y} 46'36	8.84996 AU
	4786 Jan 22 07:20	0° \approx		direct	4791 Dec 03 14:25	0° \mathbb{Y} 27'15	
morning rise	4786 Feb 05 22:48	1° \approx 44'34		evening set	4792 Mar 12 19:37	7° \mathbb{Y} 36'43	
retrograde	4786 May 17 06:23	8° \approx 51'22					
opposition	4786 Jul 25 23:56	5° \approx 33'01	0°33'57	conjunction	4792 Mar 29 12:26	9° \mathbb{Y} 36'51	-1°41'39
min. Earth dist.	4786 Jul 26 02:30	5° \approx 32'32	8.90499 AU	minimum elong	4792 Mar 29 12:24	9° \mathbb{Y} 36'51	1°41'38
direct	4786 Oct 04 18:39	2° \approx 12'05		max. Earth dist.	4792 Mar 29 12:34	9° \mathbb{Y} 36'54	10.82150 AU
evening set	4787 Jan 15 04:19	9° \approx 24'56		morning rise	4792 Apr 15 07:46	11° \mathbb{Y} 37'46	
				retrograde	4792 Jul 27 23:33	19° \mathbb{Y} 01'58	
conjunction	4787 Jan 31 22:50	11° \approx 24'26	0°14'40	opposition	4792 Oct 06 15:26	15° \mathbb{Y} 39'28	-2°14'21
minimum elong	4787 Jan 31 22:50	11° \approx 24'26	0°14'40	min. Earth dist.	4792 Oct 06 14:35	15° \mathbb{Y} 39'38	8.79154 AU
behind sun begin	4787 Jan 31 19:44	11° \approx 23'31		direct	4792 Dec 14 20:12	12° \mathbb{Y} 19'56	
behind sun end	4787 Feb 01 01:56	11° \approx 25'21		evening set	4793 Mar 24 20:32	19° \mathbb{Y} 32'19	
max. Earth dist.	4787 Jan 31 19:45	11° \approx 23'31	10.91856 AU				
morning rise	4787 Feb 17 16:09	13° \approx 23'34		conjunction	4793 Apr 10 14:43	21° \mathbb{Y} 33'37	-1°55'56
	4787 Mar 03 18:13	15° \approx		minimum elong	4793 Apr 10 14:41	21° \mathbb{Y} 33'36	1°55'56
retrograde	4787 May 29 07:17	20° \approx 30'08		max. Earth dist.	4793 Apr 10 16:17	21° \mathbb{Y} 34'06	10.75649 AU
opposition	4787 Aug 07 09:30	17° \approx 11'29	0°01'58	morning rise	4793 Apr 27 11:51	23° \mathbb{Y} 35'52	
min. Earth dist.	4787 Aug 07 11:32	17° \approx 11'06	8.92792 AU		4793 Jul 03 22:32	0° \mathbb{B}	
desc. node	4787 Aug 30 13:30	15° \approx 32'33		retrograde	4793 Aug 09 21:13	1° \mathbb{B} 06'27	
	4787 Sep 08 12:48	15° \mathbb{R} \approx			4793 Sep 16 09:17	30° \mathbb{R} \mathbb{Y}	
direct	4787 Oct 17 02:57	13° \approx 51'09		opposition	4793 Oct 19 08:34	27° \mathbb{Y} 42'55	-2°29'10
	4787 Nov 23 19:53	15° \approx		min. Earth dist.	4793 Oct 19 06:38	27° \mathbb{Y} 43'17	8.72110 AU
evening set	4788 Jan 26 21:04	21° \approx 00'51		direct	4793 Dec 27 02:36	24° \mathbb{Y} 23'03	
					4794 Mar 22 22:35	0° \mathbb{B}	
conjunction	4788 Feb 12 14:32	22° \approx 59'52	-0°11'34	evening set	4794 Apr 06 02:59	1° \mathbb{B} 39'23	
minimum elong	4788 Feb 12 14:31	22° \approx 59'52	0°11'35				
behind sun begin	4788 Feb 12 09:27	22° \approx 58'22		conjunction	4794 Apr 22 23:07	3° \mathbb{B} 42'10	-2°05'17

minimum elong	4794 Apr 22 23:06	3° 8 42'10	2°05'17	morning rise	4800 Jul 28 20:07	23° 5 53'44	
max. Earth dist.	4794 Apr 23 00:56	3° 8 42'43	10.68095 AU		4800 Sep 24 03:17	0° 0	
morning rise	4794 May 09 22:49	5° 8 46'05		retrograde	4800 Nov 11 19:23	2° 0 01'07	
retrograde	4794 Aug 22 23:34	13° 8 23'26			4800 Dec 31 04:50	30° 8 5	
opposition	4794 Nov 01 05:07	9° 8 58'54	-2°37'30	opposition	4801 Jan 18 15:39	28° 5 32'53	-0°53'13
min. Earth dist.	4794 Nov 01 03:00	9° 8 59'18	8.64165 AU	min. Earth dist.	4801 Jan 18 13:46	28° 5 33'16	8.19398 AU
direct	4795 Jan 08 11:28	6° 8 38'30		direct	4801 Mar 26 10:28	25° 5 06'52	
evening set	4795 Apr 18 15:44	13° 8 59'43			4801 Jun 11 19:56	0° 0	
	4795 Apr 26 21:42	15° 8		evening set	4801 Jul 07 10:28	3° 0 03'27	
conjunction	4795 May 05 14:33	16° 8 04'19	-2°09'01	conjunction	4801 Jul 25 09:50	5° 0 20'47	-0°28'09
minimum elong	4795 May 05 14:33	16° 8 04'19	2°09'02	minimum elong	4801 Jul 25 09:51	5° 0 20'47	0°28'09
max. Earth dist.	4795 May 05 16:19	16° 8 04'51	10.59832 AU	max. Earth dist.	4801 Jul 25 11:06	5° 0 21'11	10.17398 AU
morning rise	4795 May 22 17:34	18° 8 10'11		morning rise	4801 Aug 12 11:26	7° 0 38'48	
retrograde	4795 Sep 05 06:20	25° 8 54'25			4801 Oct 27 10:09	15° 0	
opposition	4795 Nov 14 05:43	22° 8 28'55	-2°38'38	retrograde	4801 Nov 26 00:34	15° 0 46'53	
min. Earth dist.	4795 Nov 14 03:41	22° 8 29'18	8.55687 AU		4801 Dec 25 16:02	15° 8 0	
direct	4796 Jan 21 03:03	19° 8 07'49		opposition	4802 Feb 01 11:30	12° 0 18'48	-0°15'55
evening set	4796 Apr 30 11:25	26° 8 34'34		min. Earth dist.	4802 Feb 01 10:33	12° 0 18'59	8.15859 AU
				direct	4802 Apr 09 08:21	8° 0 51'50	
conjunction	4796 May 17 13:49	28° 8 41'18	-2°06'39		4802 Jul 06 15:57	15° 0	
minimum elong	4796 May 17 13:51	28° 8 41'18	2°06'41	asc. node	4802 Jul 08 05:41	15° 0 11'15	
max. Earth dist.	4796 May 17 16:00	28° 8 41'58	10.51248 AU	evening set	4802 Jul 22 01:00	16° 0 53'06	
	4796 May 28 03:38	0° 0 0					
morning rise	4796 Jun 03 20:43	0° 0 49'23		conjunction	4802 Aug 09 02:31	19° 0 11'26	0°02'40
retrograde	4796 Sep 17 19:30	8° 0 40'13		minimum elong	4802 Aug 09 02:29	19° 0 11'25	0°02'40
opposition	4796 Nov 26 10:17	5° 0 13'50	-2°32'04	behind sun begin	4802 Aug 08 19:10	19° 0 09'05	
min. Earth dist.	4796 Nov 26 08:11	5° 0 14'14	8.47079 AU	behind sun end	4802 Aug 09 09:49	19° 0 13'45	
direct	4797 Feb 01 22:54	1° 0 51'54		max. Earth dist.	4802 Aug 09 03:10	19° 0 11'36	10.14814 AU
evening set	4797 May 13 14:59	9° 0 24'40		morning rise	4802 Aug 27 05:08	21° 0 30'06	
				retrograde	4802 Dec 10 04:12	29° 0 37'20	
conjunction	4797 May 30 21:43	11° 0 33'43	-1°57'59	opposition	4803 Feb 15 08:27	26° 0 09'36	0°22'33
minimum elong	4797 May 30 21:45	11° 0 33'44	1°58'00	min. Earth dist.	4803 Feb 15 07:44	26° 0 09'45	8.14292 AU
max. Earth dist.	4797 May 31 00:58	11° 0 34'44	10.42748 AU	direct	4803 Apr 23 10:40	22° 0 41'52	
morning rise	4797 Jun 17 08:48	13° 0 44'08			4803 Jul 30 13:30	0° 0 0	
retrograde	4797 Oct 01 13:47	21° 0 40'53		evening set	4803 Aug 05 18:54	0° 0 46'34	
opposition	4797 Dec 09 18:31	18° 0 13'45	-2°17'39				
min. Earth dist.	4797 Dec 09 15:49	18° 0 14'17	8.38759 AU	conjunction	4803 Aug 23 21:09	3° 0 05'10	0°33'18
direct	4798 Feb 14 23:51	14° 0 50'54		minimum elong	4803 Aug 23 21:08	3° 0 05'09	0°33'18
evening set	4798 May 27 02:34	22° 0 29'55		max. Earth dist.	4803 Aug 23 21:41	3° 0 05'20	10.14300 AU
				morning rise	4803 Sep 10 23:18	5° 0 23'43	
conjunction	4798 Jun 13 13:56	24° 0 41'21	-1°43'06	retrograde	4803 Dec 24 06:14	13° 0 28'28	
minimum elong	4798 Jun 13 13:59	24° 0 41'22	1°43'06	opposition	4804 Feb 29 05:24	10° 0 01'18	0°59'45
max. Earth dist.	4798 Jun 13 17:52	24° 0 42'36	10.34753 AU	min. Earth dist.	4804 Feb 29 04:36	10° 0 01'28	8.14877 AU
morning rise	4798 Jul 01 05:19	26° 0 54'05		direct	4804 May 06 13:51	6° 0 32'59	
	4798 Jul 27 14:38	0° 0 0		evening set	4804 Aug 19 13:48	14° 0 23'35	
retrograde	4798 Oct 15 12:11	4° 0 55'44					
opposition	4798 Dec 23 06:33	1° 0 28'01	-1°55'43	conjunction	4804 Sep 06 15:20	16° 0 57'42	1°02'01
min. Earth dist.	4798 Dec 23 03:23	1° 0 28'40	8.31139 AU	minimum elong	4804 Sep 06 15:18	16° 0 57'42	1°02'01
	4799 Jan 11 05:24	30° 8 0		max. Earth dist.	4804 Sep 06 15:54	16° 0 57'53	10.15943 AU
direct	4799 Feb 28 06:48	28° 0 04'10		morning rise	4804 Sep 24 15:28	19° 0 15'25	
	4799 Apr 16 01:27	0° 0 0		retrograde	4805 Jan 06 06:12	27° 0 16'11	
evening set	4799 Jun 09 21:59	5° 0 49'21		opposition	4805 Mar 14 01:31	23° 0 49'44	1°33'19
				min. Earth dist.	4805 Mar 14 00:39	23° 0 49'55	8.17600 AU
conjunction	4799 Jun 27 13:54	8° 0 03'05	-1°22'29	direct	4805 May 20 17:55	20° 0 21'07	
minimum elong	4799 Jun 27 13:57	8° 0 03'06	1°22'29	evening set	4805 Sep 03 07:01	28° 0 27'50	
max. Earth dist.	4799 Jun 27 17:45	8° 0 04'18	10.27658 AU		4805 Sep 15 10:17	0° 0 0	
morning rise	4799 Jul 15 09:26	10° 0 17'58					
retrograde	4799 Oct 29 14:39	18° 0 23'14		conjunction	4805 Sep 21 06:27	0° 0 44'48	1°27'00
opposition	4800 Jan 05 21:52	14° 0 55'08	-1°27'07	minimum elong	4805 Sep 21 06:24	0° 0 44'47	1°27'01
min. Earth dist.	4800 Jan 05 18:55	14° 0 55'44	8.24589 AU	max. Earth dist.	4805 Sep 21 06:57	0° 0 44'57	10.19649 AU
direct	4800 Mar 12 17:59	11° 0 30'11		morning rise	4805 Oct 09 03:22	3° 0 01'01	
evening set	4800 Jun 23 00:57	19° 0 21'16		retrograde	4806 Jan 20 01:33	10° 0 56'33	
				opposition	4806 Mar 27 19:46	7° 0 31'00	2°01'15
conjunction	4800 Jul 10 21:00	21° 0 37'01	-0°57'04	min. Earth dist.	4806 Mar 27 19:24	7° 0 31'05	8.22295 AU
minimum elong	4800 Jul 10 21:02	21° 0 37'02	0°57'04	direct	4806 Jun 03 21:48	4° 0 02'18	
max. Earth dist.	4800 Jul 10 23:42	21° 0 37'53	10.21784 AU	evening set	4806 Sep 17 20:07	12° 0 07'21	

conjunction	4806 Oct 05 16:27	14° <u>♏</u> 22'37	1°46'52	conjunction	4812 Dec 22 07:58	1° <u>♏</u> 07'32	1°34'36
minimum elong	4806 Oct 05 16:24	14° <u>♏</u> 22'36	1°46'52	minimum elong	4812 Dec 22 08:00	1° <u>♏</u> 07'33	1°34'37
max. Earth dist.	4806 Oct 05 16:17	14° <u>♏</u> 22'34	10.25199 AU	max. Earth dist.	4812 Dec 22 05:52	1° <u>♏</u> 06'54	10.74907 AU
morning rise	4806 Oct 23 09:30	16° <u>♏</u> 36'55		morning rise	4813 Jan 08 04:56	3° <u>♏</u> 09'38	
retrograde	4807 Feb 02 14:45	24° <u>♏</u> 26'14		retrograde	4813 Apr 18 01:49	10° <u>♏</u> 21'48	
opposition	4807 Apr 10 11:11	21° <u>♏</u> 01'42	2°22'03	opposition	4813 Jun 25 22:30	7° <u>♏</u> 02'49	1°44'25
min. Earth dist.	4807 Apr 10 11:40	21° <u>♏</u> 01'36	8.28676 AU	min. Earth dist.	4813 Jun 26 00:27	7° <u>♏</u> 02'26	8.78648 AU
direct	4807 Jun 18 00:25	17° <u>♏</u> 33'11		direct	4813 Sep 04 15:34	3° <u>♏</u> 39'34	
evening set	4807 Oct 02 02:58	25° <u>♏</u> 34'53		evening set	4813 Dec 17 13:23	11° <u>♏</u> 03'48	
conjunction	4807 Oct 19 19:39	27° <u>♏</u> 48'06	2°00'36	conjunction	4814 Jan 03 11:43	13° <u>♏</u> 05'28	1°14'20
minimum elong	4807 Oct 19 19:37	27° <u>♏</u> 48'05	2°00'37	minimum elong	4814 Jan 03 11:45	13° <u>♏</u> 05'29	1°14'21
max. Earth dist.	4807 Oct 19 18:29	27° <u>♏</u> 47'44	10.32252 AU	max. Earth dist.	4814 Jan 03 09:12	13° <u>♏</u> 04'43	10.81999 AU
morning rise	4807 Nov 06 08:36	0° <u>♏</u> 00'11		morning rise	4814 Jan 20 07:12	15° <u>♏</u> 06'18	
	4807 Nov 06 08:01	0° <u>♏</u>		retrograde	4814 Apr 30 05:58	22° <u>♏</u> 15'04	
retrograde	4808 Feb 15 21:54	7° <u>♏</u> 42'42		opposition	4814 Jul 08 11:47	18° <u>♏</u> 56'33	1°17'28
opposition	4808 Apr 22 23:08	4° <u>♏</u> 19'14	2°34'49	min. Earth dist.	4814 Jul 08 13:17	18° <u>♏</u> 56'16	8.85103 AU
min. Earth dist.	4808 Apr 23 00:20	4° <u>♏</u> 18'59	8.36342 AU	direct	4814 Sep 17 08:25	15° <u>♏</u> 34'24	
direct	4808 Jun 30 23:46	0° <u>♏</u> 51'09		evening set	4814 Dec 29 13:47	22° <u>♏</u> 52'59	
evening set	4808 Oct 15 02:05	8° <u>♏</u> 48'01		conjunction	4815 Jan 15 10:24	24° <u>♏</u> 53'31	0°51'09
conjunction	4808 Nov 01 14:55	10° <u>♏</u> 59'02	2°07'44	minimum elong	4815 Jan 15 10:26	24° <u>♏</u> 53'32	0°51'10
minimum elong	4808 Nov 01 14:53	10° <u>♏</u> 59'02	2°07'45	max. Earth dist.	4815 Jan 15 08:32	24° <u>♏</u> 52'57	10.87803 AU
max. Earth dist.	4808 Nov 01 12:53	10° <u>♏</u> 58'24	10.40384 AU	morning rise	4815 Feb 01 04:40	26° <u>♏</u> 53'21	
morning rise	4808 Nov 18 23:47	13° <u>♏</u> 08'49			4815 Mar 01 09:36	0° <u>♏</u>	
	4808 Dec 04 11:49	15° <u>♏</u>		retrograde	4815 May 12 08:01	3° <u>♏</u> 59'56	
retrograde	4809 Feb 27 23:00	20° <u>♏</u> 44'21		opposition	4815 Jul 20 22:35	0° <u>♏</u> 41'40	0°47'37
opposition	4809 May 06 07:04	17° <u>♏</u> 21'55	2°39'16	min. Earth dist.	4815 Jul 20 23:24	0° <u>♏</u> 41'31	8.90152 AU
min. Earth dist.	4809 May 06 08:20	17° <u>♏</u> 21'40	8.44856 AU		4815 Jul 30 07:18	30° <u>♏</u>	
	4809 Jun 08 08:54	15° <u>♏</u>		direct	4815 Sep 29 19:01	27° <u>♏</u> 20'34	
direct	4809 Jul 14 19:02	13° <u>♏</u> 54'31			4815 Nov 27 09:24	0° <u>♏</u>	
	4809 Aug 19 21:46	15° <u>♏</u>		evening set	4816 Jan 10 09:55	4° <u>♏</u> 34'26	
evening set	4809 Oct 28 16:25	21° <u>♏</u> 45'26		conjunction	4816 Jan 27 05:06	6° <u>♏</u> 34'04	0°26'02
conjunction	4809 Nov 15 01:38	23° <u>♏</u> 54'15	2°08'14	minimum elong	4816 Jan 27 05:06	6° <u>♏</u> 34'04	0°26'03
minimum elong	4809 Nov 15 01:38	23° <u>♏</u> 54'15	2°08'14	max. Earth dist.	4816 Jan 27 04:07	6° <u>♏</u> 33'46	10.92090 AU
max. Earth dist.	4809 Nov 14 23:31	23° <u>♏</u> 53'35	10.49156 AU	morning rise	4816 Feb 12 22:25	8° <u>♏</u> 33'12	
morning rise	4809 Dec 02 06:42	26° <u>♏</u> 01'47			4816 Apr 25 10:39	15° <u>♏</u>	
	4810 Jan 06 16:35	0° <u>♏</u>		retrograde	4816 May 23 10:01	15° <u>♏</u> 38'56	
retrograde	4810 Mar 12 18:22	3° <u>♏</u> 30'30			4816 Jun 20 20:00	15° <u>♏</u>	
opposition	4810 May 19 10:49	0° <u>♏</u> 09'03	2°35'41	opposition	4816 Aug 01 08:05	12° <u>♏</u> 20'43	0°16'05
min. Earth dist.	4810 May 19 11:41	0° <u>♏</u> 08'53	8.53770 AU	min. Earth dist.	4816 Aug 01 08:43	12° <u>♏</u> 20'36	8.93609 AU
	4810 May 21 09:06	30° <u>♏</u>		direct	4816 Oct 11 02:50	9° <u>♏</u> 00'30	
direct	4810 Jul 28 09:13	26° <u>♏</u> 42'32			4817 Jan 10 20:25	15° <u>♏</u>	
	4810 Oct 01 06:32	0° <u>♏</u>		evening set	4817 Jan 21 03:03	16° <u>♏</u> 10'41	
evening set	4810 Nov 10 21:39	4° <u>♏</u> 26'47		conjunction	4817 Feb 06 20:53	18° <u>♏</u> 09'41	-0°00'00
conjunction	4810 Nov 28 03:41	6° <u>♏</u> 33'30	2°02'26	minimum elong	4817 Feb 06 20:54	18° <u>♏</u> 09'41	0°00'01
minimum elong	4810 Nov 28 03:42	6° <u>♏</u> 33'31	2°02'26	behind sun begin	4817 Feb 06 18:07	18° <u>♏</u> 08'54	
max. Earth dist.	4810 Nov 28 02:10	6° <u>♏</u> 33'02	10.58118 AU	behind sun end	4817 Feb 06 23:41	18° <u>♏</u> 10'27	
morning rise	4810 Dec 15 05:26	8° <u>♏</u> 38'58		desc. node	4817 Feb 06 18:56	18° <u>♏</u> 09'09	
retrograde	4811 Mar 25 10:05	16° <u>♏</u> 01'21		max. Earth dist.	4817 Feb 06 19:46	18° <u>♏</u> 09'24	10.94704 AU
opposition	4811 Jun 01 10:27	12° <u>♏</u> 40'50	2°24'41	morning rise	4817 Feb 23 13:47	20° <u>♏</u> 08'24	
min. Earth dist.	4811 Jun 01 11:23	12° <u>♏</u> 40'39	8.62638 AU	retrograde	4817 Jun 04 12:34	27° <u>♏</u> 14'37	
direct	4811 Aug 10 16:57	9° <u>♏</u> 15'21		opposition	4817 Aug 13 16:45	23° <u>♏</u> 56'13	-0°15'55
evening set	4811 Nov 23 18:30	16° <u>♏</u> 52'41		min. Earth dist.	4817 Aug 13 17:45	23° <u>♏</u> 56'02	8.95355 AU
				direct	4817 Oct 23 06:58	20° <u>♏</u> 36'43	
conjunction	4811 Dec 10 21:37	18° <u>♏</u> 57'30	1°50'57	evening set	4818 Feb 01 18:45	27° <u>♏</u> 44'23	
minimum elong	4811 Dec 10 21:39	18° <u>♏</u> 57'31	1°50'56	conjunction	4818 Feb 18 11:33	29° <u>♏</u> 43'01	-0°25'58
max. Earth dist.	4811 Dec 10 20:09	18° <u>♏</u> 57'03	10.66831 AU	minimum elong	4818 Feb 18 11:32	29° <u>♏</u> 43'01	0°25'58
morning rise	4811 Dec 27 20:37	21° <u>♏</u> 01'08		max. Earth dist.	4818 Feb 18 10:05	29° <u>♏</u> 42'35	10.95554 AU
retrograde	4812 Apr 05 20:26	28° <u>♏</u> 17'53			4818 Feb 20 20:30	0° <u>♏</u>	
opposition	4812 Jun 13 06:09	24° <u>♏</u> 58'13	2°07'13	morning rise	4818 Mar 07 04:23	1° <u>♏</u> 41'39	
min. Earth dist.	4812 Jun 13 07:43	24° <u>♏</u> 57'56	8.71051 AU	retrograde	4818 Jun 16 13:37	8° <u>♏</u> 49'37	
direct	4812 Aug 22 18:04	21° <u>♏</u> 33'51		opposition	4818 Aug 26 01:01	5° <u>♏</u> 30'47	-0°47'14
evening set	4812 Dec 05 07:28	29° <u>♏</u> 04'25		min. Earth dist.	4818 Aug 26 01:56	5° <u>♏</u> 30'37	8.95315 AU
	4812 Dec 13 01:00	0° <u>♏</u>					

direct	4818 Nov 04 09:54	2° H 11'47			4825 Feb 21 23:02	15° B
evening set	4819 Feb 13 10:09	9° H 18'13		evening set	4825 Apr 25 01:01	21° B 07'52
conjunction	4819 Mar 02 02:25	11° H 16'47 -0°50'51		conjunction	4825 May 12 01:48	23° B 13'30 -2°08'26
minimum elong	4819 Mar 02 02:23	11° H 16'47 0°50'52		minimum elong	4825 May 12 01:48	23° B 13'30 2°08'28
max. Earth dist.	4819 Mar 02 01:33	11° H 16'32 10.94586 AU		max. Earth dist.	4825 May 12 03:16	23° B 13'57 10.55787 AU
morning rise	4819 Mar 18 19:21	13° H 15'35		morning rise	4825 May 29 06:39	25° B 20'26
retrograde	4819 Jun 28 19:48	20° H 26'37			4825 Jul 10 22:50	0° II
opposition	4819 Sep 07 09:59	17° H 07'07 -1°16'42		retrograde	4825 Sep 12 01:34	3° II 07'55
min. Earth dist.	4819 Sep 07 10:02	17° H 07'07 8.93452 AU			4825 Nov 16 22:52	30° R B
direct	4819 Nov 16 13:18	13° H 48'25		opposition	4825 Nov 20 19:42	29° B 41'53 -2°35'57
evening set	4820 Feb 25 02:33	20° H 54'46		min. Earth dist.	4825 Nov 20 18:04	29° B 42'12 8.51297 AU
				direct	4826 Jan 27 12:28	26° B 20'15
conjunction	4820 Mar 12 18:40	22° H 53'37 -1°13'46			4826 Apr 04 03:05	0° II
minimum elong	4820 Mar 12 18:38	22° H 53'37 1°13'45		evening set	4826 May 08 00:40	3° II 49'55
max. Earth dist.	4820 Mar 12 18:47	22° H 53'39 10.91784 AU				
morning rise	4820 Mar 29 12:02	24° H 52'55		conjunction	4826 May 25 05:17	5° II 57'49 -2°02'41
	4820 May 19 01:04	0° Y		minimum elong	4826 May 25 05:19	5° II 57'50 2°02'42
retrograde	4820 Jul 10 05:20	2° Y 08'10		max. Earth dist.	4826 May 25 06:32	5° II 58'13 10.46583 AU
	4820 Sep 02 08:51	30° R H		morning rise	4826 Jun 11 14:17	8° II 07'07
opposition	4820 Sep 18 20:24	28° H 47'49 -1°43'12		retrograde	4826 Sep 25 17:02	16° II 01'01
min. Earth dist.	4820 Sep 18 19:59	28° H 47'54 8.89772 AU		opposition	4826 Dec 04 02:02	12° II 33'58 -2°25'10
direct	4820 Nov 27 14:12	25° H 29'12		min. Earth dist.	4826 Dec 04 00:34	12° II 34'16 8.42180 AU
	4821 Feb 12 13:53	0° Y		direct	4827 Feb 09 10:30	9° II 11'14
evening set	4821 Mar 07 21:33	2° Y 36'46		evening set	4827 May 21 08:10	16° II 47'16
conjunction	4821 Mar 24 13:54	4° Y 36'14 -1°33'45		conjunction	4827 Jun 07 17:12	18° II 57'37 -1°50'38
minimum elong	4821 Mar 24 13:52	4° Y 36'14 1°33'45		minimum elong	4827 Jun 07 17:14	18° II 57'37 1°50'38
max. Earth dist.	4821 Mar 24 13:36	4° Y 36'09 10.87192 AU		max. Earth dist.	4827 Jun 07 18:23	18° II 57'59 10.37711 AU
morning rise	4821 Apr 10 08:21	6° Y 36'23		morning rise	4827 Jun 25 06:41	21° II 09'19
retrograde	4821 Jul 22 17:35	13° Y 56'56		retrograde	4827 Oct 09 12:42	29° II 08'53
opposition	4821 Oct 01 08:52	10° Y 35'36 -2°05'40		opposition	4827 Dec 17 12:20	25° II 40'59 -2°06'38
min. Earth dist.	4821 Oct 01 08:53	10° Y 35'36 8.84358 AU		min. Earth dist.	4827 Dec 17 11:05	25° II 41'14 8.33614 AU
direct	4821 Dec 09 16:57	7° Y 16'48		direct	4828 Feb 22 15:06	22° II 17'05
evening set	4822 Mar 19 20:12	14° Y 26'55		evening set	4828 Jun 02 23:38	29° II 59'36
					4828 Jun 03 00:56	0° B
conjunction	4822 Apr 05 13:26	16° Y 27'23 -1°49'59		conjunction	4828 Jun 20 13:25	2° B 12'23 -1°32'34
minimum elong	4822 Apr 05 13:24	16° Y 27'23 1°49'59		minimum elong	4828 Jun 20 13:28	2° B 12'24 1°32'34
max. Earth dist.	4822 Apr 05 12:26	16° Y 27'05 10.80963 AU		max. Earth dist.	4828 Jun 20 15:06	2° B 12'55 10.29615 AU
morning rise	4822 Apr 22 09:38	18° Y 28'44		morning rise	4828 Jul 08 07:19	4° B 26'26
retrograde	4822 Aug 04 11:14	25° Y 55'29		retrograde	4828 Oct 22 12:49	12° B 30'30
opposition	4822 Oct 14 00:15	22° Y 33'04 -2°23'03		opposition	4828 Dec 30 02:08	9° B 02'00 -1°40'58
min. Earth dist.	4822 Oct 14 00:39	22° Y 32'59 8.77434 AU		min. Earth dist.	4828 Dec 30 00:42	9° B 02'18 8.26034 AU
direct	4822 Dec 21 22:29	19° Y 13'51		direct	4829 Mar 07 00:41	5° B 36'56
evening set	4823 Mar 31 23:36	26° Y 27'36		evening set	4829 Jun 16 23:08	13° B 25'47
conjunction	4823 Apr 17 18:32	28° Y 29'27 -2°01'37				
minimum elong	4823 Apr 17 18:30	28° Y 29'26 2°01'38		conjunction	4829 Jul 04 17:28	15° B 40'49 -1°09'12
max. Earth dist.	4823 Apr 17 18:06	28° Y 29'19 10.73394 AU		minimum elong	4829 Jul 04 17:31	15° B 40'50 1°09'12
	4823 Apr 30 04:57	0° B		max. Earth dist.	4829 Jul 04 19:45	15° B 41'33 10.22711 AU
morning rise	4823 May 04 16:57	0° B 32'21		morning rise	4829 Jul 22 15:10	17° B 56'56
retrograde	4823 Aug 17 09:34	8° B 05'54		retrograde	4829 Nov 05 16:26	26° B 04'04
opposition	4823 Oct 26 18:58	4° B 42'16 -2°34'26		opposition	4830 Jan 12 18:49	22° B 35'15 -1°09'16
min. Earth dist.	4823 Oct 26 18:49	4° B 42'18 8.69350 AU		min. Earth dist.	4830 Jan 12 16:55	22° B 35'38 8.19852 AU
direct	4824 Jan 03 07:19	1° B 22'26		direct	4830 Mar 20 15:20	19° B 09'04
evening set	4824 Apr 12 08:55	8° B 40'46		evening set	4830 Jul 01 05:46	27° B 03'49
conjunction	4824 Apr 29 06:25	10° B 44'21 -2°07'58		conjunction	4830 Jul 19 03:57	29° B 20'42 -0°41'41
minimum elong	4824 Apr 29 06:25	10° B 44'21 2°07'59		minimum elong	4830 Jul 19 03:58	29° B 20'43 0°41'41
max. Earth dist.	4824 Apr 29 07:14	10° B 44'36 10.64866 AU		max. Earth dist.	4830 Jul 19 06:42	29° B 21'35 10.17390 AU
morning rise	4824 May 16 07:41	12° B 49'07			4830 Jul 24 06:32	0° B
	4824 Jun 04 02:15	15° B		morning rise	4830 Aug 06 04:32	1° B 38'24
retrograde	4824 Aug 29 14:03	20° B 29'43		retrograde	4830 Nov 19 21:39	9° B 47'04
opposition	4824 Nov 07 17:21	17° B 04'50 -2°38'56		opposition	4831 Jan 26 14:01	6° B 18'12 -0°33'14
min. Earth dist.	4824 Nov 07 16:15	17° B 05'02 8.60502 AU		min. Earth dist.	4831 Jan 26 11:43	6° B 18'41 8.15432 AU
	4824 Dec 06 18:46	15° R B		direct	4831 Apr 03 10:48	2° B 51'03
direct	4825 Jan 14 20:29	13° B 44'11		evening set	4831 Jul 15 18:16	10° B 50'52

conjunction	4831 Aug 02 19:10	13°♏09'03	-0°11'33	direct	4837 Jun 25 02:23	25°♑11'24	
minimum elong	4831 Aug 02 19:11	13°♏09'03	0°11'33		4837 Sep 11 23:41	0°♐	
behind sun begin	4831 Aug 02 14:01	13°♏07'25		evening set	4837 Oct 09 06:11	3°♐11'06	
behind sun end	4831 Aug 03 00:21	13°♏10'42					
max. Earth dist.	4831 Aug 02 21:43	13°♏09'51	10.13973 AU	conjunction	4837 Oct 26 20:56	5°♐23'15	2°05'13
	4831 Aug 17 05:43	15°♏		minimum elong	4837 Oct 26 20:55	5°♐23'14	2°05'14
morning rise	4831 Aug 20 21:29	15°♏27'43		max. Earth dist.	4837 Oct 26 21:21	5°♐23'22	10.36556 AU
retrograde	4831 Dec 04 03:06	23°♏36'15		morning rise	4837 Nov 13 07:33	7°♐34'09	
asc. node	4831 Dec 21 22:36	23°♏18'51			4838 Feb 06 23:40	15°♐	
opposition	4832 Feb 09 10:49	20°♏07'39	0°05'03	retrograde	4838 Feb 22 15:24	15°♐13'24	
min. Earth dist.	4832 Feb 09 08:50	20°♏08'03	8.13050 AU		4838 Mar 10 07:12	15°♐♌	
direct	4832 Apr 16 10:04	16°♏39'40		opposition	4838 Apr 30 18:24	11°♐50'49	2°38'06
evening set	4832 Jul 29 11:14	24°♏43'30		min. Earth dist.	4838 Apr 30 18:15	11°♐50'51	8.41052 AU
				direct	4838 Jul 08 23:12	8°♐23'33	
conjunction	4832 Aug 16 13:26	27°♏02'17	0°19'28		4838 Oct 12 06:45	15°♐	
minimum elong	4832 Aug 16 13:25	27°♏02'16	0°19'28	evening set	4838 Oct 23 01:20	16°♐17'40	
max. Earth dist.	4832 Aug 16 15:11	27°♏02'50	10.12672 AU				
morning rise	4832 Sep 03 15:59	29°♏21'10		conjunction	4838 Nov 09 12:17	18°♐27'32	2°08'39
	4832 Sep 08 20:11	0°♐		minimum elong	4838 Nov 09 12:17	18°♐27'32	2°08'39
retrograde	4832 Dec 17 07:29	7°♐27'51		max. Earth dist.	4838 Nov 09 12:03	18°♐27'28	10.45433 AU
opposition	4833 Feb 22 08:06	3°♐59'50	0°43'09	morning rise	4838 Nov 26 18:56	20°♐36'08	
min. Earth dist.	4833 Feb 22 06:47	4°♐00'06	8.12864 AU	retrograde	4839 Mar 07 13:40	28°♐08'15	
direct	4833 Apr 30 11:57	0°♐31'16		opposition	4839 May 14 00:38	24°♐46'50	2°38'00
evening set	4833 Aug 13 06:14	8°♐37'44		min. Earth dist.	4839 May 14 01:36	24°♐46'38	8.50155 AU
				direct	4839 Jul 22 16:25	21°♐20'24	
conjunction	4833 Aug 31 08:14	10°♐56'20	0°49'19	evening set	4839 Nov 05 11:34	29°♐08'02	
minimum elong	4833 Aug 31 08:12	10°♐56'20	0°49'19		4839 Nov 12 13:51	0°♑	
max. Earth dist.	4833 Aug 31 09:09	10°♐56'38	10.13585 AU				
morning rise	4833 Sep 18 09:32	13°♐14'42		conjunction	4839 Nov 22 18:56	1°♑15'41	2°05'34
retrograde	4833 Dec 31 09:10	21°♐18'01		minimum elong	4839 Nov 22 18:57	1°♑15'41	2°05'34
opposition	4834 Mar 08 05:06	17°♐50'50	1°18'39	max. Earth dist.	4839 Nov 22 17:15	1°♑15'10	10.54626 AU
min. Earth dist.	4834 Mar 08 04:20	17°♐51'00	8.14902 AU	morning rise	4839 Dec 09 22:10	3°♑22'06	
direct	4834 May 14 16:53	14°♐21'59		retrograde	4840 Mar 19 06:33	10°♑47'28	
evening set	4834 Aug 28 00:37	22°♐29'24		opposition	4840 May 26 02:41	7°♑27'02	2°30'10
				min. Earth dist.	4840 May 26 04:16	7°♑26'44	8.59289 AU
conjunction	4834 Sep 15 01:04	24°♐47'07	1°16'12	direct	4840 Aug 04 04:33	4°♑01'33	
minimum elong	4834 Sep 15 01:01	24°♐47'06	1°16'12	evening set	4840 Nov 17 12:45	11°♑42'14	
max. Earth dist.	4834 Sep 15 01:25	24°♐47'13	10.16671 AU				
morning rise	4834 Oct 02 23:48	27°♐04'16		conjunction	4840 Dec 04 16:58	13°♑47'52	1°56'30
	4834 Oct 27 10:09	0°♑		minimum elong	4840 Dec 04 16:59	13°♑47'52	1°56'30
retrograde	4835 Jan 14 05:44	5°♑02'53		max. Earth dist.	4840 Dec 04 14:22	13°♑47'04	10.63589 AU
opposition	4835 Mar 22 00:39	1°♑36'44	1°49'22	morning rise	4840 Dec 21 17:16	15°♑52'18	
min. Earth dist.	4835 Mar 21 23:59	1°♑36'52	8.19045 AU	retrograde	4841 Mar 31 19:11	23°♑11'40	
	4835 Apr 11 14:58	30°♑♐		opposition	4841 Jun 08 00:37	19°♑52'05	2°15'25
direct	4835 May 28 22:27	28°♐07'54		min. Earth dist.	4841 Jun 08 02:20	19°♑51'45	8.67921 AU
	4835 Jul 14 13:15	0°♑		direct	4841 Aug 17 09:58	16°♑27'39	
evening set	4835 Sep 11 16:17	6°♑14'30		evening set	4841 Nov 30 05:36	24°♑01'27	
conjunction	4835 Sep 29 14:07	8°♑30'43	1°38'31	conjunction	4841 Dec 17 07:14	26°♑05'19	1°42'10
minimum elong	4835 Sep 29 14:04	8°♑30'42	1°38'32	minimum elong	4841 Dec 17 07:16	26°♑05'20	1°42'11
max. Earth dist.	4835 Sep 29 14:21	8°♑30'47	10.21749 AU	max. Earth dist.	4841 Dec 17 04:32	26°♑04'30	10.71836 AU
morning rise	4835 Oct 17 09:16	10°♑46'06		morning rise	4842 Jan 03 05:08	28°♑08'05	
retrograde	4836 Jan 27 21:33	18°♑38'55			4842 Jan 19 07:39	0°♑	
opposition	4836 Apr 03 17:44	15°♑13'56	2°13'31	retrograde	4842 Apr 13 03:43	5°♑22'29	
min. Earth dist.	4836 Apr 03 16:53	15°♑14'06	8.25037 AU	opposition	4842 Jun 20 18:47	2°♑03'35	1°54'48
direct	4836 Jun 11 02:25	11°♑45'24		min. Earth dist.	4842 Jun 20 20:31	2°♑03'15	8.75650 AU
evening set	4836 Sep 25 02:50	19°♑49'23			4842 Jul 19 22:49	30°♑♌	
				direct	4842 Aug 30 10:09	28°♑40'12	
conjunction	4836 Oct 12 21:20	22°♑03'41	1°55'06		4842 Oct 10 02:21	0°♑	
minimum elong	4836 Oct 12 21:17	22°♑03'41	1°55'06	evening set	4842 Dec 12 15:09	6°♑07'33	
max. Earth dist.	4836 Oct 12 21:44	22°♑03'49	10.28509 AU				
morning rise	4836 Oct 30 12:16	24°♑16'55		conjunction	4842 Dec 29 14:37	8°♑09'55	1°23'29
	4836 Dec 23 00:59	0°♐		minimum elong	4842 Dec 29 14:39	8°♑09'56	1°23'30
retrograde	4837 Feb 09 09:26	2°♐03'11		max. Earth dist.	4842 Dec 29 12:09	8°♑09'10	10.79039 AU
	4837 Mar 31 02:13	30°♑♌		morning rise	4843 Jan 15 10:38	10°♑11'20	
opposition	4837 Apr 17 07:54	28°♑39'24	2°29'57	retrograde	4843 Apr 25 10:18	17°♑21'54	
min. Earth dist.	4837 Apr 17 07:10	28°♑39'32	8.32517 AU	opposition	4843 Jul 03 10:00	14°♑03'28	1°29'30

min. Earth dist.	4843 Jul 03 12:18	14° ♁ 03'02	8.82214 AU	morning rise	4849 Mar 24 22:27	20° ♁ 12'41	
direct	4843 Sep 12 04:27	10° ♁ 41'03		retrograde	4849 Jul 05 07:31	27° ♁ 26'55	
evening set	4843 Dec 24 18:43	18° ♁ 02'34		opposition	4849 Sep 13 23:13	24° ♁ 06'16	-1°32'34
				min. Earth dist.	4849 Sep 14 00:08	24° ♁ 06'06	8.88931 AU
conjunction	4844 Jan 10 16:09	20° ♁ 03'42	1°01'24	direct	4849 Nov 22 20:33	20° ♁ 46'55	
minimum elong	4844 Jan 10 16:11	20° ♁ 03'42	1°01'25	evening set	4850 Mar 03 07:08	27° ♁ 54'50	
max. Earth dist.	4844 Jan 10 13:04	20° ♁ 02'46	10.84971 AU				
morning rise	4844 Jan 27 10:51	22° ♁ 04'03		conjunction	4850 Mar 19 23:24	29° ♁ 54'17	-1°25'49
retrograde	4844 May 06 13:07	29° ♁ 11'58		minimum elong	4850 Mar 19 23:21	29° ♁ 54'16	1°25'48
opposition	4844 Jul 14 22:42	25° ♁ 53'45	1°00'43	max. Earth dist.	4850 Mar 19 22:36	29° ♁ 54'03	10.86720 AU
min. Earth dist.	4844 Jul 15 01:32	25° ♁ 53'13	8.87421 AU		4850 Mar 20 18:24	0° ♁	
direct	4844 Sep 23 17:37	22° ♁ 32'12		morning rise	4850 Apr 05 17:33	1° ♁ 54'19	
evening set	4845 Jan 04 17:20	29° ♁ 48'41		retrograde	4850 Jul 17 18:05	9° ♁ 13'27	
	4845 Jan 06 07:52	0° ♁		opposition	4850 Sep 26 11:03	5° ♁ 51'52	-1°56'55
				min. Earth dist.	4850 Sep 26 11:00	5° ♁ 51'52	8.84267 AU
conjunction	4845 Jan 21 13:03	1° ♁ 48'49	0°36'58	direct	4850 Dec 05 00:37	2° ♁ 32'27	
minimum elong	4845 Jan 21 13:05	1° ♁ 48'49	0°36'59	evening set	4851 Mar 15 04:24	9° ♁ 42'21	
max. Earth dist.	4845 Jan 21 09:30	1° ♁ 47'45	10.89454 AU				
morning rise	4845 Feb 07 06:55	3° ♁ 48'24		conjunction	4851 Mar 31 21:24	11° ♁ 42'39	-1°43'45
retrograde	4845 May 18 14:22	10° ♁ 54'58		minimum elong	4851 Mar 31 21:22	11° ♁ 42'38	1°43'45
opposition	4845 Jul 27 09:25	7° ♁ 36'40	0°29'42	max. Earth dist.	4851 Mar 31 21:56	11° ♁ 42'48	10.81299 AU
min. Earth dist.	4845 Jul 27 12:02	7° ♁ 36'11	8.91105 AU	morning rise	4851 Apr 17 16:47	13° ♁ 43'42	
direct	4845 Oct 06 05:09	4° ♁ 15'52		retrograde	4851 Jul 30 11:42	21° ♁ 08'39	
evening set	4846 Jan 16 12:08	11° ♁ 28'16		opposition	4851 Oct 09 01:34	17° ♁ 46'03	-2°16'36
				min. Earth dist.	4851 Oct 09 00:25	17° ♁ 46'16	8.78198 AU
conjunction	4846 Feb 02 06:37	13° ♁ 27'41	0°11'11	direct	4851 Dec 17 04:51	14° ♁ 26'27	
minimum elong	4846 Feb 02 06:37	13° ♁ 27'41	0°11'11	evening set	4852 Mar 26 05:57	21° ♁ 39'23	
behind sun begin	4846 Feb 02 01:23	13° ♁ 26'08					
behind sun end	4846 Feb 02 11:51	13° ♁ 29'14		conjunction	4852 Apr 12 00:15	23° ♁ 40'51	-1°57'26
max. Earth dist.	4846 Feb 02 03:43	13° ♁ 26'50	10.92334 AU	minimum elong	4852 Apr 12 00:13	23° ♁ 40'51	1°57'25
	4846 Feb 15 04:45	15° ♁		max. Earth dist.	4852 Apr 12 01:25	23° ♁ 41'13	10.74590 AU
morning rise	4846 Feb 18 23:52	15° ♁ 26'45		morning rise	4852 Apr 28 21:35	25° ♁ 43'18	
retrograde	4846 May 30 17:00	22° ♁ 33'18			4852 Jun 07 11:21	0° ♁	
desc. node	4846 Jul 12 16:13	21° ♁ 08'18		retrograde	4852 Aug 11 08:38	3° ♁ 14'44	
opposition	4846 Aug 08 18:47	19° ♁ 14'41	-0°02'18		4852 Oct 18 20:29	30° ♁	
min. Earth dist.	4846 Aug 08 20:22	19° ♁ 14'23	8.93133 AU	opposition	4852 Oct 20 19:17	29° ♁ 51'04	-2°30'36
direct	4846 Oct 18 12:13	15° ♁ 54'29		min. Earth dist.	4852 Oct 20 17:40	29° ♁ 51'22	8.70966 AU
evening set	4847 Jan 28 04:48	23° ♁ 03'54		direct	4852 Dec 28 11:11	26° ♁ 31'05	
					4853 Mar 04 03:15	0° ♁	
conjunction	4847 Feb 13 22:17	25° ♁ 02'53	-0°15'02	evening set	4853 Apr 07 13:07	3° ♁ 48'08	
minimum elong	4847 Feb 13 22:16	25° ♁ 02'53	0°15'02				
behind sun begin	4847 Feb 13 19:32	25° ♁ 02'04		conjunction	4853 Apr 24 09:24	5° ♁ 51'08	-2°06'03
behind sun end	4847 Feb 14 01:01	25° ♁ 03'41		minimum elong	4853 Apr 24 09:24	5° ♁ 51'08	2°06'04
max. Earth dist.	4847 Feb 13 20:35	25° ♁ 02'23	10.93498 AU	max. Earth dist.	4853 Apr 24 10:21	5° ♁ 51'25	10.66878 AU
morning rise	4847 Mar 02 15:06	27° ♁ 01'44		morning rise	4853 May 11 09:30	7° ♁ 55'17	
	4847 Mar 29 14:19	0° ♁			4853 Jul 29 11:38	15° ♁	
retrograde	4847 Jun 11 19:45	4° ♁ 09'33		retrograde	4853 Aug 24 10:43	15° ♁ 33'33	
opposition	4847 Aug 21 03:37	0° ♁ 50'26	-0°34'08		4853 Sep 19 14:44	15° ♁	
min. Earth dist.	4847 Aug 21 04:39	0° ♁ 50'14	8.93435 AU	opposition	4853 Nov 02 16:25	12° ♁ 08'51	-2°38'01
	4847 Sep 01 13:41	30° ♁		min. Earth dist.	4853 Nov 02 15:03	12° ♁ 09'07	8.62883 AU
direct	4847 Oct 30 15:37	27° ♁ 30'40		direct	4854 Jan 09 22:31	8° ♁ 48'17	
	4847 Dec 25 22:05	0° ♁			4854 Apr 10 06:07	15° ♁	
evening set	4848 Feb 08 20:41	4° ♁ 38'20		evening set	4854 Apr 20 02:39	16° ♁ 10'19	
conjunction	4848 Feb 25 13:18	6° ♁ 37'10	-0°40'31	conjunction	4854 May 07 01:51	18° ♁ 15'11	-2°09'00
minimum elong	4848 Feb 25 13:17	6° ♁ 37'09	0°40'32	minimum elong	4854 May 07 01:51	18° ♁ 15'12	2°09'01
max. Earth dist.	4848 Feb 25 11:49	6° ♁ 36'43	10.92923 AU	max. Earth dist.	4854 May 07 03:18	18° ♁ 15'38	10.58501 AU
morning rise	4848 Mar 13 06:09	8° ♁ 36'05		morning rise	4854 May 24 05:17	20° ♁ 21'21	
retrograde	4848 Jun 23 00:55	15° ♁ 46'30		retrograde	4854 Sep 06 19:24	28° ♁ 06'31	
opposition	4848 Sep 01 12:56	12° ♁ 26'42	-1°04'36	opposition	4854 Nov 15 17:33	24° ♁ 40'50	-2°38'09
min. Earth dist.	4848 Sep 01 13:57	12° ♁ 26'31	8.92019 AU	min. Earth dist.	4854 Nov 15 15:53	24° ♁ 41'09	8.54312 AU
direct	4848 Nov 10 18:27	9° ♁ 07'13		direct	4855 Jan 22 13:49	21° ♁ 19'33	
evening set	4849 Feb 19 12:57	16° ♁ 14'23		evening set	4855 May 02 23:13	28° ♁ 47'11	
					4855 May 12 19:50	0° ♁	
conjunction	4849 Mar 08 05:05	18° ♁ 13'21	-1°04'26				
minimum elong	4849 Mar 08 05:03	18° ♁ 13'21	1°04'26	conjunction	4855 May 20 02:09	0° ♁ 54'13	-2°05'49
max. Earth dist.	4849 Mar 08 03:25	18° ♁ 12'51	10.90640 AU	minimum elong	4855 May 20 02:10	0° ♁ 54'14	2°05'50

max. Earth dist.	4855 May 20 04:52	0° Π 55'04	10.49846 AU	minimum elong	4861 Aug 10 19:56	21° Ω 34'05	0°06'49
morning rise	4855 Jun 06 09:24	3° Π 02'36		behind sun begin	4861 Aug 10 13:07	21° Ω 31'56	
retrograde	4855 Sep 20 08:46	10° Π 54'22		behind sun end	4861 Aug 11 02:44	21° Ω 36'15	
opposition	4855 Nov 28 22:44	7° Π 27'48	-2°30'32	max. Earth dist.	4861 Aug 10 21:21	21° Ω 34'32	10.14630 AU
min. Earth dist.	4855 Nov 28 20:14	7° Π 28'17	8.45666 AU	morning rise	4861 Aug 28 22:31	23° Ω 52'46	
direct	4856 Feb 04 10:47	4° Π 05'42			4861 Oct 25 00:06	0° Π	
evening set	4856 May 15 03:46	11° Π 39'24		retrograde	4861 Dec 11 19:33	1° Π 59'50	
					4862 Jan 29 12:01	30° \mathbb{R} Ω	
conjunction	4856 Jun 01 11:03	13° Π 48'47	-1°56'18	opposition	4862 Feb 16 23:39	28° Ω 32'08	0°27'39
minimum elong	4856 Jun 01 11:05	13° Π 48'47	1°56'19	min. Earth dist.	4862 Feb 16 22:20	28° Ω 32'24	8.14254 AU
max. Earth dist.	4856 Jun 01 14:52	13° Π 49'59	10.41343 AU	direct	4862 Apr 25 01:59	25° Ω 04'21	
morning rise	4856 Jun 18 22:32	15° Π 59'31			4862 Jul 12 03:08	0° Π	
retrograde	4856 Oct 03 03:49	23° Π 57'09		evening set	4862 Aug 07 12:22	3° Π 09'17	
opposition	4856 Dec 11 07:42	20° Π 29'50	-2°15'05				
min. Earth dist.	4856 Dec 11 04:27	20° Π 30'29	8.37379 AU	conjunction	4862 Aug 25 14:38	5° Π 27'52	0°37'17
direct	4857 Feb 16 12:41	17° Π 06'49		minimum elong	4862 Aug 25 14:36	5° Π 27'51	0°37'18
evening set	4857 May 28 16:29	24° Π 46'47		max. Earth dist.	4862 Aug 25 15:55	5° Π 28'16	10.14391 AU
				morning rise	4862 Sep 12 16:28	7° Π 46'20	
conjunction	4857 Jun 15 04:20	26° Π 58'33	-1°40'37	retrograde	4862 Dec 25 23:01	15° Π 50'47	
minimum elong	4857 Jun 15 04:23	26° Π 58'34	1°40'37	opposition	4863 Mar 02 20:41	12° Π 23'41	1°04'28
max. Earth dist.	4857 Jun 15 08:11	26° Π 59'46	10.33426 AU	min. Earth dist.	4863 Mar 02 19:26	12° Π 23'56	8.15096 AU
morning rise	4857 Jul 02 20:14	29° Π 11'37		direct	4863 May 09 05:01	8° Π 55'22	
	4857 Jul 09 10:10	0° \mathfrak{S}		evening set	4863 Aug 22 07:12	17° Π 02'03	
retrograde	4857 Oct 17 03:57	7° \mathfrak{S} 14'02					
opposition	4857 Dec 24 20:26	3° \mathfrak{S} 46'12	-1°52'12	conjunction	4863 Sep 09 08:32	19° Π 20'04	1°05'35
min. Earth dist.	4857 Dec 24 17:14	3° \mathfrak{S} 46'50	8.29878 AU	minimum elong	4863 Sep 09 08:29	19° Π 20'03	1°05'36
direct	4858 Mar 01 19:00	0° \mathfrak{S} 22'09		max. Earth dist.	4863 Sep 09 09:30	19° Π 20'23	10.16274 AU
evening set	4858 Jun 11 13:03	8° \mathfrak{S} 08'17		morning rise	4863 Sep 27 08:17	21° Π 37'39	
				retrograde	4864 Jan 08 22:13	29° Π 37'59	
conjunction	4858 Jun 29 05:22	10° \mathfrak{S} 22'19	-1°19'17	opposition	4864 Mar 15 16:48	26° Π 11'40	1°37'23
minimum elong	4858 Jun 29 05:25	10° \mathfrak{S} 22'20	1°19'18	min. Earth dist.	4864 Mar 15 16:02	26° Π 11'49	8.18046 AU
max. Earth dist.	4858 Jun 29 08:43	10° \mathfrak{S} 23'23	10.26499 AU	direct	4864 May 22 09:50	22° Π 43'04	
morning rise	4858 Jul 17 01:25	12° \mathfrak{S} 37'31			4864 Aug 29 07:43	0° \mathfrak{L}	
retrograde	4858 Oct 31 07:20	20° \mathfrak{S} 43'21		evening set	4864 Sep 05 00:17	0° \mathfrak{L} 49'44	
opposition	4859 Jan 07 12:22	17° \mathfrak{S} 15'12	-1°22'48				
min. Earth dist.	4859 Jan 07 09:43	17° \mathfrak{S} 15'44	8.23552 AU	conjunction	4864 Sep 22 23:20	3° \mathfrak{L} 06'32	1°29'57
direct	4859 Mar 15 07:37	13° \mathfrak{S} 50'04		minimum elong	4864 Sep 22 23:17	3° \mathfrak{L} 06'31	1°29'58
evening set	4859 Jun 25 16:57	21° \mathfrak{S} 42'02		max. Earth dist.	4864 Sep 22 23:33	3° \mathfrak{L} 06'36	10.20194 AU
				morning rise	4864 Oct 10 19:52	5° \mathfrak{L} 22'34	
conjunction	4859 Jul 13 13:20	23° \mathfrak{S} 58'01	-0°53'19	retrograde	4865 Jan 21 16:18	13° \mathfrak{L} 17'33	
minimum elong	4859 Jul 13 13:23	23° \mathfrak{S} 58'02	0°53'20	opposition	4865 Mar 29 10:52	9° \mathfrak{L} 52'11	2°04'25
max. Earth dist.	4859 Jul 13 15:53	23° \mathfrak{S} 58'50	10.20909 AU	min. Earth dist.	4865 Mar 29 11:03	9° \mathfrak{L} 52'09	8.22941 AU
morning rise	4859 Jul 31 12:51	26° \mathfrak{S} 14'58		direct	4865 Jun 05 14:04	6° \mathfrak{L} 23'33	
	4859 Sep 01 13:28	0° Ω		evening set	4865 Sep 19 12:57	14° \mathfrak{L} 28'24	
retrograde	4859 Nov 14 10:53	4° Ω 22'41					
opposition	4860 Jan 21 06:40	0° Ω 54'25	-0°48'20	conjunction	4865 Oct 07 08:48	16° \mathfrak{L} 43'27	1°49'01
min. Earth dist.	4860 Jan 21 04:51	0° Ω 54'47	8.18700 AU	minimum elong	4865 Oct 07 08:45	16° \mathfrak{L} 43'26	1°49'02
	4860 Feb 01 13:13	30° \mathbb{R} \mathfrak{S}		max. Earth dist.	4865 Oct 07 07:55	16° \mathfrak{L} 43'10	10.25926 AU
direct	4860 Mar 28 02:29	27° \mathfrak{S} 28'14		morning rise	4865 Oct 25 01:29	18° \mathfrak{L} 57'31	
	4860 May 20 23:39	0° Ω		retrograde	4866 Feb 04 05:09	26° \mathfrak{L} 46'15	
evening set	4860 Jul 09 03:07	5° Ω 25'28		opposition	4866 Apr 12 02:07	23° \mathfrak{L} 21'54	2°24'10
				min. Earth dist.	4866 Apr 12 02:51	23° \mathfrak{L} 21'45	8.29486 AU
conjunction	4860 Jul 27 02:48	7° Ω 42'57	-0°24'05	direct	4866 Jun 19 16:08	19° \mathfrak{L} 53'30	
minimum elong	4860 Jul 27 02:49	7° Ω 42'57	0°24'05	evening set	4866 Oct 03 18:59	27° \mathfrak{L} 54'47	
max. Earth dist.	4860 Jul 27 04:31	7° Ω 43'30	10.16885 AU		4866 Oct 20 10:35	0° \mathbb{M}	
morning rise	4860 Aug 14 04:36	10° Ω 01'05					
	4860 Sep 27 07:03	15° Ω		conjunction	4866 Oct 21 11:13	0° \mathbb{M} 07'47	2°01'53
retrograde	4860 Nov 27 15:12	18° Ω 09'13		minimum elong	4866 Oct 21 11:11	0° \mathbb{M} 07'46	2°01'53
	4861 Jan 30 06:04	15° \mathbb{R} Ω		max. Earth dist.	4866 Oct 21 09:39	0° \mathbb{M} 07'17	10.33129 AU
opposition	4861 Feb 03 02:43	14° Ω 41'06	-0°10'45	morning rise	4866 Nov 07 23:48	2° \mathbb{M} 19'38	
min. Earth dist.	4861 Feb 03 01:24	14° Ω 41'22	8.15521 AU	retrograde	4867 Feb 17 11:40	10° \mathbb{M} 01'31	
direct	4861 Apr 11 01:03	11° Ω 14'02		opposition	4867 Apr 25 13:42	6° \mathbb{M} 38'13	2°35'48
asc. node	4861 May 20 00:09	12° Ω 35'52		min. Earth dist.	4867 Apr 25 14:32	6° \mathbb{M} 38'03	8.37280 AU
	4861 Jun 16 23:47	15° Ω		direct	4867 Jul 03 15:40	3° \mathbb{M} 10'18	
evening set	4861 Jul 23 18:14	19° Ω 15'42		evening set	4867 Oct 17 17:15	11° \mathbb{M} 06'36	
conjunction	4861 Aug 10 19:55	21° Ω 34'05	0°06'49	conjunction	4867 Nov 04 05:46	13° \mathbb{M} 17'23	2°08'06

minimum elong	4867 Nov 04 05:45	13° \mathbb{M} 17'23	2°08'06	minimum elong	4874 Jan 16 20:31	27° \mathfrak{Z} 02'43	0°47'44
max. Earth dist.	4867 Nov 04 04:02	13° \mathbb{M} 16'51	10.41370 AU	max. Earth dist.	4874 Jan 16 19:16	27° \mathfrak{Z} 02'21	10.88471 AU
	4867 Nov 17 22:45	15° \mathbb{M}		morning rise	4874 Feb 02 14:35	29° \mathfrak{Z} 02'26	
morning rise	4867 Nov 21 14:15	15° \mathbb{M} 26'57			4874 Feb 10 21:35	0° \approx	
retrograde	4868 Mar 01 11:53	23° \mathbb{M} 01'48		retrograde	4874 May 13 18:57	6° \approx 08'41	
opposition	4868 May 07 21:08	19° \mathbb{M} 39'32	2°39'08	opposition	4874 Jul 22 09:56	2° \approx 50'25	0°43'17
min. Earth dist.	4868 May 07 21:46	19° \mathbb{M} 39'24	8.45872 AU	min. Earth dist.	4874 Jul 22 10:48	2° \approx 50'15	8.90735 AU
direct	4868 Jul 16 10:47	16° \mathbb{M} 12'19			4874 Sep 05 22:11	30° \mathfrak{R} \mathfrak{Z}	
evening set	4868 Oct 30 06:43	24° \mathbb{M} 02'33		direct	4874 Oct 01 06:37	29° \mathfrak{Z} 29'21	
					4874 Oct 26 07:49	0° \approx	
conjunction	4868 Nov 16 15:42	26° \mathbb{M} 11'08	2°07'42	evening set	4875 Jan 11 19:35	6° \approx 42'37	
minimum elong	4868 Nov 16 15:42	26° \mathbb{M} 11'08	2°07'42				
max. Earth dist.	4868 Nov 16 14:24	26° \mathbb{M} 10'43	10.50198 AU	conjunction	4875 Jan 28 14:36	8° \approx 42'08	0°22'27
morning rise	4868 Dec 03 20:21	28° \mathbb{M} 18'26		minimum elong	4875 Jan 28 14:36	8° \approx 42'08	0°22'28
	4868 Dec 18 02:34	0° \mathfrak{Z}		max. Earth dist.	4875 Jan 28 13:17	8° \approx 41'45	10.92585 AU
retrograde	4869 Mar 14 08:02	5° \mathfrak{Z} 46'29		morning rise	4875 Feb 14 07:55	10° \approx 41'11	
opposition	4869 May 21 00:33	2° \mathfrak{Z} 25'11	2°34'28		4875 Mar 27 11:14	15° \approx	
min. Earth dist.	4869 May 21 01:16	2° \mathfrak{Z} 25'02	8.54812 AU	retrograde	4875 May 25 20:26	17° \approx 46'42	
	4869 Jun 24 12:24	30° \mathfrak{R} \mathbb{M}			4875 Jul 27 16:43	15° \mathfrak{R} \approx	
direct	4869 Jul 29 23:22	28° \mathbb{M} 58'51		opposition	4875 Aug 03 19:03	14° \approx 28'27	0°11'39
	4869 Sep 03 01:49	0° \mathfrak{Z}		min. Earth dist.	4875 Aug 03 20:23	14° \approx 28'12	8.94013 AU
evening set	4869 Nov 12 11:03	6° \mathfrak{Z} 42'19		direct	4875 Oct 13 12:55	11° \approx 08'15	
				desc. node	4875 Dec 19 00:54	14° \approx 30'19	
conjunction	4869 Nov 29 16:47	8° \mathfrak{Z} 48'49	2°01'04		4875 Dec 24 04:43	15° \approx	
minimum elong	4869 Nov 29 16:48	8° \mathfrak{Z} 48'49	2°01'04	evening set	4876 Jan 23 12:23	18° \approx 17'59	
max. Earth dist.	4869 Nov 29 15:38	8° \mathfrak{Z} 48'28	10.59163 AU				
morning rise	4869 Dec 16 18:12	10° \mathfrak{Z} 54'04		conjunction	4876 Feb 09 06:03	20° \approx 16'53	-0°03'41
retrograde	4870 Mar 26 23:00	18° \mathfrak{Z} 15'47		minimum elong	4876 Feb 09 06:03	20° \approx 16'53	0°03'41
opposition	4870 Jun 02 23:47	14° \mathfrak{Z} 55'23	2°22'31	behind sun begin	4876 Feb 08 23:07	20° \approx 14'51	
min. Earth dist.	4870 Jun 03 01:09	14° \mathfrak{Z} 55'07	8.63668 AU	behind sun end	4876 Feb 09 12:58	20° \approx 18'56	
direct	4870 Aug 12 05:29	11° \mathfrak{Z} 30'03		max. Earth dist.	4876 Feb 09 04:10	20° \approx 16'22	10.95010 AU
evening set	4870 Nov 25 06:59	19° \mathfrak{Z} 06'34		morning rise	4876 Feb 25 23:00	22° \approx 15'34	
				retrograde	4876 Jun 05 20:42	29° \approx 21'43	
conjunction	4870 Dec 12 09:45	21° \mathfrak{Z} 11'10	1°48'52	opposition	4876 Aug 15 03:24	26° \approx 03'14	-0°20'18
minimum elong	4870 Dec 12 09:48	21° \mathfrak{Z} 11'11	1°48'52	min. Earth dist.	4876 Aug 15 04:37	26° \approx 03'01	8.95563 AU
max. Earth dist.	4870 Dec 12 07:51	21° \mathfrak{Z} 10'35	10.67843 AU	direct	4876 Oct 24 17:23	22° \approx 43'44	
morning rise	4870 Dec 29 08:38	23° \mathfrak{Z} 14'38		evening set	4877 Feb 03 03:45	29° \approx 51'07	
	4871 Mar 15 01:10	0° \mathfrak{Z}			4877 Feb 04 10:10	0° \mathfrak{H}	
retrograde	4871 Apr 08 06:54	0° \mathfrak{Z} 30'46					
	4871 May 02 20:56	30° \mathfrak{R} \mathfrak{Z}		conjunction	4877 Feb 19 20:31	1° \mathfrak{H} 49'42	-0°29'28
opposition	4871 Jun 15 18:55	27° \mathfrak{Z} 11'11	2°04'15	minimum elong	4877 Feb 19 20:30	1° \mathfrak{H} 49'42	0°29'28
min. Earth dist.	4871 Jun 15 20:51	27° \mathfrak{Z} 10'49	8.72028 AU	max. Earth dist.	4877 Feb 19 19:18	1° \mathfrak{H} 49'20	10.95661 AU
direct	4871 Aug 25 08:13	23° \mathfrak{Z} 46'54		morning rise	4877 Mar 08 13:19	3° \mathfrak{H} 48'17	
	4871 Nov 26 19:49	0° \mathfrak{Z}		retrograde	4877 Jun 18 00:31	10° \mathfrak{H} 56'24	
evening set	4871 Dec 07 19:06	1° \mathfrak{Z} 16'41		opposition	4877 Aug 27 11:33	7° \mathfrak{H} 37'27	-0°51'23
				min. Earth dist.	4877 Aug 27 11:55	7° \mathfrak{H} 37'23	8.95327 AU
conjunction	4871 Dec 24 19:21	3° \mathfrak{Z} 19'36	1°31'56	direct	4877 Nov 05 21:26	4° \mathfrak{H} 18'27	
minimum elong	4871 Dec 24 19:23	3° \mathfrak{Z} 19'37	1°31'57	evening set	4878 Feb 14 19:01	11° \mathfrak{H} 24'41	
max. Earth dist.	4871 Dec 24 16:45	3° \mathfrak{Z} 18'49	10.75843 AU				
morning rise	4872 Jan 10 16:16	5° \mathfrak{Z} 21'32		conjunction	4878 Mar 03 11:20	13° \mathfrak{H} 23'16	-0°54'06
retrograde	4872 Apr 19 13:02	12° \mathfrak{Z} 33'10		minimum elong	4878 Mar 03 11:18	13° \mathfrak{H} 23'16	0°54'07
opposition	4872 Jun 27 10:40	9° \mathfrak{Z} 14'13	1°40'49	max. Earth dist.	4878 Mar 03 11:09	13° \mathfrak{H} 23'13	10.94500 AU
min. Earth dist.	4872 Jun 27 12:21	9° \mathfrak{Z} 13'54	8.79526 AU	morning rise	4878 Mar 20 04:12	15° \mathfrak{H} 22'04	
direct	4872 Sep 06 05:15	5° \mathfrak{Z} 51'04		retrograde	4878 Jun 30 06:38	22° \mathfrak{H} 33'20	
evening set	4872 Dec 19 00:13	13° \mathfrak{Z} 14'30		opposition	4878 Sep 08 20:29	19° \mathfrak{H} 13'45	-1°20'28
				min. Earth dist.	4878 Sep 08 20:09	19° \mathfrak{H} 13'48	8.93283 AU
conjunction	4873 Jan 04 22:26	15° \mathfrak{Z} 16'02	1°11'13	direct	4878 Nov 17 22:06	15° \mathfrak{H} 55'03	
minimum elong	4873 Jan 04 22:29	15° \mathfrak{Z} 16'03	1°11'14	evening set	4879 Feb 26 11:40	23° \mathfrak{H} 01'22	
max. Earth dist.	4873 Jan 04 20:20	15° \mathfrak{Z} 15'24	10.82817 AU				
morning rise	4873 Jan 21 17:46	17° \mathfrak{Z} 16'43		conjunction	4879 Mar 15 03:44	25° \mathfrak{H} 00'14	-1°16'38
retrograde	4873 May 01 16:44	24° \mathfrak{Z} 25'02		minimum elong	4879 Mar 15 03:41	25° \mathfrak{H} 00'14	1°16'38
opposition	4873 Jul 09 23:30	21° \mathfrak{Z} 06'30	1°13'25	max. Earth dist.	4879 Mar 15 03:38	25° \mathfrak{H} 00'13	10.91535 AU
min. Earth dist.	4873 Jul 10 00:25	21° \mathfrak{Z} 06'20	8.85844 AU	morning rise	4879 Mar 31 21:10	26° \mathfrak{H} 59'34	
direct	4873 Sep 18 19:57	17° \mathfrak{Z} 44'28			4879 Apr 28 02:19	0° \mathfrak{Y}	
evening set	4873 Dec 30 23:56	25° \mathfrak{Z} 02'19		retrograde	4879 Jul 12 15:17	4° \mathfrak{Y} 15'10	
				opposition	4879 Sep 21 06:59	0° \mathfrak{Y} 54'44	-1°46'27
conjunction	4874 Jan 16 20:30	27° \mathfrak{Z} 02'43	0°47'43	min. Earth dist.	4879 Sep 21 06:55	0° \mathfrak{Y} 54'45	8.89467 AU

	4879 Oct 03 15:45	30° RH	direct	4886 Feb 10 23:06	11° II 24'58	
direct	4879 Nov 29 23:49	27° H 36'05	evening set	4886 May 22 21:13	19° II 01'44	
	4880 Jan 23 14:44	0° Y				
evening set	4880 Mar 09 06:54	4° Y 43'46	conjunction	4886 Jun 09 06:48	21° II 12'21	-1°48'30
			minimum elong	4886 Jun 09 06:51	21° II 12'22	1°48'31
conjunction	4880 Mar 25 23:11	6° Y 43'16 -1°36'09	max. Earth dist.	4886 Jun 09 08:03	21° II 12'45	10.36882 AU
minimum elong	4880 Mar 25 23:09	6° Y 43'16 1°36'08	morning rise	4886 Jun 26 20:45	23° II 24'20	
max. Earth dist.	4880 Mar 25 22:21	6° Y 43'01 10.86837 AU		4886 Aug 31 06:31	0° S	
morning rise	4880 Apr 11 17:50	8° Y 43'29	retrograde	4886 Oct 11 02:40	1° S 24'27	
retrograde	4880 Jul 24 04:36	16° Y 04'26		4886 Nov 21 10:12	30° RII	
opposition	4880 Oct 02 19:43	12° Y 43'01 -2°08'15	opposition	4886 Dec 19 01:18	27° II 56'34	-2°03'33
min. Earth dist.	4880 Oct 02 20:08	12° Y 42'56 8.83963 AU	min. Earth dist.	4886 Dec 19 00:06	27° II 56'49	8.32794 AU
direct	4880 Dec 11 03:03	9° Y 24'10	direct	4887 Feb 24 03:39	24° II 32'37	
evening set	4881 Mar 21 05:45	16° Y 34'27		4887 May 17 16:46	0° S	
			evening set	4887 Jun 05 13:31	2° S 15'53	
conjunction	4881 Apr 06 23:07	18° Y 35'00 -1°51'46				
minimum elong	4881 Apr 06 23:06	18° Y 34'59 1°51'46	conjunction	4887 Jun 23 03:53	4° S 28'56	-1°29'42
max. Earth dist.	4881 Apr 06 22:21	18° Y 34'46 10.80519 AU	minimum elong	4887 Jun 23 03:56	4° S 28'57	1°29'42
morning rise	4881 Apr 23 19:28	20° Y 36'27	max. Earth dist.	4887 Jun 23 06:08	4° S 29'39	10.28827 AU
retrograde	4881 Aug 05 21:32	28° Y 03'41	morning rise	4887 Jul 10 22:06	6° S 43'14	
opposition	4881 Oct 15 11:14	24° Y 41'09 -2°24'51	retrograde	4887 Oct 25 04:01	14° S 47'48	
min. Earth dist.	4881 Oct 15 11:29	24° Y 41'06 8.76942 AU	opposition	4888 Jan 01 15:35	11° S 19'18	-1°37'02
direct	4881 Dec 23 08:56	21° Y 21'55	min. Earth dist.	4888 Jan 01 13:41	11° S 19'41	8.25286 AU
evening set	4882 Apr 02 09:41	28° Y 35'58	direct	4888 Mar 08 13:38	7° S 54'11	
	4882 Apr 14 00:20	0° S	evening set	4888 Jun 18 13:55	15° S 43'46	
conjunction	4882 Apr 19 04:54	0° S 37'56 -2°02'43	conjunction	4888 Jul 06 08:44	17° S 59'03	-1°05'44
minimum elong	4882 Apr 19 04:52	0° S 37'56 2°02'44	minimum elong	4888 Jul 06 08:47	17° S 59'03	1°05'44
max. Earth dist.	4882 Apr 19 05:07	0° S 38'00 10.72837 AU	max. Earth dist.	4888 Jul 06 11:26	17° S 59'54	10.22024 AU
morning rise	4882 May 06 03:26	2° S 40'58	morning rise	4888 Jul 24 06:44	20° S 15'22	
retrograde	4882 Aug 18 21:20	10° S 15'05	retrograde	4888 Nov 07 07:35	28° S 22'52	
opposition	4882 Oct 28 06:04	6° S 51'22 -2°35'19	opposition	4889 Jan 14 08:43	24° S 54'04	-1°04'41
min. Earth dist.	4882 Oct 28 05:24	6° S 51'29 8.68737 AU	min. Earth dist.	4889 Jan 14 06:30	24° S 54'31	8.19231 AU
direct	4883 Jan 04 18:16	3° S 31'31	direct	4889 Mar 22 05:05	21° S 27'50	
evening set	4883 Apr 14 19:38	10° S 50'17	evening set	4889 Jul 02 21:25	29° S 23'15	
				4889 Jul 07 17:54	0° S	
conjunction	4883 May 01 17:24	12° S 54'02 -2°08'18				
minimum elong	4883 May 01 17:23	12° S 54'02 2°08'19	conjunction	4889 Jul 20 19:54	1° S 40'20	-0°37'48
max. Earth dist.	4883 May 01 18:06	12° S 54'15 10.64191 AU	minimum elong	4889 Jul 20 19:56	1° S 40'20	0°37'48
morning rise	4883 May 18 18:55	14° S 58'59	max. Earth dist.	4889 Jul 20 22:26	1° S 41'08	10.16853 AU
	4883 May 18 22:17	15° S	morning rise	4889 Aug 07 20:45	3° S 58'11	
retrograde	4883 Sep 01 03:52	22° S 40'11	retrograde	4889 Nov 21 13:11	12° S 07'02	
opposition	4883 Nov 10 04:54	19° S 15'16 -2°38'51	opposition	4890 Jan 28 04:17	8° S 38'13	-0°28'15
min. Earth dist.	4883 Nov 10 03:46	19° S 15'29 8.59773 AU	min. Earth dist.	4890 Jan 28 02:15	8° S 38'38	8.14982 AU
direct	4884 Jan 17 05:52	15° S 54'37	direct	4890 Apr 05 00:35	5° S 10'58	
evening set	4884 Apr 26 12:25	23° S 18'51	evening set	4890 Jul 17 10:32	13° S 11'22	
				4890 Jul 31 15:18	15° S	
conjunction	4884 May 13 13:26	25° S 24'41 -2°07'57				
minimum elong	4884 May 13 13:27	25° S 24'41 2°07'58	conjunction	4890 Aug 04 11:31	15° S 29'40	-0°07'30
max. Earth dist.	4884 May 13 14:04	25° S 24'52 10.55018 AU	minimum elong	4890 Aug 04 11:31	15° S 29'40	0°07'30
morning rise	4884 May 30 18:43	27° S 31'50	behind sun begin	4890 Aug 04 04:52	15° S 27'33	
	4884 Jun 20 22:51	0° II	behind sun end	4890 Aug 04 18:11	15° S 31'47	
retrograde	4884 Sep 13 14:25	5° II 19'57	max. Earth dist.	4890 Aug 04 13:20	15° S 30'14	10.13622 AU
opposition	4884 Nov 22 07:47	1° II 53'54 -2°34'51	morning rise	4890 Aug 22 13:58	17° S 48'25	
min. Earth dist.	4884 Nov 22 06:45	1° II 54'07 8.50491 AU	asc. node	4890 Nov 03 15:00	25° S 01'19	
	4884 Dec 18 02:56	30° RS	retrograde	4890 Dec 05 18:54	25° S 56'56	
direct	4885 Jan 28 23:24	28° S 32'14	opposition	4891 Feb 11 01:20	22° S 28'23	0°10'07
	4885 Mar 10 20:52	0° II	min. Earth dist.	4891 Feb 10 23:56	22° S 28'41	8.12806 AU
evening set	4885 May 09 12:52	6° II 02'35	direct	4891 Apr 19 00:16	19° S 00'19	
			evening set	4891 Aug 01 03:45	27° S 04'34	
conjunction	4885 May 26 17:53	8° II 10'44 -2°01'22				
minimum elong	4885 May 26 17:54	8° II 10'44 2°01'23	conjunction	4891 Aug 19 05:54	29° S 23'21	0°23'29
max. Earth dist.	4885 May 26 18:25	8° II 10'54 10.45764 AU	minimum elong	4891 Aug 19 05:53	29° S 23'21	0°23'29
morning rise	4885 Jun 13 03:25	10° II 20'16	max. Earth dist.	4891 Aug 19 07:01	29° S 23'43	10.12537 AU
retrograde	4885 Sep 27 05:44	18° II 14'48		4891 Aug 23 23:46	0° N	
opposition	4885 Dec 05 14:32	14° II 47'45 -2°23'02	morning rise	4891 Sep 06 08:28	1° N 42'16	
min. Earth dist.	4885 Dec 05 13:44	14° II 47'55 8.41344 AU	retrograde	4891 Dec 19 22:50	9° N 48'45	

opposition	4892 Feb 24 22:39	6° \mathbb{M} 20'47	0°48'00	retrograde	4898 Mar 09 01:04	0° \mathbb{Z} 21'56	
min. Earth dist.	4892 Feb 24 21:40	6° \mathbb{M} 20'59	8.12844 AU		4898 Mar 29 08:43	30° $\mathbb{R}\mathbb{M}$	
direct	4892 May 02 03:44	2° \mathbb{M} 52'08		opposition	4898 May 15 13:22	27° \mathbb{M} 00'35	2°37'18
evening set	4892 Aug 14 22:47	10° \mathbb{M} 58'49		min. Earth dist.	4898 May 15 14:14	27° \mathbb{M} 00'25	8.51073 AU
				direct	4898 Jul 24 06:36	23° \mathbb{M} 34'14	
conjunction	4892 Sep 02 00:40	13° \mathbb{M} 17'21	0°53'02		4898 Oct 26 14:57	0° \mathbb{Z}	
minimum elong	4892 Sep 02 00:38	13° \mathbb{M} 17'21	0°53'02	evening set	4898 Nov 07 00:03	1° \mathbb{Z} 21'07	
max. Earth dist.	4892 Sep 02 01:24	13° \mathbb{M} 17'36	10.13671 AU				
morning rise	4892 Sep 20 01:48	15° \mathbb{M} 35'39		conjunction	4898 Nov 24 07:07	3° \mathbb{Z} 28'33	2°04'36
retrograde	4893 Jan 01 22:33	23° \mathbb{M} 38'36		minimum elong	4898 Nov 24 07:08	3° \mathbb{Z} 28'34	2°04'36
opposition	4893 Mar 09 19:31	20° \mathbb{M} 11'27	1°22'59	max. Earth dist.	4898 Nov 24 05:30	3° \mathbb{Z} 28'03	10.55592 AU
min. Earth dist.	4893 Mar 09 18:32	20° \mathbb{M} 11'40	8.15098 AU	morning rise	4898 Dec 11 10:09	5° \mathbb{Z} 34'45	
direct	4893 May 16 09:30	16° \mathbb{M} 42'33		retrograde	4899 Mar 21 17:48	12° \mathbb{Z} 59'26	
evening set	4893 Aug 29 17:01	24° \mathbb{M} 49'58		opposition	4899 May 28 14:52	9° \mathbb{Z} 39'05	2°28'28
				min. Earth dist.	4899 May 28 15:38	9° \mathbb{Z} 38'56	8.60297 AU
conjunction	4893 Sep 16 17:15	27° \mathbb{M} 07'33	1°19'23	direct	4899 Aug 06 17:32	6° \mathbb{Z} 13'43	
minimum elong	4893 Sep 16 17:12	27° \mathbb{M} 07'32	1°19'24	evening set	4899 Nov 20 00:20	13° \mathbb{Z} 53'33	
max. Earth dist.	4893 Sep 16 18:01	27° \mathbb{M} 07'47	10.16963 AU				
morning rise	4893 Oct 04 15:35	29° \mathbb{M} 24'32		conjunction	4899 Dec 07 04:24	15° \mathbb{Z} 58'59	1°54'47
	4893 Oct 09 09:22	0° \mathbb{Z}		minimum elong	4899 Dec 07 04:26	15° \mathbb{Z} 58'59	1°54'47
retrograde	4894 Jan 15 19:05	7° \mathbb{Z} 22'41		max. Earth dist.	4899 Dec 07 02:47	15° \mathbb{Z} 58'29	10.64654 AU
opposition	4894 Mar 23 14:49	3° \mathbb{Z} 56'33	1°52'54	morning rise	4899 Dec 24 04:27	18° \mathbb{Z} 03'13	
min. Earth dist.	4894 Mar 23 13:32	3° \mathbb{Z} 56'49	8.19437 AU	retrograde	4900 Apr 03 05:33	25° \mathbb{Z} 21'52	
direct	4894 May 30 13:50	0° \mathbb{Z} 27'41		opposition	4900 Jun 10 12:13	22° \mathbb{Z} 02'21	2°12'53
evening set	4894 Sep 13 08:08	8° \mathbb{Z} 34'02		min. Earth dist.	4900 Jun 10 13:12	22° \mathbb{Z} 02'10	8.69026 AU
				direct	4900 Aug 19 22:50	18° \mathbb{Z} 38'02	
conjunction	4894 Oct 01 05:42	10° \mathbb{Z} 50'05	1°41'00	evening set	4900 Dec 02 16:18	26° \mathbb{Z} 10'53	
minimum elong	4894 Oct 01 05:39	10° \mathbb{Z} 50'04	1°41'01				
max. Earth dist.	4894 Oct 01 06:46	10° \mathbb{Z} 50'26	10.22227 AU	conjunction	4900 Dec 19 17:47	28° \mathbb{Z} 14'33	1°39'50
morning rise	4894 Oct 19 00:19	13° \mathbb{Z} 05'15		minimum elong	4900 Dec 19 17:49	28° \mathbb{Z} 14'33	1°39'50
retrograde	4895 Jan 29 11:55	20° \mathbb{Z} 57'30		max. Earth dist.	4900 Dec 19 16:01	28° \mathbb{Z} 14'00	10.72984 AU
opposition	4895 Apr 06 07:38	17° \mathbb{Z} 32'31	2°16'05		4901 Jan 03 06:07	0° \mathbb{Z}	
min. Earth dist.	4895 Apr 06 06:27	17° \mathbb{Z} 32'45	8.25604 AU	morning rise	4901 Jan 05 15:25	0° \mathbb{Z} 17'06	
direct	4895 Jun 13 16:09	14° \mathbb{Z} 03'58		retrograde	4901 Apr 15 14:45	7° \mathbb{Z} 30'46	
evening set	4895 Sep 27 17:58	22° \mathbb{Z} 07'32		opposition	4901 Jun 23 05:59	4° \mathbb{Z} 11'57	1°51'35
				min. Earth dist.	4901 Jun 23 07:43	4° \mathbb{Z} 11'37	8.76807 AU
conjunction	4895 Oct 15 12:08	24° \mathbb{Z} 21'38	1°56'45	direct	4901 Sep 01 21:10	0° \mathbb{Z} 48'41	
minimum elong	4895 Oct 15 12:06	24° \mathbb{Z} 21'37	1°56'46	evening set	4901 Dec 15 00:56	8° \mathbb{Z} 15'03	
max. Earth dist.	4895 Oct 15 13:03	24° \mathbb{Z} 21'55	10.29150 AU				
morning rise	4895 Nov 02 02:34	26° \mathbb{Z} 34'38		conjunction	4902 Jan 01 00:08	10° \mathbb{Z} 17'14	1°20'39
	4895 Dec 01 09:45	0° \mathbb{M}		minimum elong	4902 Jan 01 00:10	10° \mathbb{Z} 17'14	1°20'40
retrograde	4896 Feb 11 23:18	4° \mathbb{M} 20'13		max. Earth dist.	4901 Dec 31 21:35	10° \mathbb{Z} 16'27	10.80193 AU
opposition	4896 Apr 18 21:27	0° \mathbb{M} 56'28	2°31'26	morning rise	4902 Jan 17 20:03	12° \mathbb{Z} 18'27	
min. Earth dist.	4896 Apr 18 20:59	0° \mathbb{M} 56'34	8.33228 AU	retrograde	4902 Apr 27 19:12	19° \mathbb{Z} 28'22	
	4896 Apr 30 19:10	30° $\mathbb{R}\mathbb{Z}$		opposition	4902 Jul 05 20:37	16° \mathbb{Z} 10'00	1°25'46
direct	4896 Jun 26 16:20	27° \mathbb{Z} 28'28		min. Earth dist.	4902 Jul 05 23:22	16° \mathbb{Z} 09'29	8.83337 AU
	4896 Aug 21 05:12	0° \mathbb{M}		direct	4902 Sep 14 14:33	12° \mathbb{Z} 47'45	
evening set	4896 Oct 10 20:39	5° \mathbb{M} 27'39		evening set	4902 Dec 27 03:43	20° \mathbb{Z} 08'23	
conjunction	4896 Oct 28 10:58	7° \mathbb{M} 39'34	2°05'59	conjunction	4903 Jan 13 00:55	22° \mathbb{Z} 09'19	0°58'13
minimum elong	4896 Oct 28 10:56	7° \mathbb{M} 39'33	2°06'00	minimum elong	4903 Jan 13 00:57	22° \mathbb{Z} 09'19	0°58'14
max. Earth dist.	4896 Oct 28 11:08	7° \mathbb{M} 39'37	10.37325 AU	max. Earth dist.	4903 Jan 12 21:14	22° \mathbb{Z} 08'12	10.86046 AU
morning rise	4896 Nov 14 21:11	9° \mathbb{M} 50'15		morning rise	4903 Jan 29 19:38	24° \mathbb{Z} 09'31	
	4897 Jan 01 11:05	15° \mathbb{M}			4903 Mar 31 14:21	0° \mathbb{Z}	
retrograde	4897 Feb 24 02:57	17° \mathbb{M} 28'45		retrograde	4903 May 09 21:11	1° \mathbb{Z} 16'56	
	4897 Apr 20 20:54	15° $\mathbb{R}\mathbb{M}$			4903 Jun 19 07:19	30° $\mathbb{R}\mathbb{Z}$	
opposition	4897 May 02 07:31	14° \mathbb{M} 06'16	2°38'28	opposition	4903 Jul 18 08:38	27° \mathbb{Z} 58'47	0°56'39
min. Earth dist.	4897 May 02 07:52	14° \mathbb{M} 06'12	8.41876 AU	min. Earth dist.	4903 Jul 18 11:27	27° \mathbb{Z} 58'16	8.88424 AU
direct	4897 Jul 10 14:07	10° \mathbb{M} 39'01		direct	4903 Sep 27 05:01	24° \mathbb{Z} 37'24	
	4897 Sep 23 16:12	15° \mathbb{M}			4903 Dec 22 11:11	0° \mathbb{Z}	
evening set	4897 Oct 24 14:54	18° \mathbb{M} 32'30		evening set	4904 Jan 08 01:41	1° \mathbb{Z} 53'09	
conjunction	4897 Nov 11 01:24	20° \mathbb{M} 42'08	2°08'31	conjunction	4904 Jan 24 21:20	3° \mathbb{Z} 53'08	0°33'34
minimum elong	4897 Nov 11 01:24	20° \mathbb{M} 42'08	2°08'32	minimum elong	4904 Jan 24 21:21	3° \mathbb{Z} 53'09	0°33'35
max. Earth dist.	4897 Nov 11 00:34	20° \mathbb{M} 41'52	10.46304 AU	max. Earth dist.	4904 Jan 24 17:57	3° \mathbb{Z} 52'08	10.90375 AU
morning rise	4897 Nov 28 07:48	22° \mathbb{M} 50'30		morning rise	4904 Feb 10 15:07	5° \mathbb{Z} 52'35	
	4898 Feb 16 21:47	0° \mathbb{Z}		retrograde	4904 May 20 23:48	12° \mathbb{Z} 58'49	



























































































































opposition	4904 Jul 29 18:57	9° \approx 40'36	0°25'29	retrograde	4910 Aug 01 21:10	23° Υ 13'35
min. Earth dist.	4904 Jul 29 21:01	9° \approx 40'13	8.91923 AU	opposition	4910 Oct 11 10:57	19° Υ 50'52 -2°18'40
direct	4904 Oct 08 14:38	6° \approx 19'59		min. Earth dist.	4910 Oct 11 10:14	19° Υ 51'01 8.77482 AU
evening set	4905 Jan 18 20:01	13° \approx 31'46		direct	4910 Dec 19 12:05	16° Υ 31'13
	4905 Jan 31 06:23	15° \approx		evening set	4911 Mar 29 14:35	23° Υ 44'35
conjunction	4905 Feb 04 14:28	15° \approx 31'05	0°07'44	conjunction	4911 Apr 15 08:55	25° Υ 46'12 -1°58'46
minimum elong	4905 Feb 04 14:28	15° \approx 31'05	0°07'44	minimum elong	4911 Apr 15 08:54	25° Υ 46'11 1°58'46
behind sun begin	4905 Feb 04 08:08	15° \approx 29'13		max. Earth dist.	4911 Apr 15 09:01	25° Υ 46'13 10.73760 AU
behind sun end	4905 Feb 04 20:48	15° \approx 32'57		morning rise	4911 May 02 06:34	27° Υ 48'48
max. Earth dist.	4905 Feb 04 12:09	15° \approx 30'25	10.93044 AU		4911 May 21 06:43	0° B
morning rise	4905 Feb 21 07:33	17° \approx 30'04		retrograde	4911 Aug 14 18:25	5° B 20'55
desc. node	4905 May 26 06:06	24° \approx 34'08		opposition	4911 Oct 24 05:03	1° B 57'07 -2°31'51
retrograde	4905 Jun 02 01:39	24° \approx 36'28		min. Earth dist.	4911 Oct 24 04:21	1° B 57'16 8.70033 AU
opposition	4905 Aug 11 04:07	21° \approx 17'54	-0°06'32		4911 Nov 20 11:58	30° $\text{R}\Upsilon$
min. Earth dist.	4905 Aug 11 05:36	21° \approx 17'38	8.93723 AU	direct	4911 Dec 31 20:39	28° Υ 37'01
direct	4905 Oct 20 20:36	17° \approx 57'52			4912 Feb 10 02:59	0° B
evening set	4906 Jan 30 12:30	25° \approx 06'52		evening set	4912 Apr 09 22:17	5° B 54'38
conjunction	4906 Feb 16 05:52	27° \approx 05'46	-0°18'26	conjunction	4912 Apr 26 18:48	7° B 57'49 -2°06'41
minimum elong	4906 Feb 16 05:51	27° \approx 05'46	0°18'26	minimum elong	4912 Apr 26 18:47	7° B 57'49 2°06'42
max. Earth dist.	4906 Feb 16 03:46	27° \approx 05'09	10.93967 AU	max. Earth dist.	4912 Apr 26 19:18	7° B 57'59 10.65852 AU
morning rise	4906 Mar 04 22:40	29° \approx 04'34		morning rise	4912 May 13 19:12	10° B 02'12
	4906 Mar 12 23:02	0° H			4912 Jun 29 12:00	15° B
retrograde	4906 Jun 14 05:08	6° H 12'24		retrograde	4912 Aug 26 21:42	17° B 41'14
opposition	4906 Aug 23 12:44	2° H 53'20	-0°38'12		4912 Oct 26 14:39	15° RB
min. Earth dist.	4906 Aug 23 14:30	2° H 53'00	8.93776 AU	opposition	4912 Nov 05 02:42	14° B 16'22 -2°38'22
	4906 Oct 09 16:00	30° $\text{R}\approx$		min. Earth dist.	4912 Nov 05 01:44	14° B 16'33 8.61773 AU
direct	4906 Nov 02 00:21	29° \approx 33'41		direct	4913 Jan 12 08:02	10° B 55'39
	4906 Nov 25 02:13	0° H			4913 Mar 24 09:43	15° B
evening set	4907 Feb 11 04:17	6° H 41'07		evening set	4913 Apr 22 12:28	18° B 18'21
conjunction	4907 Feb 27 20:46	8° H 39'54	-0°43'44	conjunction	4913 May 09 12:07	20° B 23'28 -2°08'52
minimum elong	4907 Feb 27 20:44	8° H 39'54	0°43'45	minimum elong	4913 May 09 12:07	20° B 23'28 2°08'54
max. Earth dist.	4907 Feb 27 18:20	8° H 39'11	10.93130 AU	max. Earth dist.	4913 May 09 13:56	20° B 24'02 10.57316 AU
morning rise	4907 Mar 16 13:43	10° H 38'50		morning rise	4913 May 26 15:51	22° B 29'53
retrograde	4907 Jun 26 08:35	17° H 49'24			4913 Aug 22 14:15	0° II
opposition	4907 Sep 04 21:54	14° H 29'37	-1°08'22	retrograde	4913 Sep 09 06:24	0° II 15'52
min. Earth dist.	4907 Sep 04 23:37	14° H 29'18	8.92091 AU		4913 Sep 27 01:10	30° RB
direct	4907 Nov 14 02:09	11° H 10'12		opposition	4913 Nov 18 04:17	26° B 50'00 -2°37'32
evening set	4908 Feb 22 20:32	18° H 17'19		min. Earth dist.	4913 Nov 18 02:22	26° B 50'22 8.53065 AU
conjunction	4908 Mar 10 12:40	20° H 16'17	-1°07'20	direct	4914 Jan 25 00:15	23° B 28'33
minimum elong	4908 Mar 10 12:38	20° H 16'16	1°07'20		4914 Apr 27 12:58	0° II
max. Earth dist.	4908 Mar 10 10:51	20° H 15'45	10.90572 AU	evening set	4914 May 05 10:01	0° II 56'59
morning rise	4908 Mar 27 06:02	22° H 15'38		conjunction	4914 May 22 13:25	3° II 04'18 -2°04'53
retrograde	4908 Jul 07 15:53	29° H 30'13		minimum elong	4914 May 22 13:27	3° II 04'18 2°04'54
opposition	4908 Sep 16 08:12	26° H 09'32	-1°35'54	max. Earth dist.	4914 May 22 16:22	3° II 05'13 10.48546 AU
min. Earth dist.	4908 Sep 16 09:01	26° H 09'22	8.88728 AU	morning rise	4914 Jun 08 21:00	5° II 12'58
direct	4908 Nov 25 06:06	22° H 50'12		retrograde	4914 Sep 22 21:10	13° II 05'34
evening set	4909 Mar 05 14:51	29° H 58'13		opposition	4914 Dec 01 09:57	9° II 38'48 -2°28'55
	4909 Mar 05 20:53	0° Υ		min. Earth dist.	4914 Dec 01 07:09	9° II 39'21 8.44330 AU
conjunction	4909 Mar 22 07:13	1° Υ 57'44	-1°28'18	direct	4915 Feb 06 21:28	6° II 16'30
minimum elong	4909 Mar 22 07:10	1° Υ 57'43	1°28'17	evening set	4915 May 18 15:32	13° II 51'05
max. Earth dist.	4909 Mar 22 06:54	1° Υ 57'38	10.86378 AU	conjunction	4915 Jun 04 23:13	16° II 00'47 -1°54'34
morning rise	4909 Apr 08 01:20	3° Υ 57'49		minimum elong	4915 Jun 04 23:16	16° II 00'47 1°54'35
retrograde	4909 Jul 20 04:59	11° Υ 17'26		max. Earth dist.	4915 Jun 05 02:35	16° II 01'50 10.39993 AU
opposition	4909 Sep 28 20:10	7° Υ 55'46	-1°59'41	morning rise	4915 Jun 22 11:10	18° II 11'49
min. Earth dist.	4909 Sep 28 19:50	7° Υ 55'50	8.83799 AU	retrograde	4915 Oct 06 18:02	26° II 10'15
direct	4909 Dec 07 08:56	4° Υ 36'22		opposition	4915 Dec 14 19:41	22° II 42'47 -2°12'29
evening set	4910 Mar 17 12:30	11° Υ 46'30		min. Earth dist.	4915 Dec 14 16:36	22° II 43'24 8.36027 AU
conjunction	4910 Apr 03 05:35	13° Υ 46'53	-1°45'43	direct	4916 Feb 19 22:53	19° II 19'33
minimum elong	4910 Apr 03 05:33	13° Υ 46'52	1°45'43	evening set	4916 May 31 05:12	27° II 00'27
max. Earth dist.	4910 Apr 03 05:45	13° Υ 46'56	10.80700 AU	conjunction	4916 Jun 17 17:27	29° II 12'32 -1°38'07
morning rise	4910 Apr 20 01:06	15° Υ 48'04		minimum elong	4916 Jun 17 17:30	29° II 12'33 1°38'07




























































































































max. Earth dist.	4916 Jun 17 20:29	29°13'30	10.32104 AU	min. Earth dist.	4922 Mar 05 10:08	14°44'09	8.15246 AU
	4916 Jun 23 23:32	0°		direct	4922 May 11 20:13	11°15'36	
morning rise	4916 Jul 05 09:55	1°25'57		evening set	4922 Aug 24 23:50	19°22'27	
retrograde	4916 Oct 19 18:26	9°29'05					
opposition	4916 Dec 27 09:08	6°01'07	-1°48'42	conjunction	4922 Sep 12 00:51	21°40'22	1°08'59
min. Earth dist.	4916 Dec 27 06:29	6°01'39	8.28596 AU	minimum elong	4922 Sep 12 00:48	21°40'21	1°09'00
direct	4917 Mar 04 06:55	2°36'51		max. Earth dist.	4922 Sep 12 01:27	21°40'33	10.16545 AU
evening set	4917 Jun 14 02:53	10°24'00		morning rise	4922 Sep 30 00:19	23°57'49	
					4922 Nov 25 08:40	0°	
conjunction	4917 Jul 01 19:40	12°38'20	-1°16'08	retrograde	4923 Jan 11 12:51	1°57'48	
minimum elong	4917 Jul 01 19:43	12°38'21	1°16'08		4923 Feb 28 14:42	30°8'11	
max. Earth dist.	4917 Jul 01 22:34	12°39'16	10.25293 AU	opposition	4923 Mar 19 07:21	28°31'38	1°41'14
morning rise	4917 Jul 19 16:13	14°53'50		min. Earth dist.	4923 Mar 19 07:04	28°31'41	8.18440 AU
retrograde	4917 Nov 02 20:39	23°00'17		direct	4923 May 26 00:44	25°03'03	
opposition	4918 Jan 10 01:36	19°32'03	-1°18'32		4923 Aug 13 01:56	0°	
min. Earth dist.	4918 Jan 09 23:15	19°32'32	8.22435 AU	evening set	4923 Sep 08 16:37	3°09'43	
direct	4918 Mar 17 21:46	16°06'46					
evening set	4918 Jun 28 07:49	23°59'41		conjunction	4923 Sep 26 15:17	5°26'22	1°32'43
				minimum elong	4923 Sep 26 15:14	5°26'21	1°32'43
conjunction	4918 Jul 16 04:40	26°15'57	-0°49'39	max. Earth dist.	4923 Sep 26 14:49	5°26'13	10.20691 AU
minimum elong	4918 Jul 16 04:42	26°15'57	0°49'39	morning rise	4923 Oct 14 11:32	7°42'14	
max. Earth dist.	4918 Jul 16 07:37	26°16'54	10.19919 AU	retrograde	4924 Jan 25 06:42	15°36'45	
morning rise	4918 Aug 03 04:29	28°33'07		opposition	4924 Apr 01 01:10	12°11'33	2°07'22
	4918 Aug 14 23:02	0°		min. Earth dist.	4924 Apr 01 01:35	12°11'28	8.23543 AU
retrograde	4918 Nov 17 00:51	6°41'18		direct	4924 Jun 08 05:10	8°43'00	
opposition	4919 Jan 23 20:31	3°13'00	-0°43'33	evening set	4924 Sep 22 04:49	16°47'40	
min. Earth dist.	4919 Jan 23 18:14	3°13'28	8.17862 AU				
	4919 Mar 16 04:41	30°8'28		conjunction	4924 Oct 10 00:17	19°02'32	1°51'00
direct	4919 Mar 31 16:34	29°46'43		minimum elong	4924 Oct 10 00:14	19°02'31	1°51'00
	4919 Apr 16 02:26	0°		max. Earth dist.	4924 Oct 09 23:04	19°02'08	10.26613 AU
evening set	4919 Jul 12 18:47	7°44'41		morning rise	4924 Oct 27 16:37	21°16'24	
				retrograde	4925 Feb 06 18:31	29°04'34	
conjunction	4919 Jul 30 18:49	10°02'22	-0°20'06	opposition	4925 Apr 14 16:10	25°40'24	2°26'04
minimum elong	4919 Jul 30 18:50	10°02'22	0°20'06	min. Earth dist.	4925 Apr 14 16:33	25°40'19	8.30254 AU
max. Earth dist.	4919 Jul 30 21:43	10°03'17	10.16225 AU	direct	4925 Jun 22 07:56	22°12'08	
morning rise	4919 Aug 17 20:43	12°02'38			4925 Oct 04 15:46	0°13'03	
	4919 Sep 08 20:35	15°02'58		evening set	4925 Oct 06 10:11	0°13'03	
retrograde	4919 Dec 01 06:33	20°02'58					
opposition	4920 Feb 06 16:56	17°00'49	-0°05'44	conjunction	4925 Oct 24 02:04	2°25'50	2°02'59
min. Earth dist.	4920 Feb 06 14:44	17°01'17	8.15048 AU	minimum elong	4925 Oct 24 02:02	2°25'49	2°03'00
	4920 Mar 04 00:53	15°8'02		max. Earth dist.	4925 Oct 24 00:56	2°25'28	10.33964 AU
asc. node	4920 Apr 03 02:00	13°03'50		morning rise	4925 Nov 10 14:11	4°37'28	
direct	4920 Apr 13 14:57	13°03'39		retrograde	4926 Feb 20 00:15	12°18'47	
	4920 May 23 17:21	15°02'50		opposition	4926 Apr 28 03:28	8°55'39	2°36'36
evening set	4920 Jul 26 10:35	21°03'50		min. Earth dist.	4926 Apr 28 03:39	8°55'37	8.38174 AU
				direct	4926 Jul 06 07:07	5°27'54	
conjunction	4920 Aug 13 12:27	23°05'41	0°10'50	evening set	4926 Oct 20 07:36	13°23'39	
minimum elong	4920 Aug 13 12:27	23°05'41	0°10'51		4926 Nov 02 06:27	15°13'03	
behind sun begin	4920 Aug 13 06:56	23°05'23					
behind sun end	4920 Aug 13 17:57	23°05'04		conjunction	4926 Nov 06 19:51	15°34'14	2°08'19
max. Earth dist.	4920 Aug 13 14:50	23°05'04	10.14336 AU	minimum elong	4926 Nov 06 19:51	15°34'14	2°08'19
morning rise	4920 Aug 31 14:56	26°01'30		max. Earth dist.	4926 Nov 06 18:59	15°33'57	10.42317 AU
	4920 Oct 02 18:03	0°		morning rise	4926 Nov 24 03:52	17°43'33	
retrograde	4920 Dec 14 11:33	4°20'00		retrograde	4927 Mar 05 01:58	25°17'48	
opposition	4921 Feb 19 14:03	0°52'19	0°32'36	opposition	4927 May 11 10:33	21°55'41	2°38'50
min. Earth dist.	4921 Feb 19 12:15	0°52'41	8.14124 AU	min. Earth dist.	4927 May 11 10:58	21°55'36	8.46853 AU
	4921 Mar 02 08:29	30°8'02		direct	4927 Jul 19 23:53	18°28'39	
direct	4921 Apr 27 16:23	27°02'48		evening set	4927 Nov 02 20:17	26°18'12	
	4921 Jun 21 13:16	0°					
evening set	4921 Aug 10 05:05	5°29'46		conjunction	4927 Nov 20 04:59	28°26'35	2°07'03
				minimum elong	4927 Nov 20 05:00	28°26'36	2°07'03
conjunction	4921 Aug 28 07:16	7°48'19	0°41'08	max. Earth dist.	4927 Nov 20 04:05	28°26'18	10.51210 AU
minimum elong	4921 Aug 28 07:14	7°48'18	0°41'08		4927 Dec 02 18:59	0°	
max. Earth dist.	4921 Aug 28 08:47	7°48'48	10.14404 AU	morning rise	4927 Dec 02 09:17	0°33'41	
morning rise	4921 Sep 15 08:53	10°06'45		retrograde	4928 Mar 16 20:54	8°01'02	
retrograde	4921 Dec 28 14:07	18°10'56		opposition	4928 May 23 13:35	4°39'55	2°33'08
opposition	4922 Mar 05 11:14	14°43'55	1°09'01	min. Earth dist.	4928 May 23 14:47	4°39'41	8.55836 AU

direct	4928 Aug 01 12:01	1°♊13'44		desc. node	4934 Oct 31 06:41	13°♊25'52	
evening set	4928 Nov 14 23:51	8°♊56'27			4934 Dec 02 03:03	15°♊	
				evening set	4935 Jan 25 20:59	20°♊23'36	
conjunction	4928 Dec 02 05:13	11°♊02'45	1°59'37				
minimum elong	4928 Dec 02 05:14	11°♊02'45	1°59'37	conjunction	4935 Feb 11 14:35	22°♊22'24	-0°07'12
max. Earth dist.	4928 Dec 02 03:36	11°♊02'15	10.60191 AU	minimum elong	4935 Feb 11 14:35	22°♊22'24	0°07'13
morning rise	4928 Dec 19 06:26	13°♊07'49		behind sun begin	4935 Feb 11 08:08	22°♊20'30	
retrograde	4929 Mar 29 09:12	20°♊28'51		behind sun end	4935 Feb 11 21:01	22°♊24'18	
opposition	4929 Jun 05 12:24	17°♊08'36	2°20'16	max. Earth dist.	4935 Feb 11 12:46	22°♊21'53	10.95368 AU
min. Earth dist.	4929 Jun 05 14:10	17°♊08'15	8.64687 AU	morning rise	4935 Feb 28 07:31	24°♊21'01	
direct	4929 Aug 14 19:42	13°♊43'23			4935 Apr 27 20:58	0°♋	
evening set	4929 Nov 27 18:50	21°♊19'06		retrograde	4935 Jun 09 06:19	1°♋27'05	
					4935 Jul 22 23:02	30°♋	
conjunction	4929 Dec 14 21:19	23°♊23'30	1°46'44	opposition	4935 Aug 18 13:24	28°♋08'31	-0°24'34
minimum elong	4929 Dec 14 21:21	23°♊23'31	1°46'44	min. Earth dist.	4935 Aug 18 14:06	28°♋08'23	8.95827 AU
max. Earth dist.	4929 Dec 14 18:56	23°♊22'47	10.68847 AU	direct	4935 Oct 28 04:37	24°♋49'01	
morning rise	4929 Dec 31 20:06	25°♊26'47			4936 Jan 20 08:46	0°♋	
	4930 Feb 12 11:28	0°♋		evening set	4936 Feb 06 12:07	1°♋56'02	
retrograde	4930 Apr 10 18:15	2°♋42'19					
	4930 Jun 10 03:02	30°♋		conjunction	4936 Feb 23 04:55	3°♋54'34	-0°32'51
opposition	4930 Jun 18 07:01	29°♊22'48	2°01'14	minimum elong	4936 Feb 23 04:54	3°♋54'34	0°32'52
min. Earth dist.	4930 Jun 18 08:39	29°♊22'29	8.73002 AU	max. Earth dist.	4936 Feb 23 04:21	3°♋54'24	10.95827 AU
direct	4930 Aug 27 21:35	25°♊58'38		morning rise	4936 Mar 10 21:35	5°♋53'07	
	4930 Nov 08 23:27	0°♋		retrograde	4936 Jun 20 10:28	13°♋01'16	
evening set	4930 Dec 10 05:59	3°♋27'33		opposition	4936 Aug 29 21:30	9°♋42'14	-0°55'24
				min. Earth dist.	4936 Aug 29 21:25	9°♋42'15	8.95399 AU
conjunction	4930 Dec 27 06:07	5°♋30'20	1°29'14	direct	4936 Nov 08 06:03	6°♋23'16	
minimum elong	4930 Dec 27 06:10	5°♋30'20	1°29'15	evening set	4937 Feb 17 03:19	13°♋29'16	
max. Earth dist.	4930 Dec 27 03:54	5°♋29'39	10.76782 AU				
morning rise	4931 Jan 13 02:55	7°♋32'06		conjunction	4937 Mar 05 19:33	15°♋27'48	-0°57'14
retrograde	4931 Apr 22 23:33	14°♋43'10		minimum elong	4937 Mar 05 19:31	15°♋27'48	0°57'14
opposition	4931 Jun 30 22:13	11°♋24'14	1°37'12	max. Earth dist.	4937 Mar 05 19:21	15°♋27'45	10.94481 AU
min. Earth dist.	4931 Jun 30 23:13	11°♋24'02	8.80408 AU	morning rise	4937 Mar 22 12:26	17°♋26'36	
direct	4931 Sep 09 16:54	8°♋01'10		retrograde	4937 Jul 02 16:07	24°♋38'05	
evening set	4931 Dec 22 10:25	15°♋23'48		opposition	4937 Sep 11 06:27	21°♋18'24	-1°24'05
				min. Earth dist.	4937 Sep 11 06:25	21°♋18'24	8.93184 AU
conjunction	4932 Jan 08 08:35	17°♋25'11	1°08'05	direct	4937 Nov 20 07:11	17°♋59'42	
minimum elong	4932 Jan 08 08:37	17°♋25'12	1°08'07	evening set	4938 Feb 28 20:08	25°♋05'58	
max. Earth dist.	4932 Jan 08 07:13	17°♋24'46	10.83644 AU				
morning rise	4932 Jan 25 03:42	19°♋25'43		conjunction	4938 Mar 17 12:05	27°♋04'51	-1°19'23
retrograde	4932 May 04 02:51	26°♋33'34		minimum elong	4938 Mar 17 12:03	27°♋04'50	1°19'22
opposition	4932 Jul 12 10:36	23°♋15'02	1°09'23	max. Earth dist.	4938 Mar 17 11:16	27°♋04'36	10.91364 AU
min. Earth dist.	4932 Jul 12 11:29	23°♋14'52	8.86601 AU	morning rise	4938 Apr 03 05:41	29°♋04'12	
direct	4932 Sep 21 07:32	19°♋53'03			4938 Apr 11 06:38	0°♌	
evening set	4933 Jan 02 09:32	27°♋10'11		retrograde	4938 Jul 15 01:00	6°♌20'05	
				opposition	4938 Sep 23 16:51	2°♌59'36	-1°49'32
conjunction	4933 Jan 19 05:55	29°♋10'26	0°44'19	min. Earth dist.	4938 Sep 23 17:18	2°♌59'31	8.89238 AU
minimum elong	4933 Jan 19 05:56	29°♋10'27	0°44'20		4938 Nov 12 18:47	30°♌	
max. Earth dist.	4933 Jan 19 04:33	29°♋10'02	10.89159 AU	direct	4938 Dec 02 08:56	29°♋40'56	
	4933 Jan 26 03:32	0°♍			4938 Dec 21 19:04	0°♌	
morning rise	4933 Feb 04 23:56	1°♍10'02		evening set	4939 Mar 12 15:29	6°♌48'42	
retrograde	4933 May 16 05:19	8°♍15'55					
opposition	4933 Jul 24 20:47	4°♍57'37	0°39'00	conjunction	4939 Mar 29 07:50	8°♌48'14	-1°38'23
min. Earth dist.	4933 Jul 24 22:09	4°♍57'22	8.91349 AU	minimum elong	4939 Mar 29 07:47	8°♌48'14	1°38'23
direct	4933 Oct 03 16:43	1°♍36'36		max. Earth dist.	4939 Mar 29 07:09	8°♌48'02	10.86559 AU
evening set	4934 Jan 14 04:34	8°♍49'12		morning rise	4939 Apr 15 02:34	10°♌48'30	
				retrograde	4939 Jul 27 13:22	18°♌09'51	
conjunction	4934 Jan 30 23:24	10°♍48'37	0°18'55	opposition	4939 Oct 06 05:37	14°♌48'21	-2°10'39
minimum elong	4934 Jan 30 23:24	10°♍48'37	0°18'55	min. Earth dist.	4939 Oct 06 05:47	14°♌48'19	8.83653 AU
max. Earth dist.	4934 Jan 30 21:26	10°♍48'02	10.93119 AU	direct	4939 Dec 14 12:29	11°♌29'30	
morning rise	4934 Feb 16 16:47	12°♍47'35		evening set	4940 Mar 23 14:33	18°♌39'56	
	4934 Mar 08 08:06	15°♍					
retrograde	4934 May 28 04:27	19°♍52'52		conjunction	4940 Apr 09 08:06	20°♌40'33	-1°53'25
opposition	4934 Aug 06 05:28	16°♍34'33	0°07'18	minimum elong	4940 Apr 09 08:04	20°♌40'32	1°53'25
min. Earth dist.	4934 Aug 06 07:00	16°♍34'16	8.94463 AU	max. Earth dist.	4940 Apr 09 08:11	20°♌40'35	10.80174 AU
	4934 Aug 28 07:08	15°♍		morning rise	4940 Apr 26 04:29	22°♌42'03	
direct	4934 Oct 15 23:22	13°♍14'21			4940 Jul 25 08:42	0°♎	

retrograde	4940 Aug 08 08:28	0°♄09'44	retrograde	4946 Oct 27 16:44	17°♄01'25
	4940 Aug 22 10:02	30°♄'Y	opposition	4947 Jan 04 03:26	13°♄32'58 -1°33'10
opposition	4940 Oct 17 21:14	26°♄'Y47'08 -2°26'28	min. Earth dist.	4947 Jan 04 01:20	13°♄33'23 8.24726 AU
min. Earth dist.	4940 Oct 17 20:49	26°♄'Y47'12 8.76569 AU	direct	4947 Mar 12 01:20	10°♄07'49
direct	4940 Dec 25 18:55	23°♄'Y27'55	evening set	4947 Jun 22 03:05	17°♄57'58
	4941 Mar 29 20:10	0°♄			
evening set	4941 Apr 04 18:53	0°♄42'10	conjunction	4947 Jul 09 22:12	20°♄13'27 -1°02'22
			minimum elong	4947 Jul 09 22:15	20°♄13'28 1°02'22
conjunction	4941 Apr 21 14:17	2°♄44'15 -2°03'41	max. Earth dist.	4947 Jul 10 00:26	20°♄14'10 10.21516 AU
minimum elong	4941 Apr 21 14:16	2°♄44'14 2°03'41	morning rise	4947 Jul 27 20:31	22°♄29'57
max. Earth dist.	4941 Apr 21 14:42	2°♄44'23 10.72424 AU		4947 Oct 15 06:08	0°♄
morning rise	4941 May 08 13:00	4°♄47'23	retrograde	4947 Nov 10 21:28	0°♄37'41
retrograde	4941 Aug 21 09:16	12°♄21'56		4947 Dec 07 13:27	30°♄R♄
opposition	4941 Oct 30 16:13	8°♄58'12 -2°36'03	opposition	4948 Jan 17 20:58	27°♄08'55 -1°00'15
min. Earth dist.	4941 Oct 30 15:27	8°♄58'21 8.68286 AU	min. Earth dist.	4948 Jan 17 19:07	27°♄09'17 8.18778 AU
direct	4942 Jan 07 02:22	5°♄38'22	direct	4948 Mar 24 16:00	23°♄42'36
evening set	4942 Apr 17 05:23	12°♄57'29		4948 Jun 22 02:19	0°♄
	4942 May 03 22:52	15°♄	evening set	4948 Jul 05 11:13	1°♄38'33
conjunction	4942 May 04 03:18	15°♄01'22 -2°08'30	conjunction	4948 Jul 23 09:54	3°♄55'47 -0°34'04
minimum elong	4942 May 04 03:18	15°♄01'22 2°08'31	minimum elong	4948 Jul 23 09:56	3°♄55'48 0°34'04
max. Earth dist.	4942 May 04 03:14	15°♄01'20 10.63699 AU	max. Earth dist.	4948 Jul 23 11:33	3°♄56'19 10.16472 AU
morning rise	4942 May 21 05:12	17°♄06'28	morning rise	4948 Aug 10 11:03	6°♄13'47
retrograde	4942 Sep 03 14:38	24°♄48'08	retrograde	4948 Nov 24 03:22	14°♄22'41
opposition	4942 Nov 12 15:22	21°♄23'14 -2°38'38	opposition	4949 Jan 30 16:47	10°♄53'55 -0°23'28
min. Earth dist.	4942 Nov 12 14:51	21°♄23'20 8.59239 AU	min. Earth dist.	4949 Jan 30 15:27	10°♄54'11 8.14673 AU
direct	4943 Jan 19 15:17	18°♄02'34	direct	4949 Apr 07 13:00	7°♄26'34
evening set	4943 Apr 29 22:40	25°♄27'18		4949 Jul 16 09:12	15°♄
			evening set	4949 Jul 20 00:55	15°♄27'27
conjunction	4943 May 16 23:58	27°♄33'17 -2°07'22	conjunction	4949 Aug 07 02:01	17°♄45'49 -0°03'37
minimum elong	4943 May 16 23:59	27°♄33'18 2°07'23	minimum elong	4949 Aug 07 02:00	17°♄45'49 0°03'37
max. Earth dist.	4943 May 16 23:56	27°♄33'17 10.54454 AU	behind sun begin	4949 Aug 06 18:44	17°♄43'30
morning rise	4943 Jun 03 05:40	29°♄40'38	behind sun end	4949 Aug 07 09:16	17°♄48'08
	4943 Jun 05 21:44	0°♄	max. Earth dist.	4949 Aug 07 03:07	17°♄46'08 10.13392 AU
retrograde	4943 Sep 17 01:25	7°♄29'16	morning rise	4949 Aug 25 04:34	20°♄04'38
opposition	4943 Nov 25 18:37	4°♄03'15 -2°33'38	asc. node	4949 Sep 19 14:32	23°♄07'39
min. Earth dist.	4943 Nov 25 18:11	4°♄03'20 8.49895 AU	retrograde	4949 Dec 08 07:46	28°♄13'02
direct	4944 Feb 01 10:10	0°♄41'34	opposition	4950 Feb 13 13:54	24°♄44'33 0°14'56
evening set	4944 May 11 23:42	8°♄12'26	min. Earth dist.	4950 Feb 13 12:52	24°♄44'45 8.12658 AU
			direct	4950 Apr 21 14:29	21°♄16'23
conjunction	4944 May 29 05:11	10°♄20'48 -1°59'58	evening set	4950 Aug 03 18:23	29°♄21'00
minimum elong	4944 May 29 05:13	10°♄20'49 2°00'00		4950 Aug 08 21:34	0°♄
max. Earth dist.	4944 May 29 05:55	10°♄21'02 10.45154 AU			
morning rise	4944 Jun 15 15:07	12°♄30'33	conjunction	4950 Aug 21 20:32	1°♄39'47 0°27'17
retrograde	4944 Sep 29 18:10	20°♄25'35	minimum elong	4950 Aug 21 20:31	1°♄39'47 0°27'17
opposition	4944 Dec 08 01:43	16°♄58'34 -2°20'51	max. Earth dist.	4950 Aug 21 21:36	1°♄40'07 10.12471 AU
min. Earth dist.	4944 Dec 08 00:56	16°♄58'43 8.40722 AU	morning rise	4950 Sep 08 23:00	3°♄58'40
direct	4945 Feb 13 09:27	13°♄35'45	retrograde	4950 Dec 22 10:27	12°♄04'56
evening set	4945 May 25 08:50	21°♄13'07	opposition	4951 Feb 27 11:16	8°♄36'59 0°52'34
			min. Earth dist.	4951 Feb 27 10:03	8°♄37'15 8.12867 AU
conjunction	4945 Jun 11 18:58	23°♄23'57 -1°46'21	direct	4951 May 05 18:19	5°♄08'16
minimum elong	4945 Jun 11 19:01	23°♄23'58 1°46'22	evening set	4951 Aug 18 13:22	13°♄15'07
max. Earth dist.	4945 Jun 11 20:48	23°♄24'32 10.36262 AU			
morning rise	4945 Jun 29 09:15	25°♄36'08	conjunction	4951 Sep 05 15:13	15°♄33'36 0°56'30
	4945 Aug 07 08:02	0°♄	minimum elong	4951 Sep 05 15:10	15°♄33'35 0°56'31
retrograde	4945 Oct 13 15:24	3°♄36'43	max. Earth dist.	4951 Sep 05 16:27	15°♄34'00 10.13772 AU
opposition	4945 Dec 21 12:47	0°♄08'51 -2°00'28	morning rise	4951 Sep 23 16:03	17°♄51'47
min. Earth dist.	4945 Dec 21 11:10	0°♄09'10 8.32180 AU	retrograde	4952 Jan 05 10:56	25°♄54'25
	4945 Dec 23 09:04	30°♄R♄	opposition	4952 Mar 12 08:02	22°♄27'16 1°27'00
direct	4946 Feb 26 14:48	26°♄44'53	min. Earth dist.	4952 Mar 12 06:34	22°♄27'34 8.15282 AU
	4946 Apr 29 10:28	0°♄	direct	4952 May 18 22:15	18°♄58'17
evening set	4946 Jun 08 01:59	4°♄28'45	evening set	4952 Sep 01 07:33	27°♄05'42
conjunction	4946 Jun 25 16:47	6°♄42'01 -1°26'52	conjunction	4952 Sep 19 07:37	29°♄23'11 1°22'20
minimum elong	4946 Jun 25 16:50	6°♄42'02 1°26'53	minimum elong	4952 Sep 19 07:34	29°♄23'10 1°22'21
max. Earth dist.	4946 Jun 25 19:12	6°♄42'47 10.28237 AU	max. Earth dist.	4952 Sep 19 08:57	29°♄23'36 10.17216 AU
morning rise	4946 Jul 13 11:18	8°♄56'31			

	4952 Sep 24 02:32	0°♌		conjunction	4958 Dec 09 14:37	18°♊07'06	1°53'00
morning rise	4952 Oct 07 05:31	1°♌40'00		minimum elong	4958 Dec 09 14:39	18°♊07'07	1°53'00
retrograde	4953 Jan 18 08:42	9°♌37'41		max. Earth dist.	4958 Dec 09 13:59	18°♊06'54	10.65423 AU
opposition	4953 Mar 26 03:11	6°♌11'34	1°56'09	morning rise	4958 Dec 26 14:25	20°♊11'11	
min. Earth dist.	4953 Mar 26 01:46	6°♌11'51	8.19763 AU	retrograde	4959 Apr 05 16:29	27°♊29'22	
direct	4953 Jun 02 02:07	2°♌42'37		opposition	4959 Jun 12 22:49	24°♊09'56	2°10'17
evening set	4953 Sep 15 22:18	10°♌48'50		min. Earth dist.	4959 Jun 12 23:43	24°♊09'46	8.69830 AU
				direct	4959 Aug 22 09:01	20°♊45'46	
conjunction	4953 Oct 03 19:32	13°♌04'44	1°43'15	evening set	4959 Dec 05 02:02	28°♊17'56	
minimum elong	4953 Oct 03 19:29	13°♌04'43	1°43'16		4959 Dec 19 04:46	0°♊	
max. Earth dist.	4953 Oct 03 20:45	13°♌05'07	10.22614 AU				
morning rise	4953 Oct 21 13:41	15°♌19'42		conjunction	4959 Dec 22 03:18	0°♊21'26	1°37'27
retrograde	4954 Feb 01 00:24	23°♌11'24		minimum elong	4959 Dec 22 03:21	0°♊21'27	1°37'28
opposition	4954 Apr 08 19:54	19°♌46'27	2°18'23	max. Earth dist.	4959 Dec 22 01:44	0°♊20'58	10.73840 AU
min. Earth dist.	4954 Apr 08 19:06	19°♌46'37	8.26055 AU	morning rise	4960 Jan 08 00:50	2°♊23'52	
direct	4954 Jun 16 05:15	16°♌17'50		retrograde	4960 Apr 16 23:22	9°♊37'00	
evening set	4954 Sep 30 07:24	24°♌21'06		opposition	4960 Jun 24 16:15	6°♊18'16	1°48'21
				min. Earth dist.	4960 Jun 24 18:14	6°♊17'53	8.77700 AU
conjunction	4954 Oct 18 01:08	26°♌35'01	1°58'12	direct	4960 Sep 03 07:05	2°♊55'08	
minimum elong	4954 Oct 18 01:06	26°♌35'00	1°58'13	evening set	4960 Dec 16 09:58	10°♊20'46	
max. Earth dist.	4954 Oct 18 01:37	26°♌35'10	10.29651 AU				
morning rise	4954 Nov 04 15:13	28°♌47'50		conjunction	4961 Jan 02 08:54	12°♊22'46	1°17'49
	4954 Nov 14 11:33	0°♌		minimum elong	4961 Jan 02 08:56	12°♊22'47	1°17'50
retrograde	4955 Feb 14 09:55	6°♌32'50		max. Earth dist.	4961 Jan 02 06:02	12°♊21'54	10.81116 AU
opposition	4955 Apr 22 09:25	3°♌09'08	2°32'41	morning rise	4961 Jan 19 04:49	14°♊23'52	
min. Earth dist.	4955 Apr 22 09:29	3°♌09'08	8.33783 AU	retrograde	4961 Apr 29 03:07	21°♊33'17	
	4955 Jun 11 05:17	30°♌		opposition	4961 Jul 07 06:25	18°♊15'00	1°22'03
direct	4955 Jun 30 06:01	29°♌41'07		min. Earth dist.	4961 Jul 07 08:56	18°♊14'32	8.84263 AU
	4955 Jul 19 06:44	0°♌		direct	4961 Sep 16 01:50	14°♊52'53	
evening set	4955 Oct 14 09:23	7°♌39'53		evening set	4961 Dec 28 11:59	22°♊12'47	
conjunction	4955 Oct 31 23:16	9°♌51'35	2°06'35	conjunction	4962 Jan 14 09:05	24°♊13'34	0°55'04
minimum elong	4955 Oct 31 23:15	9°♌51'35	2°06'35	minimum elong	4962 Jan 14 09:07	24°♊13'35	0°55'05
max. Earth dist.	4955 Oct 31 22:42	9°♌51'24	10.37917 AU	max. Earth dist.	4962 Jan 14 05:48	24°♊12'35	10.86963 AU
morning rise	4955 Nov 18 09:16	12°♌02'05		morning rise	4962 Jan 31 03:45	26°♊13'38	
	4955 Dec 13 17:09	15°♌			4962 Mar 07 02:21	0°♊	
retrograde	4956 Feb 27 13:41	19°♌40'01		retrograde	4962 May 11 06:23	3°♊20'40	
opposition	4956 May 04 19:02	16°♌17'34	2°38'40	opposition	4962 Jul 19 17:54	0°♊02'35	0°52'38
min. Earth dist.	4956 May 04 19:27	16°♌17'29	8.42504 AU	min. Earth dist.	4962 Jul 19 19:57	0°♊02'12	8.89307 AU
	4956 May 21 12:52	15°♌			4962 Jul 20 07:42	30°♌	
direct	4956 Jul 13 02:35	12°♌50'20		direct	4962 Sep 28 14:39	26°♊41'22	
	4956 Sep 02 13:48	15°♌			4962 Dec 03 12:51	0°♊	
evening set	4956 Oct 27 02:49	20°♌43'20		evening set	4963 Jan 09 09:24	3°♊56'27	
conjunction	4956 Nov 13 13:01	22°♌52'47	2°08'16	conjunction	4963 Jan 26 05:02	5°♊56'19	0°30'13
minimum elong	4956 Nov 13 13:01	22°♌52'47	2°08'16	minimum elong	4963 Jan 26 05:03	5°♊56'19	0°30'14
max. Earth dist.	4956 Nov 13 11:59	22°♌52'28	10.46961 AU	max. Earth dist.	4963 Jan 26 02:29	5°♊55'33	10.91214 AU
morning rise	4956 Nov 30 19:10	25°♌00'59		morning rise	4963 Feb 11 22:40	7°♊55'38	
	4957 Jan 15 23:09	0°♊			4963 May 17 17:42	15°♊	
retrograde	4957 Mar 11 11:15	2°♊31'53		retrograde	4963 May 23 07:57	15°♊01'35	
	4957 May 07 09:32	30°♌			4963 May 28 23:14	15°♌	
opposition	4957 May 18 00:36	29°♌10'35	2°36'28	opposition	4963 Aug 01 03:49	11°♊43'27	0°21'19
min. Earth dist.	4957 May 18 00:48	29°♌10'32	8.51750 AU	min. Earth dist.	4963 Aug 01 05:33	11°♊43'08	8.92702 AU
direct	4957 Jul 26 18:55	25°♌44'19		direct	4963 Oct 10 22:50	8°♊23'00	
	4957 Oct 09 11:08	0°♊			4964 Jan 16 05:14	15°♊	
evening set	4957 Nov 09 11:05	3°♊30'36		evening set	4964 Jan 21 03:26	15°♊34'15	
conjunction	4957 Nov 26 17:59	5°♊37'54	2°03'33	conjunction	4964 Feb 06 21:44	17°♊33'27	0°04'21
minimum elong	4957 Nov 26 18:00	5°♊37'54	2°03'33	minimum elong	4964 Feb 06 21:45	17°♊33'27	0°04'22
max. Earth dist.	4957 Nov 26 17:09	5°♊37'38	10.56299 AU	behind sun begin	4964 Feb 06 14:52	17°♊31'25	
morning rise	4957 Dec 13 20:43	7°♊43'56		behind sun end	4964 Feb 07 04:37	17°♊35'29	
retrograde	4958 Mar 24 03:47	15°♊08'09		max. Earth dist.	4964 Feb 06 19:29	17°♊32'49	10.93755 AU
opposition	4958 May 31 01:49	11°♊47'51	2°26'42	morning rise	4964 Feb 23 14:45	19°♊32'19	
min. Earth dist.	4958 May 31 01:54	11°♊47'50	8.61024 AU	desc. node	4964 Apr 08 16:19	24°♊11'08	
direct	4958 Aug 09 05:29	8°♊22'37		retrograde	4964 Jun 03 10:24	26°♊38'33	
				opposition	4964 Aug 12 12:48	23°♊20'06	-0°10'40
evening set	4958 Nov 22 10:40	16°♊01'50		min. Earth dist.	4964 Aug 12 14:45	23°♊19'44	8.94363 AU

direct	4964 Oct 22 04:47	20°  00'12	conjunction	4971 Apr 29 02:41	10°  00'24 -2°07'11
evening set	4965 Jan 31 19:38	27°  08'46	minimum elong	4971 Apr 29 02:40	10°  00'24 2°07'12
			max. Earth dist.	4971 Apr 29 03:34	10°  00'40 10.65311 AU
conjunction	4965 Feb 17 12:47	29°  07'35 -0°21'44	morning rise	4971 May 16 03:13	12°  04'52
minimum elong	4965 Feb 17 12:46	29°  07'35 0°21'44		4971 Jun 10 16:56	15° 
max. Earth dist.	4965 Feb 17 09:57	29°  06'44 10.94529 AU	retrograde	4971 Aug 29 05:48	19°  44'20
	4965 Feb 24 20:46	0° 	opposition	4971 Nov 07 11:06	16°  19'20 -2°38'33
morning rise	4965 Mar 06 05:40	1°  06'19	min. Earth dist.	4971 Nov 07 09:51	16°  19'34 8.61155 AU
retrograde	4965 Jun 15 12:14	8°  14'05		4971 Nov 25 01:20	15°  18
opposition	4965 Aug 24 21:16	4°  55'04 -0°42'09	direct	4972 Jan 14 16:27	12°  58'30
min. Earth dist.	4965 Aug 24 23:29	4°  54'39 8.94258 AU		4972 Mar 03 10:32	15° 
direct	4965 Nov 03 07:41	1°  35'33	evening set	4972 Apr 23 20:27	20°  21'31
evening set	4966 Feb 12 11:09	8°  42'40			
			conjunction	4972 May 10 20:26	22°  26'49 -2°08'38
conjunction	4966 Mar 01 03:36	10°  41'23 -0°46'51	minimum elong	4972 May 10 20:26	22°  26'49 2°08'39
minimum elong	4966 Mar 01 03:34	10°  41'22 0°46'51	max. Earth dist.	4972 May 10 22:30	22°  27'27 10.56623 AU
max. Earth dist.	4966 Mar 01 01:07	10°  40'38 10.93521 AU	morning rise	4972 May 28 00:22	24°  33'22
morning rise	4966 Mar 17 20:35	12°  40'16		4972 Jul 18 18:32	0° 
retrograde	4966 Jun 27 16:04	19°  50'54	retrograde	4972 Sep 10 15:51	2°  19'50
opposition	4966 Sep 06 06:10	16°  31'07 -1°11'59		4972 Nov 05 03:22	30°  18
min. Earth dist.	4966 Sep 06 07:39	16°  30'50 8.92389 AU	opposition	4972 Nov 19 12:54	28°  53'47 -2°36'48
direct	4966 Nov 15 11:20	13°  11'48	min. Earth dist.	4972 Nov 19 10:43	28°  54'13 8.52306 AU
evening set	4967 Feb 24 03:21	20°  18'42	direct	4973 Jan 26 08:37	25°  32'12
				4973 Apr 10 16:37	0° 
conjunction	4967 Mar 12 19:32	22°  17'39 -1°10'07	evening set	4973 May 06 18:39	3°  10'03
minimum elong	4967 Mar 12 19:30	22°  17'38 1°10'07			
max. Earth dist.	4967 Mar 12 18:21	22°  17'17 10.90765 AU	conjunction	4973 May 23 22:22	5°  10'35 -2°03'54
morning rise	4967 Mar 29 12:50	24°  16'57	minimum elong	4973 May 23 22:24	5°  10'35 2°03'55
	4967 May 27 07:18	0° 	max. Earth dist.	4973 May 24 00:39	5°  10'9'17 10.47732 AU
retrograde	4967 Jul 10 01:14	1°  31'41	morning rise	4973 Jun 10 06:20	7°  11'27
	4967 Aug 23 23:21	30°  18	retrograde	4973 Sep 24 08:10	15°  10'29
opposition	4967 Sep 18 16:20	28°  10'59 -1°39'03	opposition	4973 Dec 02 18:47	11°  12'35 -2°27'15
min. Earth dist.	4967 Sep 18 16:40	28°  10'55 8.88824 AU	min. Earth dist.	4973 Dec 02 16:25	11°  12'44'04 8.43461 AU
direct	4967 Nov 27 13:31	24°  51'43	direct	4974 Feb 08 04:23	8°  12'07
	4968 Feb 18 09:14	0° 	evening set	4974 May 20 00:48	15°  15'16
evening set	4968 Mar 06 21:46	1°  39'37			
			conjunction	4974 Jun 06 08:48	18°  12'06'10 -1°52'51
conjunction	4968 Mar 23 14:08	3°  39'07 -1°30'39	minimum elong	4974 Jun 06 08:51	18°  12'06'11 1°52'52
minimum elong	4968 Mar 23 14:05	3°  39'07 1°30'38	max. Earth dist.	4974 Jun 06 11:00	18°  12'06'52 10.39091 AU
max. Earth dist.	4968 Mar 23 13:45	3°  39'01 10.86371 AU	morning rise	4974 Jun 23 21:14	20°  11'27
morning rise	4968 Apr 09 08:16	5°  39'13	retrograde	4974 Oct 08 03:56	28°  11'20
retrograde	4968 Jul 21 12:58	13°  39'04	opposition	4974 Dec 16 04:57	24°  11'48'46 -2°09'57
opposition	4968 Sep 30 04:28	9°  39'20 -2°02'15	min. Earth dist.	4974 Dec 16 02:43	24°  11'49'12 8.35089 AU
min. Earth dist.	4968 Sep 30 04:19	9°  39'22 8.83700 AU	direct	4975 Feb 21 07:58	21°  11'25'19
direct	4968 Dec 08 15:20	6°  39'57	evening set	4975 Jun 02 15:02	29°  11'06'54
evening set	4969 Mar 18 19:34	13°  39'48'05		4975 Jun 09 17:04	0° 
conjunction	4969 Apr 04 12:35	15°  39'48'29 -1°47'32	conjunction	4975 Jun 20 03:42	1°  39'19'14 -1°35'43
minimum elong	4969 Apr 04 12:33	15°  39'48'29 1°47'32	minimum elong	4975 Jun 20 03:45	1°  39'19'15 1°35'43
max. Earth dist.	4969 Apr 04 11:56	15°  39'48'17 10.80507 AU	max. Earth dist.	4975 Jun 20 06:08	1°  39'20'00 10.31160 AU
morning rise	4969 Apr 21 08:19	17°  39'49'43	morning rise	4975 Jul 07 20:37	3°  39'32'52
retrograde	4969 Aug 03 05:18	25°  39'15'33	retrograde	4975 Oct 22 03:44	11°  39'36'30
opposition	4969 Oct 12 19:18	21°  39'52'45 -2°20'31	opposition	4975 Dec 29 18:49	8°  39'08'27 -1°45'22
min. Earth dist.	4969 Oct 12 19:19	21°  39'52'45 8.77200 AU	min. Earth dist.	4975 Dec 29 16:40	8°  39'08'53 8.27644 AU
direct	4969 Dec 20 20:31	18°  39'33'02	direct	4976 Mar 05 17:26	4°  39'44'01
evening set	4970 Mar 30 21:56	25°  39'46'31	evening set	4976 Jun 15 13:29	12°  39'31'53
conjunction	4970 Apr 16 16:22	27°  39'48'12 -1°59'57	conjunction	4976 Jul 03 06:46	14°  39'46'29 -1°13'09
minimum elong	4970 Apr 16 16:21	27°  39'48'12 1°59'58	minimum elong	4976 Jul 03 06:49	14°  39'46'30 1°13'09
max. Earth dist.	4970 Apr 16 15:59	27°  39'48'05 10.73389 AU	max. Earth dist.	4976 Jul 03 09:52	14°  39'47'29 10.24365 AU
morning rise	4970 May 03 14:13	29°  39'50'54	morning rise	4976 Jul 21 03:41	17°  39'50'21'14
	4970 May 04 20:51	0° 	retrograde	4976 Nov 04 07:10	25°  39'50'09'10
retrograde	4970 Aug 16 02:49	7°  39'23'21	opposition	4977 Jan 11 11:39	21°  39'50'40'51 -1°14'33
opposition	4970 Oct 25 13:19	3°  39'59'27 -2°32'55	min. Earth dist.	4977 Jan 11 09:09	21°  39'50'41'22 8.21536 AU
min. Earth dist.	4970 Oct 25 13:04	3°  39'59'30 8.69577 AU	direct	4977 Mar 19 07:35	18°  39'50'15'25
direct	4971 Jan 02 04:10	0°  39'39'15	evening set	4977 Jun 29 19:18	26°  39'50'09'08
evening set	4971 Apr 12 05:52	7°  39'57'06			

conjunction	4977 Jul 17 16:37	28°  25'38	-0°46'13	min. Earth dist.	4983 Apr 03 12:41	14°  24'09	8.23864 AU
minimum elong	4977 Jul 17 16:39	28°  25'39	0°46'13	direct	4983 Jun 10 18:29	10°  55'41	
max. Earth dist.	4977 Jul 17 20:13	28°  26'48	10.19077 AU	evening set	4983 Sep 24 17:45	19°  00'21	
	4977 Jul 30 00:09	0°  0					
morning rise	4977 Aug 04 16:37	0°  43'01		conjunction	4983 Oct 12 12:58	21°  15'05	1°52'43
retrograde	4977 Nov 18 13:11	8°  51'38		minimum elong	4983 Oct 12 12:55	21°  15'04	1°52'44
opposition	4978 Jan 25 07:02	5°  23'18	-0°39'07	max. Earth dist.	4983 Oct 12 12:13	21°  14'51	10.26997 AU
min. Earth dist.	4978 Jan 25 04:11	5°  23'53	8.17095 AU	morning rise	4983 Oct 30 04:53	23°  28'49	
direct	4978 Apr 02 02:35	1°  56'56			4984 Jan 02 12:21	0°  0	
evening set	4978 Jul 14 07:04	9°  55'40		retrograde	4984 Feb 09 05:17	1°  16'42	
					4984 Mar 18 13:52	30°  0	
conjunction	4978 Aug 01 07:21	12°  13'31	-0°16'26	opposition	4984 Apr 16 03:35	27°  52'40	2°27'42
minimum elong	4978 Aug 01 07:22	12°  13'31	0°16'26	min. Earth dist.	4984 Apr 16 03:22	27°  52'42	8.30698 AU
max. Earth dist.	4978 Aug 01 10:55	12°  14'39	10.15567 AU	direct	4984 Jun 23 20:29	24°  24'31	
morning rise	4978 Aug 19 09:17	14°  31'56			4984 Sep 17 14:46	0°  0	
	4978 Aug 23 03:02	15°  0		evening set	4984 Oct 07 22:50	2°  12'51'17	
retrograde	4978 Dec 02 18:53	22°  40'34					
opposition	4979 Feb 08 03:57	19°  12'26	-0°01'07	conjunction	4984 Oct 25 14:28	4°  13'56	2°03'53
min. Earth dist.	4979 Feb 08 01:18	19°  12'58	8.14523 AU	minimum elong	4984 Oct 25 14:26	4°  13'56	2°03'54
asc. node	4979 Feb 19 01:14	18°  19'36		max. Earth dist.	4984 Oct 25 14:06	4°  13'49	10.34461 AU
direct	4979 Apr 16 01:57	15°  45'12		morning rise	4984 Nov 12 02:06	6°  14'49'23	
evening set	4979 Jul 28 23:28	23°  47'59		retrograde	4985 Feb 21 12:34	14°  13'30'22	
				opposition	4985 Apr 29 14:52	11°  13'07'22	2°37'11
conjunction	4979 Aug 16 01:22	26°  06'32	0°14'32	min. Earth dist.	4985 Apr 29 14:56	11°  13'07'21	8.38720 AU
minimum elong	4979 Aug 16 01:22	26°  06'32	0°14'32	direct	4985 Jul 07 17:46	7°  13'39'45	
behind sun begin	4979 Aug 15 22:25	26°  05'36			4985 Oct 16 24:00	15°  0	
behind sun end	4979 Aug 16 04:18	26°  07'28		evening set	4985 Oct 21 19:47	15°  13'35'13	
max. Earth dist.	4979 Aug 16 03:55	26°  07'21	10.13956 AU				
morning rise	4979 Sep 03 03:50	28°  12'51'18		conjunction	4985 Nov 08 07:42	17°  13'45'39	2°08'22
	4979 Sep 15 22:55	0°  0		minimum elong	4985 Nov 08 07:42	17°  13'45'39	2°08'23
retrograde	4979 Dec 16 23:30	6°  13'32'21		max. Earth dist.	4985 Nov 08 07:11	17°  13'45'29	10.42909 AU
opposition	4980 Feb 22 01:21	3°  13'04'41	0°37'06	morning rise	4985 Nov 25 15:19	19°  13'54'48	
min. Earth dist.	4980 Feb 21 23:45	3°  13'05'01	8.13885 AU	retrograde	4986 Mar 06 13:15	27°  13'28'38	
	4980 Apr 08 14:11	30°  0		opposition	4986 May 12 21:55	24°  13'06'41	2°38'22
direct	4980 Apr 29 03:52	29°  13'36'47		min. Earth dist.	4986 May 12 22:44	24°  13'06'31	8.47489 AU
	4980 May 19 17:34	0°  0		direct	4986 Jul 21 11:02	20°  13'39'45	
evening set	4980 Aug 11 18:21	7°  13'42'29		evening set	4986 Nov 04 07:49	28°  13'28'54	
					4986 Nov 16 16:24	0°  0	
conjunction	4980 Aug 29 20:22	10°  13'01'03	0°44'37	conjunction	4986 Nov 21 16:10	0°  13'37'07	2°06'17
minimum elong	4980 Aug 29 20:20	10°  13'01'02	0°44'37	minimum elong	4986 Nov 21 16:11	0°  13'37'08	2°06'17
max. Earth dist.	4980 Aug 29 21:19	10°  13'01'21	10.14286 AU	max. Earth dist.	4986 Nov 21 14:53	0°  13'36'43	10.51881 AU
morning rise	4980 Sep 16 21:54	12°  13'19'27		morning rise	4986 Dec 08 20:16	2°  13'44'06	
retrograde	4980 Dec 30 02:03	20°  13'23'32		retrograde	4987 Mar 19 06:18	10°  13'11'00	
opposition	4981 Mar 06 22:41	16°  13'56'37	1°13'07	opposition	4987 May 26 00:44	6°  13'50'00	2°31'42
min. Earth dist.	4981 Mar 06 22:10	16°  13'56'43	8.15238 AU	min. Earth dist.	4987 May 26 02:16	6°  13'49'42	8.56536 AU
direct	4981 May 13 07:37	13°  13'28'16		direct	4987 Aug 04 00:42	3°  13'23'54	
evening set	4981 Aug 26 13:13	21°  13'35'24		evening set	4987 Nov 17 10:47	11°  13'13'06'08	
conjunction	4981 Sep 13 13:56	23°  13'53'16	1°12'03	conjunction	4987 Dec 04 15:52	13°  13'12'16	1°58'06
minimum elong	4981 Sep 13 13:53	23°  13'53'15	1°12'04	minimum elong	4987 Dec 04 15:53	13°  13'12'17	1°58'06
max. Earth dist.	4981 Sep 13 13:49	23°  13'53'13	10.16625 AU	max. Earth dist.	4987 Dec 04 13:44	13°  13'11'37	10.60912 AU
morning rise	4981 Oct 01 13:11	26°  13'10'38		morning rise	4987 Dec 21 16:59	15°  13'17'12	
	4981 Nov 03 03:32	0°  0		retrograde	4988 Mar 30 19:11	22°  13'17'47	
retrograde	4982 Jan 13 00:53	4°  13'10'26		opposition	4988 Jun 06 23:11	19°  13'17'36	2°17'58
opposition	4982 Mar 20 18:50	0°  13'44'22	1°44'42	min. Earth dist.	4988 Jun 07 00:36	19°  13'17'20	8.65414 AU
min. Earth dist.	4982 Mar 20 18:48	0°  13'44'23	8.18610 AU	direct	4988 Aug 16 07:51	15°  13'17'52'30	
	4982 Mar 29 22:15	30°  0		evening set	4988 Nov 29 05:03	23°  13'17'27'36	
direct	4982 May 27 13:09	27°  13'15'50					
	4982 Jul 23 14:44	0°  0		conjunction	4988 Dec 16 07:23	25°  13'17'31'52	1°44'34
evening set	4982 Sep 10 05:49	5°  13'22'39		minimum elong	4988 Dec 16 07:25	25°  13'17'31'53	1°44'34
				max. Earth dist.	4988 Dec 16 05:23	25°  13'17'31'16	10.69581 AU
conjunction	4982 Sep 28 04:11	7°  13'39'11	1°35'11	morning rise	4989 Jan 02 06:01	27°  13'17'35'01	
minimum elong	4982 Sep 28 04:08	7°  13'39'10	1°35'11		4989 Jan 23 08:10	0°  0	
max. Earth dist.	4982 Sep 28 03:30	7°  13'38'58	10.20935 AU	retrograde	4989 Apr 12 03:54	4°  13'38'50'06	
morning rise	4982 Oct 16 00:07	9°  13'54'57		opposition	4989 Jun 19 17:36	1°  13'38'30'37	1°58'13
retrograde	4983 Jan 26 17:19	17°  13'49'14		min. Earth dist.	4989 Jun 19 18:28	1°  13'38'30'27	8.73724 AU
opposition	4983 Apr 03 12:39	14°  13'24'09	2°09'59				

	4989 Jul 10 06:02	30° \mathbb{R} 7		max. Earth dist.	4995 Feb 24 11:41	5° \mathbb{H} 56'09	10.96090 AU
direct	4989 Aug 29 08:19	28° \mathbb{H} 06'33		morning rise	4995 Mar 13 04:43	7° \mathbb{H} 54'46	
	4989 Oct 17 03:36	0° \mathbb{Z}		retrograde	4995 Jun 22 18:19	15° \mathbb{H} 02'53	
evening set	4989 Dec 11 15:26	5° \mathbb{Z} 34'47		opposition	4995 Sep 01 06:04	11° \mathbb{H} 43'48	-0°59'12
				min. Earth dist.	4995 Sep 01 06:15	11° \mathbb{H} 43'46	8.95593 AU
conjunction	4989 Dec 28 15:31	7° \mathbb{Z} 37'25	1°26'33	direct	4995 Nov 10 13:57	8° \mathbb{H} 24'50	
minimum elong	4989 Dec 28 15:33	7° \mathbb{Z} 37'26	1°26'33	evening set	4996 Feb 19 10:25	15° \mathbb{H} 30'34	
max. Earth dist.	4989 Dec 28 14:14	7° \mathbb{Z} 37'02	10.77497 AU				
morning rise	4990 Jan 14 12:07	9° \mathbb{Z} 39'04		conjunction	4996 Mar 07 02:29	17° \mathbb{H} 29'04	-1°00'11
retrograde	4990 Apr 24 09:19	16° \mathbb{Z} 49'43		minimum elong	4996 Mar 07 02:27	17° \mathbb{H} 29'03	1°00'11
opposition	4990 Jul 02 08:28	13° \mathbb{Z} 30'47	1°33'38	max. Earth dist.	4996 Mar 07 01:39	17° \mathbb{H} 28'49	10.94606 AU
min. Earth dist.	4990 Jul 02 09:13	13° \mathbb{Z} 30'38	8.81099 AU	morning rise	4996 Mar 23 19:28	19° \mathbb{H} 27'50	
direct	4990 Sep 11 03:42	10° \mathbb{Z} 07'47		retrograde	4996 Jul 04 00:13	26° \mathbb{H} 39'24	
evening set	4990 Dec 23 19:21	17° \mathbb{Z} 29'44		opposition	4996 Sep 12 14:56	23° \mathbb{H} 19'40	-1°27'28
				min. Earth dist.	4996 Sep 12 15:24	23° \mathbb{H} 19'35	8.93246 AU
conjunction	4991 Jan 09 17:23	19° \mathbb{Z} 30'59	1°05'01	direct	4996 Nov 21 14:46	20° \mathbb{H} 00'58	
minimum elong	4991 Jan 09 17:25	19° \mathbb{Z} 31'00	1°05'02	evening set	4997 Mar 02 03:05	27° \mathbb{H} 07'06	
max. Earth dist.	4991 Jan 09 16:14	19° \mathbb{Z} 30'38	10.84313 AU				
morning rise	4991 Jan 26 12:26	21° \mathbb{Z} 31'24		conjunction	4997 Mar 18 19:02	29° \mathbb{H} 05'57	-1°21'56
retrograde	4991 May 06 12:20	28° \mathbb{Z} 38'50		minimum elong	4997 Mar 18 19:00	29° \mathbb{H} 05'57	1°21'55
opposition	4991 Jul 14 20:28	25° \mathbb{Z} 20'18	1°05'26	max. Earth dist.	4997 Mar 18 18:10	29° \mathbb{H} 05'42	10.91363 AU
min. Earth dist.	4991 Jul 14 21:48	25° \mathbb{Z} 20'03	8.87238 AU		4997 Mar 26 07:49	0° \mathbb{Y}	
direct	4991 Sep 23 16:51	21° \mathbb{Z} 58'21		morning rise	4997 Apr 04 12:45	1° \mathbb{Y} 05'20	
evening set	4992 Jan 04 17:58	29° \mathbb{Z} 14'50		retrograde	4997 Jul 16 08:01	8° \mathbb{Y} 21'25	
	4992 Jan 11 03:04	0° \mathbb{A}		opposition	4997 Sep 25 01:10	5° \mathbb{Y} 00'52	-1°52'22
				min. Earth dist.	4997 Sep 25 01:29	5° \mathbb{Y} 00'48	8.89184 AU
conjunction	4992 Jan 21 14:08	1° \mathbb{A} 14'58	0°40'59	direct	4997 Dec 03 17:00	1° \mathbb{Y} 42'13	
minimum elong	4992 Jan 21 14:10	1° \mathbb{A} 14'58	0°41'00	evening set	4998 Mar 13 22:29	8° \mathbb{Y} 49'58	
max. Earth dist.	4992 Jan 21 12:12	1° \mathbb{A} 14'23	10.89762 AU				
morning rise	4992 Feb 07 08:12	3° \mathbb{A} 14'29		conjunction	4998 Mar 30 15:00	10° \mathbb{Y} 49'32	-1°40'27
retrograde	4992 May 17 12:10	10° \mathbb{A} 20'02		minimum elong	4998 Mar 30 14:58	10° \mathbb{Y} 49'32	1°40'26
opposition	4992 Jul 26 06:20	7° \mathbb{A} 01'41	0°34'50	max. Earth dist.	4998 Mar 30 15:08	10° \mathbb{Y} 49'35	10.86451 AU
min. Earth dist.	4992 Jul 26 07:51	7° \mathbb{A} 01'24	8.91908 AU	morning rise	4998 Apr 16 09:46	12° \mathbb{Y} 49'49	
direct	4992 Oct 05 02:16	3° \mathbb{A} 40'41		retrograde	4998 Jul 28 22:15	20° \mathbb{Y} 11'27	
evening set	4993 Jan 15 12:25	10° \mathbb{A} 52'43		opposition	4998 Oct 07 13:48	16° \mathbb{Y} 49'54	-2°12'49
				min. Earth dist.	4998 Oct 07 13:16	16° \mathbb{Y} 50'00	8.83510 AU
conjunction	4993 Feb 01 07:09	12° \mathbb{A} 52'00	0°15'29	direct	4998 Dec 15 21:02	13° \mathbb{Y} 31'06	
minimum elong	4993 Feb 01 07:09	12° \mathbb{A} 52'00	0°15'30	evening set	4999 Mar 25 21:47	20° \mathbb{Y} 41'34	
behind sun begin	4993 Feb 01 04:59	12° \mathbb{A} 51'22					
behind sun end	4993 Feb 01 09:18	12° \mathbb{A} 52'38		conjunction	4999 Apr 11 15:25	22° \mathbb{Y} 42'14	-1°54'53
max. Earth dist.	4993 Feb 01 05:15	12° \mathbb{A} 51'26	10.93632 AU	minimum elong	4999 Apr 11 15:24	22° \mathbb{Y} 42'14	1°54'53
morning rise	4993 Feb 18 00:31	14° \mathbb{A} 50'53		max. Earth dist.	4999 Apr 11 15:57	22° \mathbb{Y} 42'24	10.79998 AU
	4993 Feb 19 07:51	15° \mathbb{A}		morning rise	4999 Apr 28 11:53	24° \mathbb{Y} 43'48	
retrograde	4993 May 29 13:10	21° \mathbb{A} 55'57			4999 Jun 18 21:59	0° \mathbb{B}	
opposition	4993 Aug 07 14:39	18° \mathbb{A} 37'33	0°03'05	retrograde	4999 Aug 10 18:04	2° \mathbb{B} 11'45	
min. Earth dist.	4993 Aug 07 15:33	18° \mathbb{A} 37'23	8.94921 AU		4999 Oct 04 07:36	30° \mathbb{R} \mathbb{Y}	
desc. node	4993 Sep 13 02:35	16° \mathbb{A} 12'16		opposition	4999 Oct 20 05:31	28° \mathbb{Y} 49'07	-2°27'52
direct	4993 Oct 17 09:51	15° \mathbb{A} 17'23		min. Earth dist.	4999 Oct 20 04:47	28° \mathbb{Y} 49'15	8.76375 AU
evening set	4994 Jan 27 04:26	22° \mathbb{A} 26'06		direct	4999 Dec 28 00:58	25° \mathbb{Y} 29'56	
					5000 Mar 13 23:21	0° \mathbb{B}	
conjunction	4994 Feb 12 22:03	24° \mathbb{A} 24'50	-0°10'35	evening set	5000 Apr 07 02:22	2° \mathbb{B} 44'18	
minimum elong	4994 Feb 12 22:03	24° \mathbb{A} 24'50	0°10'35				
behind sun begin	4994 Feb 12 16:35	24° \mathbb{A} 23'14		conjunction	5000 Apr 23 21:49	4° \mathbb{B} 46'25	-2°04'28
behind sun end	4994 Feb 13 03:32	24° \mathbb{A} 26'27		minimum elong	5000 Apr 23 21:48	4° \mathbb{B} 46'25	2°04'29
max. Earth dist.	4994 Feb 12 21:06	24° \mathbb{A} 24'33	10.95767 AU	max. Earth dist.	5000 Apr 23 21:42	4° \mathbb{B} 46'23	10.72205 AU
morning rise	4994 Mar 01 14:53	26° \mathbb{A} 23'22		morning rise	5000 May 10 20:49	6° \mathbb{B} 49'39	
	4994 Apr 04 04:35	0° \mathbb{H}		retrograde	5000 Aug 23 17:23	14° \mathbb{B} 24'29	
retrograde	4994 Jun 10 14:58	3° \mathbb{H} 29'18		opposition	5000 Nov 02 00:40	11° \mathbb{B} 00'44	-2°36'36
opposition	4994 Aug 19 22:08	0° \mathbb{H} 10'39	-0°28'38	min. Earth dist.	5000 Nov 02 00:24	11° \mathbb{B} 00'47	8.68039 AU
min. Earth dist.	4994 Aug 19 22:17	0° \mathbb{H} 10'38	8.96160 AU	direct	5001 Jan 09 10:01	7° \mathbb{B} 40'54	
	4994 Aug 22 07:36	30° \mathbb{R} \mathbb{A}		evening set	5001 Apr 19 13:08	15° \mathbb{B} 00'15	
direct	4994 Oct 29 12:31	26° \mathbb{A} 51'11			5001 Apr 19 12:19	15° \mathbb{B}	
	4995 Jan 01 10:28	0° \mathbb{H}					
evening set	4995 Feb 07 19:21	3° \mathbb{H} 57'48		conjunction	5001 May 06 11:15	17° \mathbb{B} 04'13	-2°08'34
				minimum elong	5001 May 06 11:15	17° \mathbb{B} 04'13	2°08'36
conjunction	4995 Feb 24 12:05	5° \mathbb{H} 56'16	-0°36'05	max. Earth dist.	5001 May 06 10:36	17° \mathbb{B} 04'01	10.63417 AU
minimum elong	4995 Feb 24 12:04	5° \mathbb{H} 56'16	0°36'06	morning rise	5001 May 23 13:31	19° \mathbb{B} 09'27	

retrograde	5001 Sep 05 23:09	26°♄51'26			5007 Oct 16 15:27	15°♄	
opposition	5001 Nov 14 23:53	23°♄26'33 -2°38'16		retrograde	5007 Nov 27 13:04	16°♄32'08	
min. Earth dist.	5001 Nov 14 24:00	23°♄26'31 8.58915 AU			5008 Jan 08 21:02	15°♄	
direct	5002 Jan 21 23:49	20°♄05'53		opposition	5008 Feb 03 02:52	13°♄03'25 -0°18'58	
evening set	5002 May 02 06:51	27°♄30'54		min. Earth dist.	5008 Feb 03 01:50	13°♄03'37 8.14371 AU	
				direct	5008 Apr 10 00:35	9°♄36'01	
conjunction	5002 May 19 08:31	29°♄37'03 -2°06'41			5008 Jun 30 21:00	15°♄	
minimum elong	5002 May 19 08:32	29°♄37'03 2°06'43		evening set	5008 Jul 22 12:41	17°♄37'20	
max. Earth dist.	5002 May 19 08:39	29°♄37'05 10.54088 AU		asc. node	5008 Aug 08 09:40	19°♄46'40	
	5002 May 22 10:31	0°♄					
morning rise	5002 Jun 05 14:30	1°♄44'32		conjunction	5008 Aug 09 13:58	19°♄55'46 0°00'06	
retrograde	5002 Sep 19 10:58	9°♄33'31		minimum elong	5008 Aug 09 13:58	19°♄55'46 0°00'07	
opposition	5002 Nov 28 03:13	6°♄07'31 -2°32'21		behind sun begin	5008 Aug 09 06:52	19°♄53'31	
min. Earth dist.	5002 Nov 28 02:47	6°♄07'36 8.49489 AU		behind sun end	5008 Aug 09 21:05	19°♄58'02	
direct	5003 Feb 03 17:57	2°♄45'51		max. Earth dist.	5008 Aug 09 15:13	19°♄56'07 10.13153 AU	
evening set	5003 May 15 08:22	10°♄17'06		morning rise	5008 Aug 27 16:34	22°♄14'37	
					5008 Nov 20 06:47	0°♄	
conjunction	5003 Jun 01 14:17	12°♄25'38 -1°58'33		retrograde	5008 Dec 10 17:31	0°♄23'00	
minimum elong	5003 Jun 01 14:19	12°♄25'39 1°58'35			5008 Dec 31 06:52	30°♄	
max. Earth dist.	5003 Jun 01 15:30	12°♄26'01 10.44715 AU		opposition	5009 Feb 16 00:03	26°♄54'32 0°19'27	
morning rise	5003 Jun 19 00:27	14°♄35'32		min. Earth dist.	5009 Feb 15 22:46	26°♄54'48 8.12485 AU	
retrograde	5003 Oct 03 03:33	22°♄30'58		direct	5009 Apr 24 01:30	23°♄26'20	
opposition	5003 Dec 11 10:36	19°♄03'56 -2°18'40			5009 Jul 24 23:14	0°♄	
min. Earth dist.	5003 Dec 11 09:23	19°♄04'11 8.40255 AU		evening set	5009 Aug 06 06:31	1°♄31'16	
direct	5004 Feb 16 18:19	15°♄41'09					
evening set	5004 May 27 18:06	23°♄18'56		conjunction	5009 Aug 24 08:45	3°♄50'05 0°30'50	
				minimum elong	5009 Aug 24 08:44	3°♄50'04 0°30'50	
conjunction	5004 Jun 14 04:39	25°♄29'59 -1°44'14		max. Earth dist.	5009 Aug 24 10:25	3°♄50'37 10.12365 AU	
minimum elong	5004 Jun 14 04:42	25°♄30'00 1°44'15		morning rise	5009 Sep 11 11:01	6°♄08'55	
max. Earth dist.	5004 Jun 14 06:29	25°♄30'33 10.35781 AU		retrograde	5009 Dec 24 21:26	14°♄15'04	
morning rise	5004 Jul 01 19:16	27°♄42'20		opposition	5010 Mar 01 21:35	10°♄47'08 0°56'48	
	5004 Jul 21 00:36	0°♄		min. Earth dist.	5010 Mar 01 19:52	10°♄47'29 8.12834 AU	
retrograde	5004 Oct 16 01:48	5°♄43'15		direct	5010 May 08 04:22	7°♄18'22	
opposition	5004 Dec 23 21:59	2°♄15'25 -1°57'27		evening set	5010 Aug 21 01:32	15°♄25'23	
min. Earth dist.	5004 Dec 23 20:15	2°♄15'45 8.31689 AU					
	5005 Jan 23 18:49	30°♄		conjunction	5010 Sep 08 03:17	17°♄43'49 0°59'43	
direct	5005 Feb 28 23:17	28°♄51'25		minimum elong	5010 Sep 08 03:14	17°♄43'49 0°59'43	
	5005 Apr 05 14:27	0°♄		max. Earth dist.	5010 Sep 08 05:05	17°♄44'24 10.13808 AU	
evening set	5005 Jun 10 12:04	6°♄35'47		morning rise	5010 Sep 26 03:46	20°♄01'55	
				retrograde	5011 Jan 07 22:43	28°♄04'19	
conjunction	5005 Jun 28 03:11	8°♄49'15 -1°24'08		opposition	5011 Mar 15 18:25	24°♄37'10 1°30'42	
minimum elong	5005 Jun 28 03:13	8°♄49'16 1°24'08		min. Earth dist.	5011 Mar 15 16:52	24°♄37'29 8.15394 AU	
max. Earth dist.	5005 Jun 28 04:47	8°♄49'46 10.27753 AU		direct	5011 May 22 08:35	21°♄08'08	
morning rise	5005 Jul 15 22:05	11°♄03'56		evening set	5011 Sep 04 19:39	29°♄15'35	
retrograde	5005 Oct 30 04:07	19°♄09'05			5011 Sep 10 16:23	0°♄	
opposition	5006 Jan 06 12:54	15°♄40'40 -1°29'27					
min. Earth dist.	5006 Jan 06 11:21	15°♄40'59 8.24252 AU		conjunction	5011 Sep 22 19:28	1°♄32'58 1°25'02	
direct	5006 Mar 14 09:29	12°♄15'28		minimum elong	5011 Sep 22 19:25	1°♄32'57 1°25'02	
evening set	5006 Jun 24 13:49	20°♄06'10		max. Earth dist.	5011 Sep 22 20:47	1°♄33'23 10.17395 AU	
				morning rise	5011 Oct 10 17:00	3°♄49'40	
conjunction	5006 Jul 12 09:10	22°♄21'47 -0°59'08		retrograde	5012 Jan 21 18:56	11°♄46'59	
minimum elong	5006 Jul 12 09:12	22°♄21'48 0°59'09		opposition	5012 Mar 28 13:27	8°♄20'53 1°59'06	
max. Earth dist.	5006 Jul 12 10:24	22°♄22'11 10.21075 AU		min. Earth dist.	5012 Mar 28 12:32	8°♄21'04 8.20014 AU	
morning rise	5006 Jul 30 07:50	24°♄38'27		direct	5012 Jun 04 13:26	4°♄51'52	
	5006 Sep 16 17:36	0°♄		evening set	5012 Sep 18 10:09	12°♄58'00	
retrograde	5006 Nov 13 08:48	2°♄46'20					
	5007 Jan 11 13:08	30°♄		conjunction	5012 Oct 06 06:59	15°♄13'45 1°45'17	
opposition	5007 Jan 20 06:49	29°♄17'37 -0°56'01		minimum elong	5012 Oct 06 06:56	15°♄13'44 1°45'17	
min. Earth dist.	5007 Jan 20 05:40	29°♄17'51 8.18370 AU		max. Earth dist.	5012 Oct 06 07:33	15°♄13'55 10.22922 AU	
direct	5007 Mar 28 02:01	25°♄51'15		morning rise	5012 Oct 24 00:49	17°♄28'34	
	5007 Jun 06 13:39	0°♄		retrograde	5013 Feb 03 09:48	25°♄19'49	
evening set	5007 Jul 08 22:25	3°♄47'43		opposition	5013 Apr 11 06:04	21°♄54'55 2°20'25	
				min. Earth dist.	5013 Apr 11 05:50	21°♄54'58 8.26426 AU	
conjunction	5007 Jul 26 21:20	6°♄05'03 -0°30'31		direct	5013 Jun 18 16:32	18°♄26'15	
minimum elong	5007 Jul 26 21:21	6°♄05'04 0°30'31		evening set	5013 Oct 02 18:39	26°♄29'17	
max. Earth dist.	5007 Jul 26 22:29	6°♄05'25 10.16117 AU					
morning rise	5007 Aug 13 22:43	8°♄23'10		conjunction	5013 Oct 20 11:56	28°♄43'02 1°59'27	

minimum elong	5013 Oct 20 11:54	28° 2 43'01	1°59'28	conjunction	5020 Jan 05 16:02	14° 3 24'16	1°15'03
max. Earth dist.	5013 Oct 20 11:40	28° 2 42'56	10.30070 AU	minimum elong	5020 Jan 05 16:04	14° 3 24'16	1°15'04
	5013 Oct 30 15:34	0° 1		max. Earth dist.	5020 Jan 05 13:31	14° 3 23'30	10.81928 AU
morning rise	5013 Nov 07 01:44	0° 1 55'40		morning rise	5020 Jan 22 11:53	16° 3 25'13	
retrograde	5014 Feb 16 19:04	8° 1 40'12		retrograde	5020 May 01 10:38	23° 3 34'13	
opposition	5014 Apr 24 19:18	5° 1 16'32	2°33'44	opposition	5020 Jul 09 14:18	20° 3 16'00	1°18'27
min. Earth dist.	5014 Apr 24 19:19	5° 1 16'32	8.34254 AU	min. Earth dist.	5020 Jul 09 15:53	20° 3 15'42	8.85094 AU
direct	5014 Jul 02 16:54	1° 1 48'31		direct	5020 Sep 18 09:55	16° 3 54'01	
evening set	5014 Oct 16 19:53	9° 1 46'55		evening set	5020 Dec 30 18:34	24° 3 13'13	
conjunction	5014 Nov 03 09:29	11° 1 58'28	2°07'01	conjunction	5021 Jan 16 15:38	26° 3 13'53	0°52'01
minimum elong	5014 Nov 03 09:27	11° 1 58'27	2°07'01	minimum elong	5021 Jan 16 15:40	26° 3 13'53	0°52'02
max. Earth dist.	5014 Nov 03 08:48	11° 1 58'15	10.38430 AU	max. Earth dist.	5021 Jan 16 13:27	26° 3 13'14	10.87804 AU
morning rise	5014 Nov 20 19:11	14° 1 08'48		morning rise	5021 Feb 02 10:07	28° 3 13'49	
	5014 Nov 27 19:22	15° 1			5021 Feb 17 22:13	0° 0	
retrograde	5015 Mar 01 22:06	21° 1 46'15		retrograde	5021 May 13 12:52	5° 0 20'27	
opposition	5015 May 08 04:31	18° 1 23'50	2°38'42	opposition	5021 Jul 22 01:28	2° 0 02'26	0°48'46
min. Earth dist.	5015 May 08 04:22	18° 1 23'52	8.43049 AU	min. Earth dist.	5021 Jul 22 02:57	2° 0 02'09	8.90134 AU
	5015 Jul 08 12:14	15° 0			5021 Aug 20 10:48	30° 0	
direct	5015 Jul 16 13:38	14° 0 56'39		direct	5021 Sep 30 21:46	28° 0 41'22	
	5015 Jul 24 14:27	15° 0			5021 Nov 10 10:05	0° 0	
evening set	5015 Oct 30 12:37	22° 0 49'11		evening set	5022 Jan 11 15:26	5° 0 55'48	
conjunction	5015 Nov 16 22:39	24° 0 58'30	2°07'54	conjunction	5022 Jan 28 10:59	7° 0 55'32	0°27'01
minimum elong	5015 Nov 16 22:40	24° 0 58'30	2°07'54	minimum elong	5022 Jan 28 10:59	7° 0 55'32	0°27'02
max. Earth dist.	5015 Nov 16 22:16	24° 0 58'23	10.47537 AU	max. Earth dist.	5022 Jan 28 08:48	7° 0 54'53	10.92015 AU
morning rise	5015 Dec 04 04:29	27° 0 06'33		morning rise	5022 Feb 14 04:32	9° 0 54'44	
	5015 Dec 29 02:15	0° 0			5022 Apr 05 16:34	15° 0	
retrograde	5016 Mar 13 19:53	4° 0 36'59		retrograde	5022 May 25 15:23	17° 0 00'23	
opposition	5016 May 20 09:47	1° 0 15'44	2°35'32		5022 Jul 16 13:50	15° 0	
min. Earth dist.	5016 May 20 09:31	1° 0 15'47	8.52340 AU	opposition	5022 Aug 03 11:01	13° 0 42'19	0°17'21
	5016 Jun 05 22:40	30° 0		min. Earth dist.	5022 Aug 03 13:03	13° 0 41'56	8.93465 AU
direct	5016 Jul 29 05:09	27° 0 49'33		direct	5022 Oct 13 06:01	10° 0 22'00	
	5016 Sep 19 03:35	0° 0			5022 Dec 31 12:30	15° 0	
evening set	5016 Nov 11 20:16	5° 0 35'21		evening set	5023 Jan 23 09:11	17° 0 32'42	
conjunction	5016 Nov 29 02:59	7° 0 42'30	2°02'26	conjunction	5023 Feb 09 03:18	19° 0 31'47	0°01'06
minimum elong	5016 Nov 29 03:00	7° 0 42'30	2°02'26	minimum elong	5023 Feb 09 03:17	19° 0 31'47	0°01'06
max. Earth dist.	5016 Nov 29 02:56	7° 0 42'29	10.56913 AU	behind sun begin	5023 Feb 08 20:17	19° 0 29'43	
morning rise	5016 Dec 16 05:22	9° 0 48'23		behind sun end	5023 Feb 09 10:16	19° 0 33'50	
retrograde	5017 Mar 26 13:15	17° 0 12'10		max. Earth dist.	5023 Feb 09 00:24	19° 0 30'59	10.94468 AU
opposition	5017 Jun 02 10:50	13° 0 51'58	2°24'53	desc. node	5023 Feb 24 10:23	21° 0 20'38	
min. Earth dist.	5017 Jun 02 11:00	13° 0 51'56	8.61653 AU	morning rise	5023 Feb 25 20:20	21° 0 30'34	
direct	5017 Aug 11 13:49	10° 0 26'51		retrograde	5023 Jun 06 15:42	28° 0 36'33	
evening set	5017 Nov 24 19:11	18° 0 05'31		opposition	5023 Aug 15 19:39	25° 0 18'10	-0°14'35
conjunction	5017 Dec 11 22:53	20° 0 10'40	1°51'14	min. Earth dist.	5023 Aug 15 22:03	25° 0 17'43	8.95021 AU
minimum elong	5017 Dec 11 22:55	20° 0 10'41	1°51'14	direct	5023 Oct 25 10:30	21° 0 58'24	
max. Earth dist.	5017 Dec 11 22:23	20° 0 10'31	10.66082 AU	evening set	5024 Feb 04 01:03	29° 0 06'32	
morning rise	5017 Dec 28 22:32	22° 0 14'39			5024 Feb 11 14:53	0° 0	
retrograde	5018 Apr 07 23:58	29° 0 32'24		conjunction	5024 Feb 20 18:06	1° 0 05'14	-0°24'52
opposition	5018 Jun 15 07:32	26° 0 13'04	2°07'44	minimum elong	5024 Feb 20 18:05	1° 0 05'14	0°24'52
min. Earth dist.	5018 Jun 15 08:45	26° 0 12'51	8.70519 AU	max. Earth dist.	5024 Feb 20 15:05	1° 0 04'21	10.95121 AU
direct	5018 Aug 24 17:23	22° 0 49'01		morning rise	5024 Mar 08 10:59	3° 0 03'54	
	5018 Dec 04 12:08	0° 0		retrograde	5024 Jun 17 17:30	10° 0 11'34	
evening set	5018 Dec 07 09:55	0° 0 20'38		opposition	5024 Aug 27 03:55	6° 0 52'35	-0°45'52
conjunction	5018 Dec 24 10:56	2° 0 24'00	1°35'07	min. Earth dist.	5024 Aug 27 05:50	6° 0 52'14	8.94780 AU
minimum elong	5018 Dec 24 10:59	2° 0 24'01	1°35'08	direct	5024 Nov 05 15:11	3° 0 33'11	
max. Earth dist.	5018 Dec 24 09:05	2° 0 23'26	10.74572 AU	evening set	5025 Feb 14 16:17	10° 0 39'57	
morning rise	5019 Jan 10 08:29	4° 0 26'20		conjunction	5025 Mar 03 08:46	12° 0 38'36	-0°49'45
retrograde	5019 Apr 20 06:09	11° 0 39'04		minimum elong	5025 Mar 03 08:45	12° 0 38'35	0°49'45
opposition	5019 Jun 28 00:34	8° 0 20'24	1°45'11	max. Earth dist.	5025 Mar 03 06:58	12° 0 38'03	10.93963 AU
min. Earth dist.	5019 Jun 28 02:17	8° 0 20'05	8.78470 AU	morning rise	5025 Mar 20 01:40	14° 0 37'24	
direct	5019 Sep 06 17:05	4° 0 57'23		retrograde	5025 Jun 29 23:46	21° 0 48'02	
evening set	5019 Dec 19 17:13	12° 0 22'24		opposition	5025 Sep 08 12:38	18° 0 48'16	-1°15'21
				min. Earth dist.	5025 Sep 08 13:31	18° 0 48'06	8.92751 AU

direct	5025 Nov 17 17:41	15° H 09'03	min. Earth dist.	5031 Nov 22 17:38	0° II 52'25	8.51773 AU
evening set	5026 Feb 26 08:32	22° H 15'40		5031 Dec 04 01:05	30° R B	
			direct	5032 Jan 29 13:24	27° B 30'22	
conjunction	5026 Mar 15 00:43	24° H 14'34 -1°12'42		5032 Mar 23 17:15	0° II	
minimum elong	5026 Mar 15 00:41	24° H 14'33 1°12'42	evening set	5032 May 09 01:04	4° II 59'33	
max. Earth dist.	5026 Mar 14 23:40	24° H 14'15 10.91039 AU				
morning rise	5026 Mar 31 17:59	26° H 13'51	conjunction	5032 May 26 05:02	7° II 07'12 -2°02'52	
	5026 May 05 17:24	0° Y	minimum elong	5032 May 26 05:03	7° II 07'13 2°02'53	
retrograde	5026 Jul 12 07:07	3° Y 28'37	max. Earth dist.	5032 May 26 06:20	7° II 07'37 10.47159 AU	
opposition	5026 Sep 20 22:37	0° Y 07'55 -1°41'57	morning rise	5032 Jun 12 13:27	9° II 16'15	
min. Earth dist.	5026 Sep 20 23:05	0° Y 07'49 8.89015 AU	retrograde	5032 Sep 26 14:42	17° II 09'35	
	5026 Sep 22 16:53	30° R H	opposition	5032 Dec 05 01:30	13° II 42'37 -2°25'34	
direct	5026 Nov 29 18:09	26° H 48'42	min. Earth dist.	5032 Dec 04 23:57	13° II 42'55 8.42842 AU	
	5027 Feb 01 09:42	0° Y	direct	5033 Feb 10 11:16	10° II 20'00	
evening set	5027 Mar 10 03:02	3° Y 56'28	evening set	5033 May 22 07:39	17° II 55'34	
conjunction	5027 Mar 26 19:17	5° Y 55'56 -1°32'47	conjunction	5033 Jun 08 16:03	20° II 05'40 -1°51'08	
minimum elong	5027 Mar 26 19:15	5° Y 55'55 1°32'47	minimum elong	5033 Jun 08 16:05	20° II 05'41 1°51'09	
max. Earth dist.	5027 Mar 26 18:04	5° Y 55'34 10.86477 AU	max. Earth dist.	5033 Jun 08 17:43	20° II 06'11 10.38444 AU	
morning rise	5027 Apr 12 13:35	7° Y 56'01	morning rise	5033 Jun 26 04:54	22° II 17'08	
retrograde	5027 Jul 24 18:57	15° Y 15'59		5033 Sep 22 17:32	0° B	
opposition	5027 Oct 03 10:48	11° Y 54'14 -2°04'33	retrograde	5033 Oct 10 10:40	0° B 16'21	
min. Earth dist.	5027 Oct 03 11:25	11° Y 54'07 8.83725 AU		5033 Oct 28 05:20	30° R II	
direct	5027 Dec 11 21:29	8° Y 34'51	opposition	5033 Dec 18 11:48	26° II 48'41 -2°07'27	
evening set	5028 Mar 21 00:49	15° Y 44'55	min. Earth dist.	5033 Dec 18 10:07	26° II 49'01 8.34408 AU	
			direct	5034 Feb 23 15:09	23° II 25'07	
conjunction	5028 Apr 06 17:52	17° Y 45'19 -1°49'09		5034 May 26 18:40	0° B	
minimum elong	5028 Apr 06 17:50	17° Y 45'19 1°49'09	evening set	5034 Jun 04 22:21	1° B 07'10	
max. Earth dist.	5028 Apr 06 16:47	17° Y 45'00 10.80453 AU				
morning rise	5028 Apr 23 13:46	19° Y 46'35	conjunction	5034 Jun 22 11:29	3° B 19'43 -1°33'23	
retrograde	5028 Aug 05 11:22	27° Y 12'36	minimum elong	5034 Jun 22 11:32	3° B 19'44 1°33'24	
opposition	5028 Oct 15 01:37	23° Y 49'45 -2°22'09	max. Earth dist.	5034 Jun 22 14:11	3° B 20'34 10.30464 AU	
min. Earth dist.	5028 Oct 15 01:59	23° Y 49'41 8.77070 AU	morning rise	5034 Jul 10 04:41	5° B 33'32	
direct	5028 Dec 23 02:16	20° Y 30'00	retrograde	5034 Oct 24 11:41	13° B 37'32	
evening set	5029 Apr 02 03:20	27° Y 43'31	opposition	5035 Jan 01 01:53	10° B 09'24 -1°42'09	
			min. Earth dist.	5034 Dec 31 23:34	10° B 09'52 8.26937 AU	
conjunction	5029 Apr 18 22:01	29° Y 45'15 -2°00'58	direct	5035 Mar 09 00:08	6° B 44'50	
minimum elong	5029 Apr 18 22:00	29° Y 45'14 2°00'59	evening set	5035 Jun 18 21:20	14° B 33'15	
max. Earth dist.	5029 Apr 18 22:03	29° Y 45'15 10.73183 AU				
	5029 Apr 20 22:28	0° B	conjunction	5035 Jul 06 15:03	16° B 48'04 -1°10'18	
morning rise	5029 May 05 19:59	1° B 47'59	minimum elong	5035 Jul 06 15:06	16° B 48'05 1°10'19	
retrograde	5029 Aug 18 08:32	9° B 20'41	max. Earth dist.	5035 Jul 06 18:43	16° B 49'14 10.23665 AU	
opposition	5029 Oct 27 19:31	5° B 56'41 -2°33'46	morning rise	5035 Jul 24 12:10	19° B 03'59	
min. Earth dist.	5029 Oct 27 18:59	5° B 56'48 8.69300 AU	retrograde	5035 Nov 07 15:55	27° B 11'17	
direct	5030 Jan 04 10:50	2° B 36'26	opposition	5036 Jan 14 19:00	23° B 42'54 -1°10'47	
evening set	5030 Apr 14 11:35	9° B 54'25	min. Earth dist.	5036 Jan 14 16:02	23° B 43'30 8.20853 AU	
			direct	5036 Mar 21 14:36	20° B 17'23	
conjunction	5030 May 01 08:40	11° B 57'49 -2°07'33	evening set	5036 Jul 02 03:51	28° B 11'42	
minimum elong	5030 May 01 08:39	11° B 57'49 2°07'34		5036 Jul 16 08:49	0° B	
max. Earth dist.	5030 May 01 09:51	11° B 58'11 10.64960 AU				
morning rise	5030 May 18 09:21	14° B 02'23	conjunction	5036 Jul 20 01:28	0° B 28'24 -0°43'01	
	5030 May 26 11:38	15° B	minimum elong	5036 Jul 20 01:30	0° B 28'24 0°43'01	
retrograde	5030 Aug 31 13:27	21° B 42'07	max. Earth dist.	5036 Jul 20 05:12	0° B 29'36 10.18431 AU	
opposition	5030 Nov 09 17:23	18° B 17'01 -2°38'35	morning rise	5036 Aug 07 01:38	2° B 45'56	
min. Earth dist.	5030 Nov 09 15:51	18° B 17'18 8.60738 AU	retrograde	5036 Nov 20 21:46	10° B 54'53	
	5031 Jan 08 08:07	15° R B	opposition	5037 Jan 27 14:43	7° B 26'32 -0°34'59	
direct	5031 Jan 16 22:08	14° B 56'07	min. Earth dist.	5037 Jan 27 11:48	7° B 27'08 8.16499 AU	
	5031 Jan 25 10:53	15° B	direct	5037 Apr 04 10:06	4° B 00'05	
evening set	5031 Apr 27 02:29	22° B 19'20	evening set	5037 Jul 16 16:22	11° B 59'27	
conjunction	5031 May 14 02:39	24° B 24'44 -2°08'18	conjunction	5037 Aug 03 16:43	14° B 17'27 -0°13'02	
minimum elong	5031 May 14 02:39	24° B 24'44 2°08'19	minimum elong	5037 Aug 03 16:44	14° B 17'27 0°13'02	
max. Earth dist.	5031 May 14 04:07	24° B 25'12 10.56147 AU	behind sun begin	5037 Aug 03 12:27	14° B 16'06	
morning rise	5031 May 31 06:53	26° B 31'26	behind sun end	5037 Aug 03 21:01	14° B 18'49	
	5031 Jun 30 21:22	0° II	max. Earth dist.	5037 Aug 03 19:56	14° B 18'28 10.15046 AU	
retrograde	5031 Sep 13 23:54	4° II 18'11		5037 Aug 09 05:12	15° B	
opposition	5031 Nov 22 19:25	0° II 52'04 -2°35'58	morning rise	5037 Aug 21 18:45	16° B 35'59	

retrograde	5037 Dec 05 04:01	24°♏44'50		morning rise	5043 Nov 15 10:40	8°♍53'14	
asc. node	5038 Jan 10 12:18	23°♏35'19			5044 Jan 13 18:49	15°♍	
opposition	5038 Feb 10 11:59	21°♏16'44	0°03'09	retrograde	5044 Feb 24 20:55	16°♍33'54	
min. Earth dist.	5038 Feb 10 09:39	21°♏17'13	8.14102 AU		5044 Apr 07 19:52	15°♍	
direct	5038 Apr 18 09:11	17°♏49'27		opposition	5044 May 01 23:07	13°♍11'01	2°37'34
evening set	5038 Jul 31 09:13	25°♏52'46		min. Earth dist.	5044 May 01 23:46	13°♍10'54	8.39123 AU
				direct	5044 Jul 10 02:19	9°♍43'29	
conjunction	5038 Aug 18 11:02	28°♏11'23	0°17'55		5044 Oct 01 15:42	15°♍	
minimum elong	5038 Aug 18 11:01	28°♏11'23	0°17'55	evening set	5044 Oct 24 04:41	17°♍38'46	
max. Earth dist.	5038 Aug 18 13:02	28°♏12'01	10.13657 AU				
	5038 Sep 01 14:03	0°♍		conjunction	5044 Nov 10 16:15	19°♍49'04	2°08'17
morning rise	5038 Sep 05 13:32	0°♍30'12		minimum elong	5044 Nov 10 16:15	19°♍49'04	2°08'18
retrograde	5038 Dec 19 08:49	8°♍37'16		max. Earth dist.	5044 Nov 10 15:05	19°♍48'42	10.43325 AU
opposition	5039 Feb 24 09:39	5°♍09'40	0°41'13	morning rise	5044 Nov 27 23:38	21°♍58'08	
min. Earth dist.	5039 Feb 24 08:28	5°♍09'55	8.13722 AU	retrograde	5045 Mar 08 19:59	29°♍31'41	
direct	5039 May 02 12:11	1°♍41'41		opposition	5045 May 15 06:16	26°♍09'50	2°37'48
evening set	5039 Aug 15 04:15	9°♍47'43		min. Earth dist.	5045 May 15 07:29	26°♍09'36	8.47919 AU
				direct	5045 Jul 23 20:53	22°♍43'00	
conjunction	5039 Sep 02 06:08	12°♍06'15	0°47'47		5045 Nov 02 06:28	0°♍	
minimum elong	5039 Sep 02 06:06	12°♍06'15	0°47'48	evening set	5045 Nov 06 16:11	0°♍31'52	
max. Earth dist.	5039 Sep 02 06:40	12°♍06'26	10.14245 AU				
morning rise	5039 Sep 20 07:36	14°♍24'39		conjunction	5045 Nov 24 00:14	2°♍39'59	2°05'27
retrograde	5040 Jan 02 10:28	22°♍28'33		minimum elong	5045 Nov 24 00:15	2°♍39'59	2°05'27
opposition	5040 Mar 09 06:59	19°♍01'41	1°16'49	max. Earth dist.	5045 Nov 23 22:22	2°♍39'24	10.52319 AU
min. Earth dist.	5040 Mar 09 06:32	19°♍01'46	8.15305 AU	morning rise	5045 Dec 11 04:13	4°♍46'51	
direct	5040 May 15 17:29	15°♍33'18		retrograde	5046 Mar 21 14:06	12°♍13'31	
evening set	5040 Aug 28 23:11	23°♍40'37		opposition	5046 May 28 08:58	8°♍52'35	2°30'14
				min. Earth dist.	5046 May 28 10:12	8°♍52'21	8.56976 AU
conjunction	5040 Sep 15 23:44	25°♍58'23	1°14'48	direct	5046 Aug 06 09:26	5°♍26'36	
minimum elong	5040 Sep 15 23:41	25°♍58'22	1°14'48	evening set	5046 Nov 19 18:43	13°♍08'28	
max. Earth dist.	5040 Sep 15 23:36	25°♍58'20	10.16769 AU				
morning rise	5040 Oct 03 22:44	28°♍15'41		conjunction	5046 Dec 06 23:40	15°♍14'32	1°56'35
	5040 Oct 18 02:39	0°♎		minimum elong	5046 Dec 06 23:42	15°♍14'32	1°56'35
retrograde	5041 Jan 15 07:54	6°♎15'13		max. Earth dist.	5046 Dec 06 21:45	15°♍13'56	10.61357 AU
opposition	5041 Mar 23 03:01	2°♎49'14	1°47'46	morning rise	5046 Dec 24 00:39	17°♍19'22	
min. Earth dist.	5041 Mar 23 02:38	2°♎49'19	8.18822 AU	retrograde	5047 Apr 03 02:36	24°♍39'42	
	5041 May 02 17:50	30°♍		opposition	5047 Jun 10 07:14	21°♍19'34	2°15'43
direct	5041 May 29 23:21	29°♍20'44		min. Earth dist.	5047 Jun 10 07:57	21°♍19'26	8.65844 AU
	5041 Jun 26 01:08	0°♎		direct	5047 Aug 19 16:16	17°♍54'34	
evening set	5041 Sep 12 15:35	7°♎27'35		evening set	5047 Dec 02 12:36	25°♍29'17	
conjunction	5041 Sep 30 13:45	9°♎44'01	1°37'20	conjunction	5047 Dec 19 14:54	27°♍33'28	1°42'27
minimum elong	5041 Sep 30 13:42	9°♎44'00	1°37'21	minimum elong	5047 Dec 19 14:56	27°♍33'29	1°42'27
max. Earth dist.	5041 Sep 30 13:34	9°♎43'57	10.21193 AU	max. Earth dist.	5047 Dec 19 13:47	27°♍33'07	10.70008 AU
morning rise	5041 Oct 18 09:17	11°♎59'39		morning rise	5048 Jan 05 13:19	29°♍36'32	
retrograde	5042 Jan 29 01:29	19°♎53'42			5048 Jan 08 20:22	0°♎	
opposition	5042 Apr 05 20:54	16°♎28'42	2°12'14	retrograde	5048 Apr 14 11:30	6°♎51'23	
min. Earth dist.	5042 Apr 05 20:27	16°♎28'47	8.24167 AU	opposition	5048 Jun 22 01:40	3°♎31'56	1°55'18
direct	5042 Jun 13 02:42	13°♎00'17		min. Earth dist.	5048 Jun 22 02:18	3°♎31'49	8.74127 AU
evening set	5042 Sep 27 03:09	21°♎04'52		direct	5048 Aug 31 16:57	0°♎07'58	
				evening set	5048 Dec 13 22:37	7°♎35'46	
conjunction	5042 Oct 14 22:10	23°♎19'31	1°54'11				
minimum elong	5042 Oct 14 22:07	23°♎19'30	1°54'12	conjunction	5048 Dec 30 22:34	9°♎38'19	1°23'57
max. Earth dist.	5042 Oct 14 22:03	23°♎19'29	10.27331 AU	minimum elong	5048 Dec 30 22:36	9°♎38'20	1°23'57
morning rise	5042 Nov 01 13:39	25°♎33'06		max. Earth dist.	5048 Dec 30 21:38	9°♎38'02	10.77890 AU
	5042 Dec 10 19:00	0°♍		morning rise	5049 Jan 16 19:02	11°♎39'53	
retrograde	5043 Feb 11 14:47	3°♍20'44		retrograde	5049 Apr 26 17:14	18°♎50'20	
	5043 Apr 18 19:51	30°♍		opposition	5049 Jul 04 16:30	15°♎31'25	1°30'12
opposition	5043 Apr 19 11:50	29°♎56'47	2°29'02	min. Earth dist.	5049 Jul 04 17:37	15°♎31'12	8.81473 AU
min. Earth dist.	5043 Apr 19 11:39	29°♎56'50	8.31060 AU	direct	5049 Sep 13 10:36	12°♎08'29	
direct	5043 Jun 27 03:55	26°♎28'42		evening set	5049 Dec 26 02:12	19°♎29'59	
	5043 Sep 01 11:15	0°♍					
evening set	5043 Oct 11 08:03	4°♍29'21		conjunction	5050 Jan 12 00:02	21°♎31'10	1°02'03
				minimum elong	5050 Jan 12 00:03	21°♎31'11	1°02'05
conjunction	5043 Oct 28 23:23	6°♍41'54	2°04'35	max. Earth dist.	5050 Jan 11 22:24	21°♎30'41	10.84673 AU
minimum elong	5043 Oct 28 23:21	6°♍41'53	2°04'36	morning rise	5050 Jan 28 19:07	23°♎31'33	
max. Earth dist.	5043 Oct 28 23:04	6°♍41'48	10.34844 AU		5050 Apr 11 02:17	0°♎	

retrograde	5050 May 08 18:01	0° \approx 38'47	conjunction	5056 Mar 21 00:38	1° Υ 03'45 -1°24'18
	5050 Jun 05 21:28	30° \mathbb{R} 3	minimum elong	5056 Mar 21 00:35	1° Υ 03'44 1°24'18
opposition	5050 Jul 17 04:12	27° \mathbb{Z} 20'15 1°01'38	max. Earth dist.	5056 Mar 21 00:37	1° Υ 03'44 10.91384 AU
min. Earth dist.	5050 Jul 17 05:44	27° \mathbb{Z} 19'57 8.87579 AU	morning rise	5056 Apr 06 18:18	3° Υ 03'06
direct	5050 Sep 26 00:45	23° \mathbb{Z} 58'19	retrograde	5056 Jul 18 15:31	10° Υ 19'24
	5050 Dec 27 05:24	0° \approx	opposition	5056 Sep 27 07:53	6° Υ 58'46 -1°54'59
evening set	5051 Jan 07 00:27	1° \approx 14'26	min. Earth dist.	5056 Sep 27 07:21	6° Υ 58'52 8.89187 AU
			direct	5056 Dec 06 00:06	3° Υ 40'10
conjunction	5051 Jan 23 20:30	3° \approx 14'29 0°37'48	evening set	5057 Mar 16 04:01	10° Υ 47'49
minimum elong	5051 Jan 23 20:32	3° \approx 14'29 0°37'50			
max. Earth dist.	5051 Jan 23 18:30	3° \approx 13'53 10.90082 AU	conjunction	5057 Apr 01 20:37	12° Υ 47'24 -1°42'19
morning rise	5051 Feb 09 14:36	5° \approx 13'56	minimum elong	5057 Apr 01 20:35	12° Υ 47'23 1°42'19
retrograde	5051 May 20 19:04	12° \approx 19'23	max. Earth dist.	5057 Apr 01 21:24	12° Υ 47'38 10.86432 AU
opposition	5051 Jul 29 13:49	9° \approx 00'59 0°30'52	morning rise	5057 Apr 18 15:25	14° Υ 47'42
min. Earth dist.	5051 Jul 29 14:45	9° \approx 00'49 8.92199 AU	retrograde	5057 Jul 31 05:53	22° Υ 09'31
direct	5051 Oct 08 11:11	5° \approx 40'01	opposition	5057 Oct 09 20:27	18° Υ 47'55 -2°14'47
evening set	5052 Jan 18 18:34	12° \approx 51'41	min. Earth dist.	5057 Oct 09 19:28	18° Υ 48'06 8.83490 AU
			direct	5057 Dec 18 01:48	15° Υ 29'10
conjunction	5052 Feb 04 13:17	14° \approx 50'55 0°12'13	evening set	5058 Mar 28 03:31	22° Υ 39'36
minimum elong	5052 Feb 04 13:17	14° \approx 50'55 0°12'14			
behind sun begin	5052 Feb 04 08:32	14° \approx 49'31	conjunction	5058 Apr 13 21:10	24° Υ 40'16 -1°56'11
behind sun end	5052 Feb 04 18:02	14° \approx 52'19	minimum elong	5058 Apr 13 21:08	24° Υ 40'16 1°56'11
max. Earth dist.	5052 Feb 04 12:15	14° \approx 50'37 10.93896 AU	max. Earth dist.	5058 Apr 13 21:24	24° Υ 40'21 10.79981 AU
	5052 Feb 05 19:44	15° \approx	morning rise	5058 Apr 30 17:48	26° Υ 41'52
morning rise	5052 Feb 21 06:32	16° \approx 49'45		5058 May 30 11:06	0° \mathbb{B}
retrograde	5052 May 31 20:15	23° \approx 54'46	retrograde	5058 Aug 12 23:50	4° \mathbb{B} 09'57
desc. node	5052 Jul 30 02:32	21° \approx 24'06	opposition	5058 Oct 22 12:04	0° \mathbb{B} 47'18 -2°29'04
opposition	5052 Aug 09 21:58	20° \approx 36'19 -0°00'55	min. Earth dist.	5058 Oct 22 11:37	0° \mathbb{B} 47'23 8.76377 AU
min. Earth dist.	5052 Aug 09 22:08	20° \approx 36'17 8.95153 AU		5058 Nov 01 23:41	30° \mathbb{R} Υ
direct	5052 Oct 19 16:16	17° \approx 16'12	direct	5058 Dec 30 07:02	27° Υ 28'07
evening set	5053 Jan 29 10:21	24° \approx 24'35		5059 Feb 23 19:02	0° \mathbb{B}
			evening set	5059 Apr 09 08:11	4° \mathbb{B} 42'28
conjunction	5053 Feb 15 03:56	26° \approx 23'16 -0°13'49			
minimum elong	5053 Feb 15 03:55	26° \approx 23'15 0°13'49	conjunction	5059 Apr 26 03:42	6° \mathbb{B} 44'37 -2°05'08
behind sun begin	5053 Feb 15 00:07	26° \approx 22'08	minimum elong	5059 Apr 26 03:41	6° \mathbb{B} 44'37 2°05'09
behind sun end	5053 Feb 15 07:44	26° \approx 24'23	max. Earth dist.	5059 Apr 26 03:18	6° \mathbb{B} 44'29 10.72229 AU
max. Earth dist.	5053 Feb 15 03:33	26° \approx 23'09 10.95970 AU	morning rise	5059 May 13 02:57	8° \mathbb{B} 47'52
morning rise	5053 Mar 03 20:41	28° \approx 21'45		5059 Jul 15 16:27	15° \mathbb{B}
	5053 Mar 18 06:59	0° \mathbb{H}	retrograde	5059 Aug 26 00:09	16° \mathbb{B} 22'47
retrograde	5053 Jun 12 21:51	5° \mathbb{H} 27'42		5059 Oct 07 01:29	15° \mathbb{R} \mathbb{B}
opposition	5053 Aug 22 05:21	2° \mathbb{H} 09'00 -0°32'31	opposition	5059 Nov 04 07:13	12° \mathbb{B} 59'02 -2°36'58
min. Earth dist.	5053 Aug 22 05:30	2° \mathbb{H} 08'58 8.96336 AU	min. Earth dist.	5059 Nov 04 07:17	12° \mathbb{B} 59'01 8.68079 AU
	5053 Sep 22 17:47	30° \mathbb{R} \approx	direct	5060 Jan 11 16:24	9° \mathbb{B} 39'12
direct	5053 Oct 31 19:10	28° \approx 49'33		5060 Apr 03 20:33	15° \mathbb{B}
	5053 Dec 08 22:17	0° \mathbb{H}	evening set	5060 Apr 20 18:56	16° \mathbb{B} 58'29
evening set	5054 Feb 10 01:08	5° \mathbb{H} 55'55			
conjunction	5054 Feb 26 17:43	7° \mathbb{H} 54'20 -0°39'09	conjunction	5060 May 07 17:20	19° \mathbb{B} 02'30 -2°08'32
minimum elong	5054 Feb 26 17:42	7° \mathbb{H} 54'20 0°39'09	minimum elong	5060 May 07 17:20	19° \mathbb{B} 02'30 2°08'34
max. Earth dist.	5054 Feb 26 16:50	7° \mathbb{H} 54'04 10.96233 AU	max. Earth dist.	5060 May 07 17:10	19° \mathbb{B} 02'26 10.63462 AU
morning rise	5054 Mar 15 10:27	9° \mathbb{H} 52'48	morning rise	5060 May 24 19:47	21° \mathbb{B} 07'46
retrograde	5054 Jun 25 01:01	17° \mathbb{H} 00'58	retrograde	5060 Sep 07 05:41	28° \mathbb{B} 49'48
opposition	5054 Sep 03 13:04	13° \mathbb{H} 41'50 -1°02'48	opposition	5060 Nov 16 06:15	25° \mathbb{B} 24'55 -2°37'47
min. Earth dist.	5054 Sep 03 13:43	13° \mathbb{H} 41'43 8.95708 AU	min. Earth dist.	5060 Nov 16 06:09	25° \mathbb{B} 24'56 8.58954 AU
direct	5054 Nov 12 20:13	10° \mathbb{H} 22'53	direct	5061 Jan 23 05:47	22° \mathbb{B} 04'15
evening set	5055 Feb 21 16:04	17° \mathbb{H} 28'27	evening set	5061 May 03 12:56	29° \mathbb{B} 29'17
				5061 May 07 17:44	0° \mathbb{I}
conjunction	5055 Mar 10 08:03	19° \mathbb{H} 26'54 -1°02'58	conjunction	5061 May 20 14:58	1° \mathbb{I} 35'29 -2°05'57
minimum elong	5055 Mar 10 08:01	19° \mathbb{H} 26'53 1°02'57	minimum elong	5061 May 20 14:59	1° \mathbb{I} 35'30 2°05'58
max. Earth dist.	5055 Mar 10 07:05	19° \mathbb{H} 26'37 10.94686 AU	max. Earth dist.	5061 May 20 15:43	1° \mathbb{I} 35'43 10.54111 AU
morning rise	5055 Mar 27 01:06	21° \mathbb{H} 25'40	morning rise	5061 Jun 06 21:08	3° \mathbb{I} 43'01
retrograde	5055 Jul 07 05:13	28° \mathbb{H} 37'21	retrograde	5061 Sep 20 17:06	11° \mathbb{I} 32'02
opposition	5055 Sep 15 21:44	25° \mathbb{H} 17'33 -1°30'39	opposition	5061 Nov 29 09:23	8° \mathbb{I} 06'02 -2°31'00
min. Earth dist.	5055 Sep 15 22:01	25° \mathbb{H} 17'30 8.93299 AU	min. Earth dist.	5061 Nov 29 08:29	8° \mathbb{I} 06'13 8.49492 AU
direct	5055 Nov 24 21:18	21° \mathbb{H} 58'53	direct	5062 Feb 05 00:31	4° \mathbb{I} 44'24
evening set	5056 Mar 04 08:36	29° \mathbb{H} 04'54	evening set	5062 May 16 14:44	12° \mathbb{I} 15'42
	5056 Mar 12 03:17	0° Υ			

conjunction	5062 Jun 02 20:58	14° <u>II</u> 24'20	-1°57'08	opposition	5068 Feb 18 06:33	28° <u>Q</u> 54'50	0°23'29
minimum elong	5062 Jun 02 21:00	14° <u>II</u> 24'21	1°57'09	min. Earth dist.	5068 Feb 18 04:59	28° <u>Q</u> 55'10	8.12454 AU
max. Earth dist.	5062 Jun 02 22:03	14° <u>II</u> 24'41	10.44696 AU	direct	5068 Apr 25 07:39	25° <u>Q</u> 26'36	
morning rise	5062 Jun 20 07:23	16° <u>II</u> 34'19			5068 Jul 08 21:01	0° <u>W</u>	
retrograde	5062 Oct 04 11:11	24° <u>II</u> 29'44		evening set	5068 Aug 07 14:40	3° <u>W</u> 31'46	
opposition	5062 Dec 12 16:51	21° <u>II</u> 02'45	-2°16'30				
min. Earth dist.	5062 Dec 12 15:35	21° <u>II</u> 03'00	8.40212 AU	conjunction	5068 Aug 25 16:56	5° <u>W</u> 50'35	0°33'59
direct	5063 Feb 17 23:31	17° <u>II</u> 39'58		minimum elong	5068 Aug 25 16:54	5° <u>W</u> 50'35	0°33'59
evening set	5063 May 30 00:43	25° <u>II</u> 17'51		max. Earth dist.	5068 Aug 25 18:42	5° <u>W</u> 51'09	10.12353 AU
				morning rise	5068 Sep 12 19:00	8° <u>W</u> 09'24	
conjunction	5063 Jun 16 11:29	27° <u>II</u> 28'59	-1°42'11	retrograde	5068 Dec 26 05:12	16° <u>W</u> 15'24	
minimum elong	5063 Jun 16 11:32	27° <u>II</u> 29'00	1°42'12	opposition	5069 Mar 03 04:13	12° <u>W</u> 47'31	1°00'33
max. Earth dist.	5063 Jun 16 12:25	27° <u>II</u> 29'17	10.35727 AU	min. Earth dist.	5069 Mar 03 02:44	12° <u>W</u> 47'49	8.12844 AU
morning rise	5063 Jul 04 02:29	29° <u>II</u> 41'27		direct	5069 May 09 11:15	9° <u>W</u> 18'43	
	5063 Jul 06 14:47	0° <u>W</u>		evening set	5069 Aug 22 09:48	17° <u>W</u> 25'56	
retrograde	5063 Oct 18 09:56	7° <u>W</u> 42'20					
opposition	5063 Dec 26 04:20	4° <u>W</u> 14'33	-1°54'33	conjunction	5069 Sep 09 11:19	19° <u>W</u> 44'20	1°02'33
min. Earth dist.	5063 Dec 26 03:14	4° <u>W</u> 14'46	8.31614 AU	minimum elong	5069 Sep 09 11:17	19° <u>W</u> 44'19	1°02'33
direct	5064 Mar 02 04:25	0° <u>W</u> 50'32		max. Earth dist.	5069 Sep 09 12:39	19° <u>W</u> 44'45	10.13838 AU
evening set	5064 Jun 11 19:02	8° <u>W</u> 35'05		morning rise	5069 Sep 27 11:35	22° <u>W</u> 02'22	
					5069 Dec 31 04:03	0° <u>W</u>	
conjunction	5064 Jun 29 10:25	10° <u>W</u> 48'38	-1°21'33	retrograde	5070 Jan 09 05:29	0° <u>W</u> 04'36	
minimum elong	5064 Jun 29 10:28	10° <u>W</u> 48'39	1°21'33		5070 Jan 18 07:06	30° <u>R</u> <u>W</u>	
max. Earth dist.	5064 Jun 29 10:58	10° <u>W</u> 48'48	10.27678 AU	opposition	5070 Mar 17 01:09	26° <u>W</u> 37'31	1°33'56
morning rise	5064 Jul 17 05:44	13° <u>W</u> 03'24		min. Earth dist.	5070 Mar 17 00:17	26° <u>W</u> 37'41	8.15455 AU
retrograde	5064 Oct 31 10:54	21° <u>W</u> 08'29		direct	5070 May 23 16:04	23° <u>W</u> 08'26	
opposition	5065 Jan 07 19:15	17° <u>W</u> 40'08	-1°25'58		5070 Aug 26 21:28	0° <u>W</u>	
min. Earth dist.	5065 Jan 07 18:34	17° <u>W</u> 40'17	8.24165 AU	evening set	5070 Sep 06 03:48	1° <u>W</u> 16'01	
direct	5065 Mar 15 16:29	14° <u>W</u> 14'53					
evening set	5065 Jun 25 21:07	22° <u>W</u> 05'50		conjunction	5070 Sep 24 03:17	3° <u>W</u> 33'19	1°27'22
				minimum elong	5070 Sep 24 03:14	3° <u>W</u> 33'18	1°27'22
conjunction	5065 Jul 13 16:47	24° <u>W</u> 21'33	-0°56'09	max. Earth dist.	5070 Sep 24 03:43	3° <u>W</u> 33'27	10.17477 AU
minimum elong	5065 Jul 13 16:49	24° <u>W</u> 21'33	0°56'09	morning rise	5070 Oct 12 00:38	5° <u>W</u> 49'56	
max. Earth dist.	5065 Jul 13 17:34	24° <u>W</u> 21'48	10.20991 AU	retrograde	5071 Jan 23 01:32	13° <u>W</u> 47'04	
morning rise	5065 Jul 31 15:43	26° <u>W</u> 38'16		opposition	5071 Mar 30 20:10	10° <u>W</u> 21'00	2°01'38
	5065 Aug 29 01:55	0° <u>W</u>		min. Earth dist.	5071 Mar 30 19:53	10° <u>W</u> 21'04	8.20129 AU
retrograde	5065 Nov 14 14:20	4° <u>W</u> 46'05		direct	5071 Jun 06 20:26	6° <u>W</u> 51'57	
opposition	5066 Jan 21 13:14	1° <u>W</u> 17'26	-0°52'07	evening set	5071 Sep 20 18:03	14° <u>W</u> 58'08	
min. Earth dist.	5066 Jan 21 12:23	1° <u>W</u> 17'36	8.18284 AU				
	5066 Feb 06 19:08	30° <u>R</u> <u>W</u>		conjunction	5071 Oct 08 14:35	17° <u>W</u> 13'47	1°47'00
direct	5066 Mar 29 09:56	27° <u>W</u> 51'02		minimum elong	5071 Oct 08 14:32	17° <u>W</u> 13'46	1°47'00
	5066 May 17 18:12	0° <u>W</u>		max. Earth dist.	5071 Oct 08 14:19	17° <u>W</u> 13'42	10.23055 AU
evening set	5066 Jul 10 05:58	5° <u>W</u> 47'43		morning rise	5071 Oct 26 08:13	19° <u>W</u> 28'31	
				retrograde	5072 Feb 05 16:11	27° <u>W</u> 19'33	
conjunction	5066 Jul 28 05:09	8° <u>W</u> 05'09	-0°27'18	opposition	5072 Apr 12 12:40	23° <u>W</u> 54'40	2°22'08
minimum elong	5066 Jul 28 05:10	8° <u>W</u> 05'09	0°27'17	min. Earth dist.	5072 Apr 12 12:33	23° <u>W</u> 54'41	8.26585 AU
max. Earth dist.	5066 Jul 28 06:31	8° <u>W</u> 05'35	10.16040 AU	direct	5072 Jun 20 00:14	20° <u>W</u> 25'59	
morning rise	5066 Aug 15 06:36	10° <u>W</u> 23'17		evening set	5072 Oct 04 02:15	28° <u>W</u> 28'58	
	5066 Sep 24 12:21	15° <u>W</u>			5072 Oct 16 04:40	0° <u>W</u>	
retrograde	5066 Nov 28 19:35	18° <u>W</u> 32'12					
opposition	5067 Feb 04 09:20	15° <u>W</u> 03'31	-0°14'53	conjunction	5072 Oct 21 19:16	0° <u>W</u> 42'37	2°00'29
min. Earth dist.	5067 Feb 04 08:04	15° <u>W</u> 03'47	8.14305 AU	minimum elong	5072 Oct 21 19:14	0° <u>W</u> 42'36	2°00'29
	5067 Feb 05 02:31	15° <u>R</u> <u>W</u>		max. Earth dist.	5072 Oct 21 18:51	0° <u>W</u> 42'29	10.30245 AU
direct	5067 Apr 12 06:55	11° <u>W</u> 36'06		morning rise	5072 Nov 08 08:46	2° <u>W</u> 55'10	
	5067 Jun 14 11:51	15° <u>W</u>		retrograde	5073 Feb 18 00:32	10° <u>W</u> 39'29	
asc. node	5067 Jul 01 06:55	16° <u>W</u> 47'12		opposition	5073 Apr 26 01:48	7° <u>W</u> 15'49	2°34'33
evening set	5067 Jul 24 20:31	19° <u>W</u> 37'38		min. Earth dist.	5073 Apr 26 01:17	7° <u>W</u> 15'56	8.34447 AU
				direct	5073 Jul 04 01:03	3° <u>W</u> 47'48	
conjunction	5067 Aug 11 21:59	21° <u>W</u> 56'07	0°03'27	evening set	5073 Oct 18 02:58	11° <u>W</u> 46'04	
minimum elong	5067 Aug 11 22:00	21° <u>W</u> 56'08	0°03'28				
behind sun begin	5067 Aug 11 14:43	21° <u>W</u> 53'49		conjunction	5073 Nov 04 16:24	13° <u>W</u> 57'31	2°07'18
behind sun end	5067 Aug 12 05:17	21° <u>W</u> 58'27		minimum elong	5073 Nov 04 16:23	13° <u>W</u> 57'31	2°07'19
max. Earth dist.	5067 Aug 11 23:43	21° <u>W</u> 56'38	10.13104 AU	max. Earth dist.	5073 Nov 04 16:25	13° <u>W</u> 57'31	10.38642 AU
morning rise	5067 Aug 30 00:31	24° <u>W</u> 14'59			5073 Nov 12 23:28	15° <u>W</u>	
	5067 Oct 21 11:13	0° <u>W</u>		morning rise	5073 Nov 22 01:45	16° <u>W</u> 07'45	
retrograde	5067 Dec 13 01:30	2° <u>W</u> 23'16		retrograde	5074 Mar 03 04:08	23° <u>W</u> 45'01	
	5068 Feb 04 19:36	30° <u>R</u> <u>W</u>		opposition	5074 May 09 10:58	20° <u>W</u> 22'36	2°38'35

min. Earth dist.	5074 May 09 10:22	20° \mathbb{M} 22'43	8.43276 AU	min. Earth dist.	5080 Jul 23 08:38	3° \approx 57'18	8.90738 AU
direct	5074 Jul 17 20:44	16° \mathbb{M} 55'27		direct	5080 Oct 02 03:22	0° \approx 36'37	
evening set	5074 Oct 31 19:15	24° \mathbb{M} 47'46		evening set	5081 Jan 12 19:43	7° \approx 50'29	
conjunction	5074 Nov 18 05:08	26° \mathbb{M} 57'00	2°07'27	conjunction	5081 Jan 29 15:03	9° \approx 50'06	0°23'58
minimum elong	5074 Nov 18 05:09	26° \mathbb{M} 57'00	2°07'27	minimum elong	5081 Jan 29 15:04	9° \approx 50'07	0°23'58
max. Earth dist.	5074 Nov 18 05:26	26° \mathbb{M} 57'06	10.47782 AU	max. Earth dist.	5081 Jan 29 12:39	9° \approx 49'24	10.92640 AU
morning rise	5074 Dec 05 10:40	29° \mathbb{M} 04'57		morning rise	5081 Feb 15 08:38	11° \approx 49'14	
	5074 Dec 13 01:19	0° \mathbb{A}			5081 Mar 16 09:28	15° \approx	
retrograde	5075 Mar 16 03:14	6° \mathbb{A} 35'11		retrograde	5081 May 26 19:13	18° \approx 54'36	
opposition	5075 May 22 16:09	3° \mathbb{A} 13'58	2°34'32	opposition	5081 Aug 04 16:25	15° \approx 36'34	0°13'35
min. Earth dist.	5075 May 22 16:04	3° \mathbb{A} 13'59	8.52597 AU	min. Earth dist.	5081 Aug 04 18:40	15° \approx 36'09	8.94098 AU
	5075 Jul 15 22:26	30° \mathbb{R} \mathbb{M}			5081 Aug 12 21:59	15° \mathbb{R} \approx	
direct	5075 Jul 31 10:09	29° \mathbb{M} 47'48		direct	5081 Oct 14 10:23	12° \approx 16'21	
	5075 Aug 15 23:15	0° \mathbb{A}			5081 Dec 12 20:33	15° \approx	
evening set	5075 Nov 14 02:35	7° \mathbb{A} 33'21		desc. node	5082 Jan 12 08:10	18° \approx 02'59	
				evening set	5082 Jan 24 13:07	19° \approx 26'33	
conjunction	5075 Dec 01 09:04	9° \mathbb{A} 40'26	2°01'17	conjunction	5082 Feb 10 07:06	21° \approx 25'31	-0°02'03
minimum elong	5075 Dec 01 09:05	9° \mathbb{A} 40'27	2°01'17	minimum elong	5082 Feb 10 07:05	21° \approx 25'31	0°02'04
max. Earth dist.	5075 Dec 01 08:58	9° \mathbb{A} 40'25	10.57186 AU	behind sun begin	5082 Feb 10 00:06	21° \approx 23'27	
morning rise	5075 Dec 18 11:17	11° \mathbb{A} 46'16		behind sun end	5082 Feb 10 14:05	21° \approx 27'34	
retrograde	5076 Mar 27 18:17	19° \mathbb{A} 09'49		max. Earth dist.	5082 Feb 10 04:07	21° \approx 24'41	10.95095 AU
opposition	5076 Jun 03 17:07	15° \mathbb{A} 49'40	2°23'05	morning rise	5082 Feb 27 00:11	23° \approx 24'13	
min. Earth dist.	5076 Jun 03 17:47	15° \mathbb{A} 49'33	8.61942 AU		5082 May 14 05:47	0° \mathbb{H}	
direct	5076 Aug 12 20:21	12° \mathbb{A} 24'35		retrograde	5082 Jun 07 19:21	0° \mathbb{H} 30'00	
evening set	5076 Nov 26 01:06	20° \mathbb{A} 03'00			5082 Jul 02 18:52	30° \mathbb{R} \approx	
conjunction	5076 Dec 13 04:33	22° \mathbb{A} 08'04	1°49'28	opposition	5082 Aug 17 00:34	27° \approx 11'38	-0°18'16
minimum elong	5076 Dec 13 04:35	22° \mathbb{A} 08'05	1°49'29	min. Earth dist.	5082 Aug 17 02:35	27° \approx 11'16	8.95632 AU
max. Earth dist.	5076 Dec 13 03:31	22° \mathbb{A} 07'46	10.66394 AU	direct	5082 Oct 26 16:37	23° \approx 51'58	
morning rise	5076 Dec 30 04:10	24° \mathbb{A} 12'00			5083 Jan 27 12:57	0° \mathbb{H}	
	5077 Feb 26 08:58	0° \mathbb{B}		evening set	5083 Feb 05 04:42	0° \mathbb{H} 59'40	
retrograde	5077 Apr 09 04:37	1° \mathbb{B} 29'35		conjunction	5083 Feb 21 21:45	2° \mathbb{H} 58'17	-0°27'48
	5077 May 22 06:08	30° \mathbb{R} \mathbb{A}		minimum elong	5083 Feb 21 21:44	2° \mathbb{H} 58'17	0°27'48
opposition	5077 Jun 16 13:48	28° \mathbb{A} 10'18	2°05'13	max. Earth dist.	5083 Feb 21 19:32	2° \mathbb{H} 57'38	10.95702 AU
min. Earth dist.	5077 Jun 16 14:47	28° \mathbb{A} 10'07	8.70859 AU	morning rise	5083 Mar 10 14:31	4° \mathbb{H} 56'50	
direct	5077 Aug 26 01:10	24° \mathbb{A} 46'19		retrograde	5083 Jun 19 22:54	12° \mathbb{H} 04'22	
	5077 Nov 18 14:15	0° \mathbb{B}		opposition	5083 Aug 29 08:38	8° \mathbb{H} 45'25	-0°49'20
evening set	5077 Dec 08 15:17	2° \mathbb{B} 17'36		min. Earth dist.	5083 Aug 29 09:43	8° \mathbb{H} 45'13	8.95325 AU
conjunction	5077 Dec 25 16:12	4° \mathbb{B} 20'54	1°32'51	direct	5083 Nov 07 19:52	5° \mathbb{H} 26'08	
minimum elong	5077 Dec 25 16:15	4° \mathbb{B} 20'55	1°32'52	evening set	5084 Feb 16 19:45	12° \mathbb{H} 32'28	
max. Earth dist.	5077 Dec 25 14:40	4° \mathbb{B} 20'26	10.74952 AU	conjunction	5084 Mar 04 12:12	14° \mathbb{H} 31'02	-0°52'27
morning rise	5078 Jan 11 13:43	6° \mathbb{B} 23'10		minimum elong	5084 Mar 04 12:10	14° \mathbb{H} 31'02	0°52'28
retrograde	5078 Apr 21 12:09	13° \mathbb{B} 35'44		max. Earth dist.	5084 Mar 04 10:54	14° \mathbb{H} 30'39	10.94465 AU
opposition	5078 Jun 29 06:36	10° \mathbb{B} 17'05	1°42'07	morning rise	5084 Mar 21 04:59	16° \mathbb{H} 29'47	
min. Earth dist.	5078 Jun 29 07:19	10° \mathbb{B} 16'57	8.78890 AU	retrograde	5084 Jul 01 03:39	23° \mathbb{H} 40'18	
direct	5078 Sep 07 23:13	6° \mathbb{B} 54'12		opposition	5084 Sep 09 17:14	20° \mathbb{H} 20'33	-1°18'29
evening set	5078 Dec 20 22:15	14° \mathbb{B} 18'46		min. Earth dist.	5084 Sep 09 18:01	20° \mathbb{H} 20'24	8.93210 AU
conjunction	5079 Jan 06 21:04	16° \mathbb{B} 20'33	1°12'23	direct	5084 Nov 18 20:42	17° \mathbb{H} 01'27	
minimum elong	5079 Jan 06 21:06	16° \mathbb{B} 20'34	1°12'24	evening set	5085 Feb 27 11:57	24° \mathbb{H} 07'44	
max. Earth dist.	5079 Jan 06 19:46	16° \mathbb{B} 20'10	10.82407 AU	conjunction	5085 Mar 16 04:01	26° \mathbb{H} 06'33	-1°15'04
morning rise	5079 Jan 23 16:47	18° \mathbb{B} 21'27		minimum elong	5085 Mar 16 03:58	26° \mathbb{H} 06'33	1°15'04
retrograde	5079 May 03 15:38	25° \mathbb{B} 30'12		max. Earth dist.	5085 Mar 16 02:25	26° \mathbb{H} 06'05	10.91450 AU
opposition	5079 Jul 11 20:06	22° \mathbb{B} 12'00	1°14'59	morning rise	5085 Apr 01 21:22	28° \mathbb{H} 05'47	
min. Earth dist.	5079 Jul 11 20:52	22° \mathbb{B} 11'51	8.85618 AU		5085 Apr 18 15:52	0° \mathbb{Y}	
direct	5079 Sep 20 15:43	18° \mathbb{B} 50'07		retrograde	5085 Jul 13 11:28	5° \mathbb{Y} 20'28	
evening set	5080 Jan 01 23:16	26° \mathbb{B} 08'49		opposition	5085 Sep 22 02:59	1° \mathbb{Y} 59'47	-1°44'36
conjunction	5080 Jan 18 20:15	28° \mathbb{B} 09'22	0°49'05	min. Earth dist.	5085 Sep 22 04:04	1° \mathbb{Y} 59'35	8.89377 AU
minimum elong	5080 Jan 18 20:17	28° \mathbb{B} 09'23	0°49'06		5085 Oct 20 18:24	30° \mathbb{R} \mathbb{H}	
max. Earth dist.	5080 Jan 18 18:53	28° \mathbb{B} 08'58	10.88379 AU	direct	5085 Nov 30 22:29	28° \mathbb{H} 40'38	
	5080 Feb 03 07:17	0° \approx			5086 Jan 10 00:10	0° \mathbb{Y}	
morning rise	5080 Feb 04 14:37	0° \approx 09'12		evening set	5086 Mar 11 06:21	5° \mathbb{Y} 48'08	
retrograde	5080 May 14 18:33	7° \approx 15'34		conjunction	5086 Mar 27 22:34	7° \mathbb{Y} 47'34	-1°34'43
opposition	5080 Jul 23 07:09	3° \approx 57'35	0°45'04				

minimum elong	5086 Mar 27 22:32	7° Υ 47'33	1°34'43	morning rise	5092 Jun 27 09:27	24° Π 09'38	
max. Earth dist.	5086 Mar 27 20:51	7° Υ 47'03	10.86784 AU		5092 Aug 21 14:22	0° \mathfrak{C}	
morning rise	5086 Apr 13 16:59	9° Υ 47'38		retrograde	5092 Oct 11 15:24	2° \mathfrak{C} 09'02	
retrograde	5086 Jul 25 22:22	17° Υ 07'32			5092 Dec 02 18:30	30° \mathfrak{R} Π	
opposition	5086 Oct 04 14:56	13° Υ 45'48	-2°06'38	opposition	5092 Dec 19 15:34	28° Π 41'18	-2°05'04
min. Earth dist.	5086 Oct 04 15:54	13° Υ 45'37	8.83974 AU	min. Earth dist.	5092 Dec 19 13:45	28° Π 41'40	8.33973 AU
direct	5086 Dec 13 01:09	10° Υ 26'26		direct	5093 Feb 24 18:38	25° Π 17'38	
evening set	5087 Mar 23 04:02	17° Υ 36'20			5093 May 11 16:20	0° \mathfrak{C}	
				evening set	5093 Jun 06 02:40	3° \mathfrak{C} 00'01	
conjunction	5087 Apr 08 21:11	19° Υ 36'43	-1°50'34				
minimum elong	5087 Apr 08 21:10	19° Υ 36'43	1°50'34	conjunction	5093 Jun 23 16:12	5° \mathfrak{C} 12'43	-1°31'12
max. Earth dist.	5087 Apr 08 20:35	19° Υ 36'32	10.80639 AU	minimum elong	5093 Jun 23 16:15	5° \mathfrak{C} 12'44	1°31'13
morning rise	5087 Apr 25 17:05	21° Υ 37'57		max. Earth dist.	5093 Jun 23 19:07	5° \mathfrak{C} 13'39	10.29987 AU
retrograde	5087 Aug 07 14:32	29° Υ 04'01		morning rise	5093 Jul 11 09:35	7° \mathfrak{C} 26'41	
opposition	5087 Oct 17 05:34	25° Υ 41'07	-2°23'33	retrograde	5093 Oct 25 16:11	15° \mathfrak{C} 30'53	
min. Earth dist.	5087 Oct 17 05:32	25° Υ 41'07	8.77197 AU	opposition	5094 Jan 02 05:42	12° \mathfrak{C} 02'41	-1°39'09
direct	5087 Dec 25 06:47	22° Υ 21'24		min. Earth dist.	5094 Jan 02 03:08	12° \mathfrak{C} 03'12	8.26423 AU
evening set	5088 Apr 03 06:34	29° Υ 34'48		direct	5094 Mar 10 04:06	8° \mathfrak{C} 38'02	
	5088 Apr 06 18:49	0° \mathfrak{C}		evening set	5094 Jun 20 02:04	16° \mathfrak{C} 26'52	
conjunction	5088 Apr 20 01:25	1° \mathfrak{C} 36'33	-2°01'50	conjunction	5094 Jul 07 20:04	18° \mathfrak{C} 41'51	-1°07'41
minimum elong	5088 Apr 20 01:24	1° \mathfrak{C} 36'32	2°01'50	minimum elong	5094 Jul 07 20:06	18° \mathfrak{C} 41'51	1°07'41
max. Earth dist.	5088 Apr 20 01:55	1° \mathfrak{C} 36'42	10.73245 AU	max. Earth dist.	5094 Jul 07 23:21	18° \mathfrak{C} 42'53	10.23129 AU
morning rise	5088 May 06 23:25	3° \mathfrak{C} 39'18		morning rise	5094 Jul 25 17:23	20° \mathfrak{C} 57'54	
retrograde	5088 Aug 19 14:02	11° \mathfrak{C} 12'04		retrograde	5094 Nov 08 20:49	29° \mathfrak{C} 05'26	
opposition	5088 Oct 28 23:21	7° \mathfrak{C} 48'01	-2°34'26	opposition	5095 Jan 15 23:08	25° \mathfrak{C} 37'01	-1°07'18
min. Earth dist.	5088 Oct 28 22:29	7° \mathfrak{C} 48'11	8.69303 AU	min. Earth dist.	5095 Jan 15 20:23	25° \mathfrak{C} 37'35	8.20300 AU
direct	5089 Jan 05 14:03	4° \mathfrak{C} 27'47		direct	5095 Mar 23 18:18	22° \mathfrak{C} 11'23	
evening set	5089 Apr 15 14:58	11° \mathfrak{C} 45'42			5095 Jul 03 13:14	0° \mathfrak{C}	
				evening set	5095 Jul 04 09:00	0° \mathfrak{C} 06'12	
conjunction	5089 May 02 12:10	13° \mathfrak{C} 49'09	-2°07'47				
minimum elong	5089 May 02 12:10	13° \mathfrak{C} 49'09	2°07'48	conjunction	5095 Jul 22 06:46	2° \mathfrak{C} 23'03	-0°40'04
max. Earth dist.	5089 May 02 12:48	13° \mathfrak{C} 49'20	10.64901 AU	minimum elong	5095 Jul 22 06:48	2° \mathfrak{C} 23'03	0°40'04
	5089 May 12 03:33	15° \mathfrak{C}		max. Earth dist.	5095 Jul 22 09:36	2° \mathfrak{C} 23'57	10.17883 AU
morning rise	5089 May 19 13:05	15° \mathfrak{C} 53'46		morning rise	5095 Aug 09 07:12	4° \mathfrak{C} 40'44	
retrograde	5089 Sep 01 17:57	23° \mathfrak{C} 33'33		retrograde	5095 Nov 23 03:31	12° \mathfrak{C} 49'55	
opposition	5089 Nov 10 21:08	20° \mathfrak{C} 08'26	-2°38'28	opposition	5096 Jan 29 19:10	9° \mathfrak{C} 21'33	-0°31'12
min. Earth dist.	5089 Nov 10 20:04	20° \mathfrak{C} 08'38	8.60618 AU	min. Earth dist.	5096 Jan 29 16:54	9° \mathfrak{C} 22'01	8.15961 AU
direct	5090 Jan 18 00:24	16° \mathfrak{C} 47'29		direct	5096 Apr 05 13:28	5° \mathfrak{C} 55'00	
evening set	5090 Apr 28 06:01	24° \mathfrak{C} 10'48		evening set	5096 Jul 17 22:07	13° \mathfrak{C} 54'56	
					5096 Jul 26 10:59	15° \mathfrak{C}	
conjunction	5090 May 15 06:18	26° \mathfrak{C} 16'16	-2°07'54				
minimum elong	5090 May 15 06:19	26° \mathfrak{C} 16'16	2°07'55	conjunction	5096 Aug 04 22:33	16° \mathfrak{C} 13'04	-0°09'57
max. Earth dist.	5090 May 15 06:42	26° \mathfrak{C} 16'23	10.55970 AU	minimum elong	5096 Aug 04 22:34	16° \mathfrak{C} 13'04	0°09'57
morning rise	5090 Jun 01 10:53	28° \mathfrak{C} 23'02		behind sun begin	5096 Aug 04 16:41	16° \mathfrak{C} 11'12	
	5090 Jun 15 02:18	0° \mathfrak{C}		behind sun end	5096 Aug 05 04:27	16° \mathfrak{C} 14'56	
retrograde	5090 Sep 15 03:02	6° \mathfrak{C} 09'53		max. Earth dist.	5096 Aug 05 00:49	16° \mathfrak{C} 13'46	10.14541 AU
opposition	5090 Nov 23 23:09	2° \mathfrak{C} 43'44	-2°35'04	morning rise	5096 Aug 23 00:47	18° \mathfrak{C} 31'44	
min. Earth dist.	5090 Nov 23 22:17	2° \mathfrak{C} 43'55	8.51536 AU	asc. node	5096 Dec 04 17:15	26° \mathfrak{C} 40'37	
	5091 Jan 03 17:57	30° \mathfrak{R} \mathfrak{C}		retrograde	5096 Dec 06 10:04	26° \mathfrak{C} 40'46	
direct	5091 Jan 30 17:28	29° \mathfrak{C} 21'58		opposition	5097 Feb 11 16:39	23° \mathfrak{C} 12'42	0°07'00
	5091 Feb 26 09:09	0° \mathfrak{C}		min. Earth dist.	5097 Feb 11 14:55	23° \mathfrak{C} 13'04	8.13646 AU
evening set	5091 May 11 04:42	6° \mathfrak{C} 51'19		direct	5097 Apr 19 14:19	19° \mathfrak{C} 45'20	
				evening set	5097 Aug 01 15:24	27° \mathfrak{C} 49'13	
conjunction	5091 May 28 08:57	8° \mathfrak{C} 59'05	-2°01'49		5097 Aug 18 16:40	0° \mathfrak{C}	
minimum elong	5091 May 28 08:59	8° \mathfrak{C} 59'05	2°01'50				
max. Earth dist.	5091 May 28 09:53	8° \mathfrak{C} 59'22	10.46873 AU	conjunction	5097 Aug 19 17:16	0° \mathfrak{C} 07'55	0°20'59
morning rise	5091 Jun 14 17:41	11° \mathfrak{C} 08'14		minimum elong	5097 Aug 19 17:15	0° \mathfrak{C} 07'55	0°20'59
retrograde	5091 Sep 28 18:22	19° \mathfrak{C} 01'44		max. Earth dist.	5097 Aug 19 18:56	0° \mathfrak{C} 08'27	10.13274 AU
opposition	5091 Dec 07 05:17	15° \mathfrak{C} 34'42	-2°23'54	morning rise	5097 Sep 06 19:47	2° \mathfrak{C} 26'48	
min. Earth dist.	5091 Dec 07 04:11	15° \mathfrak{C} 34'55	8.42502 AU	retrograde	5097 Dec 20 13:22	10° \mathfrak{C} 34'00	
direct	5092 Feb 12 15:20	12° \mathfrak{C} 12'00		opposition	5098 Feb 25 14:39	7° \mathfrak{C} 06'26	0°44'55
evening set	5092 May 23 11:30	19° \mathfrak{C} 47'47		min. Earth dist.	5098 Feb 25 13:20	7° \mathfrak{C} 06'42	8.13438 AU
				direct	5098 May 03 18:47	3° \mathfrak{C} 38'24	
conjunction	5092 Jun 09 20:20	21° \mathfrak{C} 58'02	-1°49'29	evening set	5098 Aug 16 10:39	11° \mathfrak{C} 44'49	
minimum elong	5092 Jun 09 20:23	21° \mathfrak{C} 58'03	1°49'30				
max. Earth dist.	5092 Jun 09 22:17	21° \mathfrak{C} 58'39	10.38058 AU	conjunction	5098 Sep 03 12:31	14° \mathfrak{C} 03'22	0°50'38

minimum elong	5098 Sep 03 12:29	14° <u>10</u> 03'21	0°50'38
max. Earth dist.	5098 Sep 03 13:36	14° <u>10</u> 03'42	10.14068 AU
morning rise	5098 Sep 21 13:50	16° <u>10</u> 21'44	
retrograde	5099 Jan 03 14:40	24° <u>10</u> 25'38	
opposition	5099 Mar 11 12:05	20° <u>10</u> 58'45	1°20'08
min. Earth dist.	5099 Mar 11 10:59	20° <u>10</u> 58'59	8.15235 AU
direct	5099 May 17 23:43	17° <u>10</u> 30'21	
evening set	5099 Aug 31 05:43	25° <u>10</u> 37'49	
conjunction	5099 Sep 18 06:13	27° <u>10</u> 55'34	1°17'14
minimum elong	5099 Sep 18 06:10	27° <u>10</u> 55'33	1°17'15
max. Earth dist.	5099 Sep 18 06:53	27° <u>10</u> 55'47	10.16784 AU
	5099 Oct 04 12:19	0° <u>10</u>	
morning rise	5099 Oct 06 04:55	0° <u>10</u> 12'46	
retrograde	5100 Jan 17 13:22	8° <u>10</u> 12'10	
opposition	5100 Mar 25 08:08	4° <u>10</u> 46'12	1°50'28
min. Earth dist.	5100 Mar 25 07:17	4° <u>10</u> 46'22	8.18905 AU
direct	5100 Jun 01 03:54	1° <u>10</u> 17'40	
evening set	5100 Sep 14 22:07	9° <u>10</u> 24'36	
conjunction	5100 Oct 02 20:07	11° <u>10</u> 40'58	1°39'14
minimum elong	5100 Oct 02 20:04	11° <u>10</u> 40'57	1°39'14
max. Earth dist.	5100 Oct 02 20:26	11° <u>10</u> 41'04	10.21323 AU
morning rise	5100 Oct 20 15:15	13° <u>10</u> 56'29	
retrograde	5101 Jan 31 08:14	21° <u>10</u> 50'21	
opposition	5101 Apr 08 02:10	18° <u>10</u> 25'24	2°14'12
min. Earth dist.	5101 Apr 08 01:50	18° <u>10</u> 25'28	8.24335 AU
direct	5101 Jun 15 07:25	14° <u>10</u> 57'00	
evening set	5101 Sep 29 09:26	23° <u>10</u> 01'35	
conjunction	5101 Oct 17 04:08	25° <u>10</u> 16'07	1°55'26
minimum elong	5101 Oct 17 04:06	25° <u>10</u> 16'07	1°55'26
max. Earth dist.	5101 Oct 17 03:57	25° <u>10</u> 16'04	10.27526 AU
morning rise	5101 Nov 03 19:18	27° <u>10</u> 29'37	
	5101 Nov 24 17:54	0° <u>10</u>	