

direct	4600 Mar 07 05:36	22° Π 56'02	conjunction	4606 Jun 19 14:38	29° Π 57'23 -13°53'26
evening set	4600 Jun 10 05:27	24° Π 17'00	minimum elong	4606 Jun 19 14:49	29° Π 57'23 13°53'27
			max. Earth dist.	4606 Jun 20 01:07	29° Π 57'58 50.21328 AU
conjunction	4600 Jun 13 09:21	24° Π 21'17 -14°42'01		4606 Jun 21 13:09	0° \mathfrak{E}
minimum elong	4600 Jun 13 09:32	24° Π 21'18 14°42'01	morning rise	4606 Jun 25 15:50	0° \mathfrak{E} 05'33
max. Earth dist.	4600 Jun 14 02:19	24° Π 22'15 50.36342 AU	retrograde	4606 Sep 30 03:43	1° \mathfrak{E} 25'48
morning rise	4600 Jun 16 13:45	24° Π 25'37	opposition	4606 Dec 22 18:56	0° \mathfrak{E} 26'35 -14°22'56
retrograde	4600 Sep 23 21:07	25° Π 49'52	min. Earth dist.	4606 Dec 22 09:25	0° \mathfrak{E} 27'02 48.25606 AU
opposition	4600 Dec 16 17:29	24° Π 50'36 -15°14'05		4607 Jan 16 10:21	30° $\mathfrak{R}\Pi$
min. Earth dist.	4600 Dec 16 02:04	24° Π 51'19 48.42315 AU	direct	4607 Mar 14 09:01	29° Π 28'14
direct	4601 Mar 08 09:49	23° Π 52'18		4607 May 09 04:01	0° \mathfrak{E}
evening set	4601 Jun 10 19:55	25° Π 12'24	evening set	4607 Jun 14 10:09	0° \mathfrak{E} 44'51
conjunction	4601 Jun 14 14:12	25° Π 17'30 -14°34'30	conjunction	4607 Jun 20 19:34	0° \mathfrak{E} 53'30 -13°44'30
minimum elong	4601 Jun 14 14:21	25° Π 17'31 14°34'30	minimum elong	4607 Jun 20 19:46	0° \mathfrak{E} 53'31 13°44'30
max. Earth dist.	4601 Jun 15 05:12	25° Π 18'21 50.34662 AU	max. Earth dist.	4607 Jun 21 06:11	0° \mathfrak{E} 54'06 50.17747 AU
morning rise	4601 Jun 18 09:01	25° Π 22'38	morning rise	4607 Jun 27 05:46	1° \mathfrak{E} 02'11
retrograde	4601 Sep 25 04:24	26° Π 46'01	retrograde	4607 Oct 01 07:17	2° \mathfrak{E} 21'57
opposition	4601 Dec 17 21:51	25° Π 46'44 -15°06'11	opposition	4607 Dec 23 23:06	1° \mathfrak{E} 22'46 -14°13'34
min. Earth dist.	4601 Dec 17 08:11	25° Π 47'22 48.40326 AU	min. Earth dist.	4607 Dec 23 14:26	1° \mathfrak{E} 23'10 48.21702 AU
direct	4602 Mar 09 11:23	24° Π 48'24	direct	4608 Mar 14 12:58	0° \mathfrak{E} 24'25
evening set	4602 Jun 11 12:22	26° Π 07'46	evening set	4608 Jun 14 06:33	1° \mathfrak{E} 40'38
conjunction	4602 Jun 15 19:15	26° Π 13'35 -14°26'46	conjunction	4608 Jun 21 00:30	1° \mathfrak{E} 49'46 -13°35'21
minimum elong	4602 Jun 15 19:26	26° Π 13'35 14°26'46	minimum elong	4608 Jun 21 00:41	1° \mathfrak{E} 49'47 13°35'22
max. Earth dist.	4602 Jun 16 10:15	26° Π 14'25 50.32602 AU	max. Earth dist.	4608 Jun 21 09:01	1° \mathfrak{E} 50'15 50.13783 AU
morning rise	4602 Jun 20 02:42	26° Π 19'24	morning rise	4608 Jun 27 19:23	1° \mathfrak{E} 58'56
retrograde	4602 Sep 26 06:55	27° Π 42'02	retrograde	4608 Oct 01 11:59	3° \mathfrak{E} 18'15
opposition	4602 Dec 19 01:58	26° Π 42'45 -14°58'02	opposition	4608 Dec 24 03:18	2° \mathfrak{E} 19'06 -14°03'57
min. Earth dist.	4602 Dec 18 13:00	26° Π 43'21 48.37972 AU	min. Earth dist.	4608 Dec 23 19:28	2° \mathfrak{E} 19'28 48.17386 AU
direct	4603 Mar 10 17:00	25° Π 44'23	direct	4609 Mar 15 16:43	1° \mathfrak{E} 20'46
evening set	4603 Jun 12 05:47	27° Π 03'05	evening set	4609 Jun 15 03:18	2° \mathfrak{E} 36'35
conjunction	4603 Jun 17 00:04	27° Π 09'33 -14°18'48	conjunction	4609 Jun 22 05:39	2° \mathfrak{E} 46'11 -13°25'59
minimum elong	4603 Jun 17 00:15	27° Π 09'33 14°18'47	minimum elong	4609 Jun 22 05:51	2° \mathfrak{E} 46'11 13°25'59
max. Earth dist.	4603 Jun 17 13:19	27° Π 10'17 50.30218 AU	max. Earth dist.	4609 Jun 22 13:08	2° \mathfrak{E} 46'36 50.09350 AU
morning rise	4603 Jun 21 19:01	27° Π 16'01	morning rise	4609 Jun 29 08:57	2° \mathfrak{E} 55'50
retrograde	4603 Sep 27 09:55	28° Π 37'57	retrograde	4609 Oct 02 15:32	4° \mathfrak{E} 14'44
opposition	4603 Dec 20 06:12	27° Π 38'40 -14°49'38	opposition	4609 Dec 25 07:41	3° \mathfrak{E} 15'35 -13°54'08
min. Earth dist.	4603 Dec 19 17:36	27° Π 39'15 48.35319 AU	min. Earth dist.	4609 Dec 25 02:00	3° \mathfrak{E} 15'51 48.12565 AU
direct	4604 Mar 10 22:05	26° Π 40'18	direct	4610 Mar 16 23:54	2° \mathfrak{E} 17'14
evening set	4604 Jun 11 23:50	27° Π 58'25	evening set	4610 Jun 16 00:36	3° \mathfrak{E} 32'40
conjunction	4604 Jun 17 04:49	28° Π 05'27 -14°10'35	conjunction	4610 Jun 23 10:55	3° \mathfrak{E} 42'42 -13°16'25
minimum elong	4604 Jun 17 05:00	28° Π 05'28 14°10'36	minimum elong	4610 Jun 23 11:06	3° \mathfrak{E} 42'43 13°16'25
max. Earth dist.	4604 Jun 17 17:40	28° Π 06'11 50.27533 AU	max. Earth dist.	4610 Jun 23 17:12	3° \mathfrak{E} 43'04 50.04407 AU
morning rise	4604 Jun 22 10:30	28° Π 12'33	morning rise	4610 Jun 30 22:07	3° \mathfrak{E} 52'49
retrograde	4604 Sep 27 14:25	29° Π 33'52	retrograde	4610 Oct 03 21:53	5° \mathfrak{E} 11'17
opposition	4604 Dec 20 10:33	28° Π 34'35 -14°40'59	opposition	4610 Dec 26 11:49	4° \mathfrak{E} 12'08 -13°44'06
min. Earth dist.	4604 Dec 19 23:35	28° Π 35'06 48.32371 AU	min. Earth dist.	4610 Dec 26 06:37	4° \mathfrak{E} 12'23 48.07211 AU
direct	4605 Mar 12 04:00	27° Π 36'13	direct	4611 Mar 18 04:16	3° \mathfrak{E} 13'46
evening set	4605 Jun 12 18:52	28° Π 53'47	evening set	4611 Jun 16 22:04	4° \mathfrak{E} 28'49
conjunction	4605 Jun 18 09:45	29° Π 01'23 -14°02'08	conjunction	4611 Jun 24 16:03	4° \mathfrak{E} 39'18 -13°06'38
minimum elong	4605 Jun 18 09:56	29° Π 01'24 14°02'08	minimum elong	4611 Jun 24 16:15	4° \mathfrak{E} 39'18 13°06'39
max. Earth dist.	4605 Jun 18 22:00	29° Π 02'04 50.24580 AU	max. Earth dist.	4611 Jun 24 20:00	4° \mathfrak{E} 39'31 49.98927 AU
morning rise	4605 Jun 24 01:21	29° Π 09'02	morning rise	4611 Jul 02 11:10	4° \mathfrak{E} 49'51
	4605 Aug 04 16:50	0° \mathfrak{E}	retrograde	4611 Oct 05 06:51	6° \mathfrak{E} 07'54
retrograde	4605 Sep 28 20:12	0° \mathfrak{E} 29'47	opposition	4611 Dec 27 16:14	5° \mathfrak{E} 08'44 -13°33'52
	4605 Nov 23 23:44	30° $\mathfrak{R}\Pi$	min. Earth dist.	4611 Dec 27 13:02	5° \mathfrak{E} 08'53 48.01342 AU
opposition	4605 Dec 21 14:37	29° Π 30'32 -14°32'05	direct	4612 Mar 18 04:34	4° \mathfrak{E} 10'19
min. Earth dist.	4605 Dec 21 03:27	29° Π 31'04 48.29142 AU	evening set	4612 Jun 16 19:36	5° \mathfrak{E} 24'59
direct	4606 Mar 13 07:37	28° Π 32'10			
evening set	4606 Jun 13 14:17	29° Π 49'15	conjunction	4612 Jun 24 21:10	5° \mathfrak{E} 35'54 -12°56'40
			minimum elong	4612 Jun 24 21:21	5° \mathfrak{E} 35'54 12°56'40

max. Earth dist.	4612 Jun 25 00:50	5°☾36'06	49.92952 AU	conjunction	4619 Jul 02 09:48	12°☾12'29	-11°40'26
morning rise	4612 Jul 02 23:42	5°☾46'52		minimum elong	4619 Jul 02 09:59	12°☾12'30	11°40'27
retrograde	4612 Oct 05 10:41	7°☾04'31		max. Earth dist.	4619 Jul 02 05:52	12°☾12'16	49.40987 AU
opposition	4612 Dec 27 20:33	6°☾05'19	-13°23'25	morning rise	4619 Jul 12 11:59	12°☾26'10	
min. Earth dist.	4612 Dec 27 18:14	6°☾05'26	47.94990 AU	retrograde	4619 Oct 12 19:10	13°☾41'34	
direct	4613 Mar 19 09:43	5°☾06'51		opposition	4620 Jan 04 02:59	12°☾42'06	-12°03'33
evening set	4613 Jun 17 17:36	6°☾21'10		min. Earth dist.	4620 Jan 04 07:39	12°☾41'53	47.40869 AU
				direct	4620 Mar 25 18:27	11°☾43'15	
				evening set	4620 Jun 22 08:16	12°☾55'39	
conjunction	4613 Jun 26 02:19	6°☾32'29	-12°46'28				
minimum elong	4613 Jun 26 02:31	6°☾32'30	12°46'29				
max. Earth dist.	4613 Jun 26 04:01	6°☾32'35	49.86534 AU	conjunction	4620 Jul 02 15:14	13°☾09'36	-11°28'36
morning rise	4613 Jul 04 12:12	6°☾43'51		minimum elong	4620 Jul 02 15:26	13°☾09'37	11°28'36
retrograde	4613 Oct 06 13:16	8°☾01'07		max. Earth dist.	4620 Jul 02 10:31	13°☾09'20	49.32254 AU
opposition	4613 Dec 29 00:43	7°☾01'53	-13°12'44	morning rise	4620 Jul 12 23:28	13°☾23'40	
min. Earth dist.	4613 Dec 28 23:14	7°☾01'57	47.88232 AU	retrograde	4620 Oct 13 00:26	14°☾38'49	
direct	4614 Mar 20 14:56	6°☾03'20		opposition	4621 Jan 04 07:30	13°☾39'20	-11°51'11
evening set	4614 Jun 18 15:40	7°☾17'20		min. Earth dist.	4621 Jan 04 12:29	13°☾39'06	47.31762 AU
				direct	4621 Mar 26 23:57	12°☾40'26	
				evening set	4621 Jun 23 07:59	13°☾52'38	
conjunction	4614 Jun 27 07:33	7°☾29'02	-12°36'03				
minimum elong	4614 Jun 27 07:44	7°☾29'03	12°36'03				
max. Earth dist.	4614 Jun 27 08:25	7°☾29'05	49.79716 AU	conjunction	4621 Jul 03 20:53	14°☾06'57	-11°16'34
morning rise	4614 Jul 06 00:35	7°☾40'49		minimum elong	4621 Jul 03 21:04	14°☾06'58	11°16'34
retrograde	4614 Oct 07 16:07	8°☾57'43		max. Earth dist.	4621 Jul 03 13:47	14°☾06'33	49.23049 AU
opposition	4614 Dec 30 05:05	7°☾58'26	-13°01'49	morning rise	4621 Jul 14 11:20	14°☾21'22	
min. Earth dist.	4614 Dec 30 05:21	7°☾58'25	47.81101 AU	retrograde	4621 Oct 14 09:31	15°☾36'18	
direct	4615 Mar 21 22:07	6°☾59'49		opposition	4622 Jan 05 12:08	14°☾36'47	-11°38'35
evening set	4615 Jun 19 13:55	8°☾13'30		min. Earth dist.	4622 Jan 05 19:20	14°☾36'27	47.22163 AU
				direct	4622 Mar 28 01:37	13°☾37'49	
				evening set	4622 Jun 24 07:53	14°☾49'50	
conjunction	4615 Jun 28 12:38	8°☾25'35	-12°25'24				
minimum elong	4615 Jun 28 12:50	8°☾25'36	12°25'25				
max. Earth dist.	4615 Jun 28 12:54	8°☾25'36	49.72567 AU	conjunction	4622 Jul 05 02:48	15°☾04'31	-11°04'18
morning rise	4615 Jul 07 12:31	8°☾37'46		minimum elong	4622 Jul 05 03:00	15°☾04'31	11°04'19
retrograde	4615 Oct 08 21:21	9°☾54'20		max. Earth dist.	4622 Jul 04 19:10	15°☾04'05	49.13325 AU
opposition	4615 Dec 31 09:18	8°☾54'59	-12°50'40	morning rise	4622 Jul 15 23:00	15°☾19'17	
min. Earth dist.	4615 Dec 31 09:23	8°☾54'59	47.73651 AU	retrograde	4622 Oct 15 15:11	16°☾33'59	
direct	4616 Mar 22 03:10	7°☾56'19		opposition	4623 Jan 06 16:51	15°☾34'25	-11°25'46
evening set	4616 Jun 19 12:21	9°☾09'41		min. Earth dist.	4623 Jan 07 01:02	15°☾34'02	47.12014 AU
				direct	4623 Mar 29 06:07	14°☾35'22	
				evening set	4623 Jun 25 07:56	15°☾47'13	
conjunction	4616 Jun 28 17:46	9°☾22'10	-12°14'31				
minimum elong	4616 Jun 28 17:57	9°☾22'10	12°14'31				
max. Earth dist.	4616 Jun 28 16:16	9°☾22'05	49.65110 AU	conjunction	4623 Jul 06 08:26	16°☾02'14	-10°51'50
morning rise	4616 Jul 08 00:31	9°☾34'44		minimum elong	4623 Jul 06 08:37	16°☾02'14	10°51'51
retrograde	4616 Oct 09 04:57	10°☾50'58		max. Earth dist.	4623 Jul 05 22:29	16°☾01'40	49.03061 AU
opposition	4616 Dec 31 13:42	9°☾51'35	-12°39'16	morning rise	4623 Jul 17 10:29	16°☾17'20	
min. Earth dist.	4616 Dec 31 15:23	9°☾51'30	47.65917 AU	retrograde	4623 Oct 16 20:11	17°☾31'49	
direct	4617 Mar 23 05:19	8°☾52'52		opposition	4624 Jan 07 21:37	16°☾32'12	-11°12'44
evening set	4617 Jun 20 10:57	10°☾05'56		min. Earth dist.	4624 Jan 08 06:57	16°☾31'46	47.01341 AU
				direct	4624 Mar 29 10:50	15°☾33'04	
				evening set	4624 Jun 25 08:07	16°☾44'44	
conjunction	4617 Jun 29 23:06	10°☾18'49	-12°03'24				
minimum elong	4617 Jun 29 23:17	10°☾18'49	12°03'25				
max. Earth dist.	4617 Jun 29 21:45	10°☾18'44	49.57374 AU	conjunction	4624 Jul 06 14:20	17°☾00'05	-10°39'10
morning rise	4617 Jul 09 12:23	10°☾31'46		minimum elong	4624 Jul 06 14:32	17°☾00'06	10°39'11
retrograde	4617 Oct 10 10:21	11°☾47'41		max. Earth dist.	4624 Jul 06 03:13	16°☾59'27	48.92276 AU
opposition	4618 Jan 01 18:05	10°☾48'16	-12°27'36	morning rise	4624 Jul 17 22:01	17°☾15'32	
min. Earth dist.	4618 Jan 01 20:19	10°☾48'10	47.57885 AU	retrograde	4624 Oct 16 23:24	18°☾29'49	
direct	4618 Mar 24 08:38	9°☾49'29		opposition	4625 Jan 08 02:25	17°☾30'07	-10°59'29
evening set	4618 Jun 21 09:57	11°☾02'19		min. Earth dist.	4625 Jan 08 13:43	17°☾29'35	46.90172 AU
				direct	4625 Mar 30 18:24	16°☾30'53	
				evening set	4625 Jun 26 08:33	17°☾42'23	
conjunction	4618 Jul 01 04:23	11°☾15'34	-11°52'02				
minimum elong	4618 Jul 01 04:34	11°☾15'35	11°52'02				
max. Earth dist.	4618 Jul 01 01:09	11°☾15'23	49.49346 AU	conjunction	4625 Jul 07 20:15	17°☾58'04	-10°26'16
morning rise	4618 Jul 11 00:11	11°☾28'53		minimum elong	4625 Jul 07 20:26	17°☾58'05	10°26'16
retrograde	4618 Oct 11 15:58	12°☾44'31		max. Earth dist.	4625 Jul 07 08:09	17°☾57'23	48.81039 AU
opposition	4619 Jan 02 22:24	11°☾45'05	-12°15'42	morning rise	4625 Jul 19 09:22	18°☾13'51	
min. Earth dist.	4619 Jan 03 01:13	11°☾44'57	47.49556 AU	retrograde	4625 Oct 18 04:57	19°☾27'56	
direct	4619 Mar 25 12:00	10°☾46'16		opposition	4626 Jan 09 07:08	18°☾28'10	-10°46'00
evening set	4619 Jun 22 08:58	11°☾58'53		min. Earth dist.	4626 Jan 09 18:35	18°☾27'37	46.78571 AU

direct	4626 Apr 01 00:05	17°☾28'49	retrograde	4632 Oct 25 03:55	26°☾20'32
evening set	4626 Jun 27 09:11	18°☾40'10	opposition	4633 Jan 15 18:47	25°☾20'12 -9°04'30
			min. Earth dist.	4633 Jan 16 13:16	25°☾19'19 45.88390 AU
conjunction	4626 Jul 09 02:10	18°☾56'11 -10°13'09	direct	4633 Apr 07 06:54	24°☾20'08
minimum elong	4626 Jul 09 02:22	18°☾56'11 10°13'09	evening set	4633 Jul 02 18:59	25°☾30'59
max. Earth dist.	4626 Jul 08 12:04	18°☾55'22 48.69381 AU			
morning rise	4626 Jul 20 20:49	19°☾12'17	conjunction	4633 Jul 15 22:18	25°☾49'12 -8°34'30
retrograde	4626 Oct 19 12:47	20°☾26'12	minimum elong	4633 Jul 15 22:28	25°☾49'13 8°34'29
opposition	4627 Jan 10 11:58	19°☾26'20 -10°32'16	max. Earth dist.	4633 Jul 15 00:55	25°☾47'58 47.79060 AU
min. Earth dist.	4627 Jan 11 01:22	19°☾25'42 46.66593 AU	morning rise	4633 Jul 29 03:18	26°☾07'32
direct	4627 Apr 02 03:00	18°☾26'53	retrograde	4633 Oct 26 12:00	27°☾20'41
evening set	4627 Jun 28 09:53	19°☾38'06	opposition	4634 Jan 17 00:19	26°☾20'17 -8°49'00
			min. Earth dist.	4634 Jan 17 20:06	26°☾19'20 45.74102 AU
conjunction	4627 Jul 10 08:15	19°☾54'27 -9°59'47	direct	4634 Apr 08 11:03	25°☾20'06
minimum elong	4627 Jul 10 08:25	19°☾54'27 9°59'47	evening set	4634 Jul 03 21:26	26°☾30'56
max. Earth dist.	4627 Jul 09 18:08	19°☾53'38 48.57377 AU	max. Earth dist.	4634 Jul 16 06:38	26°☾48'08 47.64647 AU
morning rise	4627 Jul 22 07:58	20°☾10'53			
retrograde	4627 Oct 20 19:23	21°☾24'37	conjunction	4634 Jul 17 05:17	26°☾49'27 -8°19'27
opposition	4628 Jan 11 16:53	20°☾24'41 -10°18'17	minimum elong	4634 Jul 17 05:26	26°☾49'28 8°19'27
min. Earth dist.	4628 Jan 12 06:41	20°☾24'01 46.54286 AU	morning rise	4634 Jul 30 14:38	27°☾08'04
direct	4628 Apr 02 06:48	19°☾25'07	retrograde	4634 Oct 27 16:01	28°☾21'11
evening set	4628 Jun 28 10:46	20°☾36'14	opposition	4635 Jan 18 06:00	27°☾20'40 -8°33'15
			min. Earth dist.	4635 Jan 19 03:42	27°☾19'37 45.59302 AU
conjunction	4628 Jul 10 14:08	20°☾52'53 -9°46'11	direct	4635 Apr 09 19:25	26°☾20'20
minimum elong	4628 Jul 10 14:19	20°☾52'54 9°46'12	evening set	4635 Jul 05 00:10	27°☾31'10
max. Earth dist.	4628 Jul 09 22:12	20°☾51'58 48.45074 AU			
morning rise	4628 Jul 22 19:08	21°☾09'39	conjunction	4635 Jul 18 12:19	27°☾49'58 -8°04'10
retrograde	4628 Oct 21 02:12	22°☾23'14	minimum elong	4635 Jul 18 12:29	27°☾49'59 8°04'10
opposition	4629 Jan 11 21:54	21°☾23'12 -10°04'03	max. Earth dist.	4635 Jul 17 12:29	27°☾48'34 47.49746 AU
min. Earth dist.	4629 Jan 12 12:20	21°☾22'31 46.41700 AU	morning rise	4635 Aug 01 01:56	28°☾08'53
direct	4629 Apr 03 10:42	20°☾23'32	retrograde	4635 Oct 28 21:04	29°☾21'56
evening set	4629 Jun 29 11:54	21°☾34'34	opposition	4636 Jan 19 11:43	28°☾21'17 -8°17'16
			min. Earth dist.	4636 Jan 20 09:44	28°☾20'13 45.44015 AU
conjunction	4629 Jul 11 20:24	21°☾51'33 -9°32'20	direct	4636 Apr 10 02:55	27°☾20'48
minimum elong	4629 Jul 11 20:34	21°☾51'33 9°32'20	evening set	4636 Jul 05 03:01	28°☾31'37
max. Earth dist.	4629 Jul 11 03:52	21°☾50'36 48.32483 AU			
morning rise	4629 Jul 24 06:24	22°☾08'37	conjunction	4636 Jul 18 19:18	28°☾50'43 -7°48'40
retrograde	4629 Oct 22 05:54	23°☾22'06	minimum elong	4636 Jul 18 19:27	28°☾50'43 7°48'40
opposition	4630 Jan 13 02:58	22°☾21'59 -9°49'33	max. Earth dist.	4636 Jul 17 17:15	28°☾49'11 47.34354 AU
min. Earth dist.	4630 Jan 13 18:57	22°☾21'13 46.28833 AU	morning rise	4636 Aug 01 13:16	29°☾09'55
direct	4630 Apr 04 17:21	21°☾22'13		4636 Sep 12 09:31	0°♂
evening set	4630 Jun 30 13:21	22°☾33'11	retrograde	4636 Oct 29 05:01	0°♂22'56
max. Earth dist.	4630 Jul 12 09:34	22°☾49'28 48.19632 AU		4636 Dec 15 14:01	30°♂☾
			opposition	4637 Jan 19 17:41	29°☾22'09 -8°01'02
conjunction	4630 Jul 13 02:44	22°☾50'28 -9°18'14	min. Earth dist.	4637 Jan 20 17:55	29°☾20'58 45.28269 AU
minimum elong	4630 Jul 13 02:54	22°☾50'28 9°18'16	direct	4637 Apr 11 08:05	28°☾21'29
morning rise	4630 Jul 25 17:36	23°☾07'52	evening set	4637 Jul 06 06:09	29°☾32'18
retrograde	4630 Oct 23 10:36	24°☾21'14	max. Earth dist.	4637 Jul 19 00:20	29°☾50'08 47.18529 AU
opposition	4631 Jan 14 08:06	23°☾21'03 -9°34'47			
min. Earth dist.	4631 Jan 15 00:03	23°☾20'18 46.15691 AU	conjunction	4637 Jul 20 02:40	29°☾51'41 -7°32'55
direct	4631 Apr 06 00:28	22°☾21'12	minimum elong	4637 Jul 20 02:50	29°☾51'41 7°32'56
evening set	4631 Jul 01 14:52	23°☾32'06		4637 Jul 26 00:18	0°♂
			morning rise	4637 Aug 03 00:32	0°♂11'10
conjunction	4631 Jul 14 08:56	23°☾49'42 -9°03'54	retrograde	4637 Oct 30 12:40	1°♂24'09
minimum elong	4631 Jul 14 09:07	23°☾49'42 9°03'54	opposition	4638 Jan 20 23:28	0°♂23'13 -7°44'32
max. Earth dist.	4631 Jul 13 13:54	23°☾48'36 48.06476 AU	min. Earth dist.	4638 Jan 22 00:14	0°♂22'00 45.12112 AU
morning rise	4631 Jul 27 04:43	24°☾07'24		4638 Feb 10 07:29	30°♂☾
retrograde	4631 Oct 24 20:04	25°☾20'42	direct	4638 Apr 12 13:38	29°☾22'22
opposition	4632 Jan 15 13:29	24°☾20'28 -9°19'46		4638 Jun 11 13:21	0°♂
min. Earth dist.	4632 Jan 16 07:14	24°☾19'36 46.02234 AU	evening set	4638 Jul 07 09:39	0°♂33'12
direct	4632 Apr 06 03:21	23°☾20'30	max. Earth dist.	4638 Jul 20 05:31	0°♂51'11 47.02325 AU
evening set	4632 Jul 01 16:40	24°☾31'22			
			conjunction	4638 Jul 21 09:57	0°♂52'52 -7°16'56
conjunction	4632 Jul 14 15:35	24°☾49'17 -8°49'19	minimum elong	4638 Jul 21 10:06	0°♂52'52 7°16'56
minimum elong	4632 Jul 14 15:45	24°☾49'17 8°49'20	morning rise	4638 Aug 04 11:54	1°♂12'38
max. Earth dist.	4632 Jul 13 20:28	24°☾48'10 47.92976 AU	retrograde	4638 Oct 31 22:10	2°♂25'35
morning rise	4632 Jul 27 15:54	25°☾07'17	opposition	4639 Jan 22 05:32	1°♂24'30 -7°27'48

min. Earth dist.	4639 Jan 23 07:18	1°Ω23'15	44.95617 AU	morning rise	4645 Aug 12 19:25	8°Ω33'05	
direct	4639 Apr 13 17:32	0°Ω23'29		retrograde	4645 Nov 08 04:35	9°Ω46'36	
evening set	4639 Jul 08 13:04	1°Ω34'21		opposition	4646 Jan 29 03:57	8°Ω44'36	-5°22'55
				min. Earth dist.	4646 Jan 30 11:56	8°Ω43'01	43.72633 AU
conjunction	4639 Jul 22 17:18	1°Ω54'18	-7°00'42	direct	4646 Apr 20 16:22	7°Ω42'28	
minimum elong	4639 Jul 22 17:27	1°Ω54'18	7°00'42	evening set	4646 Jul 14 23:15	8°Ω54'20	
max. Earth dist.	4639 Jul 21 12:23	1°Ω52'35	46.85789 AU	max. Earth dist.	4646 Jul 28 13:21	9°Ω13'55	45.62533 AU
morning rise	4639 Aug 05 22:56	2°Ω14'21					
retrograde	4639 Nov 02 04:26	3°Ω27'18		conjunction	4646 Jul 30 02:34	9°Ω16'11	-4°59'50
opposition	4640 Jan 23 11:47	2°Ω26'04	-7°10'47	minimum elong	4646 Jul 30 02:41	9°Ω16'11	4°59'50
min. Earth dist.	4640 Jan 24 14:53	2°Ω24'44	44.78818 AU	morning rise	4646 Aug 14 07:12	9°Ω38'07	
direct	4640 Apr 14 00:31	1°Ω24'52		retrograde	4646 Nov 09 13:17	10°Ω51'48	
evening set	4640 Jul 08 16:57	2°Ω35'48		opposition	4647 Jan 30 11:30	9°Ω49'39	-5°04'00
max. Earth dist.	4640 Jul 21 19:12	2°Ω54'16	46.68992 AU	min. Earth dist.	4647 Jan 31 21:48	9°Ω47'56	43.53675 AU
				direct	4647 Apr 21 23:29	8°Ω47'19	
conjunction	4640 Jul 23 00:51	2°Ω56'01	-6°44'12	evening set	4647 Jul 16 05:23	9°Ω59'24	
minimum elong	4640 Jul 23 01:00	2°Ω56'02	6°44'12	max. Earth dist.	4647 Jul 29 21:53	10°Ω19'11	45.43440 AU
morning rise	4640 Aug 06 10:11	3°Ω16'21					
retrograde	4640 Nov 02 09:39	4°Ω29'20		conjunction	4647 Jul 31 11:35	10°Ω21'29	-4°41'33
opposition	4641 Jan 23 17:56	3°Ω27'57	-6°53'29	minimum elong	4647 Jul 31 11:42	10°Ω21'29	4°41'34
min. Earth dist.	4641 Jan 24 20:59	3°Ω26'37	44.61778 AU	morning rise	4647 Aug 15 18:48	10°Ω43'40	
direct	4641 Apr 15 08:37	2°Ω26'35		retrograde	4647 Nov 10 22:20	11°Ω57'32	
evening set	4641 Jul 09 21:10	3°Ω37'36		opposition	4648 Jan 31 19:07	10°Ω55'13	-4°44'49
max. Earth dist.	4641 Jul 23 01:10	3°Ω56'14	46.51947 AU	min. Earth dist.	4648 Feb 02 05:50	10°Ω53'28	43.34249 AU
				direct	4648 Apr 22 06:48	9°Ω52'41	
conjunction	4641 Jul 24 08:36	3°Ω58'06	-6°27'27	evening set	4648 Jul 16 12:10	11°Ω04'58	
minimum elong	4641 Jul 24 08:45	3°Ω58'07	6°27'28	max. Earth dist.	4648 Jul 30 04:38	11°Ω24'51	45.23892 AU
morning rise	4641 Aug 07 21:35	4°Ω18'42					
retrograde	4641 Nov 03 18:03	5°Ω31'45		conjunction	4648 Jul 31 20:48	11°Ω27'18	-4°23'02
opposition	4642 Jan 25 00:30	4°Ω30'14	-6°35'55	minimum elong	4648 Jul 31 20:55	11°Ω27'18	4°23'02
min. Earth dist.	4642 Jan 26 05:13	4°Ω28'49	44.44505 AU	morning rise	4648 Aug 16 06:45	11°Ω49'44	
direct	4642 Apr 16 14:21	3°Ω28'42		retrograde	4648 Nov 11 11:18	13°Ω03'46	
evening set	4642 Jul 11 01:34	4°Ω39'50		opposition	4649 Feb 01 02:50	12°Ω01'15	-4°25'22
max. Earth dist.	4642 Jul 24 09:21	4°Ω58'45	46.34676 AU	min. Earth dist.	4649 Feb 02 15:09	11°Ω59'26	43.14400 AU
				direct	4649 Apr 23 10:54	10°Ω58'29	
conjunction	4642 Jul 25 16:35	5°Ω00'37	-6°10'26	evening set	4649 Jul 17 19:09	12°Ω11'01	
minimum elong	4642 Jul 25 16:43	5°Ω00'37	6°10'26	max. Earth dist.	4649 Jul 31 13:33	12°Ω31'06	45.03920 AU
morning rise	4642 Aug 09 08:48	5°Ω21'29					
retrograde	4642 Nov 05 03:01	6°Ω34'37		conjunction	4649 Aug 02 06:25	12°Ω33'36	-4°04'15
opposition	4643 Jan 26 07:03	5°Ω32'59	-6°18'05	minimum elong	4649 Aug 02 06:30	12°Ω33'36	4°04'16
min. Earth dist.	4643 Jan 27 11:52	5°Ω31'33	44.26995 AU	morning rise	4649 Aug 17 18:37	12°Ω56'16	
direct	4643 Apr 17 19:11	4°Ω31'18		retrograde	4649 Nov 12 21:30	14°Ω10'29	
evening set	4643 Jul 12 06:27	5°Ω42'36		opposition	4650 Feb 02 10:51	13°Ω07'46	-4°05'38
max. Earth dist.	4643 Jul 25 15:27	6°Ω01'39	46.17162 AU	min. Earth dist.	4650 Feb 04 00:32	13°Ω05'52	42.94150 AU
				direct	4650 Apr 24 18:32	12°Ω04'46	
conjunction	4643 Jul 27 00:37	6°Ω03'38	-5°53'10	evening set	4650 Jul 19 02:31	13°Ω17'33	
minimum elong	4643 Jul 27 00:45	6°Ω03'39	5°53'11	max. Earth dist.	4650 Aug 01 21:52	13°Ω37'46	44.83589 AU
morning rise	4643 Aug 10 20:18	6°Ω24'47					
retrograde	4643 Nov 06 13:44	7°Ω38'01		conjunction	4650 Aug 03 16:00	13°Ω40'22	-3°45'13
opposition	4644 Jan 27 13:51	6°Ω36'16	-5°59'58	minimum elong	4650 Aug 03 16:06	13°Ω40'22	3°45'14
min. Earth dist.	4644 Jan 28 19:51	6°Ω34'47	44.09235 AU	morning rise	4650 Aug 19 06:31	14°Ω03'16	
direct	4644 Apr 17 23:19	5°Ω34'27			4650 Oct 05 10:09	15°Ω	
evening set	4644 Jul 12 11:29	6°Ω45'55		retrograde	4650 Nov 14 05:33	15°Ω17'40	
max. Earth dist.	4644 Jul 25 23:11	7°Ω05'12	45.99347 AU		4650 Dec 24 05:52	15°Ω	
				opposition	4651 Feb 03 18:53	14°Ω14'45	-3°45'39
conjunction	4644 Jul 27 08:58	7°Ω07'14	-5°35'38	min. Earth dist.	4651 Feb 05 08:54	14°Ω12'49	42.73579 AU
minimum elong	4644 Jul 27 09:06	7°Ω07'14	5°35'38	direct	4651 Apr 26 04:20	13°Ω11'29	
morning rise	4644 Aug 11 07:41	7°Ω28'38		evening set	4651 Jul 20 10:15	14°Ω24'32	
retrograde	4644 Nov 06 21:06	8°Ω42'01		max. Earth dist.	4651 Aug 03 06:03	14°Ω44'52	44.62941 AU
opposition	4645 Jan 27 20:55	7°Ω40'08	-5°41'34				
min. Earth dist.	4645 Jan 29 04:23	7°Ω38'35	43.91133 AU	conjunction	4651 Aug 05 01:50	14°Ω47'35	-3°25'56
direct	4645 Apr 19 07:48	6°Ω38'10		minimum elong	4651 Aug 05 01:55	14°Ω47'36	3°25'56
evening set	4645 Jul 13 17:10	7°Ω49'50			4651 Aug 13 10:39	15°Ω	
max. Earth dist.	4645 Jul 27 06:37	8°Ω09'18	45.81165 AU	morning rise	4651 Aug 20 18:25	15°Ω10'44	
				retrograde	4651 Nov 15 13:03	16°Ω25'22	
conjunction	4645 Jul 28 17:39	8°Ω11'25	-5°17'51	opposition	4652 Feb 05 03:19	15°Ω22'13	-3°25'22
minimum elong	4645 Jul 28 17:46	8°Ω11'25	5°17'52	min. Earth dist.	4652 Feb 06 19:06	15°Ω20'11	42.52733 AU

	4652 Feb 23 15:32	15° $\mathring{\text{R}}\mathring{\text{O}}$		minimum elong	4658 Aug 13 06:24	22° $\mathring{\text{O}}55'17''$	1°03'40
direct	4652 Apr 26 14:25	14° $\mathring{\text{O}}18'42''$		morning rise	4658 Aug 29 08:28	23° $\mathring{\text{O}}19'53''$	
	4652 Jun 27 02:46	15° $\mathring{\text{O}}$		retrograde	4658 Nov 23 20:40	24° $\mathring{\text{O}}36'55''$	
evening set	4652 Jul 20 18:12	15° $\mathring{\text{O}}32'02''$		opposition	4659 Feb 12 21:03	23° $\mathring{\text{O}}32'16''$	-0°55'34
max. Earth dist.	4652 Aug 03 16:12	15° $\mathring{\text{O}}52'36''$	44.42048 AU	min. Earth dist.	4659 Feb 14 19:18	23° $\mathring{\text{O}}29'50''$	41.00412 AU
				direct	4659 May 05 03:07	22° $\mathring{\text{O}}27'00''$	
conjunction	4652 Aug 05 11:53	15° $\mathring{\text{O}}55'19''$	-3°06'23	evening set	4659 Jul 29 16:24	23° $\mathring{\text{O}}43'15''$	
minimum elong	4652 Aug 05 11:58	15° $\mathring{\text{O}}55'19''$	3°06'24	max. Earth dist.	4659 Aug 12 14:56	24° $\mathring{\text{O}}04'37''$	42.89056 AU
morning rise	4652 Aug 21 06:19	16° $\mathring{\text{O}}18'41''$					
retrograde	4652 Nov 15 21:59	17° $\mathring{\text{O}}33'34''$		conjunction	4659 Aug 14 18:44	24° $\mathring{\text{O}}07'58''$	-0°42'19
opposition	4653 Feb 05 11:53	16° $\mathring{\text{O}}30'12''$	-3°04'49	minimum elong	4659 Aug 14 18:45	24° $\mathring{\text{O}}07'58''$	0°42'19
min. Earth dist.	4653 Feb 07 03:33	16° $\mathring{\text{O}}28'10''$	42.31656 AU	morning rise	4659 Aug 30 21:15	24° $\mathring{\text{O}}32'44''$	
direct	4653 Apr 27 23:10	15° $\mathring{\text{O}}26'26''$		retrograde	4659 Nov 25 09:19	25° $\mathring{\text{O}}50'13''$	
evening set	4653 Jul 22 02:53	16° $\mathring{\text{O}}40'05''$		opposition	4660 Feb 14 07:38	24° $\mathring{\text{O}}45'19''$	-0°33'04
max. Earth dist.	4653 Aug 05 00:29	17° $\mathring{\text{O}}00'44''$	44.20935 AU	min. Earth dist.	4660 Feb 16 06:48	24° $\mathring{\text{O}}42'50''$	40.77354 AU
				direct	4660 May 05 12:28	23° $\mathring{\text{O}}39'45''$	
conjunction	4653 Aug 06 22:12	17° $\mathring{\text{O}}03'35''$	-2°46'35	evening set	4660 Jul 30 04:32	24° $\mathring{\text{O}}56'31''$	
minimum elong	4653 Aug 06 22:16	17° $\mathring{\text{O}}03'35''$	2°46'35	max. Earth dist.	4660 Aug 13 01:26	25° $\mathring{\text{O}}17'55''$	42.65834 AU
morning rise	4653 Aug 22 18:30	17° $\mathring{\text{O}}27'10''$					
retrograde	4653 Nov 17 10:19	18° $\mathring{\text{O}}42'20''$		conjunction	4660 Aug 15 07:14	25° $\mathring{\text{O}}21'25''$	-0°20'44
opposition	4654 Feb 06 20:41	17° $\mathring{\text{O}}38'45''$	-2°43'58	minimum elong	4660 Aug 15 07:14	25° $\mathring{\text{O}}21'25''$	0°20'44
min. Earth dist.	4654 Feb 08 13:43	17° $\mathring{\text{O}}36'39''$	42.10390 AU	morning rise	4660 Aug 31 10:17	25° $\mathring{\text{O}}46'21''$	
direct	4654 Apr 29 05:12	16° $\mathring{\text{O}}34'45''$		retrograde	4660 Nov 26 00:03	27° $\mathring{\text{O}}04'17''$	
evening set	4654 Jul 23 11:48	17° $\mathring{\text{O}}48'45''$		opposition	4661 Feb 14 18:30	25° $\mathring{\text{O}}59'08''$	-0°10'18
max. Earth dist.	4654 Aug 06 11:03	18° $\mathring{\text{O}}09'35''$	43.99625 AU	min. Earth dist.	4661 Feb 16 18:39	25° $\mathring{\text{O}}56'35''$	40.53934 AU
				direct	4661 May 06 22:13	24° $\mathring{\text{O}}53'15''$	
conjunction	4654 Aug 08 08:54	18° $\mathring{\text{O}}12'28''$	-2°26'31	asc. node	4661 Jul 29 00:58	26° $\mathring{\text{O}}06'30''$	
minimum elong	4654 Aug 08 08:58	18° $\mathring{\text{O}}12'28''$	2°26'32	evening set	4661 Jul 31 17:16	26° $\mathring{\text{O}}10'34''$	
morning rise	4654 Aug 24 06:34	18° $\mathring{\text{O}}36'15''$		max. Earth dist.	4661 Aug 14 13:02	26° $\mathring{\text{O}}32'01''$	42.42239 AU
retrograde	4654 Nov 18 22:05	19° $\mathring{\text{O}}51'45''$					
opposition	4655 Feb 08 05:51	18° $\mathring{\text{O}}47'57''$	-2°22'51	conjunction	4661 Aug 16 20:14	26° $\mathring{\text{O}}35'37''$	0°01'10
min. Earth dist.	4655 Feb 09 23:33	18° $\mathring{\text{O}}45'48''$	41.88929 AU	minimum elong	4661 Aug 16 20:14	26° $\mathring{\text{O}}35'37''$	0°01'10
direct	4655 Apr 30 13:33	17° $\mathring{\text{O}}43'42''$		behind sun begin	4661 Aug 16 13:43	26° $\mathring{\text{O}}35'14''$	
evening set	4655 Jul 24 21:08	18° $\mathring{\text{O}}58'05''$		behind sun end	4661 Aug 17 02:46	26° $\mathring{\text{O}}36'01''$	
max. Earth dist.	4655 Aug 07 20:35	19° $\mathring{\text{O}}19'03''$	43.78128 AU	morning rise	4661 Sep 01 23:19	27° $\mathring{\text{O}}00'44''$	
				retrograde	4661 Nov 27 12:10	28° $\mathring{\text{O}}19'09''$	
conjunction	4655 Aug 09 19:33	19° $\mathring{\text{O}}22'01''$	-2°06'11	opposition	4662 Feb 16 05:39	27° $\mathring{\text{O}}13'42''$	0°12'45
minimum elong	4655 Aug 09 19:37	19° $\mathring{\text{O}}22'01''$	2°06'11	min. Earth dist.	4662 Feb 18 07:34	27° $\mathring{\text{O}}11'03''$	40.30181 AU
morning rise	4655 Aug 25 18:44	19° $\mathring{\text{O}}46'01''$		direct	4662 May 08 11:13	26° $\mathring{\text{O}}07'30''$	
retrograde	4655 Nov 20 11:04	21° $\mathring{\text{O}}01'51''$		evening set	4662 Aug 02 06:28	27° $\mathring{\text{O}}25'23''$	
opposition	4656 Feb 09 15:11	19° $\mathring{\text{O}}57'51''$	-2°01'26	max. Earth dist.	4662 Aug 16 01:47	27° $\mathring{\text{O}}46'57''$	42.18354 AU
min. Earth dist.	4656 Feb 11 09:13	19° $\mathring{\text{O}}55'40''$	41.67269 AU				
direct	4656 Apr 30 22:31	18° $\mathring{\text{O}}53'21''$		conjunction	4662 Aug 18 09:28	27° $\mathring{\text{O}}50'37''$	0°23'14
evening set	4656 Jul 25 07:08	20° $\mathring{\text{O}}08'10''$		minimum elong	4662 Aug 18 09:27	27° $\mathring{\text{O}}50'37''$	0°23'13
max. Earth dist.	4656 Aug 08 06:28	20° $\mathring{\text{O}}29'15''$	43.56378 AU	morning rise	4662 Sep 03 12:28	28° $\mathring{\text{O}}15'52''$	
				retrograde	4662 Nov 29 00:11	29° $\mathring{\text{O}}34'47''$	
conjunction	4656 Aug 10 06:50	20° $\mathring{\text{O}}32'19''$	-1°45'35	opposition	4663 Feb 17 17:04	28° $\mathring{\text{O}}29'04''$	0°36'03
minimum elong	4656 Aug 10 06:52	20° $\mathring{\text{O}}32'19''$	1°45'36	min. Earth dist.	4663 Feb 19 18:56	28° $\mathring{\text{O}}26'23''$	40.06174 AU
morning rise	4656 Aug 26 07:08	20° $\mathring{\text{O}}56'31''$		direct	4663 May 10 00:13	27° $\mathring{\text{O}}22'32''$	
retrograde	4656 Nov 20 21:38	22° $\mathring{\text{O}}12'44''$		evening set	4663 Aug 03 20:08	28° $\mathring{\text{O}}41'01''$	
opposition	4657 Feb 10 00:49	21° $\mathring{\text{O}}08'32''$	-1°39'45	max. Earth dist.	4663 Aug 17 13:11	29° $\mathring{\text{O}}02'34''$	41.94224 AU
min. Earth dist.	4657 Feb 11 20:52	21° $\mathring{\text{O}}06'14''$	41.45337 AU				
direct	4657 May 02 08:30	20° $\mathring{\text{O}}03'47''$		conjunction	4663 Aug 19 22:47	29° $\mathring{\text{O}}06'23''$	0°45'32
evening set	4657 Jul 26 17:40	21° $\mathring{\text{O}}19'04''$		minimum elong	4663 Aug 19 22:45	29° $\mathring{\text{O}}06'23''$	0°45'32
max. Earth dist.	4657 Aug 09 17:39	21° $\mathring{\text{O}}40'17''$	43.34327 AU	morning rise	4663 Sep 05 01:32	29° $\mathring{\text{O}}31'47''$	
					4663 Sep 24 06:04	0° $\mathring{\text{N}}\mathring{\text{P}}$	
conjunction	4657 Aug 11 18:31	21° $\mathring{\text{O}}43'24''$	-1°24'45	retrograde	4663 Nov 30 13:24	0° $\mathring{\text{N}}\mathring{\text{P}}51'16''$	
minimum elong	4657 Aug 11 18:33	21° $\mathring{\text{O}}43'24''$	1°24'44		4664 Feb 07 16:49	30° $\mathring{\text{R}}\mathring{\text{O}}$	
morning rise	4657 Aug 27 19:45	22° $\mathring{\text{O}}07'49''$		opposition	4664 Feb 19 04:57	29° $\mathring{\text{O}}45'15''$	0°59'37
retrograde	4657 Nov 22 07:22	23° $\mathring{\text{O}}24'25''$		min. Earth dist.	4664 Feb 21 08:34	29° $\mathring{\text{O}}42'28''$	39.81972 AU
opposition	4658 Feb 11 10:43	22° $\mathring{\text{O}}20'00''$	-1°17'48	direct	4664 May 10 10:26	28° $\mathring{\text{O}}38'23''$	
min. Earth dist.	4658 Feb 13 07:02	22° $\mathring{\text{O}}17'41''$	41.23067 AU	evening set	4664 Aug 04 10:23	29° $\mathring{\text{O}}57'30''$	
direct	4658 May 03 19:28	21° $\mathring{\text{O}}15'00''$			4664 Aug 06 01:01	0° $\mathring{\text{N}}\mathring{\text{P}}$	
evening set	4658 Jul 28 04:51	22° $\mathring{\text{O}}30'45''$		max. Earth dist.	4664 Aug 18 03:19	0° $\mathring{\text{N}}\mathring{\text{P}}19'10''$	41.69920 AU
max. Earth dist.	4658 Aug 11 02:59	22° $\mathring{\text{O}}51'59''$	43.11893 AU				
				conjunction	4664 Aug 20 12:44	0° $\mathring{\text{N}}\mathring{\text{P}}23'00''$	1°08'05
conjunction	4658 Aug 13 06:22	22° $\mathring{\text{O}}55'17''$	-1°03'39	minimum elong	4664 Aug 20 12:42	0° $\mathring{\text{N}}\mathring{\text{P}}23'00''$	1°08'05

morning rise	4664 Sep 05 14:47	0° \mathring{M} 48'32	evening set	4671 Aug 15 10:13	9° \mathring{M} 22'06	
retrograde	4664 Dec 01 02:46	2° \mathring{M} 08'36	max. Earth dist.	4671 Aug 28 09:31	9° \mathring{M} 43'43	39.96561 AU
opposition	4665 Feb 19 16:58	1° \mathring{M} 02'17 1°23'27				
min. Earth dist.	4665 Feb 21 20:40	0° \mathring{M} 59'29 39.57628 AU	conjunction	4671 Aug 31 01:29	9° \mathring{M} 48'12	3°51'59
	4665 Apr 21 21:54	30° \mathring{R} 02	minimum elong	4671 Aug 31 01:22	9° \mathring{M} 48'11	3°51'59
direct	4665 May 11 21:46	29° \mathring{Q} 55'05	morning rise	4671 Sep 15 15:48	10° \mathring{M} 14'16	
	4665 May 31 18:09	0° \mathring{M}	retrograde	4671 Dec 11 20:42	11° \mathring{M} 39'39	
evening set	4665 Aug 06 01:29	1° \mathring{M} 14'53	opposition	4672 Feb 29 17:33	10° \mathring{M} 31'15	4°16'54
max. Earth dist.	4665 Aug 19 15:50	1° \mathring{M} 36'33 41.45499 AU	min. Earth dist.	4672 Mar 03 03:08	10° \mathring{M} 28'00	37.84209 AU
			direct	4672 May 20 15:23	9° \mathring{M} 21'37	
conjunction	4665 Aug 22 02:55	1° \mathring{M} 40'30 1°30'52	evening set	4672 Aug 16 06:36	10° \mathring{M} 47'27	
minimum elong	4665 Aug 22 02:52	1° \mathring{M} 40'30 1°30'52	max. Earth dist.	4672 Aug 29 01:28	11° \mathring{M} 08'55	39.71021 AU
morning rise	4665 Sep 07 04:18	2° \mathring{M} 06'09				
retrograde	4665 Dec 02 20:27	3° \mathring{M} 26'52	conjunction	4672 Aug 31 18:57	11° \mathring{M} 13'33	4°16'11
opposition	4666 Feb 21 05:29	2° \mathring{M} 20'15 1°47'32	minimum elong	4672 Aug 31 18:49	11° \mathring{M} 13'33	4°16'11
min. Earth dist.	4666 Feb 23 09:52	2° \mathring{M} 17'24 39.33204 AU	morning rise	4672 Sep 16 06:32	11° \mathring{M} 39'38	
direct	4666 May 13 07:01	1° \mathring{M} 12'42	retrograde	4672 Dec 12 16:59	13° \mathring{M} 05'54	
evening set	4666 Aug 07 16:59	2° \mathring{M} 33'15	opposition	4673 Mar 02 09:00	11° \mathring{M} 57'09	4°42'32
max. Earth dist.	4666 Aug 21 06:10	2° \mathring{M} 54'59 41.20985 AU	min. Earth dist.	4673 Mar 04 19:07	11° \mathring{M} 53'51	37.58665 AU
			direct	4673 May 22 05:45	10° \mathring{M} 47'06	
conjunction	4666 Aug 23 17:31	2° \mathring{M} 58'59 1°53'53	evening set	4673 Aug 18 03:47	12° \mathring{M} 13'57	
minimum elong	4666 Aug 23 17:28	2° \mathring{M} 58'59 1°53'53	max. Earth dist.	4673 Aug 30 18:15	12° \mathring{M} 35'17	39.45253 AU
morning rise	4666 Sep 08 17:38	3° \mathring{M} 24'44				
retrograde	4666 Dec 04 11:51	4° \mathring{M} 46'08	conjunction	4673 Sep 02 13:03	12° \mathring{M} 40'03	4°40'32
opposition	4667 Feb 22 18:28	3° \mathring{M} 39'13 2°11'51	minimum elong	4673 Sep 02 12:54	12° \mathring{M} 40'02	4°40'31
min. Earth dist.	4667 Feb 24 23:48	3° \mathring{M} 36'18 39.08705 AU	morning rise	4673 Sep 17 21:19	13° \mathring{M} 06'06	
direct	4667 May 14 18:49	2° \mathring{M} 31'21	retrograde	4673 Dec 14 10:55	14° \mathring{M} 33'19	
evening set	4667 Aug 09 09:16	3° \mathring{M} 52'40	opposition	4674 Mar 04 01:11	13° \mathring{M} 24'11	5°08'21
max. Earth dist.	4667 Aug 22 20:39	4° \mathring{M} 14'26 40.96417 AU	min. Earth dist.	4674 Mar 06 13:00	13° \mathring{M} 20'47	37.32933 AU
			direct	4674 May 23 22:05	12° \mathring{M} 13'43	
conjunction	4667 Aug 25 08:30	4° \mathring{M} 18'30 2°17'06	evening set	4674 Aug 20 01:39	13° \mathring{M} 41'38	
minimum elong	4667 Aug 25 08:26	4° \mathring{M} 18'30 2°17'05	max. Earth dist.	4674 Sep 01 12:31	14° \mathring{M} 02'53	39.19331 AU
morning rise	4667 Sep 10 07:20	4° \mathring{M} 44'21				
retrograde	4667 Dec 06 03:20	6° \mathring{M} 06'27	conjunction	4674 Sep 04 07:26	14° \mathring{M} 07'41	5°05'01
opposition	4668 Feb 24 07:40	4° \mathring{M} 59'17 2°36'25	minimum elong	4674 Sep 04 07:16	14° \mathring{M} 07'41	5°05'02
min. Earth dist.	4668 Feb 26 12:53	4° \mathring{M} 56'21 38.84150 AU	morning rise	4674 Sep 19 12:05	14° \mathring{M} 33'43	
direct	4668 May 15 09:42	3° \mathring{M} 51'04	retrograde	4674 Dec 16 04:47	16° \mathring{M} 01'53	
evening set	4668 Aug 10 02:19	5° \mathring{M} 13'13	opposition	4675 Mar 05 17:41	14° \mathring{M} 52'23	5°34'21
max. Earth dist.	4668 Aug 23 10:29	5° \mathring{M} 34'56 40.71743 AU	min. Earth dist.	4675 Mar 08 05:16	14° \mathring{M} 48'57	37.07085 AU
			direct	4675 May 25 16:32	13° \mathring{M} 41'29	
conjunction	4668 Aug 25 23:58	5° \mathring{M} 39'10 2°40'32	evening set	4675 Aug 22 00:30	15° \mathring{M} 10'30	
minimum elong	4668 Aug 25 23:54	5° \mathring{M} 39'09 2°40'32	max. Earth dist.	4675 Sep 03 05:33	15° \mathring{M} 31'31	38.93306 AU
morning rise	4668 Sep 10 21:12	6° \mathring{M} 05'05				
retrograde	4668 Dec 06 18:28	7° \mathring{M} 27'57	conjunction	4675 Sep 06 02:19	15° \mathring{M} 36'30	5°29'39
opposition	4669 Feb 24 21:29	6° \mathring{M} 20'29 3°01'13	minimum elong	4675 Sep 06 02:09	15° \mathring{M} 36'30	5°29'38
min. Earth dist.	4669 Feb 27 04:29	6° \mathring{M} 17'26 38.59474 AU	morning rise	4675 Sep 21 03:08	16° \mathring{M} 02'28	
direct	4669 May 16 23:37	5° \mathring{M} 11'58	retrograde	4675 Dec 17 23:34	17° \mathring{M} 31'41	
evening set	4669 Aug 11 20:10	6° \mathring{M} 34'58	opposition	4676 Mar 06 10:42	16° \mathring{M} 21'47	6°00'28
max. Earth dist.	4669 Aug 25 02:40	6° \mathring{M} 56'44 40.46912 AU	min. Earth dist.	4676 Mar 08 23:48	16° \mathring{M} 18'15	36.81192 AU
			direct	4676 May 26 07:55	15° \mathring{M} 10'26	
conjunction	4669 Aug 27 16:04	7° \mathring{M} 00'59 3°04'09	evening set	4676 Aug 23 00:07	16° \mathring{M} 40'37	
minimum elong	4669 Aug 27 15:59	7° \mathring{M} 00'59 3°04'09	max. Earth dist.	4676 Sep 04 01:34	17° \mathring{M} 01'33	38.67254 AU
morning rise	4669 Sep 12 11:14	7° \mathring{M} 26'59				
retrograde	4669 Dec 08 09:14	8° \mathring{M} 50'39	conjunction	4676 Sep 06 21:52	17° \mathring{M} 06'32	5°54'23
opposition	4670 Feb 26 11:34	7° \mathring{M} 42'54 3°26'14	minimum elong	4676 Sep 06 21:41	17° \mathring{M} 06'32	5°54'23
min. Earth dist.	4670 Feb 28 18:39	7° \mathring{M} 39'49 38.34616 AU	morning rise	4676 Sep 21 18:13	17° \mathring{M} 32'24	
direct	4670 May 18 13:37	6° \mathring{M} 34'02	retrograde	4676 Dec 18 17:50	19° \mathring{M} 02'43	
evening set	4670 Aug 13 14:58	7° \mathring{M} 57'57	opposition	4677 Mar 08 04:19	17° \mathring{M} 52'26	6°26'43
max. Earth dist.	4670 Aug 26 16:56	8° \mathring{M} 19'34 40.21863 AU	min. Earth dist.	4677 Mar 10 17:15	17° \mathring{M} 48'53	36.55304 AU
			direct	4677 May 28 01:11	16° \mathring{M} 40'39	
conjunction	4670 Aug 29 08:32	8° \mathring{M} 24'00 3°27'59	evening set	4677 Aug 25 00:55	18° \mathring{M} 12'04	
minimum elong	4670 Aug 29 08:26	8° \mathring{M} 24'00 3°27'59	max. Earth dist.	4677 Sep 05 20:13	18° \mathring{M} 32'44	38.41234 AU
morning rise	4670 Sep 14 01:34	8° \mathring{M} 50'03				
retrograde	4670 Dec 10 02:58	10° \mathring{M} 14'33	conjunction	4677 Sep 08 17:49	18° \mathring{M} 37'52	6°19'12
opposition	4671 Feb 28 02:20	9° \mathring{M} 06'30 3°51'28	minimum elong	4677 Sep 08 17:37	18° \mathring{M} 37'51	6°19'11
min. Earth dist.	4671 Mar 02 10:59	9° \mathring{M} 03'19 38.09539 AU	morning rise	4677 Sep 23 09:35	19° \mathring{M} 03'37	
direct	4671 May 20 01:29	7° \mathring{M} 57'15	retrograde	4677 Dec 20 15:36	20° \mathring{M} 35'05	

opposition	4678 Mar 09 22:23	19° <u>17</u> 24'25	6°53'04		4684 Sep 19 10:20	0° <u>0</u>	
min. Earth dist.	4678 Mar 12 11:49	19° <u>17</u> 20'49	36.29498 AU				
direct	4678 May 29 16:41	18° <u>17</u> 12'12		conjunction	4684 Sep 20 07:48	0° <u>0</u> 01'42	9°13'16
evening set	4678 Aug 27 02:30	19° <u>17</u> 44'56		minimum elong	4684 Sep 20 07:30	0° <u>0</u> 01'40	9°13'16
max. Earth dist.	4678 Sep 07 16:55	20° <u>17</u> 05'26	38.15295 AU	morning rise	4684 Oct 03 02:00	0° <u>0</u> 25'39	
				retrograde	4685 Jan 01 11:55	2° <u>0</u> 07'11	
conjunction	4678 Sep 10 14:28	20° <u>17</u> 10'36	6°44'04	opposition	4685 Mar 20 23:17	0° <u>0</u> 53'56	9°58'05
minimum elong	4678 Sep 10 14:15	20° <u>17</u> 10'35	6°44'05	min. Earth dist.	4685 Mar 23 16:05	0° <u>0</u> 49'58	34.51091 AU
morning rise	4678 Sep 25 00:57	20° <u>17</u> 36'12			4685 Apr 30 21:30	30° <u>0</u> 00'00	
retrograde	4678 Dec 22 13:18	22° <u>17</u> 08'54		direct	4685 Jun 09 09:20	29° <u>0</u> 00'00	
opposition	4679 Mar 11 17:15	20° <u>17</u> 57'51	7°19'29		4685 Jul 18 11:23	0° <u>0</u>	
min. Earth dist.	4679 Mar 14 07:19	20° <u>17</u> 54'12	36.03804 AU	evening set	4685 Sep 09 21:59	1° <u>0</u> 22'42	
direct	4679 May 31 10:26	19° <u>17</u> 45'13		max. Earth dist.	4685 Sep 19 07:39	1° <u>0</u> 40'29	36.35488 AU
evening set	4679 Aug 29 05:05	21° <u>17</u> 19'20					
max. Earth dist.	4679 Sep 09 13:41	21° <u>17</u> 39'36	37.89490 AU	conjunction	4685 Sep 22 09:16	1° <u>0</u> 46'20	9°37'53
				minimum elong	4685 Sep 22 08:58	1° <u>0</u> 46'18	9°37'53
conjunction	4679 Sep 12 11:29	21° <u>17</u> 44'50	7°08'59	morning rise	4685 Oct 04 18:47	2° <u>0</u> 09'51	
minimum elong	4679 Sep 12 11:15	21° <u>17</u> 44'49	7°08'58	retrograde	4686 Jan 03 13:24	3° <u>0</u> 53'04	
morning rise	4679 Sep 26 16:30	22° <u>17</u> 10'16		opposition	4686 Mar 22 22:48	2° <u>0</u> 39'24	10°24'17
retrograde	4679 Dec 24 12:54	23° <u>17</u> 44'16		min. Earth dist.	4686 Mar 25 16:39	2° <u>0</u> 35'21	34.25686 AU
opposition	4680 Mar 12 12:33	22° <u>17</u> 32'52	7°45'57	direct	4686 Jun 11 07:11	1° <u>0</u> 23'44	
min. Earth dist.	4680 Mar 15 02:06	22° <u>17</u> 29'13	35.78246 AU	evening set	4686 Sep 12 09:14	3° <u>0</u> 09'33	
direct	4680 Jun 01 05:23	21° <u>17</u> 19'49		max. Earth dist.	4686 Sep 21 09:22	3° <u>0</u> 26'46	36.09875 AU
evening set	4680 Aug 30 08:54	22° <u>17</u> 55'25					
max. Earth dist.	4680 Sep 10 10:33	23° <u>17</u> 15'21	37.63780 AU	conjunction	4686 Sep 24 11:16	3° <u>0</u> 32'41	10°02'21
				minimum elong	4686 Sep 24 10:56	3° <u>0</u> 32'39	10°02'21
conjunction	4680 Sep 13 09:23	23° <u>17</u> 20'43	7°33'54	morning rise	4686 Oct 06 11:41	3° <u>0</u> 55'43	
minimum elong	4680 Sep 13 09:08	23° <u>17</u> 20'41	7°33'55	retrograde	4687 Jan 05 17:43	5° <u>0</u> 40'41	
morning rise	4680 Sep 27 08:24	23° <u>17</u> 45'56		opposition	4687 Mar 24 22:52	4° <u>0</u> 26'35	10°50'18
retrograde	4680 Dec 25 11:14	25° <u>17</u> 21'18		min. Earth dist.	4687 Mar 27 16:12	4° <u>0</u> 22'32	34.00391 AU
opposition	4681 Mar 14 08:30	24° <u>17</u> 09'34	8°12'26	direct	4687 Jun 13 08:06	3° <u>0</u> 10'25	
min. Earth dist.	4681 Mar 16 23:32	24° <u>17</u> 05'48	35.52782 AU	evening set	4687 Sep 14 21:31	4° <u>0</u> 58'11	
direct	4681 Jun 03 00:38	22° <u>17</u> 56'07		max. Earth dist.	4687 Sep 23 11:05	5° <u>0</u> 14'43	35.84376 AU
evening set	4681 Sep 01 13:55	24° <u>17</u> 33'15					
max. Earth dist.	4681 Sep 12 09:39	24° <u>17</u> 52'55	37.38138 AU	conjunction	4687 Sep 26 13:53	5° <u>0</u> 20'46	10°26'36
				minimum elong	4687 Sep 26 13:34	5° <u>0</u> 20'45	10°26'36
conjunction	4681 Sep 15 08:01	24° <u>17</u> 58'18	7°58'49	morning rise	4687 Oct 08 04:36	5° <u>0</u> 43'15	
minimum elong	4681 Sep 15 07:46	24° <u>17</u> 58'17	7°58'49	retrograde	4688 Jan 07 22:04	7° <u>0</u> 30'03	
morning rise	4681 Sep 29 00:29	25° <u>17</u> 23'16		opposition	4688 Mar 25 23:49	6° <u>0</u> 15'29	11°16'06
retrograde	4681 Dec 27 10:01	27° <u>17</u> 00'05		min. Earth dist.	4688 Mar 28 18:19	6° <u>0</u> 11'20	33.75258 AU
opposition	4682 Mar 16 05:08	25° <u>17</u> 48'00	8°38'54	direct	4688 Jun 14 09:04	4° <u>0</u> 58'49	
min. Earth dist.	4682 Mar 18 19:49	25° <u>17</u> 44'14	35.27365 AU	evening set	4688 Sep 16 11:26	6° <u>0</u> 48'37	
direct	4682 Jun 04 21:39	24° <u>17</u> 34'09		max. Earth dist.	4688 Sep 24 15:29	7° <u>0</u> 04'33	35.59078 AU
evening set	4682 Sep 03 20:03	26° <u>17</u> 12'54					
max. Earth dist.	4682 Sep 14 06:58	26° <u>17</u> 32'06	37.12502 AU	conjunction	4688 Sep 27 17:23	7° <u>0</u> 10'35	10°50'35
				minimum elong	4688 Sep 27 17:02	7° <u>0</u> 10'34	10°50'35
conjunction	4682 Sep 17 07:07	26° <u>17</u> 37'40	8°23'42	morning rise	4688 Oct 08 21:36	7° <u>0</u> 32'27	
minimum elong	4682 Sep 17 06:50	26° <u>17</u> 37'39	8°23'43	retrograde	4689 Jan 09 02:07	9° <u>0</u> 21'09	
morning rise	4682 Sep 30 16:45	27° <u>17</u> 02'21		opposition	4689 Mar 28 01:17	8° <u>0</u> 06'09	11°41'36
retrograde	4682 Dec 29 10:16	28° <u>17</u> 40'41		min. Earth dist.	4689 Mar 30 18:52	8° <u>0</u> 02'01	33.50368 AU
opposition	4683 Mar 18 02:32	27° <u>17</u> 28'13	9°05'22	direct	4689 Jun 16 11:43	6° <u>0</u> 48'58	
min. Earth dist.	4683 Mar 20 18:37	27° <u>17</u> 24'21	35.01954 AU	evening set	4689 Sep 19 02:44	8° <u>0</u> 40'54	
direct	4683 Jun 06 15:46	26° <u>17</u> 13'57		max. Earth dist.	4689 Sep 26 18:41	8° <u>0</u> 56'00	35.34052 AU
evening set	4683 Sep 06 03:23	27° <u>17</u> 54'22					
max. Earth dist.	4683 Sep 16 07:18	28° <u>17</u> 13'12	36.86844 AU	conjunction	4689 Sep 29 21:30	9° <u>0</u> 02'11	11°14'15
				minimum elong	4689 Sep 29 21:10	9° <u>0</u> 02'09	11°14'15
conjunction	4683 Sep 19 07:11	28° <u>17</u> 18'48	8°48'32	morning rise	4689 Oct 10 14:46	9° <u>0</u> 23'21	
minimum elong	4683 Sep 19 06:54	28° <u>17</u> 18'47	8°48'31	retrograde	4690 Jan 11 05:59	11° <u>0</u> 14'04	
morning rise	4683 Oct 02 09:11	28° <u>17</u> 43'09		opposition	4690 Mar 30 03:44	9° <u>0</u> 58'37	12°06'46
	4683 Nov 21 02:17	0° <u>0</u>		min. Earth dist.	4690 Apr 01 21:54	9° <u>0</u> 54'25	33.25808 AU
retrograde	4683 Dec 31 09:04	0° <u>0</u> 23'03		direct	4690 Jun 18 11:57	8° <u>0</u> 40'55	
	4684 Feb 10 10:00	30° <u>0</u> 00'00		evening set	4690 Sep 21 19:21	10° <u>0</u> 35'05	
opposition	4684 Mar 19 00:33	29° <u>0</u> 10'13	9°31'46	max. Earth dist.	4690 Sep 29 00:55	10° <u>0</u> 49'28	35.09381 AU
min. Earth dist.	4684 Mar 21 16:52	29° <u>0</u> 06'18	34.76520 AU				
direct	4684 Jun 07 12:53	27° <u>0</u> 55'30		conjunction	4690 Oct 02 02:21	10° <u>0</u> 55'36	11°37'33
evening set	4684 Sep 07 12:08	29° <u>0</u> 37'38		minimum elong	4690 Oct 02 01:59	10° <u>0</u> 55'34	11°37'33
max. Earth dist.	4684 Sep 17 06:27	29° <u>0</u> 55'55	36.61172 AU	morning rise	4690 Oct 12 07:36	11° <u>0</u> 15'59	

retrograde	4691 Jan 13 09:18	13° <u>♁</u> 08'49		conjunction	4697 Oct 16 11:49	25° <u>♁</u> 06'53	14°05'15
opposition	4691 Apr 01 06:59	11° <u>♁</u> 52'56	12°31'31	minimum elong	4697 Oct 16 11:28	25° <u>♁</u> 06'51	14°05'15
min. Earth dist.	4691 Apr 04 00:26	11° <u>♁</u> 48'45	33.01631 AU	morning rise	4697 Oct 22 01:00	25° <u>♁</u> 18'46	
direct	4691 Jun 20 14:03	10° <u>♁</u> 34'46		retrograde	4698 Jan 28 03:13	27° <u>♁</u> 29'53	
evening set	4691 Sep 24 13:45	12° <u>♁</u> 31'16		opposition	4698 Apr 15 05:06	26° <u>♁</u> 11'14	15°08'06
max. Earth dist.	4691 Oct 01 06:02	12° <u>♁</u> 44'42	34.85131 AU	min. Earth dist.	4698 Apr 17 20:30	26° <u>♁</u> 07'00	31.43737 AU
				direct	4698 Jul 04 04:43	24° <u>♁</u> 49'56	
conjunction	4691 Oct 04 07:56	12° <u>♁</u> 50'56	12°00'24	evening set	4698 Oct 14 08:50	27° <u>♁</u> 06'55	
minimum elong	4691 Oct 04 07:35	12° <u>♁</u> 50'54	12°00'24	max. Earth dist.	4698 Oct 15 23:54	27° <u>♁</u> 10'26	33.26550 AU
morning rise	4691 Oct 14 00:44	13° <u>♁</u> 10'28					
retrograde	4692 Jan 15 16:43	15° <u>♁</u> 05'31		conjunction	4698 Oct 18 23:06	27° <u>♁</u> 16'51	14°23'27
opposition	4692 Apr 02 10:49	13° <u>♁</u> 49'14	12°55'47	minimum elong	4698 Oct 18 22:44	27° <u>♁</u> 16'49	14°23'28
min. Earth dist.	4692 Apr 05 03:51	13° <u>♁</u> 45'03	32.77899 AU	morning rise	4698 Oct 23 12:28	27° <u>♁</u> 26'43	
direct	4692 Jun 21 14:51	12° <u>♁</u> 30'35		retrograde	4699 Jan 30 15:10	29° <u>♁</u> 41'14	
evening set	4692 Sep 26 09:46	14° <u>♁</u> 29'34		opposition	4699 Apr 17 15:10	28° <u>♁</u> 22'11	15°27'19
max. Earth dist.	4692 Oct 02 13:34	14° <u>♁</u> 42'04	34.61307 AU	min. Earth dist.	4699 Apr 20 06:22	28° <u>♁</u> 17'56	31.22796 AU
				direct	4699 Jul 06 12:49	27° <u>♁</u> 00'25	
conjunction	4692 Oct 05 14:35	14° <u>♁</u> 48'17	12°22'46	evening set	4699 Oct 18 02:57	29° <u>♁</u> 21'30	
minimum elong	4692 Oct 05 14:12	14° <u>♁</u> 48'15	12°22'46	max. Earth dist.	4699 Oct 18 14:03	29° <u>♁</u> 22'31	33.05581 AU
morning rise	4692 Oct 14 17:49	15° <u>♁</u> 06'53					
retrograde	4693 Jan 16 22:50	17° <u>♁</u> 04'16		conjunction	4699 Oct 21 11:27	29° <u>♁</u> 28'50	14°40'44
opposition	4693 Apr 04 15:45	15° <u>♁</u> 47'35	13°19'31	minimum elong	4699 Oct 21 11:07	29° <u>♁</u> 28'48	14°40'44
min. Earth dist.	4693 Apr 07 08:58	15° <u>♁</u> 43'22	32.54584 AU	morning rise	4699 Oct 24 19:08	29° <u>♁</u> 36'05	
direct	4693 Jun 23 17:47	14° <u>♁</u> 28'30			4699 Nov 04 20:00	0° <u>♁</u>	
evening set	4693 Sep 29 07:42	16° <u>♁</u> 30'04		retrograde	4700 Feb 02 01:52	1° <u>♁</u> 54'33	
max. Earth dist.	4693 Oct 04 21:13	16° <u>♁</u> 41'29	34.37906 AU	opposition	4700 Apr 20 01:59	0° <u>♁</u> 35'06	15°45'31
				min. Earth dist.	4700 Apr 22 16:32	0° <u>♁</u> 30'52	31.02376 AU
conjunction	4693 Oct 07 21:51	16° <u>♁</u> 47'44	12°44'34		4700 May 12 11:06	30° <u>♁</u>	
minimum elong	4693 Oct 07 21:29	16° <u>♁</u> 47'42	12°44'34	direct	4700 Jul 08 22:42	29° <u>♁</u> 12'53	
morning rise	4693 Oct 16 10:40	17° <u>♁</u> 05'18			4700 Sep 02 13:44	0° <u>♁</u>	
retrograde	4694 Jan 19 08:37	19° <u>♁</u> 05'08		max. Earth dist.	4700 Oct 21 03:13	1° <u>♁</u> 36'24	32.85200 AU
opposition	4694 Apr 06 21:21	17° <u>♁</u> 48'04	13°42'39	evening set	4700 Oct 22 16:20	1° <u>♁</u> 39'48	
min. Earth dist.	4694 Apr 09 13:37	17° <u>♁</u> 43'53	32.31679 AU				
direct	4694 Jun 25 23:36	16° <u>♁</u> 28'32		conjunction	4700 Oct 24 00:23	1° <u>♁</u> 42'45	14°56'59
evening set	4694 Oct 02 07:26	18° <u>♁</u> 32'50		minimum elong	4700 Oct 24 00:02	1° <u>♁</u> 42'43	14°57'00
max. Earth dist.	4694 Oct 07 05:25	18° <u>♁</u> 43'02	34.14880 AU	morning rise	4700 Oct 25 07:46	1° <u>♁</u> 45'38	
				retrograde	4701 Feb 04 16:25	4° <u>♁</u> 09'47	
conjunction	4694 Oct 10 06:05	18° <u>♁</u> 49'20	13°05'47	opposition	4701 Apr 22 13:39	2° <u>♁</u> 49'56	16°02'35
minimum elong	4694 Oct 10 05:42	18° <u>♁</u> 49'18	13°05'47	min. Earth dist.	4701 Apr 25 02:50	2° <u>♁</u> 45'47	30.82577 AU
morning rise	4694 Oct 18 03:22	19° <u>♁</u> 05'44		direct	4701 Jul 11 08:32	1° <u>♁</u> 27'16	
retrograde	4695 Jan 21 17:56	21° <u>♁</u> 08'10		max. Earth dist.	4701 Oct 23 18:45	3° <u>♁</u> 52'20	32.65475 AU
opposition	4695 Apr 09 04:02	19° <u>♁</u> 50'41	14°05'09				
min. Earth dist.	4695 Apr 11 21:05	19° <u>♁</u> 46'26	32.09144 AU	conjunction	4701 Oct 26 14:04	3° <u>♁</u> 58'34	15°12'08
direct	4695 Jun 28 04:49	18° <u>♁</u> 30'43		minimum elong	4701 Oct 26 13:45	3° <u>♁</u> 58'33	15°12'09
evening set	4695 Oct 05 09:29	20° <u>♁</u> 37'53		retrograde	4702 Feb 07 04:51	6° <u>♁</u> 26'54	
max. Earth dist.	4695 Oct 09 15:24	20° <u>♁</u> 46'47	33.92228 AU	opposition	4702 Apr 25 02:19	5° <u>♁</u> 06'40	16°18'26
				min. Earth dist.	4702 Apr 27 14:58	5° <u>♁</u> 02'32	30.63470 AU
conjunction	4695 Oct 12 15:05	20° <u>♁</u> 53'04	13°26'20	direct	4702 Jul 13 19:20	3° <u>♁</u> 43'36	
minimum elong	4695 Oct 12 14:43	20° <u>♁</u> 53'02	13°26'20	max. Earth dist.	4702 Oct 26 10:34	6° <u>♁</u> 10'08	32.46525 AU
morning rise	4695 Oct 19 19:26	21° <u>♁</u> 08'10					
retrograde	4696 Jan 24 04:35	23° <u>♁</u> 13'18		conjunction	4702 Oct 29 04:21	6° <u>♁</u> 16'17	15°26'05
opposition	4696 Apr 10 11:29	21° <u>♁</u> 55'27	14°26'56	minimum elong	4702 Oct 29 04:02	6° <u>♁</u> 16'15	15°26'06
min. Earth dist.	4696 Apr 13 03:18	21° <u>♁</u> 51'15	31.86962 AU	retrograde	4703 Feb 09 20:43	8° <u>♁</u> 45'53	
direct	4696 Jun 29 12:47	20° <u>♁</u> 35'02		opposition	4703 Apr 27 15:37	7° <u>♁</u> 25'17	16°32'57
evening set	4696 Oct 07 13:56	22° <u>♁</u> 45'14		min. Earth dist.	4703 Apr 30 01:57	7° <u>♁</u> 21'17	30.45162 AU
max. Earth dist.	4696 Oct 11 00:37	22° <u>♁</u> 52'32	33.69927 AU	direct	4703 Jul 16 09:37	6° <u>♁</u> 01'50	
				max. Earth dist.	4703 Oct 29 03:10	8° <u>♁</u> 29'51	32.28408 AU
conjunction	4696 Oct 14 01:01	22° <u>♁</u> 58'56	13°46'11				
minimum elong	4696 Oct 14 00:38	22° <u>♁</u> 58'54	13°46'11	conjunction	4703 Oct 31 19:25	8° <u>♁</u> 35'54	15°38'44
morning rise	4696 Oct 20 10:58	23° <u>♁</u> 12'33		minimum elong	4703 Oct 31 19:09	8° <u>♁</u> 35'52	15°38'44
retrograde	4697 Jan 25 16:08	25° <u>♁</u> 20'34		retrograde	4704 Feb 12 11:53	11° <u>♁</u> 06'44	
opposition	4697 Apr 12 19:49	24° <u>♁</u> 02'19	14°47'56	opposition	4704 Apr 29 05:54	9° <u>♁</u> 45'48	16°46'03
min. Earth dist.	4697 Apr 15 12:17	23° <u>♁</u> 58'02	31.65150 AU	min. Earth dist.	4704 May 01 15:43	9° <u>♁</u> 41'50	30.27696 AU
direct	4697 Jul 01 19:37	22° <u>♁</u> 41'27		direct	4704 Jul 17 22:29	8° <u>♁</u> 22'00	
evening set	4697 Oct 10 21:34	24° <u>♁</u> 54'54		max. Earth dist.	4704 Oct 30 21:19	10° <u>♁</u> 51'32	32.11186 AU
max. Earth dist.	4697 Oct 13 13:03	25° <u>♁</u> 00'33	33.48019 AU				
				conjunction	4704 Nov 02 11:14	10° <u>♁</u> 57'24	15°50'01

minimum elong	4704 Nov 02 10:58	10° \mathbb{M} .57'23	15°50'01	max. Earth dist.	4712 Nov 20 17:43	0° \mathbb{A} .44'39	31.04670 AU
retrograde	4705 Feb 14 05:15	13° \mathbb{M} .29'27					
opposition	4705 May 01 20:49	12° \mathbb{M} .08'14	16°57'39	conjunction	4712 Nov 22 15:28	0° \mathbb{A} .49'13	16°23'58
min. Earth dist.	4705 May 04 04:02	12° \mathbb{M} .04'26	30.11100 AU	minimum elong	4712 Nov 22 15:28	0° \mathbb{A} .49'13	16°23'59
direct	4705 Jul 20 13:50	10° \mathbb{M} .44'08		retrograde	4713 Mar 06 11:44	3° \mathbb{A} .28'20	
max. Earth dist.	4705 Nov 02 14:56	13° \mathbb{M} .15'01	31.94849 AU	opposition	4713 May 21 22:48	2° \mathbb{A} .05'24	17°29'05
				min. Earth dist.	4713 May 23 17:02	2° \mathbb{A} .02'25	29.08656 AU
conjunction	4705 Nov 05 03:44	13° \mathbb{M} .20'50	15°59'52	direct	4713 Aug 09 10:53	0° \mathbb{A} .39'29	
minimum elong	4705 Nov 05 03:31	13° \mathbb{M} .20'48	15°59'52	max. Earth dist.	4713 Nov 23 16:29	3° \mathbb{A} .19'03	30.95505 AU
	4705 Dec 21 21:29	15° \mathbb{M} .					
retrograde	4706 Feb 16 23:46	15° \mathbb{M} .54'02		conjunction	4713 Nov 25 11:44	3° \mathbb{A} .23'22	16°20'25
	4706 Apr 17 17:25	15° \mathbb{R} \mathbb{M} .		minimum elong	4713 Nov 25 11:47	3° \mathbb{A} .23'22	16°20'26
opposition	4706 May 04 12:43	14° \mathbb{M} .32'34	17°07'40	retrograde	4714 Mar 09 07:53	6° \mathbb{A} .02'58	
min. Earth dist.	4706 May 06 19:11	14° \mathbb{M} .28'47	29.95373 AU	opposition	4714 May 24 19:23	4° \mathbb{A} .39'52	17°24'32
direct	4706 Jul 23 04:37	13° \mathbb{M} .08'11		min. Earth dist.	4714 May 26 10:06	4° \mathbb{A} .37'08	28.99954 AU
	4706 Oct 18 14:56	15° \mathbb{M} .		direct	4714 Aug 12 09:03	3° \mathbb{A} .13'49	
max. Earth dist.	4706 Nov 05 10:57	15° \mathbb{M} .40'32	31.79395 AU	max. Earth dist.	4714 Nov 26 15:45	5° \mathbb{A} .54'05	30.87435 AU
conjunction	4706 Nov 07 20:48	15° \mathbb{M} .46'06	16°08'12	conjunction	4714 Nov 28 08:06	5° \mathbb{A} .58'07	16°15'00
minimum elong	4706 Nov 07 20:36	15° \mathbb{M} .46'05	16°08'13	minimum elong	4714 Nov 28 08:11	5° \mathbb{A} .58'08	16°15'01
retrograde	4707 Feb 19 17:34	18° \mathbb{M} .20'25		retrograde	4715 Mar 12 03:15	8° \mathbb{A} .38'07	
opposition	4707 May 07 05:20	16° \mathbb{M} .58'42	17°16'04	opposition	4715 May 27 16:27	7° \mathbb{A} .14'53	17°17'56
min. Earth dist.	4707 May 09 09:38	16° \mathbb{M} .55'04	29.80475 AU	min. Earth dist.	4715 May 29 05:30	7° \mathbb{A} .12'15	28.92361 AU
direct	4707 Jul 25 22:04	15° \mathbb{M} .34'04		direct	4715 Aug 15 05:21	5° \mathbb{A} .48'44	
max. Earth dist.	4707 Nov 08 05:34	18° \mathbb{M} .07'37	31.64784 AU	max. Earth dist.	4715 Nov 29 15:41	8° \mathbb{A} .29'39	30.80551 AU
conjunction	4707 Nov 10 14:37	18° \mathbb{M} .13'09	16°15'00	conjunction	4715 Dec 01 04:42	8° \mathbb{A} .33'22	16°07'41
minimum elong	4707 Nov 10 14:27	18° \mathbb{M} .13'08	16°15'00	minimum elong	4715 Dec 01 04:49	8° \mathbb{A} .33'23	16°07'41
retrograde	4708 Feb 22 12:23	20° \mathbb{M} .48'29		retrograde	4716 Mar 13 23:57	11° \mathbb{A} .13'39	
opposition	4708 May 08 22:34	19° \mathbb{M} .26'33	17°22'46	opposition	4716 May 29 13:33	9° \mathbb{A} .50'21	17°09'17
min. Earth dist.	4708 May 11 01:46	19° \mathbb{M} .22'58	29.66400 AU	min. Earth dist.	4716 May 30 22:49	9° \mathbb{A} .47'59	28.85934 AU
direct	4708 Jul 27 13:49	18° \mathbb{M} .01'40		direct	4716 Aug 17 03:47	8° \mathbb{A} .24'09	
max. Earth dist.	4708 Nov 10 03:07	20° \mathbb{M} .36'32	31.51010 AU	max. Earth dist.	4716 Dec 01 14:59	11° \mathbb{A} .05'34	30.74882 AU
conjunction	4708 Nov 12 09:12	20° \mathbb{M} .41'48	16°20'11	conjunction	4716 Dec 03 01:25	11° \mathbb{A} .09'02	15°58'27
minimum elong	4708 Nov 12 09:03	20° \mathbb{M} .41'48	16°20'12	minimum elong	4716 Dec 03 01:34	11° \mathbb{A} .09'03	15°58'28
retrograde	4709 Feb 24 07:04	23° \mathbb{M} .18'04		retrograde	4717 Mar 16 20:47	13° \mathbb{A} .49'32	
opposition	4709 May 11 16:45	21° \mathbb{M} .55'56	17°27'44	opposition	4717 Jun 01 11:07	12° \mathbb{A} .26'12	16°58'32
min. Earth dist.	4709 May 13 18:17	21° \mathbb{M} .52'27	29.53123 AU	min. Earth dist.	4717 Jun 02 18:16	12° \mathbb{A} .24'00	28.80716 AU
direct	4709 Jul 30 07:59	20° \mathbb{M} .30'49		direct	4717 Aug 20 00:30	11° \mathbb{A} .00'02	
max. Earth dist.	4709 Nov 12 22:53	23° \mathbb{M} .06'42	31.38081 AU				
				conjunction	4717 Dec 05 22:03	13° \mathbb{A} .45'02	15°47'18
conjunction	4709 Nov 15 04:01	23° \mathbb{M} .11'55	16°23'44	minimum elong	4717 Dec 05 22:14	13° \mathbb{A} .45'03	15°47'18
minimum elong	4709 Nov 15 03:55	23° \mathbb{M} .11'55	16°23'44	max. Earth dist.	4717 Dec 04 15:41	13° \mathbb{A} .41'58	30.70458 AU
retrograde	4710 Feb 27 03:04	25° \mathbb{M} .49'03		retrograde	4718 Mar 19 17:48	16° \mathbb{A} .25'40	
opposition	4710 May 14 11:28	24° \mathbb{M} .26'41	17°30'54	opposition	4718 Jun 04 08:49	15° \mathbb{A} .02'21	16°45'44
min. Earth dist.	4710 May 16 10:55	24° \mathbb{M} .23'21	29.40681 AU	min. Earth dist.	4718 Jun 05 12:33	15° \mathbb{A} .00'23	28.76684 AU
direct	4710 Aug 02 01:35	23° \mathbb{M} .01'21		direct	4718 Aug 23 00:14	13° \mathbb{A} .36'15	
max. Earth dist.	4710 Nov 15 21:21	25° \mathbb{M} .38'21	31.26018 AU				
				conjunction	4718 Dec 08 18:41	16° \mathbb{A} .21'17	15°34'16
conjunction	4710 Nov 17 23:33	25° \mathbb{M} .43'19	16°25'35	minimum elong	4718 Dec 08 18:55	16° \mathbb{A} .21'18	15°34'17
minimum elong	4710 Nov 17 23:28	25° \mathbb{M} .43'18	16°25'36	max. Earth dist.	4718 Dec 07 14:35	16° \mathbb{A} .18'27	30.67234 AU
retrograde	4711 Mar 01 20:38	28° \mathbb{M} .21'12		retrograde	4719 Mar 22 14:49	19° \mathbb{A} .01'58	
opposition	4711 May 17 06:46	26° \mathbb{M} .58'38	17°32'13	opposition	4719 Jun 07 06:28	17° \mathbb{A} .38'42	16°30'56
min. Earth dist.	4711 May 19 04:57	26° \mathbb{M} .55'23	29.29087 AU	min. Earth dist.	4719 Jun 08 07:41	17° \mathbb{A} .36'55	28.73820 AU
direct	4711 Aug 04 20:27	25° \mathbb{M} .33'06		direct	4719 Aug 25 21:07	16° \mathbb{A} .12'41	
max. Earth dist.	4711 Nov 18 18:35	28° \mathbb{M} .10'58	31.14872 AU				
				conjunction	4719 Dec 11 15:25	18° \mathbb{A} .57'39	15°19'24
conjunction	4711 Nov 20 19:17	28° \mathbb{M} .15'48	16°25'40	minimum elong	4719 Dec 11 15:40	18° \mathbb{A} .57'41	15°19'24
minimum elong	4711 Nov 20 19:15	28° \mathbb{M} .15'48	16°25'40	max. Earth dist.	4719 Dec 10 15:22	18° \mathbb{A} .55'14	30.65176 AU
	4712 Jan 07 08:43	0° \mathbb{A} .		retrograde	4720 Mar 24 11:36	21° \mathbb{A} .38'16	
retrograde	4712 Mar 03 17:11	0° \mathbb{A} .54'21		opposition	4720 Jun 09 04:22	20° \mathbb{A} .15'05	16°14'10
	4712 May 01 23:33	30° \mathbb{R} \mathbb{M} .		min. Earth dist.	4720 Jun 10 02:53	20° \mathbb{A} .13'30	28.72050 AU
opposition	4712 May 19 02:29	29° \mathbb{M} .31'36	17°31'38	direct	4720 Aug 27 20:31	18° \mathbb{A} .49'12	
min. Earth dist.	4712 May 20 21:54	29° \mathbb{M} .28'32	29.18396 AU				
direct	4712 Aug 06 16:12	28° \mathbb{M} .05'51		conjunction	4720 Dec 13 11:50	21° \mathbb{A} .33'58	15°02'45
	4712 Nov 01 17:10	0° \mathbb{A} .		minimum elong	4720 Dec 13 12:08	21° \mathbb{A} .33'59	15°02'46

max. Earth dist.	4720 Dec 12 13:40	21° \mathbb{A} 31'44	30.64223 AU	direct	4727 Sep 16 06:15	6° \mathbb{B} 49'25	
retrograde	4721 Mar 27 09:27	24° \mathbb{A} 14'25		evening set	4727 Dec 23 05:19	9° \mathbb{B} 08'38	
opposition	4721 Jun 12 02:13	22° \mathbb{A} 51'18	15°55'30				
min. Earth dist.	4721 Jun 12 21:38	22° \mathbb{A} 49'57	28.71359 AU	conjunction	4728 Jan 01 02:02	9° \mathbb{B} 29'36	12°21'35
direct	4721 Aug 30 18:50	21° \mathbb{A} 25'34		minimum elong	4728 Jan 01 02:25	9° \mathbb{B} 29'39	12°21'36
evening set	4721 Dec 13 10:08	24° \mathbb{A} 02'57		max. Earth dist.	4728 Jan 01 01:19	9° \mathbb{B} 29'32	30.87159 AU
				morning rise	4728 Jan 09 22:46	9° \mathbb{B} 50'35	
conjunction	4721 Dec 16 08:17	24° \mathbb{A} 10'01	14°44'22	retrograde	4728 Apr 13 14:54	12° \mathbb{B} 06'06	
minimum elong	4721 Dec 16 08:35	24° \mathbb{A} 10'03	14°44'22	opposition	4728 Jun 30 04:49	10° \mathbb{B} 43'50	12°57'33
max. Earth dist.	4721 Dec 15 14:05	24° \mathbb{A} 08'11	30.64348 AU	min. Earth dist.	4728 Jun 30 04:38	10° \mathbb{B} 43'51	28.95601 AU
morning rise	4721 Dec 19 06:56	24° \mathbb{A} 17'08		direct	4728 Sep 18 02:17	9° \mathbb{B} 19'22	
retrograde	4722 Mar 30 04:01	26° \mathbb{A} 50'12		evening set	4728 Dec 24 06:24	11° \mathbb{B} 36'07	
opposition	4722 Jun 15 00:07	25° \mathbb{A} 27'11	15°34'59				
min. Earth dist.	4722 Jun 15 17:25	25° \mathbb{A} 25'58	28.71702 AU	conjunction	4729 Jan 02 19:04	11° \mathbb{B} 58'33	11°53'02
direct	4722 Sep 02 17:31	24° \mathbb{A} 01'37		minimum elong	4729 Jan 02 19:29	11° \mathbb{B} 58'36	11°53'03
evening set	4722 Dec 14 18:54	26° \mathbb{A} 35'01		max. Earth dist.	4729 Jan 02 22:08	11° \mathbb{B} 58'51	30.94852 AU
max. Earth dist.	4722 Dec 18 11:55	26° \mathbb{A} 43'58	30.65527 AU	morning rise	4729 Jan 12 07:35	12° \mathbb{B} 20'59	
				retrograde	4729 Apr 16 06:34	14° \mathbb{B} 34'12	
conjunction	4722 Dec 19 04:13	26° \mathbb{A} 45'36	14°24'20	opposition	4729 Jul 03 00:06	13° \mathbb{B} 12'07	12°26'19
minimum elong	4722 Dec 19 04:33	26° \mathbb{A} 45'38	14°24'21	min. Earth dist.	4729 Jul 02 20:13	13° \mathbb{B} 12'23	29.03493 AU
morning rise	4722 Dec 23 14:01	26° \mathbb{A} 56'14		direct	4729 Sep 20 23:52	11° \mathbb{B} 47'57	
retrograde	4723 Apr 02 00:43	29° \mathbb{A} 25'24		evening set	4729 Dec 26 08:00	14° \mathbb{B} 02'19	
opposition	4723 Jun 17 21:40	28° \mathbb{A} 02'30	15°12'43				
min. Earth dist.	4723 Jun 18 11:30	28° \mathbb{A} 01'32	28.73070 AU	conjunction	4730 Jan 05 11:29	14° \mathbb{B} 26'05	11°23'21
direct	4723 Sep 05 15:55	26° \mathbb{A} 37'05		minimum elong	4730 Jan 05 11:52	14° \mathbb{B} 26'07	11°23'22
evening set	4723 Dec 16 11:27	29° \mathbb{A} 07'14		max. Earth dist.	4730 Jan 05 17:09	14° \mathbb{B} 26'38	31.03716 AU
max. Earth dist.	4723 Dec 21 11:30	29° \mathbb{A} 19'16	30.67730 AU	morning rise	4730 Jan 15 14:52	14° \mathbb{B} 49'50	
				retrograde	4730 Apr 18 22:59	17° \mathbb{B} 00'49	
conjunction	4723 Dec 22 00:04	29° \mathbb{A} 20'32	14°02'42	opposition	4730 Jul 05 18:49	15° \mathbb{B} 38'59	11°53'55
minimum elong	4723 Dec 22 00:25	29° \mathbb{A} 20'34	14°02'42	min. Earth dist.	4730 Jul 05 11:46	15° \mathbb{B} 39'28	29.12565 AU
morning rise	4723 Dec 27 13:00	29° \mathbb{A} 33'51		direct	4730 Sep 23 18:06	14° \mathbb{B} 15'07	
	4724 Jan 07 13:11	0° \mathbb{B}		evening set	4730 Dec 28 09:59	16° \mathbb{B} 27'12	
retrograde	4724 Apr 03 19:03	1° \mathbb{B} 59'50					
opposition	4724 Jun 19 19:04	0° \mathbb{B} 37'03	14°48'46	conjunction	4731 Jan 08 03:20	16° \mathbb{B} 52'10	10°52'37
min. Earth dist.	4724 Jun 20 07:09	0° \mathbb{B} 36'12	28.75443 AU	minimum elong	4731 Jan 08 03:43	16° \mathbb{B} 52'12	10°52'38
	4724 Jul 12 15:46	30° \mathbb{R} \mathbb{A}		max. Earth dist.	4731 Jan 08 13:01	16° \mathbb{B} 53'06	31.13728 AU
direct	4724 Sep 07 13:21	29° \mathbb{A} 11'47		morning rise	4731 Jan 18 20:16	17° \mathbb{B} 17'06	
	4724 Oct 31 18:36	0° \mathbb{B}		retrograde	4731 Apr 21 13:44	19° \mathbb{B} 25'58	
evening set	4724 Dec 17 07:36	1° \mathbb{B} 38'59		opposition	4731 Jul 08 12:58	18° \mathbb{B} 04'24	11°20'28
				min. Earth dist.	4731 Jul 08 03:09	18° \mathbb{B} 05'04	29.22732 AU
conjunction	4724 Dec 23 19:23	1° \mathbb{B} 54'34	13°39'32	direct	4731 Sep 26 14:24	16° \mathbb{B} 40'53	
minimum elong	4724 Dec 23 19:45	1° \mathbb{B} 54'36	13°39'33	evening set	4731 Dec 30 12:28	18° \mathbb{B} 50'45	
max. Earth dist.	4724 Dec 23 09:05	1° \mathbb{B} 53'32	30.70974 AU				
morning rise	4724 Dec 30 07:29	2° \mathbb{B} 10'10		conjunction	4732 Jan 10 18:26	19° \mathbb{B} 16'47	10°20'59
retrograde	4725 Apr 06 13:20	4° \mathbb{B} 33'17		minimum elong	4732 Jan 10 18:48	19° \mathbb{B} 16'49	10°20'59
opposition	4725 Jun 22 16:07	3° \mathbb{B} 10'37	14°23'12	max. Earth dist.	4732 Jan 11 06:03	19° \mathbb{B} 17'55	31.24800 AU
min. Earth dist.	4725 Jun 23 00:19	3° \mathbb{B} 10'03	28.78846 AU	morning rise	4732 Jan 22 00:11	19° \mathbb{B} 42'48	
direct	4725 Sep 10 12:09	1° \mathbb{B} 45'32		retrograde	4732 Apr 23 06:17	21° \mathbb{B} 49'37	
evening set	4725 Dec 19 05:30	4° \mathbb{B} 09'56		opposition	4732 Jul 10 06:29	20° \mathbb{B} 28'20	10°46'04
				min. Earth dist.	4732 Jul 09 17:15	20° \mathbb{B} 29'13	29.33949 AU
conjunction	4725 Dec 26 14:08	4° \mathbb{B} 27'31	13°14'55	direct	4732 Sep 28 09:13	19° \mathbb{B} 05'11	
minimum elong	4725 Dec 26 14:30	4° \mathbb{B} 27'34	13°14'56	evening set	4732 Dec 31 15:12	21° \mathbb{B} 12'55	
max. Earth dist.	4725 Dec 26 07:19	4° \mathbb{B} 26'51	30.75260 AU				
morning rise	4726 Jan 02 22:52	4° \mathbb{B} 45'07		conjunction	4733 Jan 12 09:06	21° \mathbb{B} 39'56	9°48'31
retrograde	4726 Apr 09 05:39	7° \mathbb{B} 05'35		minimum elong	4733 Jan 12 09:29	21° \mathbb{B} 39'58	9°48'31
opposition	4726 Jun 25 12:55	5° \mathbb{B} 43'01	13°56'05	max. Earth dist.	4733 Jan 13 00:39	21° \mathbb{B} 41'26	31.36869 AU
min. Earth dist.	4726 Jun 25 19:08	5° \mathbb{B} 42'35	28.83309 AU	morning rise	4733 Jan 24 02:26	22° \mathbb{B} 06'54	
direct	4726 Sep 13 08:58	4° \mathbb{B} 18'07		retrograde	4733 Apr 25 19:17	24° \mathbb{B} 11'45	
evening set	4726 Dec 21 05:01	6° \mathbb{B} 39'53		opposition	4733 Jul 12 23:38	22° \mathbb{B} 50'45	10°10'52
				min. Earth dist.	4733 Jul 12 08:29	22° \mathbb{B} 51'46	29.46129 AU
conjunction	4726 Dec 29 08:22	6° \mathbb{B} 59'15	12°48'55	direct	4733 Oct 01 03:52	21° \mathbb{B} 28'00	
minimum elong	4726 Dec 29 08:45	6° \mathbb{B} 59'17	12°48'55	evening set	4734 Jan 02 18:12	23° \mathbb{B} 33'40	
max. Earth dist.	4726 Dec 29 04:32	6° \mathbb{B} 58'52	30.80647 AU				
morning rise	4727 Jan 06 11:48	7° \mathbb{B} 18'37		conjunction	4734 Jan 14 22:49	24° \mathbb{B} 01'31	9°15'21
retrograde	4727 Apr 11 23:08	9° \mathbb{B} 36'33		minimum elong	4734 Jan 14 23:09	24° \mathbb{B} 01'33	9°15'21
opposition	4727 Jun 28 08:58	8° \mathbb{B} 14'07	13°27'30	max. Earth dist.	4734 Jan 15 16:03	24° \mathbb{B} 03'10	31.49859 AU
min. Earth dist.	4727 Jun 28 11:18	8° \mathbb{B} 13'58	28.88875 AU	morning rise	4734 Jan 27 03:06	24° \mathbb{B} 29'21	

retrograde	4734 Apr 28 09:48	26° $\overline{3}$ 32'18		evening set	4741 Jan 15 18:00	9° \approx 12'49	
opposition	4734 Jul 15 15:59	25° $\overline{3}$ 11'36	9°34'59				
min. Earth dist.	4734 Jul 14 21:13	25° $\overline{3}$ 12'52	29.59212 AU	conjunction	4741 Jan 30 03:52	9° \approx 44'03	5°11'27
direct	4734 Oct 03 21:35	23° $\overline{3}$ 49'14		minimum elong	4741 Jan 30 04:05	9° \approx 44'05	5°11'27
evening set	4735 Jan 04 21:24	25° $\overline{3}$ 52'54		max. Earth dist.	4741 Jan 31 13:54	9° \approx 47'09	32.62530 AU
				morning rise	4741 Feb 13 13:21	10° \approx 15'15	
conjunction	4735 Jan 17 12:09	26° $\overline{3}$ 21'31	8°41'35	retrograde	4741 May 13 07:57	12° \approx 06'48	
minimum elong	4735 Jan 17 12:30	26° $\overline{3}$ 21'33	8°41'35	min. Earth dist.	4741 Jul 30 03:17	10° \approx 50'28	30.72677 AU
max. Earth dist.	4735 Jan 18 08:51	26° $\overline{3}$ 23'29	31.63694 AU	opposition	4741 Jul 31 15:07	10° \approx 48'10	5°12'54
morning rise	4735 Jan 30 02:18	26° $\overline{3}$ 50'05		direct	4741 Oct 20 03:01	9° \approx 28'24	
retrograde	4735 Apr 30 21:37	28° $\overline{3}$ 51'12		evening set	4742 Jan 17 21:05	11° \approx 19'53	
min. Earth dist.	4735 Jul 17 11:31	27° $\overline{3}$ 32'10	29.73125 AU				
opposition	4735 Jul 18 07:42	27° $\overline{3}$ 30'49	8°58'30	conjunction	4742 Feb 01 11:49	11° \approx 51'18	4°35'55
direct	4735 Oct 06 14:40	26° $\overline{3}$ 08'50		minimum elong	4742 Feb 01 12:00	11° \approx 51'19	4°35'56
evening set	4736 Jan 07 00:55	28° $\overline{3}$ 10'34		max. Earth dist.	4742 Feb 03 01:19	11° \approx 54'41	32.81698 AU
				morning rise	4742 Feb 16 01:51	12° \approx 22'40	
conjunction	4736 Jan 20 00:43	28° $\overline{3}$ 39'50	8°07'18	retrograde	4742 May 15 14:20	14° \approx 12'53	
minimum elong	4736 Jan 20 01:02	28° $\overline{3}$ 39'52	8°07'19	min. Earth dist.	4742 Aug 01 12:21	12° \approx 56'58	30.92047 AU
max. Earth dist.	4736 Jan 20 22:59	28° $\overline{3}$ 41'56	31.78323 AU	opposition	4742 Aug 03 01:48	12° \approx 54'34	4°34'58
morning rise	4736 Feb 02 00:01	29° $\overline{3}$ 09'03		direct	4742 Oct 22 14:35	11° \approx 35'14	
	4736 Feb 26 08:52	0° \approx		evening set	4743 Jan 20 00:24	13° \approx 25'17	
retrograde	4736 May 02 09:57	1° \approx 08'25					
	4736 Jul 12 13:56	30° \overline{R} $\overline{3}$		conjunction	4743 Feb 03 19:01	13° \approx 56'48	4°00'26
opposition	4736 Jul 19 22:44	29° $\overline{3}$ 48'20	8°21'33	minimum elong	4743 Feb 03 19:11	13° \approx 56'49	4°00'27
min. Earth dist.	4736 Jul 18 23:08	29° $\overline{3}$ 49'54	29.87814 AU	max. Earth dist.	4743 Feb 05 09:48	14° \approx 00'16	33.01634 AU
direct	4736 Oct 08 07:32	28° $\overline{3}$ 26'43		morning rise	4743 Feb 18 13:15	14° \approx 28'17	
	4736 Dec 26 19:40	0° \approx			4743 Mar 06 06:22	15° \approx	
evening set	4737 Jan 08 04:18	0° \approx 26'35		retrograde	4743 May 17 22:37	16° \approx 17'13	
				min. Earth dist.	4743 Aug 03 18:39	15° \approx 01'51	31.12186 AU
conjunction	4737 Jan 21 12:29	0° \approx 56'24	7°32'38		4743 Aug 04 23:48	15° \overline{R} \approx	
minimum elong	4737 Jan 21 12:47	0° \approx 56'26	7°32'38	opposition	4743 Aug 05 11:29	14° \approx 59'15	3°57'08
max. Earth dist.	4737 Jan 22 13:30	0° \approx 58'45	31.93684 AU	direct	4743 Oct 25 02:01	13° \approx 40'21	
morning rise	4737 Feb 03 20:06	1° \approx 26'11			4744 Jan 07 16:41	15° \approx	
retrograde	4737 May 04 19:11	3° \approx 23'51		evening set	4744 Jan 22 03:31	15° \approx 29'02	
opposition	4737 Jul 22 13:16	2° \approx 04'04	7°44'14				
min. Earth dist.	4737 Jul 21 12:08	2° \approx 05'43	30.03256 AU	conjunction	4744 Feb 06 01:38	16° \approx 00'37	3°25'04
direct	4737 Oct 10 22:16	0° \approx 42'49		minimum elong	4744 Feb 06 01:46	16° \approx 00'37	3°25'05
evening set	4738 Jan 10 07:50	2° \approx 40'51		max. Earth dist.	4744 Feb 07 19:36	16° \approx 04'20	33.22275 AU
				morning rise	4744 Feb 20 23:12	16° \approx 32'09	
conjunction	4738 Jan 23 23:35	3° \approx 11'09	6°57'37	retrograde	4744 May 19 04:47	18° \approx 19'53	
minimum elong	4738 Jan 23 23:51	3° \approx 11'11	6°57'38	min. Earth dist.	4744 Aug 05 02:47	17° \approx 04'56	31.33020 AU
max. Earth dist.	4738 Jan 25 02:49	3° \approx 13'42	32.09782 AU	opposition	4744 Aug 06 20:49	17° \approx 02'17	3°19'30
morning rise	4738 Feb 06 14:42	3° \approx 41'24		direct	4744 Oct 26 13:17	15° \approx 43'49	
retrograde	4738 May 07 04:20	5° \approx 37'26		evening set	4745 Jan 23 06:33	17° \approx 31'12	
min. Earth dist.	4738 Jul 23 22:45	4° \approx 19'46	30.19434 AU				
opposition	4738 Jul 25 02:45	4° \approx 17'56	7°06'37	conjunction	4745 Feb 07 07:23	18° \approx 02'46	2°49'53
direct	4738 Oct 13 13:12	2° \approx 57'03		minimum elong	4745 Feb 07 07:30	18° \approx 02'47	2°49'54
evening set	4739 Jan 12 11:16	4° \approx 53'20		max. Earth dist.	4745 Feb 09 02:43	18° \approx 06'36	33.43555 AU
				morning rise	4745 Feb 22 07:49	18° \approx 34'18	
conjunction	4739 Jan 26 09:46	5° \approx 24'02	6°22'23	retrograde	4745 May 21 10:27	20° \approx 20'55	
minimum elong	4739 Jan 26 10:02	5° \approx 24'03	6°22'23	min. Earth dist.	4745 Aug 07 08:21	19° \approx 06'30	31.54467 AU
max. Earth dist.	4739 Jan 27 15:07	5° \approx 26'44	32.26596 AU	opposition	4745 Aug 09 05:19	19° \approx 03'40	2°42'06
morning rise	4739 Feb 09 07:49	5° \approx 54'40		direct	4745 Oct 28 23:36	17° \approx 45'39	
retrograde	4739 May 09 13:58	7° \approx 49'08		evening set	4746 Jan 25 09:37	19° \approx 31'48	
min. Earth dist.	4739 Jul 26 09:23	6° \approx 31'52	30.36380 AU				
opposition	4739 Jul 27 15:38	6° \approx 29'54	6°28'49	conjunction	4746 Feb 09 12:38	20° \approx 03'19	2°14'57
direct	4739 Oct 16 01:06	5° \approx 09'23		minimum elong	4746 Feb 09 12:43	20° \approx 03'19	2°14'57
evening set	4740 Jan 14 14:35	7° \approx 03'59		max. Earth dist.	4746 Feb 11 10:07	20° \approx 07'18	33.65373 AU
				morning rise	4746 Feb 24 15:20	20° \approx 34'48	
conjunction	4740 Jan 28 19:15	7° \approx 34'59	5°46'58	retrograde	4746 May 23 13:37	22° \approx 20'21	
minimum elong	4740 Jan 28 19:29	7° \approx 35'00	5°46'58	min. Earth dist.	4746 Aug 09 15:05	21° \approx 06'20	31.76454 AU
max. Earth dist.	4740 Jan 30 03:40	7° \approx 37'58	32.44171 AU	opposition	4746 Aug 11 13:10	21° \approx 03'27	2°05'02
morning rise	4740 Feb 11 23:12	8° \approx 05'56		direct	4746 Oct 31 07:33	19° \approx 44'52	
retrograde	4740 May 10 21:48	9° \approx 58'54		evening set	4747 Jan 27 12:34	21° \approx 30'50	
min. Earth dist.	4740 Jul 27 19:05	8° \approx 42'05	30.54109 AU				
opposition	4740 Jul 29 03:43	8° \approx 39'58	5°50'53	conjunction	4747 Feb 11 17:19	22° \approx 02'15	1°40'18
direct	4740 Oct 17 15:51	7° \approx 19'49		minimum elong	4747 Feb 11 17:23	22° \approx 02'15	1°40'18

max. Earth dist.	4747 Feb 13 16:28	22°06'21	33.87668 AU	minimum elong	4753 Feb 22 07:27	3°21'14	1°39'02
morning rise	4747 Feb 26 21:37	22°33'37		max. Earth dist.	4753 Feb 24 15:03	3°25'50	35.28145 AU
retrograde	4747 May 25 16:13	24°18'09		morning rise	4753 Mar 09 11:26	3°51'08	
min. Earth dist.	4747 Aug 11 20:23	23°04'36	31.98875 AU	retrograde	4753 Jun 05 04:40	5°30'36	
opposition	4747 Aug 13 20:18	23°01'37	1°28'20	min. Earth dist.	4753 Aug 22 17:10	4°19'17	33.40346 AU
direct	4747 Nov 02 16:11	21°44'27		opposition	4753 Aug 25 01:32	4°15'54	-2°01'44
evening set	4748 Jan 29 15:34	23°28'18		direct	4753 Nov 14 01:51	3°00'58	
				evening set	4754 Feb 09 05:30	4°39'11	
conjunction	4748 Feb 13 21:13	23°59'33	1°06'00	conjunction	4754 Feb 24 07:43	5°08'42	-2°10'31
minimum elong	4748 Feb 13 21:16	23°59'34	1°06'00	minimum elong	4754 Feb 24 07:38	5°08'42	2°10'31
max. Earth dist.	4748 Feb 15 21:24	24°03'42	34.10333 AU	max. Earth dist.	4754 Feb 26 16:32	5°13'23	35.52683 AU
morning rise	4748 Feb 29 02:47	24°30'47		morning rise	4754 Mar 11 09:55	5°38'14	
retrograde	4748 May 26 20:34	26°14'22		retrograde	4754 Jun 07 03:01	7°17'02	
min. Earth dist.	4748 Aug 13 01:12	25°01'14	32.21679 AU	min. Earth dist.	4754 Aug 24 17:39	6°06'08	33.65127 AU
opposition	4748 Aug 15 02:53	24°58'10	0°52'04	opposition	4754 Aug 27 03:53	6°02'39	-2°34'46
direct	4748 Nov 03 21:34	23°41'23		direct	4754 Nov 16 06:14	4°48'07	
evening set	4749 Jan 30 18:19	25°24'11		evening set	4755 Feb 11 07:16	6°25'36	
conjunction	4749 Feb 15 00:43	25°55'14	0°32'06	conjunction	4755 Feb 26 07:15	6°54'43	-2°41'27
minimum elong	4749 Feb 15 00:44	25°55'14	0°32'06	minimum elong	4755 Feb 26 07:09	6°54'43	2°41'27
max. Earth dist.	4749 Feb 17 03:02	25°59'32	34.33331 AU	max. Earth dist.	4755 Feb 28 17:07	6°59'27	35.77566 AU
morning rise	4749 Mar 02 06:44	26°26'16		morning rise	4755 Mar 13 07:31	7°23'52	
retrograde	4749 May 28 22:42	28°08'56		retrograde	4755 Jun 09 02:36	9°02'04	
min. Earth dist.	4749 Aug 15 06:18	26°56'09	32.44793 AU	min. Earth dist.	4755 Aug 26 18:07	7°51'35	33.90273 AU
opposition	4749 Aug 17 08:49	26°53'03	0°16'14	opposition	4755 Aug 29 05:52	7°48'01	-3°07'09
direct	4749 Nov 06 05:08	25°36'40		direct	4755 Nov 18 07:20	6°33'53	
evening set	4750 Feb 01 21:00	27°18'27		evening set	4756 Feb 13 08:38	8°10'41	
desc. node	4750 Feb 01 13:43	27°17'50					
conjunction	4750 Feb 17 03:23	27°49'15	-0°01'28	conjunction	4756 Feb 28 06:16	8°39'24	-3°11'48
minimum elong	4750 Feb 17 03:21	27°49'15	0°01'27	minimum elong	4756 Feb 28 06:09	8°39'23	3°11'48
behind sun begin	4750 Feb 16 20:59	27°48'44		max. Earth dist.	4756 Mar 01 18:14	8°44'15	36.02772 AU
behind sun end	4750 Feb 17 09:43	27°49'46		morning rise	4756 Mar 14 03:55	9°08'08	
max. Earth dist.	4750 Feb 19 05:53	27°53'32	34.56606 AU	retrograde	4756 Jun 10 01:01	10°45'48	
morning rise	4750 Mar 04 09:42	28°20'03		min. Earth dist.	4756 Aug 27 18:40	9°35'40	34.15710 AU
	4750 May 19 23:58	0°		opposition	4756 Aug 30 07:15	9°32'05	-3°38'53
retrograde	4750 May 31 03:07	0°01'50		direct	4756 Nov 19 08:53	8°18'21	
	4750 Jun 11 07:11	30°		evening set	4757 Feb 14 10:05	9°54'32	
min. Earth dist.	4750 Aug 17 09:15	28°49'29	32.68203 AU	conjunction	4757 Mar 01 04:41	10°22'48	-3°41'33
opposition	4750 Aug 19 13:58	28°46'16	-0°19'05	minimum elong	4757 Mar 01 04:34	10°22'48	3°41'32
direct	4750 Nov 08 09:53	27°30'14		max. Earth dist.	4757 Mar 03 16:52	10°27'39	36.28234 AU
evening set	4751 Feb 03 23:26	29°11'03		morning rise	4757 Mar 15 23:43	10°51'06	
conjunction	4751 Feb 19 05:31	29°41'35	-0°34'28	retrograde	4757 Jun 12 01:44	12°28'16	
minimum elong	4751 Feb 19 05:29	29°41'35	0°34'27	min. Earth dist.	4757 Aug 29 17:25	11°18'35	34.41400 AU
max. Earth dist.	4751 Feb 21 10:21	29°46'01	34.80145 AU	opposition	4757 Sep 01 08:02	11°14'55	-4°09'57
	4751 Feb 28 08:58	0°		direct	4757 Nov 21 07:17	10°01'35	
morning rise	4751 Mar 06 11:23	0°12'06		evening set	4758 Feb 16 11:11	11°37'11	
retrograde	4751 Jun 02 04:15	1°53'04		conjunction	4758 Mar 03 02:44	12°05'00	-4°10'41
min. Earth dist.	4751 Aug 19 13:25	0°41'00	32.91902 AU	minimum elong	4758 Mar 03 02:36	12°04'59	4°10'41
opposition	4751 Aug 21 18:23	0°37'47	-0°53'52	max. Earth dist.	4758 Mar 05 16:56	12°09'58	36.53887 AU
	4751 Sep 17 20:41	30°		morning rise	4758 Mar 17 18:29	12°32'51	
direct	4751 Nov 10 15:14	29°22'07		retrograde	4758 Jun 13 23:42	14°09'34	
	4752 Jan 01 02:17	0°		min. Earth dist.	4758 Aug 31 17:56	13°00'11	34.67247 AU
evening set	4752 Feb 06 01:43	1°02'01		opposition	4758 Sep 03 08:22	12°56'33	-4°40'21
conjunction	4752 Feb 21 06:52	1°32'14	-1°07'00	direct	4758 Nov 23 08:09	11°43'37	
minimum elong	4752 Feb 21 06:50	1°32'14	1°07'00	evening set	4759 Feb 18 12:21	13°18'40	
max. Earth dist.	4752 Feb 23 12:17	1°36'41	35.03983 AU	conjunction	4759 Mar 05 00:16	13°46'01	-4°39'12
morning rise	4752 Mar 07 12:02	2°02'27		minimum elong	4759 Mar 05 00:07	13°46'00	4°39'11
retrograde	4752 Jun 03 05:12	3°42'38		max. Earth dist.	4759 Mar 07 14:21	13°50'56	36.79650 AU
min. Earth dist.	4752 Aug 20 14:40	2°31'00	33.15936 AU	morning rise	4759 Mar 19 12:34	14°13'24	
opposition	4752 Aug 22 22:13	2°27'38	-1°28'06	retrograde	4759 Jun 15 21:59	15°49'40	
direct	4752 Nov 11 21:05	1°12'20		min. Earth dist.	4759 Sep 02 15:48	14°40'43	34.93177 AU
evening set	4753 Feb 07 03:40	2°51'22		opposition	4759 Sep 05 07:57	14°36'59	-5°10'03
conjunction	4753 Feb 22 07:31	3°21'15	-1°39'02	direct	4759 Nov 25 09:12	13°24'27	

evening set	4760 Feb 20 13:23	14° ✕ 59'00	min. Earth dist.	4766 Sep 13 19:35	25° ✕ 49'28	36.73886 AU
			opposition	4766 Sep 16 15:39	25° ✕ 45'39	-8°18'47
conjunction	4760 Mar 05 21:25	15° ✕ 25'52 -5°07'05	direct	4766 Dec 06 20:34	24° ✕ 35'18	
minimum elong	4760 Mar 05 21:15	15° ✕ 25'51 5°07'06	evening set	4767 Mar 04 14:48	26° ✕ 07'02	
max. Earth dist.	4760 Mar 08 12:44	15° ✕ 30'50 37.05443 AU				
morning rise	4760 Mar 20 05:53	15° ✕ 52'45	conjunction	4767 Mar 17 11:49	26° ✕ 30'02 -8°04'39	
retrograde	4760 Jun 16 19:08	17° ✕ 28'38	minimum elong	4767 Mar 17 11:37	26° ✕ 30'01 8°04'38	
min. Earth dist.	4760 Sep 03 15:17	16° ✕ 19'58 35.19129 AU	max. Earth dist.	4767 Mar 20 06:55	26° ✕ 35'04 38.84830 AU	
opposition	4760 Sep 06 07:21	16° ✕ 16'16 -5°39'05	morning rise	4767 Mar 30 09:31	26° ✕ 53'06	
direct	4760 Nov 26 09:20	15° ✕ 04'06	retrograde	4767 Jun 28 06:28	28° ✕ 26'50	
evening set	4761 Feb 21 14:07	16° ✕ 38'10	min. Earth dist.	4767 Sep 15 15:06	27° ✕ 20'05 36.99765 AU	
			opposition	4767 Sep 18 11:19	27° ✕ 16'16 -8°42'57	
conjunction	4761 Mar 07 18:03	17° ✕ 04'31 -5°34'21	direct	4767 Dec 08 16:42	26° ✕ 06'15	
minimum elong	4761 Mar 07 17:53	17° ✕ 04'30 5°34'20	evening set	4768 Mar 05 14:10	27° ✕ 37'42	
max. Earth dist.	4761 Mar 10 09:49	17° ✕ 09'30 37.31220 AU				
morning rise	4761 Mar 21 22:18	17° ✕ 30'54	conjunction	4768 Mar 18 05:17	28° ✕ 00'07 -8°27'26	
retrograde	4761 Jun 18 13:22	19° ✕ 06'24	minimum elong	4768 Mar 18 05:05	28° ✕ 00'06 8°27'27	
min. Earth dist.	4761 Sep 05 13:09	17° ✕ 58'05 35.45026 AU	max. Earth dist.	4768 Mar 21 01:20	28° ✕ 05'11 39.10536 AU	
opposition	4761 Sep 08 06:04	17° ✕ 54'20 -6°07'25	morning rise	4768 Mar 30 20:50	28° ✕ 22'35	
direct	4761 Nov 28 10:17	16° ✕ 42'31	retrograde	4768 Jun 28 21:08	29° ✕ 56'08	
evening set	4762 Feb 23 14:54	18° ✕ 16'07	min. Earth dist.	4768 Sep 16 09:33	28° ✕ 49'42 37.25679 AU	
			opposition	4768 Sep 19 06:31	28° ✕ 45'51 -9°06'26	
conjunction	4762 Mar 09 14:16	18° ✕ 41'57 -6°01'00	direct	4768 Dec 09 14:25	27° ✕ 36'09	
minimum elong	4762 Mar 09 14:05	18° ✕ 41'56 6°01'00	evening set	4769 Mar 07 13:22	29° ✕ 07'22	
max. Earth dist.	4762 Mar 12 05:56	18° ✕ 46'53 37.56910 AU				
morning rise	4762 Mar 23 14:14	19° ✕ 07'49	conjunction	4769 Mar 19 22:07	29° ✕ 29'11 -8°49'35	
retrograde	4762 Jun 20 08:48	20° ✕ 42'58	minimum elong	4769 Mar 19 21:55	29° ✕ 29'10 8°49'35	
min. Earth dist.	4762 Sep 07 10:47	19° ✕ 34'55 35.70854 AU	max. Earth dist.	4769 Mar 22 18:00	29° ✕ 34'13 39.36253 AU	
opposition	4762 Sep 10 04:11	19° ✕ 31'10 -6°35'05	morning rise	4769 Apr 01 07:37	29° ✕ 51'03	
direct	4762 Nov 30 08:39	18° ✕ 19'39		4769 Apr 06 11:47	0° ♀	
evening set	4763 Feb 25 15:19	19° ✕ 52'49	retrograde	4769 Jun 30 14:55	1° ♀ 24'29	
			min. Earth dist.	4769 Sep 18 03:29	0° ♀ 18'21 37.51603 AU	
conjunction	4763 Mar 11 10:06	20° ✕ 18'07 -6°27'00	opposition	4769 Sep 21 01:22	0° ♀ 14'28 -9°29'13	
minimum elong	4763 Mar 11 09:55	20° ✕ 18'06 6°27'00		4769 Oct 02 00:18	30° ♁ ✕	
max. Earth dist.	4763 Mar 14 02:59	20° ✕ 23'07 37.82520 AU	direct	4769 Dec 11 08:34	29° ✕ 05'05	
morning rise	4763 Mar 25 05:11	20° ✕ 43'26		4770 Feb 15 12:30	0° ♀	
retrograde	4763 Jun 22 03:20	22° ✕ 18'15	evening set	4770 Mar 09 12:25	0° ♀ 36'06	
min. Earth dist.	4763 Sep 09 08:36	21° ✕ 10'25 35.96598 AU				
opposition	4763 Sep 12 01:51	21° ✕ 06'42 -7°02'03	conjunction	4770 Mar 21 14:54	0° ♀ 57'19 -9°11'06	
direct	4763 Dec 02 07:02	19° ✕ 55'30	minimum elong	4770 Mar 21 14:41	0° ♀ 57'18 9°11'06	
evening set	4764 Feb 27 15:30	21° ✕ 28'14	max. Earth dist.	4770 Mar 24 12:10	1° ♀ 02'25 39.61943 AU	
			morning rise	4770 Apr 02 17:50	1° ♀ 18'35	
conjunction	4764 Mar 12 05:06	21° ✕ 52'58 -6°52'23	retrograde	4770 Jul 02 07:17	2° ♀ 51'54	
minimum elong	4764 Mar 12 04:55	21° ✕ 52'57 6°52'24	min. Earth dist.	4770 Sep 19 22:25	1° ♀ 46'00 37.77459 AU	
max. Earth dist.	4764 Mar 14 21:36	21° ✕ 57'54 38.08064 AU	opposition	4770 Sep 22 19:38	1° ♀ 42'11 -9°51'20	
morning rise	4764 Mar 25 19:20	22° ✕ 17'45	direct	4770 Dec 13 03:09	0° ♀ 33'07	
retrograde	4764 Jun 22 23:47	23° ✕ 52'15	evening set	4771 Mar 11 11:30	2° ♀ 03'58	
min. Earth dist.	4764 Sep 10 04:09	22° ✕ 44'44 36.22323 AU				
opposition	4764 Sep 12 22:59	22° ✕ 40'56 -7°28'19	conjunction	4771 Mar 23 07:11	2° ♀ 24'34 -9°31'59	
direct	4764 Dec 03 03:08	21° ✕ 30'01	minimum elong	4771 Mar 23 06:59	2° ♀ 24'33 9°31'59	
evening set	4765 Feb 28 15:26	23° ✕ 02'23	max. Earth dist.	4771 Mar 26 03:43	2° ♀ 29'35 39.87538 AU	
			morning rise	4771 Apr 04 03:29	2° ♀ 45'14	
conjunction	4765 Mar 13 23:51	23° ✕ 26'33 -7°17'07	retrograde	4771 Jul 04 01:35	4° ♀ 18'27	
minimum elong	4765 Mar 13 23:40	23° ✕ 26'32 7°17'07	min. Earth dist.	4771 Sep 21 15:08	3° ♀ 12'53 38.03195 AU	
max. Earth dist.	4765 Mar 16 18:02	23° ✕ 31'34 38.33602 AU	opposition	4771 Sep 24 13:36	3° ♀ 09'01 -10°12'47	
morning rise	4765 Mar 27 08:45	23° ✕ 50'45	direct	4771 Dec 14 19:27	2° ♀ 00'16	
retrograde	4765 Jun 24 18:37	25° ✕ 24'58	evening set	4772 Mar 12 10:15	3° ♀ 30'59	
min. Earth dist.	4765 Sep 12 01:10	24° ✕ 17'39 36.48076 AU				
opposition	4765 Sep 14 19:38	24° ✕ 13'54 -7°53'54	conjunction	4772 Mar 23 23:06	3° ♀ 50'59 -9°52'16	
direct	4765 Dec 05 00:06	23° ✕ 03'16	minimum elong	4772 Mar 23 22:53	3° ♀ 50'58 9°52'16	
evening set	4766 Mar 02 15:11	24° ✕ 35'17	max. Earth dist.	4772 Mar 26 20:35	3° ♀ 56'01 40.12969 AU	
			morning rise	4772 Apr 04 12:32	4° ♀ 11'01	
conjunction	4766 Mar 15 18:03	24° ✕ 58'53 -7°41'12	retrograde	4772 Jul 04 18:16	5° ♀ 44'11	
minimum elong	4766 Mar 15 17:51	24° ✕ 58'52 7°41'13	min. Earth dist.	4772 Sep 22 09:50	4° ♀ 38'48 38.28745 AU	
max. Earth dist.	4766 Mar 18 12:10	25° ✕ 03'52 38.59192 AU	opposition	4772 Sep 25 07:23	4° ♀ 35'01 -10°33'35	
morning rise	4766 Mar 28 21:26	25° ✕ 22'31	direct	4772 Dec 15 13:00	3° ♀ 26'35	
retrograde	4766 Jun 26 13:27	26° ✕ 56'28	evening set	4773 Mar 14 09:07	4° ♀ 57'10	

conjunction	4773 Mar 25 14:53	5°♈16'33	-10°11'57	direct	4779 Dec 26 07:08	13°♈05'45	
minimum elong	4773 Mar 25 14:41	5°♈16'32	10°11'56	evening set	4780 Mar 25 20:50	14°♈36'02	
max. Earth dist.	4773 Mar 28 11:56	5°♈21'32	40.38191 AU				
morning rise	4773 Apr 05 21:07	5°♈35'58		conjunction	4780 Apr 03 19:01	14°♈50'50	-12°13'29
retrograde	4773 Jul 06 09:02	7°♈09'04		minimum elong	4780 Apr 03 18:49	14°♈50'49	12°13'29
min. Earth dist.	4773 Sep 24 02:30	6°♈03'58	38.54045 AU	max. Earth dist.	4780 Apr 06 16:46	14°♈55'40	42.08330 AU
opposition	4773 Sep 27 00:31	6°♈00'10	-10°53'45	morning rise	4780 Apr 12 17:26	15°♈05'39	
direct	4773 Dec 17 07:12	4°♈52'01		retrograde	4780 Jul 15 10:29	16°♈38'53	
evening set	4774 Mar 16 07:50	6°♈22'31		min. Earth dist.	4780 Oct 03 16:25	15°♈35'14	40.25025 AU
				opposition	4780 Oct 06 14:26	15°♈31'31	-12°57'44
conjunction	4774 Mar 27 06:15	6°♈41'16	-10°31'02	direct	4780 Dec 26 23:55	14°♈25'09	
minimum elong	4774 Mar 27 06:02	6°♈41'15	10°31'03	evening set	4781 Mar 27 18:44	15°♈55'29	
max. Earth dist.	4774 Mar 30 02:52	6°♈46'11	40.63136 AU				
morning rise	4774 Apr 07 05:19	7°♈00'03		conjunction	4781 Apr 05 07:58	16°♈09'36	-12°28'34
retrograde	4774 Jul 07 23:49	8°♈33'07		minimum elong	4781 Apr 05 07:47	16°♈09'35	12°28'34
min. Earth dist.	4774 Sep 25 19:48	7°♈28'14	38.79070 AU	max. Earth dist.	4781 Apr 08 05:05	16°♈14'22	42.32085 AU
opposition	4774 Sep 28 17:28	7°♈24'27	-11°13'18	morning rise	4781 Apr 13 21:38	16°♈23'44	
direct	4774 Dec 19 00:53	6°♈16'35		retrograde	4781 Jul 16 23:21	17°♈57'06	
evening set	4775 Mar 18 06:21	7°♈46'59		min. Earth dist.	4781 Oct 05 06:19	16°♈53'41	40.48916 AU
				opposition	4781 Oct 08 04:41	16°♈49'58	-13°13'02
conjunction	4775 Mar 28 21:21	8°♈05'05	-10°49'33	direct	4781 Dec 28 14:38	15°♈43'51	
minimum elong	4775 Mar 28 21:09	8°♈05'04	10°49'34	evening set	4782 Mar 29 16:34	17°♈14'17	
max. Earth dist.	4775 Mar 31 18:35	8°♈10'02	40.87801 AU				
morning rise	4775 Apr 08 12:44	8°♈23'14		conjunction	4782 Apr 06 20:51	17°♈27'42	-12°43'05
retrograde	4775 Jul 09 12:36	9°♈56'17		minimum elong	4782 Apr 06 20:39	17°♈27'41	12°43'05
min. Earth dist.	4775 Sep 27 12:42	8°♈51'34	39.03802 AU	max. Earth dist.	4782 Apr 09 19:01	17°♈32'31	42.55692 AU
opposition	4775 Sep 30 09:52	8°♈47'50	-11°32'15	morning rise	4782 Apr 15 01:20	17°♈41'09	
direct	4775 Dec 20 19:49	7°♈40'13		retrograde	4782 Jul 18 12:28	19°♈14'39	
evening set	4776 Mar 19 04:48	9°♈10'32		min. Earth dist.	4782 Oct 06 21:15	18°♈11'24	40.72613 AU
				opposition	4782 Oct 09 18:42	18°♈07'45	-13°27'45
conjunction	4776 Mar 29 11:56	9°♈28'00	-11°07'30	direct	4782 Dec 30 05:19	17°♈01'54	
minimum elong	4776 Mar 29 11:43	9°♈27'59	11°07'30	evening set	4783 Mar 31 14:32	18°♈32'27	
max. Earth dist.	4776 Apr 01 08:06	9°♈32'50	41.12208 AU				
morning rise	4776 Apr 08 19:39	9°♈45'29		conjunction	4783 Apr 08 09:17	18°♈45'09	-12°57'04
retrograde	4776 Jul 10 05:10	11°♈18'32		minimum elong	4783 Apr 08 09:07	18°♈45'09	12°57'05
min. Earth dist.	4776 Sep 28 03:58	10°♈14'03	39.28320 AU	max. Earth dist.	4783 Apr 11 06:22	18°♈49'52	42.79088 AU
opposition	4776 Oct 01 01:58	10°♈10'18	-11°50'34	morning rise	4783 Apr 16 04:19	18°♈57'54	
direct	4776 Dec 21 10:14	9°♈02'55		retrograde	4783 Jul 20 03:38	20°♈31'34	
evening set	4777 Mar 21 02:51	10°♈33'11		min. Earth dist.	4783 Oct 08 10:09	19°♈28'35	40.96071 AU
				opposition	4783 Oct 11 08:20	19°♈24'55	-13°41'54
conjunction	4777 Mar 31 02:11	10°♈49'59	-11°24'52	direct	4783 Dec 31 16:44	18°♈19'19	
minimum elong	4777 Mar 31 01:59	10°♈49'58	11°24'52	evening set	4784 Apr 01 12:31	19°♈50'01	
max. Earth dist.	4777 Apr 02 23:31	10°♈54'52	41.36418 AU				
morning rise	4777 Apr 10 01:56	11°♈06'49		conjunction	4784 Apr 08 21:39	20°♈02'00	-13°10'32
retrograde	4777 Jul 11 19:52	12°♈39'53		minimum elong	4784 Apr 08 21:28	20°♈02'00	13°10'32
min. Earth dist.	4777 Sep 29 20:44	11°♈35'32	39.52664 AU	max. Earth dist.	4784 Apr 11 19:00	20°♈06'43	43.02211 AU
opposition	4777 Oct 02 17:43	11°♈31'51	-12°08'17	morning rise	4784 Apr 16 07:02	20°♈14'01	
direct	4777 Dec 23 01:51	10°♈24'43		retrograde	4784 Jul 20 16:31	21°♈47'53	
evening set	4778 Mar 23 01:03	11°♈54'56		min. Earth dist.	4784 Oct 09 01:08	20°♈45'03	41.19232 AU
				opposition	4784 Oct 11 21:56	20°♈41'28	-13°55'32
conjunction	4778 Apr 01 16:09	12°♈11'05	-11°41'39	direct	4785 Jan 01 05:24	19°♈36'07	
minimum elong	4778 Apr 01 15:56	12°♈11'04	11°41'38	evening set	4785 Apr 03 10:45	21°♈06'58	
max. Earth dist.	4778 Apr 04 12:55	12°♈15'54	41.60493 AU				
morning rise	4778 Apr 11 07:38	12°♈27'16		conjunction	4785 Apr 10 09:49	21°♈18'14	-13°23'30
retrograde	4778 Jul 13 10:04	14°♈00'20		minimum elong	4785 Apr 10 09:39	21°♈18'13	13°23'31
min. Earth dist.	4778 Oct 01 10:40	12°♈56'16	39.76885 AU	max. Earth dist.	4785 Apr 13 06:43	21°♈22'53	43.25012 AU
opposition	4778 Oct 04 08:47	12°♈52'31	-12°25'22	morning rise	4785 Apr 17 09:00	21°♈29'31	
direct	4778 Dec 24 16:22	11°♈45'38		retrograde	4785 Jul 22 03:15	23°♈03'35	
evening set	4779 Mar 24 23:01	13°♈15'52		min. Earth dist.	4785 Oct 10 14:20	22°♈00'56	41.42017 AU
				opposition	4785 Oct 13 11:06	21°♈57'22	-14°08'39
conjunction	4779 Apr 03 05:45	13°♈31'21	-11°57'51	direct	4786 Jan 02 19:33	20°♈52'15	
minimum elong	4779 Apr 03 05:33	13°♈31'20	11°57'52	evening set	4786 Apr 05 09:15	22°♈23'19	
max. Earth dist.	4779 Apr 06 03:00	13°♈36'10	41.84454 AU				
morning rise	4779 Apr 12 12:57	13°♈46'51		conjunction	4786 Apr 11 21:46	22°♈33'49	-13°36'00
retrograde	4779 Jul 14 23:33	15°♈19'59		minimum elong	4786 Apr 11 21:37	22°♈33'49	13°35'59
min. Earth dist.	4779 Oct 03 02:08	14°♈16'06	40.01013 AU	max. Earth dist.	4786 Apr 14 17:30	22°♈38'22	43.47410 AU
opposition	4779 Oct 05 23:50	14°♈12'24	-12°41'51	morning rise	4786 Apr 18 10:31	22°♈44'20	

retrograde	4786 Jul 23 14:41	24°♈18'38	direct	4793 Jan 11 11:55	29°♈25'51
min. Earth dist.	4786 Oct 12 03:51	23°♈16'09 41.64397 AU		4793 Mar 06 14:15	0°♈
opposition	4786 Oct 14 23:58	23°♈12'37 -14°21'16	evening set	4793 Apr 17 19:12	1°♈00'12
direct	4787 Jan 04 09:02	22°♈07'43			
evening set	4787 Apr 07 07:59	23°♈39'00	conjunction	4793 Apr 20 01:55	1°♈03'46 -14°50'17
			minimum elong	4793 Apr 20 01:47	1°♈03'45 14°50'18
conjunction	4787 Apr 13 09:35	23°♈48'43 -13°48'01	morning rise	4793 Apr 22 08:27	1°♈07'19
minimum elong	4787 Apr 13 09:25	23°♈48'42 13°48'01	max. Earth dist.	4793 Apr 22 19:12	1°♈08'01 44.94873 AU
max. Earth dist.	4787 Apr 16 05:34	23°♈53'16 43.69402 AU	retrograde	4793 Jul 31 17:03	2°♈45'10
morning rise	4787 Apr 19 11:13	23°♈58'27	min. Earth dist.	4793 Oct 20 16:36	1°♈43'44 43.11996 AU
retrograde	4787 Jul 25 00:17	25°♈33'01	opposition	4793 Oct 23 10:30	1°♈40'24 -15°35'50
min. Earth dist.	4787 Oct 13 17:42	24°♈30'38 41.86352 AU	direct	4794 Jan 12 22:18	0°♈36'52
opposition	4787 Oct 16 12:38	24°♈27'10 -14°33'23	evening set	4794 Apr 20 18:50	2°♈13'13
direct	4788 Jan 06 00:00	23°♈22'27			
evening set	4788 Apr 08 06:58	24°♈54'00	conjunction	4794 Apr 21 11:59	2°♈14'20 -14°59'03
			minimum elong	4794 Apr 21 11:53	2°♈14'19 14°59'03
conjunction	4788 Apr 13 20:49	25°♈02'53 -13°59'34	morning rise	4794 Apr 22 04:59	2°♈15'26
minimum elong	4788 Apr 13 20:40	25°♈02'53 13°59'34	max. Earth dist.	4794 Apr 24 05:53	2°♈18'36 45.14965 AU
max. Earth dist.	4788 Apr 16 15:19	25°♈07'19 43.91001 AU	retrograde	4794 Aug 02 04:06	3°♈55'20
morning rise	4788 Apr 19 10:46	25°♈11'48	min. Earth dist.	4794 Oct 22 04:51	2°♈54'01 43.32087 AU
retrograde	4788 Jul 25 13:00	26°♈46'40	opposition	4794 Oct 24 21:13	2°♈50'46 -15°44'33
min. Earth dist.	4788 Oct 14 05:40	25°♈44'27 42.07944 AU	direct	4795 Jan 14 09:01	1°♈47'28
opposition	4788 Oct 17 01:01	25°♈40'59 -14°45'01			
direct	4789 Jan 06 11:49	24°♈36'27	conjunction	4795 Apr 22 21:50	3°♈24'30 -15°07'22
evening set	4789 Apr 10 06:26	26°♈08'19	minimum elong	4795 Apr 22 21:43	3°♈24'29 15°07'22
			max. Earth dist.	4795 Apr 25 14:41	3°♈28'40 45.34783 AU
conjunction	4789 Apr 15 07:59	26°♈16'20 -14°10'39	retrograde	4795 Aug 03 15:50	5°♈05'05
minimum elong	4789 Apr 15 07:49	26°♈16'20 14°10'40	min. Earth dist.	4795 Oct 23 14:57	4°♈03'59 43.51869 AU
max. Earth dist.	4789 Apr 18 03:01	26°♈20'47 44.12256 AU	opposition	4795 Oct 26 07:44	4°♈00'44 -15°52'50
morning rise	4789 Apr 20 09:30	26°♈24'23	direct	4796 Jan 15 16:59	2°♈57'38
retrograde	4789 Jul 27 01:44	27°♈59'36			
min. Earth dist.	4789 Oct 15 19:07	26°♈57'28 42.29224 AU	conjunction	4796 Apr 23 07:21	4°♈34'16 -15°15'16
opposition	4789 Oct 18 13:02	26°♈54'05 -14°56'10	minimum elong	4796 Apr 23 07:15	4°♈34'16 15°15'17
direct	4790 Jan 07 22:44	25°♈49'44	max. Earth dist.	4796 Apr 25 23:45	4°♈38'24 45.54255 AU
evening set	4790 Apr 12 06:52	27°♈21'59	retrograde	4796 Aug 04 02:48	6°♈14'28
			min. Earth dist.	4796 Oct 24 02:53	5°♈13'29 43.71286 AU
conjunction	4790 Apr 16 18:53	27°♈29'06 -14°21'16	opposition	4796 Oct 26 18:14	5°♈10'18 -16°00'41
minimum elong	4790 Apr 16 18:45	27°♈29'05 14°21'17	direct	4797 Jan 16 01:11	4°♈07'25
max. Earth dist.	4790 Apr 19 13:16	27°♈33'28 44.33245 AU			
morning rise	4790 Apr 21 06:52	27°♈36'12	conjunction	4797 Apr 24 17:04	5°♈43'38 -15°22'46
retrograde	4790 Jul 28 12:14	29°♈11'51	minimum elong	4797 Apr 24 16:58	5°♈43'38 15°22'46
min. Earth dist.	4790 Oct 17 06:11	28°♈09'55 42.50243 AU	max. Earth dist.	4797 Apr 27 09:12	5°♈47'44 45.73339 AU
opposition	4790 Oct 20 00:42	28°♈06'31 -15°06'49	retrograde	4797 Aug 05 09:37	7°♈23'27
direct	4791 Jan 09 09:38	27°♈02'21	min. Earth dist.	4797 Oct 25 13:38	6°♈22'36 43.90260 AU
evening set	4791 Apr 14 08:10	28°♈35'06	opposition	4797 Oct 28 04:15	6°♈19'28 -16°08'07
			direct	4798 Jan 17 13:46	5°♈16'46
conjunction	4791 Apr 18 05:21	28°♈41'12 -14°31'25			
minimum elong	4791 Apr 18 05:12	28°♈41'12 14°31'25	conjunction	4798 Apr 26 02:27	6°♈52'35 -15°29'53
max. Earth dist.	4791 Apr 20 23:16	28°♈45'31 44.53989 AU	minimum elong	4798 Apr 26 02:22	6°♈52'35 15°29'54
morning rise	4791 Apr 22 02:27	28°♈47'18	max. Earth dist.	4798 Apr 28 16:41	6°♈56'33 45.91960 AU
	4791 Jun 14 10:58	0°♈	retrograde	4798 Aug 06 17:55	8°♈32'00
retrograde	4791 Jul 29 21:48	0°♈23'29	min. Earth dist.	4798 Oct 27 00:14	7°♈31'17 44.08760 AU
	4791 Sep 14 12:54	30°♈	opposition	4798 Oct 29 14:15	7°♈28'11 -16°15'11
min. Earth dist.	4791 Oct 18 18:24	29°♈21'41 42.71047 AU	direct	4799 Jan 19 01:22	6°♈25'39
opposition	4791 Oct 21 12:16	29°♈18'19 -15°16'58			
direct	4792 Jan 10 21:58	28°♈14'22	conjunction	4799 Apr 27 11:42	8°♈01'03 -15°36'38
evening set	4792 Apr 15 11:47	29°♈47'46	minimum elong	4799 Apr 27 11:37	8°♈01'03 15°36'38
			max. Earth dist.	4799 Apr 30 02:04	8°♈05'01 46.10095 AU
conjunction	4792 Apr 18 15:51	29°♈52'44 -14°41'05	retrograde	4799 Aug 08 03:13	9°♈40'04
minimum elong	4792 Apr 18 15:44	29°♈52'44 14°41'05	min. Earth dist.	4799 Oct 28 11:47	8°♈39'24 44.26762 AU
morning rise	4792 Apr 21 19:48	29°♈57'42	opposition	4799 Oct 31 00:06	8°♈36'24 -16°21'51
max. Earth dist.	4792 Apr 21 10:24	29°♈57'05 44.74538 AU	direct	4800 Jan 20 12:57	7°♈34'01
	4792 Apr 23 07:06	0°♈			
retrograde	4792 Jul 30 05:30	1°♈34'34	conjunction	4800 Apr 27 20:44	9°♈08'59 -15°43'00
min. Earth dist.	4792 Oct 19 06:01	0°♈32'56 42.91632 AU	minimum elong	4800 Apr 27 20:39	9°♈08'58 15°43'02
opposition	4792 Oct 21 23:30	0°♈29'36 -15°26'38	max. Earth dist.	4800 Apr 30 09:31	9°♈12'49 46.27772 AU
	4792 Nov 16 04:15	30°♈	retrograde	4800 Aug 08 14:06	10°♈47'35

min. Earth dist.	4800 Oct 28 21:03	9°8'47.03	44.44325 AU	max. Earth dist.	4808 May 08 22:19	17°8'57.23	47.57787 AU
opposition	4800 Oct 31 09:34	9°8'44.03	-16°28'08	retrograde	4808 Aug 17 05:32	19°8'29.40	
direct	4801 Jan 20 21:12	8°8'41.47		min. Earth dist.	4808 Nov 06 23:07	18°8'29.57	45.73755 AU
				opposition	4808 Nov 09 06:26	18°8'27.15	-17°04'22
conjunction	4801 Apr 29 05:28	10°8'16.20	-15°49'01	direct	4809 Jan 29 17:31	17°8'26.10	
minimum elong	4801 Apr 29 05:24	10°8'16.19	15°49'01				
max. Earth dist.	4801 May 01 17:46	10°8'20.07	46.45029 AU	conjunction	4809 May 07 21:44	18°8'57.54	-16°23'28
retrograde	4801 Aug 09 23:22	11°8'54.31		minimum elong	4809 May 07 21:44	18°8'57.54	16°23'29
min. Earth dist.	4801 Oct 30 08:00	10°8'54.01	44.61505 AU	max. Earth dist.	4809 May 10 06:16	19°8'01.21	47.72633 AU
opposition	4801 Nov 01 18:57	10°8'51.06	-16°34'02	retrograde	4809 Aug 18 11:24	20°8'33.21	
direct	4802 Jan 22 05:20	9°8'48.58		min. Earth dist.	4809 Nov 08 08:36	19°8'33.42	45.88420 AU
				opposition	4809 Nov 10 14:21	19°8'31.05	-17°07'14
conjunction	4802 Apr 30 14:09	11°8'23.06	-15°54'38	direct	4810 Jan 31 04:07	18°8'30.09	
minimum elong	4802 Apr 30 14:05	11°8'23.06	15°54'39				
max. Earth dist.	4802 May 03 02:21	11°8'26.52	46.61947 AU	conjunction	4810 May 09 05:18	20°8'01.35	-16°26'13
retrograde	4802 Aug 11 05:24	13°8'00.52		minimum elong	4810 May 09 05:17	20°8'01.35	16°26'12
min. Earth dist.	4802 Oct 31 17:04	12°8'00.29	44.78356 AU	max. Earth dist.	4810 May 11 11:45	20°8'04.54	47.87012 AU
opposition	4802 Nov 03 03:49	11°8'57.35	-16°39'33	retrograde	4810 Aug 19 20:26	21°8'36.45	
direct	4803 Jan 23 14:52	10°8'55.35		min. Earth dist.	4810 Nov 09 16:22	20°8'37.14	46.02597 AU
				opposition	4810 Nov 11 21:58	20°8'34.38	-17°09'48
conjunction	4803 May 01 22:27	12°8'29.19	-15°59'52	direct	4811 Feb 01 11:21	19°8'33.50	
minimum elong	4803 May 01 22:25	12°8'29.19	15°59'52				
max. Earth dist.	4803 May 04 09:21	12°8'33.00	46.78572 AU	conjunction	4811 May 10 12:44	21°8'04.58	-16°28'39
retrograde	4803 Aug 12 13:14	14°8'06.42		minimum elong	4811 May 10 12:45	21°8'04.58	16°28'40
min. Earth dist.	4803 Nov 02 02:11	13°8'06.25	44.94947 AU	max. Earth dist.	4811 May 12 18:32	21°8'08.14	48.00886 AU
opposition	4803 Nov 04 12:45	13°8'03.32	-16°44'39	retrograde	4811 Aug 21 05:14	22°8'39.51	
direct	4804 Jan 25 00:04	12°8'01.40		min. Earth dist.	4811 Nov 11 02:13	21°8'40.21	46.16266 AU
				opposition	4811 Nov 13 05:43	21°8'37.51	-17°12'04
conjunction	4804 May 02 06:38	13°8'35.01	-16°04'44	direct	4812 Feb 02 18:08	20°8'37.11	
minimum elong	4804 May 02 06:35	13°8'35.01	16°04'44				
max. Earth dist.	4804 May 04 18:09	13°8'38.43	46.94949 AU	conjunction	4812 May 10 19:59	22°8'08.01	-16°30'48
	4804 Jul 10 19:02	15°8'		minimum elong	4812 May 10 20:00	22°8'08.01	16°30'47
retrograde	4804 Aug 12 19:29	15°8'12.04		max. Earth dist.	4812 May 13 01:00	22°8'11.13	48.14282 AU
	4804 Sep 15 12:21	15°8'8'		retrograde	4812 Aug 21 12:15	23°8'42.34	
min. Earth dist.	4804 Nov 02 12:04	14°8'11.51	45.11277 AU	min. Earth dist.	4812 Nov 11 09:50	22°8'43.10	46.29455 AU
opposition	4804 Nov 04 21:29	14°8'09.01	-16°49'21	opposition	4812 Nov 13 13:05	22°8'40.42	-17°14'01
direct	4805 Jan 25 11:25	13°8'07.18		direct	4813 Feb 03 00:14	21°8'40.08	
conjunction	4805 May 03 14:43	14°8'40.17	-16°09'12	conjunction	4813 May 12 03:02	23°8'10.41	-16°32'38
minimum elong	4805 May 03 14:42	14°8'40.17	16°09'12	minimum elong	4813 May 12 03:03	23°8'10.41	16°32'39
max. Earth dist.	4805 May 06 00:59	14°8'43.54	47.11085 AU	max. Earth dist.	4813 May 14 06:26	23°8'13.46	48.27222 AU
	4805 May 16 23:13	15°8'		retrograde	4813 Aug 22 18:54	24°8'44.56	
retrograde	4805 Aug 14 05:11	16°8'16.58		min. Earth dist.	4813 Nov 12 18:10	23°8'45.34	46.42236 AU
min. Earth dist.	4805 Nov 03 19:58	15°8'16.55	45.27358 AU	opposition	4813 Nov 14 20:15	23°8'43.09	-17°15'39
opposition	4805 Nov 06 05:48	15°8'14.05	-16°53'40	direct	4814 Feb 04 06:41	22°8'42.42	
	4805 Nov 18 07:07	15°8'8'					
direct	4806 Jan 26 19:14	14°8'12.30		conjunction	4814 May 13 10:06	24°8'12.57	-16°34'10
	4806 Apr 03 02:31	15°8'		minimum elong	4814 May 13 10:08	24°8'12.57	16°34'10
				max. Earth dist.	4814 May 15 13:43	24°8'16.03	48.39787 AU
conjunction	4806 May 04 22:38	15°8'45.09	-16°13'18	retrograde	4814 Aug 23 22:41	25°8'46.55	
minimum elong	4806 May 04 22:36	15°8'45.09	16°13'18	min. Earth dist.	4814 Nov 14 02:15	24°8'47.36	46.54650 AU
max. Earth dist.	4806 May 07 08:45	15°8'48.44	47.26956 AU	opposition	4814 Nov 16 03:18	24°8'45.15	-17°16'57
retrograde	4806 Aug 15 15:54	17°8'21.31		direct	4815 Feb 05 16:44	23°8'44.53	
min. Earth dist.	4806 Nov 05 05:54	16°8'21.32	45.43161 AU				
opposition	4806 Nov 07 14:13	16°8'18.46	-16°57'35	conjunction	4815 May 14 16:43	25°8'14.51	-16°35'22
direct	4807 Jan 28 01:20	15°8'17.22		minimum elong	4815 May 14 16:44	25°8'14.51	16°35'23
				max. Earth dist.	4815 May 16 18:48	25°8'17.52	48.52027 AU
conjunction	4807 May 06 06:23	16°8'49.41	-16°17'02	retrograde	4815 Aug 25 05:42	26°8'48.33	
minimum elong	4807 May 06 06:22	16°8'49.41	16°17'03	min. Earth dist.	4815 Nov 15 09:01	25°8'49.21	46.66765 AU
max. Earth dist.	4807 May 08 16:13	16°8'53.15	47.42544 AU	opposition	4815 Nov 17 10:13	25°8'46.59	-17°17'56
retrograde	4807 Aug 16 22:31	18°8'25.44		direct	4816 Feb 07 01:02	24°8'46.44	
min. Earth dist.	4807 Nov 06 14:04	17°8'25.54	45.58638 AU				
opposition	4807 Nov 08 22:22	17°8'23.09	-17°01'09	conjunction	4816 May 14 23:25	26°8'16.26	-16°36'15
direct	4808 Jan 29 09:17	16°8'21.55		minimum elong	4816 May 14 23:28	26°8'16.26	16°36'16
				max. Earth dist.	4816 May 17 01:30	26°8'19.26	48.63977 AU
conjunction	4808 May 06 14:01	17°8'53.56	-16°20'25	retrograde	4816 Aug 25 15:21	27°8'49.52	
minimum elong	4808 May 06 13:59	17°8'53.55	16°20'25	min. Earth dist.	4816 Nov 15 17:26	26°8'50.42	46.78598 AU

opposition	4816 Nov 17 17:04	26° 8 48'25 -17°18'35	retrograde	4824 Sep 02 16:16	5° II 52'12	
direct	4817 Feb 07 07:03	25° 8 48'17	min. Earth dist.	4824 Nov 24 03:36	4° II 53'30	47.59922 AU
			opposition	4824 Nov 25 19:31	4° II 51'37	-17°12'57
conjunction	4817 May 16 06:03	27° 8 17'44 -16°36'49	direct	4825 Feb 15 08:20	3° II 52'17	
minimum elong	4817 May 16 06:04	27° 8 17'44 16°36'50				
max. Earth dist.	4817 May 18 07:31	27° 8 20'40 48.75666 AU	conjunction	4825 May 24 08:04	5° II 19'59	-16°31'02
retrograde	4817 Aug 26 22:40	28° 8 50'54	minimum elong	4825 May 24 08:09	5° II 19'59	16°31'02
min. Earth dist.	4817 Nov 16 23:48	27° 8 51'52 46.90145 AU	max. Earth dist.	4825 May 26 00:48	5° II 22'22	49.55354 AU
opposition	4817 Nov 18 23:40	27° 8 49'35 -17°18'54	retrograde	4825 Sep 03 20:36	6° II 51'21	
direct	4818 Feb 08 11:33	26° 8 49'34	min. Earth dist.	4825 Nov 25 09:52	5° II 52'41	47.67946 AU
			opposition	4825 Nov 27 01:19	5° II 50'49	-17°11'03
conjunction	4818 May 17 12:26	28° 8 18'46 -16°37'05	direct	4826 Feb 16 15:45	4° II 51'33	
minimum elong	4818 May 17 12:30	28° 8 18'46 16°37'05				
max. Earth dist.	4818 May 19 12:36	28° 8 21'38 48.87061 AU	conjunction	4826 May 25 13:55	6° II 19'02	-16°29'09
retrograde	4818 Aug 28 04:52	29° 8 51'42	minimum elong	4826 May 25 13:59	6° II 19'02	16°29'10
min. Earth dist.	4818 Nov 18 07:30	28° 8 52'44 47.01398 AU	max. Earth dist.	4826 May 27 06:18	6° II 21'23	49.63191 AU
opposition	4818 Nov 20 06:13	28° 8 50'30 -17°18'54	retrograde	4826 Sep 05 02:57	7° II 50'11	
direct	4819 Feb 09 17:07	27° 8 50'36	min. Earth dist.	4826 Nov 26 17:24	6° II 51'30	47.75561 AU
			opposition	4826 Nov 28 07:00	6° II 49'43	-17°08'53
conjunction	4819 May 18 18:54	29° 8 19'35 -16°37'02	direct	4827 Feb 17 22:51	5° II 50'31	
minimum elong	4819 May 18 18:56	29° 8 19'36 16°37'02				
max. Earth dist.	4819 May 20 19:23	29° 8 22'28 48.98154 AU	conjunction	4827 May 26 19:40	7° II 17'47	-16°26'59
	4819 Jun 17 03:46	0° II	minimum elong	4827 May 26 19:46	7° II 17'48	16°26'59
retrograde	4819 Aug 29 07:36	0° II 52'18	max. Earth dist.	4827 May 28 11:13	7° II 20'06	49.70674 AU
	4819 Nov 13 19:58	30° R 8	retrograde	4827 Sep 06 10:00	8° II 48'44	
min. Earth dist.	4819 Nov 19 14:58	29° 8 53'24 47.12309 AU	min. Earth dist.	4827 Nov 27 22:39	7° II 50'08	47.82833 AU
opposition	4819 Nov 21 12:41	29° 8 51'13 -17°18'36	opposition	4827 Nov 29 12:31	7° II 48'21	-17°06'26
direct	4820 Feb 11 01:57	28° 8 51'27	direct	4828 Feb 19 02:56	6° II 49'12	
	4820 May 04 16:26	0° II				
conjunction	4820 May 19 01:06	0° II 20'13 -16°36'41	conjunction	4828 May 27 01:09	8° II 16'18	-16°24'34
minimum elong	4820 May 19 01:10	0° II 20'13 16°36'41	minimum elong	4828 May 27 01:14	8° II 16'18	16°24'34
max. Earth dist.	4820 May 20 23:46	0° II 22'59 49.08892 AU	max. Earth dist.	4828 May 28 15:22	8° II 18'31	49.77826 AU
retrograde	4820 Aug 29 14:06	1° II 52'42	retrograde	4828 Sep 06 16:19	9° II 47'04	
min. Earth dist.	4820 Nov 19 21:35	0° II 53'55 47.22838 AU	min. Earth dist.	4828 Nov 28 05:39	8° II 48'27	47.89796 AU
opposition	4820 Nov 21 19:02	0° II 51'45 -17°17'59	opposition	4828 Nov 29 18:05	8° II 46'45	-17°03'42
	4821 Jan 15 10:56	30° R 8	direct	4829 Feb 19 06:56	7° II 47'40	
direct	4821 Feb 11 08:39	29° 8 52'06	conjunction	4829 May 28 06:53	9° II 14'37	-16°21'51
	4821 Mar 09 20:56	0° II	minimum elong	4829 May 28 07:00	9° II 14'37	16°21'52
			max. Earth dist.	4829 May 29 21:21	9° II 16'50	49.84681 AU
conjunction	4821 May 20 07:29	1° II 20'39 -16°36'03	retrograde	4829 Sep 07 18:38	10° II 45'12	
minimum elong	4821 May 20 07:33	1° II 20'40 16°36'03	min. Earth dist.	4829 Nov 29 11:34	9° II 46'39	47.96446 AU
max. Earth dist.	4821 May 22 05:37	1° II 23'23 49.19200 AU	opposition	4829 Nov 30 23:18	9° II 44'58	-17°00'41
retrograde	4821 Aug 30 21:33	2° II 52'56	direct	4830 Feb 20 13:40	8° II 45'58	
min. Earth dist.	4821 Nov 21 06:02	1° II 54'09 47.32900 AU				
opposition	4821 Nov 23 01:15	1° II 52'06 -17°17'07	conjunction	4830 May 29 12:20	10° II 12'46	-16°18'52
direct	4822 Feb 12 16:02	0° II 52'33	minimum elong	4830 May 29 12:25	10° II 12'47	16°18'53
			max. Earth dist.	4830 May 31 00:57	10° II 14'54	49.91238 AU
conjunction	4822 May 21 13:53	2° II 20'54 -16°35'10	retrograde	4830 Sep 08 23:43	11° II 43'12	
minimum elong	4822 May 21 13:57	2° II 20'54 16°35'11	min. Earth dist.	4830 Nov 30 17:05	10° II 44'44	48.02796 AU
max. Earth dist.	4822 May 23 10:51	2° II 23'33 49.29028 AU	opposition	4830 Dec 02 04:36	10° II 43'04	-16°57'24
retrograde	4822 Sep 01 05:20	3° II 52'57	direct	4831 Feb 21 19:24	9° II 44'09	
min. Earth dist.	4822 Nov 22 12:32	2° II 54'15 47.42441 AU				
opposition	4822 Nov 24 07:23	2° II 52'13 -17°15'59	conjunction	4831 May 30 17:41	11° II 10'50	-16°15'38
direct	4823 Feb 13 20:39	1° II 52'46	minimum elong	4831 May 30 17:49	11° II 10'50	16°15'39
			max. Earth dist.	4831 Jun 01 06:11	11° II 12'56	49.97472 AU
conjunction	4823 May 22 19:55	3° II 20'54 -16°34'02	retrograde	4831 Sep 10 05:45	12° II 41'09	
minimum elong	4823 May 22 19:59	3° II 20'54 16°34'03	min. Earth dist.	4831 Dec 02 00:15	11° II 42'41	48.08801 AU
max. Earth dist.	4823 May 24 14:56	3° II 23'25 49.38314 AU	opposition	4831 Dec 03 09:58	11° II 41'06	-16°53'50
retrograde	4823 Sep 02 12:55	4° II 52'44	direct	4832 Feb 23 02:10	10° II 42'17	
min. Earth dist.	4823 Nov 23 20:26	3° II 54'01 47.51444 AU				
opposition	4823 Nov 25 13:37	3° II 52'05 -17°14'36	conjunction	4832 May 30 23:11	12° II 08'50	-16°12'07
direct	4824 Feb 15 00:11	2° II 52'41	minimum elong	4832 May 30 23:17	12° II 08'51	16°12'08
			max. Earth dist.	4832 Jun 01 10:46	12° II 10'53	50.03361 AU
conjunction	4824 May 23 02:08	4° II 20'36 -16°32'40	retrograde	4832 Sep 10 13:02	13° II 39'01	
minimum elong	4824 May 23 02:13	4° II 20'37 16°32'41	min. Earth dist.	4832 Dec 02 05:26	12° II 40'40	48.14421 AU
max. Earth dist.	4824 May 24 20:55	4° II 23'07 49.47078 AU	opposition	4832 Dec 03 15:00	12° II 39'05	-16°50'00

direct	4833 Feb 23 05:51	11°II40'21		minimum elong	4841 Jun 08 22:25	20°II44'57	15°30'12
				max. Earth dist.	4841 Jun 09 23:58	20°II46'25	50.35565 AU
conjunction	4833 Jun 01 04:36	13°II06'48 -16°08'22		retrograde	4841 Sep 19 07:56	22°II13'56	
minimum elong	4833 Jun 01 04:44	13°II06'49 16°08'24		min. Earth dist.	4841 Dec 11 11:23	21°II15'29	48.44027 AU
max. Earth dist.	4833 Jun 02 14:23	13°II08'45 50.08822 AU		opposition	4841 Dec 12 10:35	21°II14'24	-16°05'02
retrograde	4833 Sep 11 21:20	14°II36'51		direct	4842 Mar 04 03:25	20°II15'57	
opposition	4833 Dec 04 20:13	13°II37'01 -16°45'56					
min. Earth dist.	4833 Dec 03 12:31	13°II38'30 48.19589 AU		conjunction	4842 Jun 10 03:11	21°II41'23	-15°24'19
direct	4834 Feb 24 07:08	12°II38'22		minimum elong	4842 Jun 10 03:21	21°II41'24	15°24'19
				max. Earth dist.	4842 Jun 11 04:09	21°II42'48	50.37309 AU
conjunction	4834 Jun 02 10:07	14°II04'42 -16°04'23		retrograde	4842 Sep 20 13:32	23°II10'17	
minimum elong	4834 Jun 02 10:15	14°II04'43 16°04'23		opposition	4842 Dec 13 14:59	22°II10'48	-15°58'47
max. Earth dist.	4834 Jun 03 19:34	14°II06'38 50.13799 AU		min. Earth dist.	4842 Dec 12 15:32	22°II11'54	48.45522 AU
retrograde	4834 Sep 13 01:00	15°II34'37		direct	4843 Mar 05 08:14	21°II12'23	
min. Earth dist.	4834 Dec 04 18:40	14°II36'18 48.24230 AU					
opposition	4834 Dec 06 01:13	14°II34'52 -16°41'39		conjunction	4843 Jun 11 08:01	22°II37'46	-15°18'12
direct	4835 Feb 25 13:02	13°II36'16		minimum elong	4843 Jun 11 08:10	22°II37'46	15°18'12
				max. Earth dist.	4843 Jun 12 07:26	22°II39'05	50.38751 AU
conjunction	4835 Jun 03 15:29	15°II02'30 -16°00'11		retrograde	4843 Sep 21 21:37	24°II06'35	
minimum elong	4835 Jun 03 15:37	15°II02'30 16°00'13		opposition	4843 Dec 14 19:34	23°II07'10	-15°52'17
max. Earth dist.	4835 Jun 04 22:38	15°II04'17 50.18252 AU		min. Earth dist.	4843 Dec 13 21:43	23°II08'11	48.46710 AU
retrograde	4835 Sep 14 04:02	16°II32'17		direct	4844 Mar 05 09:50	22°II08'47	
min. Earth dist.	4835 Dec 06 00:35	15°II33'58 48.28345 AU					
opposition	4835 Dec 07 06:17	15°II32'35 -16°37'08		conjunction	4844 Jun 11 13:00	23°II34'08	-15°11'50
direct	4836 Feb 26 19:35	14°II34'01		minimum elong	4844 Jun 11 13:10	23°II34'08	15°11'51
				max. Earth dist.	4844 Jun 12 12:33	23°II35'28	50.39867 AU
conjunction	4836 Jun 03 20:48	16°II00'07 -15°55'46		retrograde	4844 Sep 22 01:54	25°II02'53	
minimum elong	4836 Jun 03 20:56	16°II00'08 15°55'46		opposition	4844 Dec 14 23:59	24°II03'31	-15°45'33
max. Earth dist.	4836 Jun 05 03:13	16°II01'52 50.22170 AU		min. Earth dist.	4844 Dec 14 02:57	24°II04'30	48.47522 AU
retrograde	4836 Sep 14 08:26	17°II29'46		direct	4845 Mar 06 13:49	23°II05'12	
min. Earth dist.	4836 Dec 06 07:39	16°II31'23 48.31932 AU					
opposition	4836 Dec 07 11:18	16°II30'06 -16°32'23		conjunction	4845 Jun 12 17:58	24°II30'31	-15°05'15
direct	4837 Feb 27 03:45	15°II31'34		minimum elong	4845 Jun 12 18:07	24°II30'31	15°05'15
				max. Earth dist.	4845 Jun 13 15:21	24°II31'43	50.40581 AU
conjunction	4837 Jun 05 02:08	16°II57'32 -15°51'08		retrograde	4845 Sep 23 06:04	25°II59'13	
minimum elong	4837 Jun 05 02:16	16°II57'32 15°51'09		min. Earth dist.	4845 Dec 15 08:13	25°II00'51	48.47907 AU
max. Earth dist.	4837 Jun 06 07:19	16°II59'12 50.25604 AU		opposition	4845 Dec 16 04:17	24°II59'55	-15°38'35
retrograde	4837 Sep 15 15:35	18°II27'02		direct	4846 Mar 07 18:08	24°II01'38	
opposition	4837 Dec 08 15:55	17°II27'23 -16°27'25					
min. Earth dist.	4837 Dec 07 12:28	17°II28'40 48.35055 AU		conjunction	4846 Jun 13 23:04	25°II26'55	-14°58'27
direct	4838 Feb 28 08:06	16°II28'52		minimum elong	4846 Jun 13 23:15	25°II26'56	14°58'28
				evening set	4846 Jun 13 00:54	25°II25'40	
conjunction	4838 Jun 06 07:14	17°II54'42 -15°46'16		morning rise	4846 Jun 14 21:36	25°II28'12	
minimum elong	4838 Jun 06 07:23	17°II54'43 15°46'16		max. Earth dist.	4846 Jun 14 19:40	25°II28'05	50.40820 AU
max. Earth dist.	4838 Jun 07 10:49	17°II56'17 50.28598 AU		retrograde	4846 Sep 24 09:34	26°II55'35	
retrograde	4838 Sep 16 22:04	19°II24'04		opposition	4846 Dec 17 08:49	25°II56'20	-15°31'24
opposition	4838 Dec 09 20:45	18°II24'27 -16°22'12		min. Earth dist.	4846 Dec 16 14:49	25°II57'10	48.47782 AU
min. Earth dist.	4838 Dec 08 18:59	18°II25'39 48.37784 AU		direct	4847 Mar 09 01:22	24°II58'05	
direct	4839 Mar 01 10:49	17°II25'56		evening set	4847 Jun 12 23:36	26°II20'23	
conjunction	4839 Jun 07 12:15	18°II51'39 -15°41'09		conjunction	4847 Jun 15 04:02	26°II23'20	-14°51'26
minimum elong	4839 Jun 07 12:23	18°II51'40 15°41'10		minimum elong	4847 Jun 15 04:12	26°II23'21	14°51'26
max. Earth dist.	4839 Jun 08 15:59	18°II53'14 50.31230 AU		max. Earth dist.	4847 Jun 15 23:17	26°II24'26	50.40549 AU
retrograde	4839 Sep 18 00:47	20°II20'52		morning rise	4847 Jun 17 08:51	26°II26'20	
min. Earth dist.	4839 Dec 10 00:14	19°II22'27 48.40159 AU		retrograde	4847 Sep 25 16:10	27°II51'58	
opposition	4839 Dec 11 01:26	19°II21'16 -16°16'44		opposition	4847 Dec 18 13:15	26°II52'45	-15°24'01
direct	4840 Mar 01 15:49	18°II22'46		min. Earth dist.	4847 Dec 17 19:33	26°II53'34	48.47123 AU
				direct	4848 Mar 09 05:31	25°II54'30	
conjunction	4840 Jun 07 17:13	19°II48'23 -15°35'47		evening set	4848 Jun 12 10:01	27°II15'44	
minimum elong	4840 Jun 07 17:23	19°II48'24 15°35'48					
max. Earth dist.	4840 Jun 08 19:08	19°II49'52 50.33546 AU		conjunction	4848 Jun 15 09:04	27°II19'44	-14°44'14
retrograde	4840 Sep 18 04:09	21°II17'28		minimum elong	4848 Jun 15 09:14	27°II19'45	14°44'15
min. Earth dist.	4840 Dec 10 05:06	20°II19'03 48.42242 AU		max. Earth dist.	4848 Jun 16 02:16	27°II20'43	50.39733 AU
opposition	4840 Dec 11 05:57	20°II17'54 -16°11'01		morning rise	4848 Jun 18 08:36	27°II23'47	
direct	4841 Mar 02 20:50	19°II19'25		retrograde	4848 Sep 25 23:26	28°II48'19	
				opposition	4848 Dec 18 17:39	27°II49'07	-15°16'25
conjunction	4841 Jun 08 22:17	20°II44'57 -15°30'11		min. Earth dist.	4848 Dec 18 02:10	27°II49'50	48.45941 AU

direct	4849 Mar 10 07:28	26° Π 50'52	conjunction	4855 Jun 22 19:14	3° \mathfrak{D} 53'00 -13°47'32
evening set	4849 Jun 13 00:05	28° Π 11'13	minimum elong	4855 Jun 22 19:26	3° \mathfrak{D} 53'01 13°47'33
			max. Earth dist.	4855 Jun 23 05:28	3° \mathfrak{D} 53'35 50.22667 AU
conjunction	4849 Jun 16 14:11	28° Π 16'04 -14°36'49	morning rise	4855 Jun 29 02:21	4° \mathfrak{D} 01'31
minimum elong	4849 Jun 16 14:22	28° Π 16'05 14°36'49	retrograde	4855 Oct 03 08:27	5° \mathfrak{D} 21'24
max. Earth dist.	4849 Jun 17 07:02	28° Π 17'02 50.38418 AU	opposition	4855 Dec 25 23:23	4° \mathfrak{D} 22'16 -14°16'44
morning rise	4849 Jun 20 04:46	28° Π 20'58	min. Earth dist.	4855 Dec 25 13:45	4° \mathfrak{D} 22'43 48.26771 AU
retrograde	4849 Sep 27 02:44	29° Π 44'35	direct	4856 Mar 16 11:46	3° \mathfrak{D} 23'59
opposition	4849 Dec 19 21:57	28° Π 45'24 -15°08'36	evening set	4856 Jun 16 09:12	4° \mathfrak{D} 40'18
min. Earth dist.	4849 Dec 19 07:14	28° Π 46'05 48.44267 AU			
direct	4850 Mar 11 12:16	27° Π 47'09	conjunction	4856 Jun 23 00:16	4° \mathfrak{D} 49'15 -13°38'30
evening set	4850 Jun 13 15:58	29° Π 06'44	minimum elong	4856 Jun 23 00:27	4° \mathfrak{D} 49'15 13°38'31
			max. Earth dist.	4856 Jun 23 09:56	4° \mathfrak{D} 49'48 50.18913 AU
conjunction	4850 Jun 17 18:58	29° Π 12'20 -14°29'11	morning rise	4856 Jun 29 16:11	4° \mathfrak{D} 58'15
minimum elong	4850 Jun 17 19:08	29° Π 12'20 14°29'12	retrograde	4856 Oct 03 09:55	6° \mathfrak{D} 17'40
max. Earth dist.	4850 Jun 18 09:42	29° Π 13'10 50.36650 AU	opposition	4856 Dec 26 03:36	5° \mathfrak{D} 18'33 -14°07'15
morning rise	4850 Jun 21 22:33	29° Π 17'57	min. Earth dist.	4856 Dec 25 19:48	5° \mathfrak{D} 18'55 48.22694 AU
	4850 Jul 24 22:07	0° \mathfrak{D}	direct	4857 Mar 17 19:34	4° \mathfrak{D} 20'17
retrograde	4850 Sep 28 05:43	0° \mathfrak{D} 40'47	evening set	4857 Jun 17 06:00	5° \mathfrak{D} 36'10
	4850 Dec 04 07:34	30° \mathfrak{R} Π			
opposition	4850 Dec 21 02:12	29° Π 41'36 -15°00'34	conjunction	4857 Jun 24 05:22	5° \mathfrak{D} 45'35 -13°29'14
min. Earth dist.	4850 Dec 20 12:16	29° Π 42'15 48.42180 AU	minimum elong	4857 Jun 24 05:34	5° \mathfrak{D} 45'36 13°29'16
direct	4851 Mar 12 17:05	28° Π 43'20	max. Earth dist.	4857 Jun 24 13:57	5° \mathfrak{D} 46'05 50.14768 AU
	4851 Jun 12 16:56	0° \mathfrak{D}	morning rise	4857 Jul 01 05:37	5° \mathfrak{D} 55'05
evening set	4851 Jun 14 09:06	0° \mathfrak{D} 02'15	retrograde	4857 Oct 04 15:23	7° \mathfrak{D} 14'03
			opposition	4857 Dec 27 07:48	6° \mathfrak{D} 14'57 -13°57'32
conjunction	4851 Jun 18 23:53	0° \mathfrak{D} 08'30 -14°21'19	min. Earth dist.	4857 Dec 27 00:20	6° \mathfrak{D} 15'18 48.18180 AU
minimum elong	4851 Jun 19 00:05	0° \mathfrak{D} 08'31 14°21'20	direct	4858 Mar 19 00:49	5° \mathfrak{D} 16'40
max. Earth dist.	4851 Jun 19 14:15	0° \mathfrak{D} 09'19 50.34487 AU	evening set	4858 Jun 18 02:55	6° \mathfrak{D} 32'10
morning rise	4851 Jun 23 15:19	0° \mathfrak{D} 14'48			
retrograde	4851 Sep 29 08:54	1° \mathfrak{D} 36'56	conjunction	4858 Jun 25 10:20	6° \mathfrak{D} 42'02 -13°19'47
opposition	4851 Dec 22 06:30	0° \mathfrak{D} 37'45 -14°52'17	minimum elong	4858 Jun 25 10:31	6° \mathfrak{D} 42'03 13°19'46
min. Earth dist.	4851 Dec 21 18:15	0° \mathfrak{D} 38'19 48.39724 AU	max. Earth dist.	4858 Jun 25 16:49	6° \mathfrak{D} 42'24 50.10134 AU
	4852 Jan 27 23:41	30° \mathfrak{R} Π	morning rise	4858 Jul 02 18:47	6° \mathfrak{D} 51'58
direct	4852 Mar 12 23:29	29° Π 39'28	retrograde	4858 Oct 05 23:34	8° \mathfrak{D} 10'32
	4852 Apr 26 03:25	0° \mathfrak{D}	opposition	4858 Dec 28 12:12	7° \mathfrak{D} 11'26 -13°47'37
evening set	4852 Jun 14 03:12	0° \mathfrak{D} 57'47	min. Earth dist.	4858 Dec 28 06:57	7° \mathfrak{D} 11'41 48.13158 AU
			direct	4859 Mar 20 02:46	6° \mathfrak{D} 13'07
conjunction	4852 Jun 19 04:45	1° \mathfrak{D} 04'38 -14°13'14	evening set	4859 Jun 19 00:20	7° \mathfrak{D} 28'13
minimum elong	4852 Jun 19 04:55	1° \mathfrak{D} 04'38 14°13'14			
max. Earth dist.	4852 Jun 19 18:14	1° \mathfrak{D} 05'23 50.31995 AU	conjunction	4859 Jun 26 15:36	7° \mathfrak{D} 38'32 -13°10'06
morning rise	4852 Jun 24 06:55	1° \mathfrak{D} 11'31	minimum elong	4859 Jun 26 15:47	7° \mathfrak{D} 38'33 13°10'08
retrograde	4852 Sep 29 14:13	2° \mathfrak{D} 33'02	max. Earth dist.	4859 Jun 26 21:33	7° \mathfrak{D} 38'52 50.04977 AU
opposition	4852 Dec 22 10:40	1° \mathfrak{D} 33'51 -14°43'46	morning rise	4859 Jul 04 07:47	7° \mathfrak{D} 48'55
min. Earth dist.	4852 Dec 21 22:17	1° \mathfrak{D} 34'26 48.36944 AU	retrograde	4859 Oct 07 04:15	9° \mathfrak{D} 07'03
direct	4853 Mar 14 04:33	0° \mathfrak{D} 35'34	opposition	4859 Dec 29 16:29	8° \mathfrak{D} 07'56 -13°37'29
evening set	4853 Jun 14 21:58	1° \mathfrak{D} 53'19	min. Earth dist.	4859 Dec 29 12:09	8° \mathfrak{D} 08'09 48.07585 AU
			direct	4860 Mar 20 07:04	7° \mathfrak{D} 09'35
conjunction	4853 Jun 20 09:36	2° \mathfrak{D} 00'44 -14°04'54	evening set	4860 Jun 18 22:01	8° \mathfrak{D} 24'19
minimum elong	4853 Jun 20 09:48	2° \mathfrak{D} 00'44 14°04'54			
max. Earth dist.	4853 Jun 20 21:27	2° \mathfrak{D} 01'24 50.29179 AU	conjunction	4860 Jun 26 20:42	8° \mathfrak{D} 35'03 -13°00'14
morning rise	4853 Jun 25 22:02	2° \mathfrak{D} 08'12	minimum elong	4860 Jun 26 20:54	8° \mathfrak{D} 35'04 13°00'14
retrograde	4853 Sep 30 22:26	3° \mathfrak{D} 29'07	max. Earth dist.	4860 Jun 27 00:12	8° \mathfrak{D} 35'15 49.99277 AU
opposition	4853 Dec 23 14:51	2° \mathfrak{D} 29'57 -14°35'00	morning rise	4860 Jul 04 20:31	8° \mathfrak{D} 45'51
min. Earth dist.	4853 Dec 23 04:06	2° \mathfrak{D} 30'27 48.33861 AU	retrograde	4860 Oct 07 08:45	10° \mathfrak{D} 03'35
direct	4854 Mar 15 06:04	1° \mathfrak{D} 31'40	opposition	4860 Dec 29 20:50	9° \mathfrak{D} 04'26 -13°27'09
evening set	4854 Jun 15 17:19	2° \mathfrak{D} 48'54	min. Earth dist.	4860 Dec 29 17:40	9° \mathfrak{D} 04'35 48.01476 AU
			direct	4861 Mar 21 10:44	8° \mathfrak{D} 06'01
conjunction	4854 Jun 21 14:34	2° \mathfrak{D} 56'51 -13°56'20	evening set	4861 Jun 19 19:52	9° \mathfrak{D} 20'23
minimum elong	4854 Jun 21 14:44	2° \mathfrak{D} 56'51 13°56'21			
max. Earth dist.	4854 Jun 22 02:35	2° \mathfrak{D} 57'31 50.26074 AU	conjunction	4861 Jun 28 01:59	9° \mathfrak{D} 31'33 -12°50'10
morning rise	4854 Jun 27 12:30	3° \mathfrak{D} 04'50	minimum elong	4861 Jun 28 02:10	9° \mathfrak{D} 31'33 12°50'11
retrograde	4854 Oct 02 03:33	4° \mathfrak{D} 25'14	max. Earth dist.	4861 Jun 28 04:34	9° \mathfrak{D} 31'41 49.93041 AU
opposition	4854 Dec 24 19:05	3° \mathfrak{D} 26'05 -14°26'00	morning rise	4861 Jul 06 09:10	9° \mathfrak{D} 42'45
min. Earth dist.	4854 Dec 24 08:47	3° \mathfrak{D} 26'33 48.30471 AU	retrograde	4861 Oct 08 11:24	11° \mathfrak{D} 00'05
direct	4855 Mar 16 08:25	2° \mathfrak{D} 27'47	opposition	4861 Dec 31 01:06	10° \mathfrak{D} 00'53 -13°16'37
evening set	4855 Jun 16 13:01	3° \mathfrak{D} 44'32	min. Earth dist.	4861 Dec 30 23:58	10° \mathfrak{D} 00'56 47.94859 AU

direct	4862 Mar 22 17:16	9°02'24	retrograde	4868 Oct 15 02:25	17°03'31
evening set	4862 Jun 20 18:01	10°06'26	opposition	4869 Jan 06 07:37	16°03'04 -11°56'10
			min. Earth dist.	4869 Jan 06 12:50	16°03'50 47.38670 AU
conjunction	4862 Jun 29 07:08	10°02'59 -12°39'53	direct	4869 Mar 28 22:08	15°03'13
minimum elong	4862 Jun 29 07:20	10°02'59 12°39'53	evening set	4869 Jun 25 09:33	16°05'026
max. Earth dist.	4862 Jun 29 08:36	10°02'8'04 49.86349 AU			
morning rise	4862 Jul 07 21:22	10°03'39'36	conjunction	4869 Jul 05 20:01	17°04'36 -11°21'27
retrograde	4862 Oct 09 15:39	11°05'56'33	minimum elong	4869 Jul 05 20:12	17°04'37 11°21'27
opposition	4863 Jan 01 05:19	10°05'7'18 -13°05'51	max. Earth dist.	4869 Jul 05 14:47	17°04'19 49.30006 AU
min. Earth dist.	4863 Jan 01 04:14	10°05'7'21 47.87812 AU	morning rise	4869 Jul 16 07:45	17°01'8'52
direct	4863 Mar 23 22:53	9°05'58'45	retrograde	4869 Oct 16 08:07	18°03'3'50
evening set	4863 Jun 21 16:05	11°06'12'27	opposition	4870 Jan 07 12:02	17°03'4'23 -11°43'42
			min. Earth dist.	4870 Jan 07 17:54	17°03'4'06 47.29305 AU
conjunction	4863 Jun 30 12:07	11°06'24'23 -12°29'23	direct	4870 Mar 30 02:03	16°03'5'29
minimum elong	4863 Jun 30 12:18	11°06'24'24 12°29'24	evening set	4870 Jun 26 09:21	17°04'7'32
max. Earth dist.	4863 Jun 30 11:48	11°06'24'22 49.79244 AU			
morning rise	4863 Jul 09 09:27	11°06'36'24	conjunction	4870 Jul 07 01:34	18°02'0'03 -11°09'19
retrograde	4863 Oct 10 22:50	12°05'53'00	minimum elong	4870 Jul 07 01:46	18°02'0'04 11°09'20
opposition	4864 Jan 02 09:45	11°05'53'42 -12°54'51	max. Earth dist.	4870 Jul 06 18:05	18°01'3'8 49.20568 AU
min. Earth dist.	4864 Jan 02 10:30	11°05'53'40 47.80390 AU	morning rise	4870 Jul 17 19:20	18°01'6'40
direct	4864 Mar 24 02:04	10°05'5'05	retrograde	4870 Oct 17 14:08	19°03'1'25
evening set	4864 Jun 21 14:33	12°05'08'28	opposition	4871 Jan 08 16:41	18°03'1'56 -11°31'01
			min. Earth dist.	4871 Jan 08 23:49	18°03'1'36 47.19483 AU
conjunction	4864 Jun 30 17:26	12°05'20'47 -12°18'39	direct	4871 Mar 31 05:12	17°03'2'59
minimum elong	4864 Jun 30 17:38	12°05'20'48 12°18'40	evening set	4871 Jun 27 09:07	18°04'4'52
max. Earth dist.	4864 Jun 30 17:13	12°05'20'47 49.71791 AU			
morning rise	4864 Jul 09 21:25	12°05'33'12	conjunction	4871 Jul 08 07:15	18°05'9'44 -10°56'59
retrograde	4864 Oct 11 04:17	13°05'49'27	minimum elong	4871 Jul 08 07:26	18°05'9'44 10°56'58
opposition	4865 Jan 02 13:55	12°05'0'07 -12°43'36	max. Earth dist.	4871 Jul 07 22:47	18°05'9'15 49.10628 AU
min. Earth dist.	4865 Jan 02 15:09	12°05'0'03 47.72631 AU	morning rise	4871 Jul 19 06:48	19°01'4'41
direct	4865 Mar 25 05:09	11°05'51'25	retrograde	4871 Oct 18 17:14	20°02'9'14
evening set	4865 Jun 22 13:16	13°05'04'32	opposition	4872 Jan 09 21:31	19°02'9'42 -11°18'06
			min. Earth dist.	4872 Jan 10 06:35	19°02'9'16 47.09137 AU
conjunction	4865 Jul 01 22:36	13°05'17'15 -12°07'41	direct	4872 Mar 31 12:21	18°03'0'40
minimum elong	4865 Jul 01 22:47	13°05'17'15 12°07'42	evening set	4872 Jun 27 09:23	19°04'2'23
max. Earth dist.	4865 Jul 01 20:25	13°05'17'07 49.64029 AU			
morning rise	4865 Jul 11 09:18	13°05'30'01	conjunction	4872 Jul 08 13:07	19°05'7'35 -10°44'25
retrograde	4865 Oct 12 10:21	14°05'45'58	minimum elong	4872 Jul 08 13:18	19°05'7'36 10°44'27
opposition	4866 Jan 03 18:16	13°05'46'36 -12°32'07	max. Earth dist.	4872 Jul 08 03:14	19°05'7'01 49.00178 AU
min. Earth dist.	4866 Jan 03 20:11	13°05'46'31 47.64586 AU	morning rise	4872 Jul 19 18:17	20°01'2'52
direct	4866 Mar 26 07:59	12°05'47'51	retrograde	4872 Oct 18 21:37	21°02'7'13
evening set	4866 Jun 23 11:53	14°05'00'43	opposition	4873 Jan 10 02:06	20°02'7'37 -11°04'59
			min. Earth dist.	4873 Jan 10 11:34	20°02'7'11 46.98279 AU
conjunction	4866 Jul 03 03:47	14°05'13'47 -11°56'29	direct	4873 Apr 01 18:40	19°02'8'30
minimum elong	4866 Jul 03 03:59	14°05'13'48 11°56'30	evening set	4873 Jun 28 09:45	20°04'0'02
max. Earth dist.	4866 Jul 03 01:13	14°05'13'39 49.55973 AU			
morning rise	4866 Jul 12 20:58	14°05'26'57	conjunction	4873 Jul 09 18:58	20°05'5'34 -10°31'39
retrograde	4866 Oct 13 12:22	15°05'42'37	minimum elong	4873 Jul 09 19:09	20°05'5'35 10°31'40
opposition	4867 Jan 04 22:44	14°05'43'13 -12°20'23	max. Earth dist.	4873 Jul 09 06:56	20°05'4'53 48.89217 AU
min. Earth dist.	4867 Jan 05 02:01	14°05'43'04 47.56247 AU	morning rise	4873 Jul 21 05:48	21°01'1'12
direct	4867 Mar 27 15:04	13°05'44'26	retrograde	4873 Oct 20 05:02	22°02'5'21
evening set	4867 Jun 24 10:55	14°05'57'03	opposition	4874 Jan 11 06:59	21°02'5'40 -10°51'38
			min. Earth dist.	4874 Jan 11 18:35	21°02'5'07 46.86944 AU
conjunction	4867 Jul 04 09:05	15°05'10'30 -11°45'03	direct	4874 Apr 02 22:54	20°02'6'26
minimum elong	4867 Jul 04 09:15	15°05'10'30 11°45'03	evening set	4874 Jun 29 10:03	21°03'7'48
max. Earth dist.	4867 Jul 04 05:49	15°05'10'19 49.47649 AU			
morning rise	4867 Jul 14 08:31	15°05'24'02	conjunction	4874 Jul 11 00:47	21°05'3'39 -10°18'40
retrograde	4867 Oct 14 17:21	16°05'39'27	minimum elong	4874 Jul 11 00:58	21°05'3'40 10°18'41
opposition	4868 Jan 06 03:04	15°05'40'01 -12°08'24	max. Earth dist.	4874 Jul 10 12:37	21°05'2'58 48.77808 AU
min. Earth dist.	4868 Jan 06 06:19	15°05'39'52 47.47626 AU	morning rise	4874 Jul 22 16:52	22°02'0'37
direct	4868 Mar 27 20:32	14°05'41'12	retrograde	4874 Oct 21 12:18	23°02'3'34
evening set	4868 Jun 24 10:05	15°05'53'37	opposition	4875 Jan 12 11:46	22°02'3'48 -10°38'02
			min. Earth dist.	4875 Jan 12 23:54	22°02'3'13 46.75182 AU
conjunction	4868 Jul 04 14:24	16°05'07'25 -11°33'22	direct	4875 Apr 04 02:06	21°02'4'26
minimum elong	4868 Jul 04 14:36	16°05'07'26 11°33'23	evening set	4875 Jun 30 10:46	22°03'5'39
max. Earth dist.	4868 Jul 04 09:23	16°05'07'08 49.39010 AU			
morning rise	4868 Jul 14 20:14	16°05'21'19	conjunction	4875 Jul 12 06:37	22°05'1'51 -10°05'27

minimum elong	4875 Jul 12 06:48	22°☿51'51	10°05'27	min. Earth dist.	4882 Jan 19 18:39	29°☿14'28	45.84263 AU
max. Earth dist.	4875 Jul 11 16:21	22°☿51'02	48.66012 AU	direct	4882 Apr 10 13:14	28°☿15'16	
morning rise	4875 Jul 24 04:08	23°☿08'08		evening set	4882 Jul 05 21:06	29°☿25'59	
retrograde	4875 Oct 22 20:21	24°☿21'53		max. Earth dist.	4882 Jul 18 05:51	29°☿43'08	47.74972 AU
opposition	4876 Jan 13 16:35	23°☿22'01	-10°24'12				
min. Earth dist.	4876 Jan 14 05:39	23°☿21'23	46.63071 AU	conjunction	4882 Jul 19 02:47	29°☿44'21	-8°26'06
direct	4876 Apr 04 04:29	22°☿22'32		minimum elong	4882 Jul 19 02:57	29°☿44'21	8°26'06
evening set	4876 Jun 30 11:30	23°☿33'37			4882 Jul 30 09:03	0°♂	
				morning rise	4882 Aug 01 10:02	0°♂02'48	
conjunction	4876 Jul 12 12:40	23°☿50'08	-9°51'59	retrograde	4882 Oct 29 12:18	1°♂15'51	
minimum elong	4876 Jul 12 12:50	23°☿50'08	9°52'00	opposition	4883 Jan 20 05:02	0°♂15'24	-8°40'13
max. Earth dist.	4876 Jul 11 21:52	23°☿49'17	48.53870 AU	min. Earth dist.	4883 Jan 21 00:31	0°♂14'27	45.69903 AU
morning rise	4876 Jul 24 15:19	24°☿06'44			4883 Feb 02 15:40	30°♂☿	
retrograde	4876 Oct 22 23:11	25°☿20'19		direct	4883 Apr 11 19:44	29°☿15'10	
opposition	4877 Jan 13 21:33	24°☿20'21	-10°10'07		4883 Jun 17 03:05	0°♂	
min. Earth dist.	4877 Jan 14 12:03	24°☿19'39	46.50634 AU	evening set	4883 Jul 06 23:43	0°♂25'54	
direct	4877 Apr 05 11:30	23°☿20'45		max. Earth dist.	4883 Jul 19 10:35	0°♂43'12	47.60496 AU
evening set	4877 Jul 01 12:35	24°☿31'43					
				conjunction	4883 Jul 20 09:44	0°♂44'33	-8°10'57
conjunction	4877 Jul 13 18:43	24°☿48'32	-9°38'17	minimum elong	4883 Jul 20 09:53	0°♂44'33	8°10'59
minimum elong	4877 Jul 13 18:55	24°☿48'33	9°38'18	morning rise	4883 Aug 02 21:26	1°♂03'18	
max. Earth dist.	4877 Jul 13 03:10	24°☿47'38	48.41440 AU	retrograde	4883 Oct 30 19:52	2°♂16'20	
morning rise	4877 Jul 26 02:22	25°☿05'27		opposition	4884 Jan 21 10:48	1°♂15'47	-8°24'22
retrograde	4877 Oct 24 02:28	26°☿18'54		min. Earth dist.	4884 Jan 22 08:39	1°♂14'43	45.55044 AU
opposition	4878 Jan 15 02:23	25°☿18'50	-9°55'47	direct	4884 Apr 12 01:05	0°♂15'25	
min. Earth dist.	4878 Jan 15 16:50	25°☿18'08	46.37924 AU	evening set	4884 Jul 07 02:32	1°♂26'09	
direct	4878 Apr 06 19:01	24°☿19'07					
evening set	4878 Jul 02 13:49	25°☿30'00		conjunction	4884 Jul 20 16:56	1°♂45'06	-7°55'35
max. Earth dist.	4878 Jul 14 07:34	25°☿46'08	48.28737 AU	minimum elong	4884 Jul 20 17:06	1°♂45'06	7°55'35
				max. Earth dist.	4884 Jul 19 17:15	1°♂43'43	47.45516 AU
conjunction	4878 Jul 15 00:50	25°☿47'07	-9°24'21	morning rise	4884 Aug 03 08:44	2°♂04'09	
minimum elong	4878 Jul 15 01:00	25°☿47'08	9°24'21	retrograde	4884 Oct 31 03:59	3°♂17'08	
morning rise	4878 Jul 27 13:33	26°☿04'21		opposition	4885 Jan 21 16:36	2°♂16'29	-8°08'16
retrograde	4878 Oct 25 10:13	27°☿17'41		min. Earth dist.	4885 Jan 22 15:06	2°♂15'23	45.39668 AU
opposition	4879 Jan 16 07:35	26°☿17'32	-9°41'11	direct	4885 Apr 13 06:01	1°♂15'59	
min. Earth dist.	4879 Jan 16 23:42	26°☿16'45	46.24958 AU	evening set	4885 Jul 08 05:43	2°♂26'44	
direct	4879 Apr 07 23:14	25°☿17'42		max. Earth dist.	4885 Jul 20 21:50	2°♂44'26	47.30033 AU
evening set	4879 Jul 03 15:04	26°☿28'30					
				conjunction	4885 Jul 22 00:04	2°♂45'58	-7°39'58
conjunction	4879 Jul 16 07:04	26°☿45'56	-9°10'09	minimum elong	4885 Jul 22 00:13	2°♂45'58	7°39'59
minimum elong	4879 Jul 16 07:15	26°☿45'57	9°10'10	morning rise	4885 Aug 04 20:06	3°♂05'18	
max. Earth dist.	4879 Jul 15 13:59	26°☿44'57	48.15783 AU	retrograde	4885 Nov 01 14:00	4°♂18'16	
morning rise	4879 Jul 29 00:29	27°☿03'29		opposition	4886 Jan 22 22:28	3°♂17'29	-7°51'56
retrograde	4879 Oct 26 16:51	28°☿16'43		min. Earth dist.	4886 Jan 23 22:25	3°♂16'19	45.23822 AU
opposition	4880 Jan 17 12:48	27°☿16'29	-9°26'19	direct	4886 Apr 14 09:03	2°♂16'49	
min. Earth dist.	4880 Jan 18 05:04	27°☿15'42	46.11718 AU	evening set	4886 Jul 09 08:56	3°♂27'37	
direct	4880 Apr 08 03:45	26°☿16'33		max. Earth dist.	4886 Jul 22 04:29	3°♂45'33	47.14089 AU
evening set	4880 Jul 03 16:54	27°☿27'18					
				conjunction	4886 Jul 23 07:25	3°♂47'08	-7°24'08
conjunction	4880 Jul 16 13:28	27°☿45'03	-8°55'42	minimum elong	4886 Jul 23 07:34	3°♂47'08	7°24'08
minimum elong	4880 Jul 16 13:38	27°☿45'04	8°55'43	morning rise	4886 Aug 06 07:20	4°♂06'45	
max. Earth dist.	4880 Jul 15 18:26	27°☿43'57	48.02546 AU	retrograde	4886 Nov 02 19:55	5°♂19'42	
morning rise	4880 Jul 29 11:46	28°☿02'54		opposition	4887 Jan 24 04:33	4°♂18'47	-7°35'20
retrograde	4880 Oct 27 01:31	29°☿16'03		min. Earth dist.	4887 Jan 25 05:57	4°♂17'33	45.07543 AU
opposition	4881 Jan 17 18:00	28°☿15'45	-9°11'12	direct	4887 Apr 15 15:53	3°♂17'58	
min. Earth dist.	4881 Jan 18 11:28	28°☿14'55	45.98183 AU	evening set	4887 Jul 10 12:23	4°♂28'47	
direct	4881 Apr 09 06:33	27°☿15'43		max. Earth dist.	4887 Jul 23 10:40	4°♂46'56	46.97757 AU
evening set	4881 Jul 04 18:52	28°☿26'28					
				conjunction	4887 Jul 24 14:42	4°♂48'35	-7°08'03
conjunction	4881 Jul 17 20:09	28°☿44'31	-8°41'01	minimum elong	4887 Jul 24 14:51	4°♂48'36	7°08'03
minimum elong	4881 Jul 17 20:20	28°☿44'32	8°41'03	morning rise	4887 Aug 07 18:32	5°♂08'30	
max. Earth dist.	4881 Jul 17 00:27	28°☿43'27	47.88961 AU	retrograde	4887 Nov 04 00:30	6°♂21'27	
morning rise	4881 Jul 30 22:57	29°☿02'40		opposition	4888 Jan 25 10:37	5°♂20'23	-7°18'29
	4881 Sep 19 12:00	0°♂		min. Earth dist.	4888 Jan 26 12:20	5°♂19'07	44.90901 AU
retrograde	4881 Oct 28 06:47	0°♂15'45		direct	4888 Apr 16 00:39	4°♂19'23	
	4881 Dec 06 08:18	30°♂☿		evening set	4888 Jul 10 16:15	5°♂30'16	
opposition	4882 Jan 18 23:30	29°☿15'23	-8°55'50				

conjunction	4888 Jul 24 22:16	5°Ω50'21 -6°51'43	direct	4895 Apr 23 22:10	11°Ω40'43
minimum elong	4888 Jul 24 22:26	5°Ω50'22 6°51'43	evening set	4895 Jul 18 03:17	12°Ω52'36
max. Earth dist.	4888 Jul 23 16:24	5°Ω48'35 46.81064 AU	max. Earth dist.	4895 Jul 31 18:07	13°Ω12'16 45.56224 AU
morning rise	4888 Aug 08 05:54	6°Ω10'32			
retrograde	4888 Nov 04 07:50	7°Ω23'31	conjunction	4895 Aug 02 07:51	13°Ω14'33 -4°50'16
opposition	4889 Jan 25 16:52	6°Ω22'18 -7°01'23	minimum elong	4895 Aug 02 07:58	13°Ω14'33 4°50'15
min. Earth dist.	4889 Jan 26 20:28	6°Ω20'57 44.73938 AU	morning rise	4895 Aug 17 13:51	13°Ω36'35
direct	4889 Apr 17 07:09	5°Ω21'09	retrograde	4895 Nov 12 21:54	14°Ω50'19
evening set	4889 Jul 11 20:16	6°Ω32'06	opposition	4896 Feb 02 17:18	13°Ω48'07 -4°53'58
max. Earth dist.	4889 Jul 25 00:12	6°Ω50'41 46.64078 AU	min. Earth dist.	4896 Feb 04 03:36	13°Ω46'24 43.47189 AU
			direct	4896 Apr 24 01:54	12°Ω45'43
			evening set	4896 Jul 18 09:47	13°Ω57'49
			max. Earth dist.	4896 Aug 01 02:41	14°Ω17'40 45.36877 AU
conjunction	4889 Jul 26 06:02	6°Ω52'27 -6°35'08			
minimum elong	4889 Jul 26 06:10	6°Ω52'28 6°35'09			
morning rise	4889 Aug 09 17:07	7°Ω12'55			
retrograde	4889 Nov 05 15:49	8°Ω25'57	conjunction	4896 Aug 02 17:11	14°Ω20'01 -4°31'54
opposition	4890 Jan 26 23:15	7°Ω24'36 -6°44'00	minimum elong	4896 Aug 02 17:18	14°Ω20'01 4°31'55
min. Earth dist.	4890 Jan 28 02:50	7°Ω23'14 44.56695 AU	morning rise	4896 Aug 18 01:38	14°Ω42'18
direct	4890 Apr 18 12:33	6°Ω23'15		4896 Aug 30 20:32	15°Ω
evening set	4890 Jul 13 00:31	7°Ω34'19	retrograde	4896 Nov 13 07:19	15°Ω56'11
max. Earth dist.	4890 Jul 26 05:55	7°Ω53'03 46.46829 AU		4897 Jan 28 21:07	15°RΩ
			opposition	4897 Feb 03 00:57	14°Ω53'47 -4°34'42
			min. Earth dist.	4897 Feb 04 12:39	14°Ω52'00 43.27512 AU
			direct	4897 Apr 25 09:09	13°Ω51'10
				4897 Jul 17 05:49	15°Ω
			evening set	4897 Jul 19 16:43	15°Ω03'29
			max. Earth dist.	4897 Aug 02 10:23	15°Ω23'28 45.17078 AU
conjunction	4890 Jul 27 13:37	7°Ω54'56 -6°18'18			
minimum elong	4890 Jul 27 13:45	7°Ω54'57 6°18'19			
morning rise	4890 Aug 11 04:19	8°Ω15'40			
retrograde	4890 Nov 07 02:30	9°Ω28'46	conjunction	4897 Aug 04 02:33	15°Ω25'55 -4°13'18
opposition	4891 Jan 28 05:53	8°Ω27'16 -6°26'20	minimum elong	4897 Aug 04 02:39	15°Ω25'56 4°13'18
min. Earth dist.	4891 Jan 29 10:35	8°Ω25'51 44.39213 AU	morning rise	4897 Aug 19 13:34	15°Ω48'27
direct	4891 Apr 19 16:15	7°Ω25'46	retrograde	4897 Nov 14 16:18	17°Ω02'30
evening set	4891 Jul 14 05:04	8°Ω36'57	opposition	4898 Feb 04 08:48	15°Ω59'54 -4°15'10
			min. Earth dist.	4898 Feb 05 21:10	15°Ω58'04 43.07408 AU
				4898 Apr 10 19:37	15°RΩ
conjunction	4891 Jul 28 21:40	8°Ω57'51 -6°01'12	direct	4898 Apr 26 18:09	14°Ω57'02
minimum elong	4891 Jul 28 21:48	8°Ω57'51 6°01'13		4898 May 12 17:02	15°Ω
max. Earth dist.	4891 Jul 27 13:39	8°Ω55'56 46.29331 AU	evening set	4898 Jul 20 23:45	16°Ω09'35
morning rise	4891 Aug 12 15:35	9°Ω18'51	max. Earth dist.	4898 Aug 03 18:01	16°Ω29'41 44.96849 AU
retrograde	4891 Nov 08 10:28	10°Ω32'01			
opposition	4892 Jan 29 12:34	9°Ω30'24 -6°08'24	conjunction	4898 Aug 05 11:57	16°Ω32'16 -3°54'27
min. Earth dist.	4892 Jan 30 18:22	9°Ω28'55 44.21478 AU	minimum elong	4898 Aug 05 12:03	16°Ω32'16 3°54'28
direct	4892 Apr 19 23:15	8°Ω28'44	morning rise	4898 Aug 21 01:16	16°Ω55'02
evening set	4892 Jul 14 10:04	9°Ω40'04	retrograde	4898 Nov 15 23:59	18°Ω09'16
max. Earth dist.	4892 Jul 27 20:45	9°Ω59'15 46.11587 AU	opposition	4899 Feb 05 16:58	17°Ω06'26 -3°55'21
			min. Earth dist.	4899 Feb 07 07:18	17°Ω04'30 42.86912 AU
conjunction	4892 Jul 29 05:52	10°Ω01'14 -5°43'51	direct	4899 Apr 28 03:53	16°Ω03'20
minimum elong	4892 Jul 29 06:00	10°Ω01'15 5°43'52	evening set	4899 Jul 22 07:14	17°Ω16'07
morning rise	4892 Aug 13 03:04	10°Ω22'30	max. Earth dist.	4899 Aug 05 03:35	17°Ω36'26 44.76267 AU
retrograde	4892 Nov 08 18:33	11°Ω35'47			
opposition	4893 Jan 29 19:24	10°Ω34'01 -5°50'12	conjunction	4899 Aug 06 21:45	17°Ω39'02 -3°35'20
min. Earth dist.	4893 Jan 31 01:24	10°Ω32'32 44.03474 AU	minimum elong	4899 Aug 06 21:50	17°Ω39'02 3°35'20
direct	4893 Apr 21 06:43	9°Ω32'12	morning rise	4899 Aug 22 13:09	18°Ω02'02
evening set	4893 Jul 15 15:27	10°Ω43'42	retrograde	4899 Nov 17 08:05	19°Ω16'29
max. Earth dist.	4893 Jul 29 03:29	11°Ω03'02 45.93521 AU	opposition	4900 Feb 07 01:02	18°Ω13'26 -3°35'16
			min. Earth dist.	4900 Feb 08 15:26	18°Ω11'28 42.66092 AU
conjunction	4893 Jul 30 14:17	11°Ω05'08 -5°26'14	direct	4900 Apr 29 12:58	17°Ω10'03
minimum elong	4893 Jul 30 14:24	11°Ω05'09 5°26'14	evening set	4900 Jul 23 15:14	18°Ω23'08
morning rise	4893 Aug 14 14:32	11°Ω26'40	max. Earth dist.	4900 Aug 06 11:21	18°Ω43'31 44.55378 AU
retrograde	4893 Nov 10 01:22	12°Ω40'05			
opposition	4894 Jan 31 02:30	11°Ω38'12 -5°31'43	conjunction	4900 Aug 08 07:39	18°Ω46'16 -3°15'58
min. Earth dist.	4894 Feb 01 10:38	11°Ω36'36 43.85130 AU	minimum elong	4900 Aug 08 07:44	18°Ω46'16 3°15'59
direct	4894 Apr 22 14:38	10°Ω36'12	morning rise	4900 Aug 24 01:12	19°Ω09'29
evening set	4894 Jul 16 21:07	11°Ω47'53	retrograde	4900 Nov 18 19:39	20°Ω24'11
max. Earth dist.	4894 Jul 30 11:53	12°Ω07'27 45.75091 AU	opposition	4901 Feb 08 09:31	19°Ω20'54 -3°14'55
			min. Earth dist.	4901 Feb 10 01:30	19°Ω18'51 42.45007 AU
conjunction	4894 Jul 31 23:01	12°Ω09'35 -5°08'22	direct	4901 Apr 30 19:13	18°Ω17'16
minimum elong	4894 Jul 31 23:09	12°Ω09'35 5°08'23	evening set	4901 Jul 24 23:25	19°Ω30'39
morning rise	4894 Aug 16 02:04	12°Ω31'22			
retrograde	4894 Nov 11 09:26	13°Ω44'57			
opposition	4895 Feb 01 09:44	12°Ω42'54 -5°12'58			
min. Earth dist.	4895 Feb 02 18:16	12°Ω41'16 43.66385 AU			

max. Earth dist.	4901 Aug 07 21:28	19°Ω51'14	44.34233 AU	min. Earth dist.	4908 Feb 19 01:36	27°Ω29'52	40.91620 AU
				direct	4908 May 08 07:09	26°Ω26'56	
conjunction	4901 Aug 09 17:51	19°Ω54'00	-2°56'21	evening set	4908 Aug 01 22:42	27°Ω43'23	
minimum elong	4901 Aug 09 17:55	19°Ω54'00	2°56'21	max. Earth dist.	4908 Aug 15 20:42	28°Ω04'47	42.80245 AU
morning rise	4901 Aug 25 13:00	20°Ω17'26					
retrograde	4901 Nov 20 06:35	21°Ω32'24		conjunction	4908 Aug 18 01:07	28°Ω08'11	-0°31'45
opposition	4902 Feb 09 18:10	20°Ω28'54	-2°54'16	minimum elong	4908 Aug 18 01:07	28°Ω08'11	0°31'45
min. Earth dist.	4902 Feb 11 10:44	20°Ω26'49	42.23696 AU	morning rise	4908 Sep 03 03:49	28°Ω33'01	
direct	4902 May 02 03:07	19°Ω25'01		retrograde	4908 Nov 28 18:37	29°Ω50'43	
evening set	4902 Jul 26 08:08	20°Ω38'44		opposition	4909 Feb 17 14:34	28°Ω45'45	-0°21'56
max. Earth dist.	4902 Aug 09 06:30	20°Ω59'28	44.12902 AU	min. Earth dist.	4909 Feb 19 14:13	28°Ω43'14	40.68515 AU
				direct	4909 May 09 19:21	27°Ω40'07	
conjunction	4902 Aug 11 04:09	21°Ω02'19	-2°36'28	evening set	4909 Aug 03 10:59	28°Ω57'06	
minimum elong	4902 Aug 11 04:13	21°Ω02'19	2°36'28	max. Earth dist.	4909 Aug 17 08:30	29°Ω18'36	42.56975 AU
morning rise	4902 Aug 27 01:05	21°Ω25'58					
retrograde	4902 Nov 21 19:13	22°Ω41'13		conjunction	4909 Aug 19 13:44	29°Ω22'04	-0°10'07
opposition	4903 Feb 11 03:01	21°Ω37'31	-2°33'20	minimum elong	4909 Aug 19 13:44	29°Ω22'04	0°10'07
min. Earth dist.	4903 Feb 12 19:48	21°Ω35'25	42.02224 AU	behind sun begin	4909 Aug 19 08:34	29°Ω21'45	
direct	4903 May 03 11:00	20°Ω33'23		behind sun end	4909 Aug 19 18:54	29°Ω22'23	
evening set	4903 Jul 27 17:11	21°Ω47'29		morning rise	4909 Sep 04 16:41	29°Ω47'05	
max. Earth dist.	4903 Aug 10 16:08	22°Ω08'21	43.91391 AU		4909 Sep 13 08:25	0°൬	
				retrograde	4909 Nov 30 06:31	1°൬05'15	
conjunction	4903 Aug 12 14:47	22°Ω11'17	-2°16'19	asc. node	4910 Feb 04 12:49	0°൬18'18	
minimum elong	4903 Aug 12 14:51	22°Ω11'17	2°16'19	opposition	4910 Feb 19 01:28	0°൬00'01	0°00'55
morning rise	4903 Aug 28 13:09	22°Ω35'09			4910 Feb 19 01:42	30°℞Ω	
retrograde	4903 Nov 23 04:34	23°Ω50'44		min. Earth dist.	4910 Feb 21 01:15	29°Ω57'28	40.45055 AU
opposition	4904 Feb 12 12:19	22°Ω46'49	-2°12'08	direct	4910 May 11 08:05	28°Ω54'04	
min. Earth dist.	4904 Feb 14 06:39	22°Ω44'38	41.80579 AU		4910 Jul 28 06:14	0°൬	
direct	4904 May 03 20:54	21°Ω42'28		evening set	4910 Aug 04 23:55	0°൬11'36	
evening set	4904 Jul 28 02:48	22°Ω56'58		max. Earth dist.	4910 Aug 18 19:17	0°൬33'06	42.33354 AU
max. Earth dist.	4904 Aug 11 03:01	23°Ω18'00	43.69714 AU				
				conjunction	4910 Aug 21 02:42	0°൬36'44	0°11'53
conjunction	4904 Aug 13 01:50	23°Ω20'58	-1°55'54	minimum elong	4910 Aug 21 02:41	0°൬36'44	0°11'53
minimum elong	4904 Aug 13 01:53	23°Ω20'59	1°55'55	behind sun begin	4910 Aug 20 22:15	0°൬36'28	
morning rise	4904 Aug 29 01:26	23°Ω45'03		behind sun end	4910 Aug 21 07:07	0°൬37'00	
retrograde	4904 Nov 23 13:39	25°Ω01'01		morning rise	4910 Sep 06 05:44	1°൬01'54	
opposition	4905 Feb 12 21:36	23°Ω56'54	-1°50'39	retrograde	4910 Dec 01 18:08	2°൬20'35	
min. Earth dist.	4905 Feb 14 15:52	23°Ω54'42	41.58753 AU	opposition	4911 Feb 20 12:47	1°൬15'03	0°24'02
direct	4905 May 05 07:29	22°Ω52'19		min. Earth dist.	4911 Feb 22 14:36	1°൬12'23	40.21289 AU
evening set	4905 Jul 29 13:03	24°Ω07'16		direct	4911 May 12 18:32	0°൬08'47	
max. Earth dist.	4905 Aug 12 12:10	24°Ω28'22	43.47820 AU	evening set	4911 Aug 06 13:13	1°൬26'53	
				max. Earth dist.	4911 Aug 20 08:36	1°൬48'30	42.09444 AU
conjunction	4905 Aug 14 13:05	24°Ω31'29	-1°35'14				
minimum elong	4905 Aug 14 13:08	24°Ω31'29	1°35'15	conjunction	4911 Aug 22 16:04	1°൬52'10	0°34'00
morning rise	4905 Aug 30 13:52	24°Ω55'46		minimum elong	4911 Aug 22 16:03	1°൬52'10	0°33'59
retrograde	4905 Nov 25 02:47	26°Ω12'08		morning rise	4911 Sep 07 18:49	2°൬17'29	
opposition	4906 Feb 14 07:25	25°Ω07'50	-1°28'52	retrograde	4911 Dec 03 06:22	3°൬36'41	
min. Earth dist.	4906 Feb 16 03:25	25°Ω05'32	41.36699 AU	opposition	4912 Feb 22 00:22	2°൬30'52	0°47'25
direct	4906 May 06 13:57	24°Ω03'01		min. Earth dist.	4912 Feb 24 02:28	2°൬28'10	39.97260 AU
evening set	4906 Jul 30 23:30	25°Ω18'26		direct	4912 May 13 05:42	1°൬24'15	
max. Earth dist.	4906 Aug 13 23:41	25°Ω39'43	43.25650 AU	evening set	4912 Aug 07 03:22	2°൬42'58	
				max. Earth dist.	4912 Aug 20 20:16	3°൬04'34	41.85297 AU
conjunction	4906 Aug 16 00:39	25°Ω42'51	-1°14'19				
minimum elong	4906 Aug 16 00:41	25°Ω42'51	1°14'19	conjunction	4912 Aug 23 05:42	3°൬08'23	0°56'23
morning rise	4906 Sep 01 02:10	26°Ω07'20		minimum elong	4912 Aug 23 05:40	3°൬08'23	0°56'23
retrograde	4906 Nov 26 14:52	27°Ω24'08		morning rise	4912 Sep 08 08:09	3°൬33'50	
opposition	4907 Feb 15 17:30	26°Ω19'38	-1°06'50	retrograde	4912 Dec 03 22:38	4°൬53'36	
min. Earth dist.	4907 Feb 17 14:11	26°Ω17'17	41.14334 AU	opposition	4913 Feb 22 12:12	3°൬47'28	1°11'03
direct	4907 May 07 22:28	25°Ω14'34		min. Earth dist.	4913 Feb 24 15:19	3°൬44'42	39.73043 AU
evening set	4907 Aug 01 10:51	26°Ω30'29		direct	4913 May 14 14:08	2°൬40'30	
max. Earth dist.	4907 Aug 15 09:40	26°Ω51'49	43.03144 AU	evening set	4913 Aug 08 17:57	3°൬59'52	
				max. Earth dist.	4913 Aug 22 09:59	4°൬21'33	41.60965 AU
conjunction	4907 Aug 17 12:38	26°Ω55'06	-0°53'09				
minimum elong	4907 Aug 17 12:39	26°Ω55'06	0°53'10	conjunction	4913 Aug 24 19:47	4°൬25'25	1°18'59
morning rise	4907 Sep 02 14:58	27°Ω19'46		minimum elong	4913 Aug 24 19:45	4°൬25'24	1°18'59
retrograde	4907 Nov 28 05:55	28°Ω37'00		morning rise	4913 Sep 09 21:23	4°൬50'59	
opposition	4908 Feb 17 03:46	27°Ω32'17	-0°44'31	retrograde	4913 Dec 05 13:03	6°൬11'20	

opposition	4914 Feb 24 00:36	5° \mathring{M} 04'54	1°34'57	minimum elong	4920 Sep 03 09:47	13° \mathring{M} 52'59	4°03'12
min. Earth dist.	4914 Feb 26 04:39	5° \mathring{M} 02'04	39.48680 AU	morning rise	4920 Sep 18 22:57	14° \mathring{M} 19'03	
direct	4914 May 16 01:41	3° \mathring{M} 57'35		retrograde	4920 Dec 15 07:48	15° \mathring{M} 44'48	
evening set	4914 Aug 10 09:01	5° \mathring{M} 17'38		opposition	4921 Mar 05 02:24	14° \mathring{M} 36'16	4°28'44
max. Earth dist.	4914 Aug 23 23:38	5° \mathring{M} 39'22	41.36525 AU	min. Earth dist.	4921 Mar 07 12:23	14° \mathring{M} 32'59	37.75122 AU
				direct	4921 May 24 23:52	13° \mathring{M} 26'31	
conjunction	4914 Aug 26 09:58	5° \mathring{M} 43'18	1°41'50	evening set	4921 Aug 20 16:45	14° \mathring{M} 52'44	
minimum elong	4914 Aug 26 09:55	5° \mathring{M} 43'17	1°41'50	max. Earth dist.	4921 Sep 02 10:43	15° \mathring{M} 14'12	39.61857 AU
morning rise	4914 Sep 11 10:43	6° \mathring{M} 08'58					
retrograde	4914 Dec 07 04:21	7° \mathring{M} 29'57		conjunction	4921 Sep 05 03:40	15° \mathring{M} 18'49	4°27'24
opposition	4915 Feb 25 13:14	6° \mathring{M} 23'13	1°59'05	minimum elong	4921 Sep 05 03:33	15° \mathring{M} 18'48	4°27'24
min. Earth dist.	4915 Feb 27 17:09	6° \mathring{M} 20'23	39.24237 AU	morning rise	4921 Sep 20 13:40	15° \mathring{M} 44'52	
direct	4915 May 17 16:00	5° \mathring{M} 15'33		retrograde	4921 Dec 17 01:15	17° \mathring{M} 11'33	
evening set	4915 Aug 12 00:58	6° \mathring{M} 36'21		opposition	4922 Mar 06 18:14	16° \mathring{M} 02'40	4°54'24
max. Earth dist.	4915 Aug 25 12:57	6° \mathring{M} 58'03	41.11993 AU	min. Earth dist.	4922 Mar 09 04:13	15° \mathring{M} 59'22	37.49528 AU
				direct	4922 May 26 17:13	14° \mathring{M} 52'32	
conjunction	4915 Aug 28 00:46	7° \mathring{M} 02'07	2°04'53	evening set	4922 Aug 22 14:10	16° \mathring{M} 19'47	
minimum elong	4915 Aug 28 00:42	7° \mathring{M} 02'06	2°04'52	max. Earth dist.	4922 Sep 04 02:35	16° \mathring{M} 41'03	39.36037 AU
morning rise	4915 Sep 13 00:18	7° \mathring{M} 27'53					
retrograde	4915 Dec 08 19:05	8° \mathring{M} 49'33		conjunction	4922 Sep 06 21:43	16° \mathring{M} 45'52	4°51'46
opposition	4916 Feb 27 02:18	7° \mathring{M} 42'30	2°23'28	minimum elong	4922 Sep 06 21:34	16° \mathring{M} 45'51	4°51'46
min. Earth dist.	4916 Feb 29 07:48	7° \mathring{M} 39'34	38.99727 AU	morning rise	4922 Sep 22 04:26	17° \mathring{M} 11'54	
direct	4916 May 18 05:18	6° \mathring{M} 34'30		retrograde	4922 Dec 18 19:29	18° \mathring{M} 39'33	
evening set	4916 Aug 12 17:34	7° \mathring{M} 56'05		opposition	4923 Mar 08 10:39	17° \mathring{M} 30'18	5°20'15
max. Earth dist.	4916 Aug 26 04:33	8° \mathring{M} 17'53	40.87396 AU	min. Earth dist.	4923 Mar 10 22:27	17° \mathring{M} 26'53	37.23740 AU
				direct	4923 May 28 07:33	16° \mathring{M} 19'45	
conjunction	4916 Aug 28 16:05	8° \mathring{M} 21'57	2°28'09	evening set	4923 Aug 24 12:28	17° \mathring{M} 48'06	
minimum elong	4916 Aug 28 16:01	8° \mathring{M} 21'56	2°28'09	max. Earth dist.	4923 Sep 05 21:30	18° \mathring{M} 09'18	39.10036 AU
morning rise	4916 Sep 13 14:04	8° \mathring{M} 47'49					
retrograde	4916 Dec 09 09:01	10° \mathring{M} 10'12		conjunction	4923 Sep 08 16:32	18° \mathring{M} 14'08	5°16'16
opposition	4917 Feb 27 15:47	9° \mathring{M} 02'52	2°48'05	minimum elong	4923 Sep 08 16:23	18° \mathring{M} 14'07	5°16'16
min. Earth dist.	4917 Mar 01 20:59	8° \mathring{M} 59'56	38.75142 AU	morning rise	4923 Sep 23 19:23	18° \mathring{M} 40'07	
direct	4917 May 19 19:06	7° \mathring{M} 54'32		retrograde	4923 Dec 20 12:51	20° \mathring{M} 08'48	
evening set	4917 Aug 14 10:58	9° \mathring{M} 16'57		opposition	4924 Mar 09 03:20	18° \mathring{M} 59'11	5°46'15
max. Earth dist.	4917 Aug 27 18:16	9° \mathring{M} 38'40	40.62698 AU	min. Earth dist.	4924 Mar 11 15:19	18° \mathring{M} 55'43	36.97808 AU
				direct	4924 May 29 00:09	17° \mathring{M} 48'12	
conjunction	4917 Aug 30 07:37	9° \mathring{M} 42'53	2°51'38	evening set	4924 Aug 25 11:50	19° \mathring{M} 17'42	
minimum elong	4917 Aug 30 07:32	9° \mathring{M} 42'53	2°51'37	max. Earth dist.	4924 Sep 06 15:02	19° \mathring{M} 38'39	38.83921 AU
morning rise	4917 Sep 15 03:56	10° \mathring{M} 08'50					
retrograde	4917 Dec 11 01:44	11° \mathring{M} 32'00		conjunction	4924 Sep 09 11:42	19° \mathring{M} 43'39	5°40'54
opposition	4918 Mar 01 05:43	10° \mathring{M} 24'23	3°12'56	minimum elong	4924 Sep 09 11:31	19° \mathring{M} 43'38	5°40'54
min. Earth dist.	4918 Mar 03 12:20	10° \mathring{M} 21'21	38.50452 AU	morning rise	4924 Sep 24 10:37	20° \mathring{M} 09'34	
direct	4918 May 21 06:06	9° \mathring{M} 15'43		retrograde	4924 Dec 21 10:10	21° \mathring{M} 39'19	
evening set	4918 Aug 16 05:04	10° \mathring{M} 39'01		opposition	4925 Mar 10 20:38	20° \mathring{M} 29'19	6°12'23
max. Earth dist.	4918 Aug 29 10:23	11° \mathring{M} 00'46	40.37842 AU	min. Earth dist.	4925 Mar 13 09:24	20° \mathring{M} 25'48	36.71814 AU
				direct	4925 May 30 14:42	19° \mathring{M} 17'54	
conjunction	4918 Aug 31 23:53	11° \mathring{M} 05'01	3°15'18	evening set	4925 Aug 27 11:48	20° \mathring{M} 48'36	
minimum elong	4918 Aug 31 23:47	11° \mathring{M} 05'01	3°15'18	max. Earth dist.	4925 Sep 08 10:32	21° \mathring{M} 09'25	38.57746 AU
morning rise	4918 Sep 16 17:58	11° \mathring{M} 31'01					
retrograde	4918 Dec 12 18:50	12° \mathring{M} 55'01		conjunction	4925 Sep 11 07:23	21° \mathring{M} 14'28	6°05'38
opposition	4919 Mar 02 20:07	11° \mathring{M} 47'07	3°38'00	minimum elong	4925 Sep 11 07:12	21° \mathring{M} 14'27	6°05'38
min. Earth dist.	4919 Mar 05 03:38	11° \mathring{M} 44'01	38.25580 AU	morning rise	4925 Sep 26 01:37	21° \mathring{M} 40'16	
direct	4919 May 22 18:54	10° \mathring{M} 38'07		retrograde	4925 Dec 23 06:48	23° \mathring{M} 11'09	
evening set	4919 Aug 18 00:08	12° \mathring{M} 02'21		opposition	4926 Mar 12 14:34	22° \mathring{M} 00'46	6°38'38
max. Earth dist.	4919 Aug 31 01:30	12° \mathring{M} 23'59	40.12781 AU	min. Earth dist.	4926 Mar 15 04:12	21° \mathring{M} 57'10	36.45810 AU
				direct	4926 Jun 01 07:32	20° \mathring{M} 48'54	
conjunction	4919 Sep 02 16:34	12° \mathring{M} 28'23	3°39'09	evening set	4926 Aug 29 12:55	22° \mathring{M} 20'52	
minimum elong	4919 Sep 02 16:27	12° \mathring{M} 28'23	3°39'09	max. Earth dist.	4926 Sep 10 06:21	22° \mathring{M} 41'30	38.31608 AU
morning rise	4919 Sep 18 08:25	12° \mathring{M} 54'25					
retrograde	4919 Dec 14 14:26	14° \mathring{M} 19'17		conjunction	4926 Sep 13 03:34	22° \mathring{M} 46'37	6°30'26
opposition	4920 Mar 03 10:58	13° \mathring{M} 11'04	4°03'16	minimum elong	4926 Sep 13 03:21	22° \mathring{M} 46'36	6°30'26
min. Earth dist.	4920 Mar 05 19:05	13° \mathring{M} 07'56	38.00484 AU	morning rise	4926 Sep 27 17:00	23° \mathring{M} 12'17	
direct	4920 May 23 08:05	12° \mathring{M} 01'42		retrograde	4926 Dec 25 04:57	24° \mathring{M} 44'21	
evening set	4920 Aug 18 20:03	13° \mathring{M} 26'55		opposition	4927 Mar 14 08:50	23° \mathring{M} 33'34	7°04'59
max. Earth dist.	4920 Aug 31 17:21	13° \mathring{M} 48'27	39.87444 AU	min. Earth dist.	4927 Mar 16 22:02	23° \mathring{M} 29'59	36.19886 AU
				direct	4927 Jun 03 01:56	22° \mathring{M} 21'16	
conjunction	4920 Sep 03 09:55	13° \mathring{M} 52'59	4°03'11	evening set	4927 Aug 31 14:59	23° \mathring{M} 54'35	

max. Earth dist.	4927 Sep 12 02:08	24° 14 '56	38.05543 AU	morning rise	4933 Oct 07 09:52	4° 0 39'21	
				retrograde	4934 Jan 06 01:32	6° 0 21'35	
conjunction	4927 Sep 15 00:27	24° 14 20'10	6°55'17	opposition	4934 Mar 25 11:36	5° 0 08'07	10°09'35
minimum elong	4927 Sep 15 00:14	24° 14 20'09	6°55'18	min. Earth dist.	4934 Mar 28 04:02	5° 0 04'10	34.40913 AU
morning rise	4927 Sep 29 08:34	24° 14 45'42		direct	4934 Jun 13 22:05	3° 0 52'43	
retrograde	4927 Dec 27 02:15	26° 14 19'00		evening set	4934 Sep 14 13:47	5° 0 37'22	
opposition	4928 Mar 15 03:57	25° 14 07'50	7°31'23	max. Earth dist.	4934 Sep 23 19:02	5° 0 54'53	36.25204 AU
min. Earth dist.	4928 Mar 17 18:22	25° 14 04'09	35.94068 AU				
direct	4928 Jun 03 21:12	23° 14 55'07		conjunction	4934 Sep 26 21:04	6° 0 00'47	9°48'36
evening set	4928 Sep 01 18:09	25° 14 29'50		minimum elong	4934 Sep 26 20:45	6° 0 00'45	9°48'36
max. Earth dist.	4928 Sep 13 00:20	25° 14 49'59	37.79600 AU	morning rise	4934 Oct 09 02:46	6° 0 24'05	
				retrograde	4935 Jan 08 04:52	8° 0 08'01	
conjunction	4928 Sep 15 21:58	25° 14 55'14	7°20'10	opposition	4935 Mar 27 11:18	6° 0 54'07	10°35'39
minimum elong	4928 Sep 15 21:43	25° 14 55'13	7°20'10	min. Earth dist.	4935 Mar 30 05:09	6° 0 50'03	34.15519 AU
morning rise	4928 Sep 30 00:15	26° 14 20'34		direct	4935 Jun 15 21:32	5° 0 38'13	
retrograde	4928 Dec 27 23:35	27° 14 55'11		evening set	4935 Sep 17 01:31	7° 0 24'46	
opposition	4929 Mar 16 23:29	26° 14 43'40	7°57'49	max. Earth dist.	4935 Sep 25 22:04	7° 0 41'45	35.99598 AU
min. Earth dist.	4929 Mar 19 13:16	26° 14 39'59	35.68380 AU				
direct	4929 Jun 05 17:33	25° 14 30'31		conjunction	4935 Sep 28 23:29	7° 0 47'40	10°12'55
evening set	4929 Sep 03 22:28	27° 14 06'43		minimum elong	4935 Sep 28 23:10	7° 0 47'38	10°12'56
max. Earth dist.	4929 Sep 14 20:54	27° 14 26'29	37.53774 AU	morning rise	4935 Oct 10 19:43	8° 0 10'27	
				retrograde	4936 Jan 10 07:02	9° 0 56'10	
conjunction	4929 Sep 17 20:01	27° 14 31'54	7°45'03	opposition	4936 Mar 28 11:42	8° 0 41'49	11°01'32
minimum elong	4929 Sep 17 19:46	27° 14 31'53	7°45'04	min. Earth dist.	4936 Mar 31 04:57	8° 0 37'45	33.90237 AU
morning rise	4929 Oct 01 16:15	27° 14 57'00		direct	4936 Jun 16 22:49	7° 0 25'25	
retrograde	4929 Dec 29 22:25	29° 14 33'01		evening set	4936 Sep 18 14:35	9° 0 13'56	
opposition	4930 Mar 18 19:45	28° 14 21'08	8°24'15	max. Earth dist.	4936 Sep 26 23:43	9° 0 30'10	35.74126 AU
min. Earth dist.	4930 Mar 21 10:40	28° 14 17'22	35.42819 AU				
direct	4930 Jun 07 10:52	27° 14 07'34		conjunction	4936 Sep 30 02:26	9° 0 36'15	10°37'01
evening set	4930 Sep 06 03:40	28° 14 45'19		minimum elong	4936 Sep 30 02:06	9° 0 36'13	10°37'01
max. Earth dist.	4930 Sep 16 20:10	29° 14 04'49	37.28032 AU	morning rise	4936 Oct 11 12:48	9° 0 58'28	
				retrograde	4937 Jan 11 09:55	11° 0 46'02	
conjunction	4930 Sep 19 18:46	29° 14 10'14	8°09'55	opposition	4937 Mar 30 12:49	10° 0 31'14	11°27'09
minimum elong	4930 Sep 19 18:30	29° 14 10'13	8°09'54	min. Earth dist.	4937 Apr 02 06:54	10° 0 27'05	33.65149 AU
morning rise	4930 Oct 03 08:11	29° 14 35'05		direct	4937 Jun 18 21:52	9° 0 14'19	
	4930 Oct 17 12:48	0° 0		evening set	4937 Sep 21 04:55	11° 0 04'54	
retrograde	4930 Dec 31 19:54	1° 0 12'34		max. Earth dist.	4937 Sep 29 04:31	11° 0 20'31	35.48874 AU
opposition	4931 Mar 20 16:42	0° 0 00'19	8°50'40				
	4931 Mar 20 21:49	30° 0		conjunction	4937 Oct 02 06:13	11° 0 26'34	11°00'50
min. Earth dist.	4931 Mar 23 07:49	29° 0 56'30	35.17315 AU	minimum elong	4937 Oct 02 05:53	11° 0 26'33	11°00'51
direct	4931 Jun 09 06:33	28° 0 46'19		morning rise	4937 Oct 13 05:45	11° 0 48'08	
	4931 Aug 24 21:32	0° 0		retrograde	4938 Jan 13 12:11	13° 0 37'39	
evening set	4931 Sep 08 10:27	0° 0 25'41		opposition	4938 Apr 01 14:46	12° 0 22'24	11°52'28
max. Earth dist.	4931 Sep 18 18:21	0° 0 44'44	37.02325 AU	min. Earth dist.	4938 Apr 04 08:33	12° 0 18'15	33.40324 AU
				direct	4938 Jun 20 22:33	11° 0 04'59	
conjunction	4931 Sep 21 18:16	0° 0 50'18	8°34'43	evening set	4938 Sep 23 20:41	12° 0 57'44	
minimum elong	4931 Sep 21 18:00	0° 0 50'17	8°34'44	max. Earth dist.	4938 Oct 01 08:12	13° 0 12'32	35.23932 AU
morning rise	4931 Oct 05 00:41	1° 0 14'50					
retrograde	4932 Jan 02 21:40	2° 0 53'50		conjunction	4938 Oct 04 10:26	13° 0 18'41	11°24'18
opposition	4932 Mar 21 14:10	1° 0 41'12	9°17'03	minimum elong	4938 Oct 04 10:05	13° 0 18'39	11°24'18
min. Earth dist.	4932 Mar 24 05:45	1° 0 37'21	34.91844 AU	morning rise	4938 Oct 14 22:44	13° 0 39'31	
direct	4932 Jun 10 01:26	0° 0 26'45		retrograde	4939 Jan 15 18:14	15° 0 31'06	
evening set	4932 Sep 09 18:20	2° 0 07'49		opposition	4939 Apr 03 17:22	14° 0 15'24	12°17'25
max. Earth dist.	4932 Sep 19 18:15	2° 0 26'26	36.76606 AU	min. Earth dist.	4939 Apr 06 10:41	14° 0 11'15	33.15855 AU
				direct	4939 Jun 22 22:35	12° 0 57'29	
conjunction	4932 Sep 22 18:38	2° 0 32'05	8°59'28	evening set	4939 Sep 26 13:59	14° 0 52'31	
minimum elong	4932 Sep 22 18:21	2° 0 32'04	8°59'27	max. Earth dist.	4939 Oct 03 14:07	15° 0 06'31	34.99356 AU
morning rise	4932 Oct 05 17:15	2° 0 56'16					
retrograde	4933 Jan 03 22:19	4° 0 36'52		conjunction	4939 Oct 06 15:43	15° 0 12'40	11°47'22
opposition	4933 Mar 23 12:38	3° 0 23'49	9°43'22	minimum elong	4939 Oct 06 15:22	15° 0 12'38	11°47'22
min. Earth dist.	4933 Mar 26 05:24	3° 0 19'52	34.66366 AU	morning rise	4939 Oct 16 15:49	15° 0 32'43	
direct	4933 Jun 11 21:51	2° 0 08'54		retrograde	4940 Jan 17 23:19	17° 0 26'27	
evening set	4933 Sep 12 03:25	3° 0 51'43		opposition	4940 Apr 04 20:51	16° 0 10'19	12°41'55
max. Earth dist.	4933 Sep 21 18:45	4° 0 09'51	36.50895 AU	min. Earth dist.	4940 Apr 07 14:25	16° 0 06'07	32.91791 AU
				direct	4940 Jun 24 00:43	14° 0 51'56	
conjunction	4933 Sep 24 19:26	4° 0 15'35	9°24'06	evening set	4940 Sep 28 09:05	16° 0 49'22	
minimum elong	4933 Sep 24 19:08	4° 0 15'34	9°24'07	max. Earth dist.	4940 Oct 04 20:44	17° 0 02'27	34.75232 AU

conjunction	4940 Oct 07 21:40	17° <u>♂</u> 08'37	12°09'58		4947 May 12 04:10	30° <u>♂</u> ♂	
minimum elong	4940 Oct 07 21:18	17° <u>♂</u> 08'35	12°09'57	direct	4947 Jul 08 17:33	29° <u>♂</u> ♂13'12	
morning rise	4940 Oct 17 08:49	17° <u>♂</u> 27'47			4947 Sep 02 12:20	0° <u>♂</u> ♂	
retrograde	4941 Jan 19 08:03	19° <u>♂</u> 23'47		evening set	4947 Oct 19 11:28	1° <u>♂</u> ♂31'44	
opposition	4941 Apr 07 01:07	18° <u>♂</u> 07'16	13°05'55	max. Earth dist.	4947 Oct 20 16:55	1° <u>♂</u> ♂34'24	33.18413 AU
min. Earth dist.	4941 Apr 09 17:22	18° <u>♂</u> 03'07	32.68195 AU				
direct	4941 Jun 26 05:27	16° <u>♂</u> 48'25		conjunction	4947 Oct 23 14:56	1° <u>♂</u> ♂40'44	14°30'22
evening set	4941 Oct 01 05:30	18° <u>♂</u> 48'23		minimum elong	4947 Oct 23 14:35	1° <u>♂</u> ♂40'43	14°30'23
max. Earth dist.	4941 Oct 07 03:23	19° <u>♂</u> 00'27	34.51564 AU	morning rise	4947 Oct 27 17:34	1° <u>♂</u> ♂49'40	
				retrograde	4948 Feb 04 06:57	4° <u>♂</u> ♂05'44	
conjunction	4941 Oct 10 04:19	19° <u>♂</u> 06'40	12°32'02	opposition	4948 Apr 21 07:31	2° <u>♂</u> ♂46'34	15°34'33
minimum elong	4941 Oct 10 03:57	19° <u>♂</u> 06'38	12°32'03	min. Earth dist.	4948 Apr 23 21:28	2° <u>♂</u> ♂42'24	31.14926 AU
morning rise	4941 Oct 19 01:41	19° <u>♂</u> 24'51		direct	4948 Jul 10 02:13	1° <u>♂</u> ♂24'41	
retrograde	4942 Jan 21 16:18	21° <u>♂</u> 23'15		evening set	4948 Oct 22 09:41	3° <u>♂</u> ♂47'41	
opposition	4942 Apr 09 06:20	20° <u>♂</u> 06'20	13°29'20	max. Earth dist.	4948 Oct 22 06:36	3° <u>♂</u> ♂47'24	32.97771 AU
min. Earth dist.	4942 Apr 11 23:15	20° <u>♂</u> 02'08	32.45062 AU				
direct	4942 Jun 28 09:15	18° <u>♂</u> 47'04		conjunction	4948 Oct 25 03:37	3° <u>♂</u> ♂53'42	14°47'09
evening set	4942 Oct 04 04:08	20° <u>♂</u> 49'41		minimum elong	4948 Oct 25 03:17	3° <u>♂</u> ♂53'40	14°47'09
max. Earth dist.	4942 Oct 09 12:24	21° <u>♂</u> 00'43	34.28360 AU	morning rise	4948 Oct 27 20:49	3° <u>♂</u> ♂59'40	
				retrograde	4949 Feb 05 18:48	6° <u>♂</u> ♂20'02	
conjunction	4942 Oct 12 11:58	21° <u>♂</u> 06'53	12°53'32	opposition	4949 Apr 23 18:54	5° <u>♂</u> ♂00'28	15°52'11
minimum elong	4942 Oct 12 11:36	21° <u>♂</u> 06'51	12°53'32	min. Earth dist.	4949 Apr 26 08:55	4° <u>♂</u> ♂56'16	30.94835 AU
morning rise	4942 Oct 20 18:24	21° <u>♂</u> 23'59		direct	4949 Jul 12 12:08	3° <u>♂</u> ♂38'08	
retrograde	4943 Jan 24 01:04	23° <u>♂</u> 24'54		max. Earth dist.	4949 Oct 24 21:11	6° <u>♂</u> ♂02'21	32.77727 AU
opposition	4943 Apr 11 12:10	22° <u>♂</u> 07'37	13°52'08				
min. Earth dist.	4943 Apr 14 03:49	22° <u>♂</u> 03'28	32.22368 AU	conjunction	4949 Oct 27 16:45	6° <u>♂</u> ♂08'35	15°02'52
direct	4943 Jun 30 15:18	20° <u>♂</u> 47'56		minimum elong	4949 Oct 27 16:26	6° <u>♂</u> ♂08'33	15°02'53
evening set	4943 Oct 07 04:43	22° <u>♂</u> 53'20		retrograde	4950 Feb 08 09:38	8° <u>♂</u> ♂36'12	
max. Earth dist.	4943 Oct 11 20:09	23° <u>♂</u> 03'01	34.05570 AU	opposition	4950 Apr 26 06:55	7° <u>♂</u> ♂16'14	16°08'40
				min. Earth dist.	4950 Apr 28 19:02	7° <u>♂</u> ♂12'09	30.75363 AU
conjunction	4943 Oct 14 20:29	23° <u>♂</u> 09'19	13°14'24	direct	4950 Jul 15 01:41	5° <u>♂</u> ♂53'28	
minimum elong	4943 Oct 14 20:07	23° <u>♂</u> 09'18	13°14'25	max. Earth dist.	4950 Oct 27 11:59	8° <u>♂</u> ♂19'07	32.58343 AU
morning rise	4943 Oct 22 11:02	23° <u>♂</u> 25'12					
retrograde	4944 Jan 26 11:37	25° <u>♂</u> 28'46		conjunction	4950 Oct 30 06:48	8° <u>♂</u> ♂25'19	15°17'27
opposition	4944 Apr 12 19:07	24° <u>♂</u> 11'08	14°14'14	minimum elong	4950 Oct 30 06:29	8° <u>♂</u> ♂25'17	15°17'27
min. Earth dist.	4944 Apr 15 11:20	24° <u>♂</u> 06'55	32.00079 AU	retrograde	4951 Feb 10 23:57	10° <u>♂</u> ♂54'12	
direct	4944 Jul 01 20:10	22° <u>♂</u> 51'01		opposition	4951 Apr 28 19:45	9° <u>♂</u> ♂33'50	16°23'54
evening set	4944 Oct 09 07:39	24° <u>♂</u> 59'22		min. Earth dist.	4951 May 01 07:44	9° <u>♂</u> ♂29'44	30.56593 AU
max. Earth dist.	4944 Oct 13 07:09	25° <u>♂</u> 07'45	33.83168 AU	direct	4951 Jul 17 13:36	8° <u>♂</u> ♂10'39	
				max. Earth dist.	4951 Oct 30 05:08	10° <u>♂</u> ♂37'50	32.39727 AU
conjunction	4944 Oct 16 05:54	25° <u>♂</u> 13'59	13°34'35				
minimum elong	4944 Oct 16 05:32	25° <u>♂</u> 13'57	13°34'35	conjunction	4951 Nov 01 21:36	10° <u>♂</u> ♂43'52	15°30'48
morning rise	4944 Oct 23 02:54	25° <u>♂</u> 28'29		minimum elong	4951 Nov 01 21:18	10° <u>♂</u> ♂43'51	15°30'49
retrograde	4945 Jan 27 21:02	27° <u>♂</u> 34'51		retrograde	4952 Feb 13 15:43	13° <u>♂</u> ♂13'59	
opposition	4945 Apr 15 02:58	26° <u>♂</u> 16'50	14°35'37	opposition	4952 Apr 30 09:30	11° <u>♂</u> ♂53'15	16°37'47
min. Earth dist.	4945 Apr 17 18:25	26° <u>♂</u> 12'38	31.78162 AU	min. Earth dist.	4952 May 02 19:09	11° <u>♂</u> ♂49'18	30.38602 AU
direct	4945 Jul 04 02:58	24° <u>♂</u> 56'18		direct	4952 Jul 19 03:58	10° <u>♂</u> ♂29'42	
evening set	4945 Oct 12 13:09	27° <u>♂</u> 07'46		max. Earth dist.	4952 Oct 31 21:12	12° <u>♂</u> ♂58'13	32.21943 AU
max. Earth dist.	4945 Oct 15 16:40	27° <u>♂</u> 14'28	33.61159 AU				
				conjunction	4952 Nov 03 12:55	13° <u>♂</u> ♂04'14	15°42'50
conjunction	4945 Oct 18 16:03	27° <u>♂</u> 20'48	13°54'01	minimum elong	4952 Nov 03 12:38	13° <u>♂</u> ♂04'13	15°42'50
minimum elong	4945 Oct 18 15:41	27° <u>♂</u> 20'46	13°54'02		4952 Dec 31 07:15	15° <u>♂</u> ♂	
morning rise	4945 Oct 24 17:56	27° <u>♂</u> 33'45		retrograde	4953 Feb 15 09:10	15° <u>♂</u> ♂35'33	
retrograde	4946 Jan 30 07:52	29° <u>♂</u> 43'05			4953 Apr 03 19:41	15° <u>♂</u> ♂ <u>♂</u>	
opposition	4946 Apr 17 11:37	28° <u>♂</u> 24'41	14°56'10	opposition	4953 May 03 00:06	14° <u>♂</u> ♂14'30	16°50'12
min. Earth dist.	4946 Apr 20 02:53	28° <u>♂</u> 20'29	31.56653 AU	min. Earth dist.	4953 May 05 08:46	14° <u>♂</u> ♂10'36	30.21466 AU
direct	4946 Jul 06 09:23	27° <u>♂</u> 03'43		direct	4953 Jul 21 17:30	12° <u>♂</u> ♂50'36	
evening set	4946 Oct 15 21:55	29° <u>♂</u> 18'32			4953 Oct 25 13:58	15° <u>♂</u> ♂	
max. Earth dist.	4946 Oct 18 05:03	29° <u>♂</u> 23'28	33.39558 AU	max. Earth dist.	4953 Nov 03 16:25	15° <u>♂</u> ♂20'40	32.05058 AU
conjunction	4946 Oct 21 03:08	29° <u>♂</u> 29'45	14°12'38	conjunction	4953 Nov 06 05:05	15° <u>♂</u> ♂26'26	15°53'28
minimum elong	4946 Oct 21 02:46	29° <u>♂</u> 29'43	14°12'38	minimum elong	4953 Nov 06 04:51	15° <u>♂</u> ♂26'25	15°53'29
morning rise	4946 Oct 26 07:18	29° <u>♂</u> 40'53		retrograde	4954 Feb 18 01:07	17° <u>♂</u> ♂58'55	
	4946 Nov 04 06:22	0° <u>♂</u> ♂		opposition	4954 May 05 15:25	16° <u>♂</u> ♂37'35	17°01'05
retrograde	4947 Feb 01 17:30	1° <u>♂</u> ♂53'24		min. Earth dist.	4954 May 07 22:07	16° <u>♂</u> ♂33'48	30.05203 AU
opposition	4947 Apr 19 21:16	0° <u>♂</u> ♂34'37	15°15'50	direct	4954 Jul 24 08:48	15° <u>♂</u> ♂13'23	
min. Earth dist.	4947 Apr 22 12:21	0° <u>♂</u> ♂30'24	31.35550 AU	max. Earth dist.	4954 Nov 06 09:58	17° <u>♂</u> ♂44'44	31.89077 AU

conjunction	4954 Nov 08 21:47	17° ℳ 50'28	16°02'38	conjunction	4962 Nov 29 07:41	7° ♊ 57'12	16°17'05
minimum elong	4954 Nov 08 21:34	17° ℳ 50'27	16°02'38	minimum elong	4962 Nov 29 07:43	7° ♊ 57'12	16°17'06
retrograde	4955 Feb 20 19:11	20° ℳ 24'05		retrograde	4963 Mar 13 04:24	10° ♊ 37'01	
opposition	4955 May 08 07:31	19° ℳ 02'30	17°10'22	opposition	4963 May 28 16:05	9° ♊ 13'56	17°20'37
min. Earth dist.	4955 May 10 12:43	18° ℳ 58'48	29.89817 AU	min. Earth dist.	4963 May 30 06:06	9° ♊ 11'15	28.97136 AU
direct	4955 Jul 26 23:19	17° ℳ 38'01		direct	4963 Aug 16 05:46	7° ♊ 47'55	
max. Earth dist.	4955 Nov 09 06:27	20° ℳ 10'49	31.73967 AU	max. Earth dist.	4963 Nov 30 12:22	10° ♊ 28'25	30.84851 AU
conjunction	4955 Nov 11 15:21	20° ℳ 16'19	16°10'16	conjunction	4963 Dec 02 04:12	10° ♊ 32'24	16°10'52
minimum elong	4955 Nov 11 15:11	20° ℳ 16'18	16°10'17	minimum elong	4963 Dec 02 04:18	10° ♊ 32'25	16°10'53
retrograde	4956 Feb 23 12:08	22° ℳ 50'59		retrograde	4964 Mar 15 01:44	13° ♊ 12'35	
opposition	4956 May 10 00:26	21° ℳ 29'11	17°18'00	opposition	4964 May 30 13:11	11° ♊ 49'22	17°13'10
min. Earth dist.	4956 May 12 04:24	21° ℳ 25'33	29.75259 AU	min. Earth dist.	4964 Jun 01 01:02	11° ♊ 46'50	28.89864 AU
direct	4956 Jul 28 15:05	20° ℳ 04'28		direct	4964 Aug 18 02:30	10° ♊ 23'16	
max. Earth dist.	4956 Nov 11 01:31	22° ℳ 38'27	31.59719 AU	max. Earth dist.	4964 Dec 02 13:14	13° ♊ 04'27	30.78296 AU
conjunction	4956 Nov 13 09:23	22° ℳ 43'53	16°16'20	conjunction	4964 Dec 04 00:55	13° ♊ 08'03	16°02'45
minimum elong	4956 Nov 13 09:13	22° ℳ 43'52	16°16'21	minimum elong	4964 Dec 04 01:02	13° ♊ 08'03	16°02'46
retrograde	4957 Feb 25 07:54	25° ℳ 19'34		retrograde	4965 Mar 17 22:16	15° ♊ 48'28	
opposition	4957 May 12 18:05	23° ℳ 57'33	17°23'55	opposition	4965 Jun 02 10:35	14° ♊ 25'11	17°03'39
min. Earth dist.	4957 May 14 19:48	23° ℳ 54'04	29.61534 AU	min. Earth dist.	4965 Jun 03 19:22	14° ♊ 22'51	28.83758 AU
direct	4957 Jul 31 07:08	22° ℳ 32'36		direct	4965 Aug 21 01:49	12° ♊ 59'03	
max. Earth dist.	4957 Nov 13 22:42	25° ℳ 07'50	31.46307 AU	max. Earth dist.	4965 Dec 05 11:57	15° ♊ 40'37	30.72970 AU
conjunction	4957 Nov 16 04:02	25° ℳ 13'03	16°20'47	conjunction	4965 Dec 06 21:27	15° ♊ 43'59	15°52'43
minimum elong	4957 Nov 16 03:55	25° ℳ 13'03	16°20'48	minimum elong	4965 Dec 06 21:38	15° ♊ 44'00	15°52'44
retrograde	4958 Feb 28 00:57	27° ℳ 49'40		retrograde	4966 Mar 20 19:09	18° ♊ 24'35	
opposition	4958 May 15 12:32	26° ℳ 27'27	17°28'04	opposition	4966 Jun 05 08:03	17° ♊ 01'16	16°52'03
min. Earth dist.	4958 May 17 13:26	26° ℳ 24'01	29.48612 AU	min. Earth dist.	4966 Jun 06 13:47	16° ♊ 59'09	28.78870 AU
direct	4958 Aug 03 00:26	25° ℳ 02'17		direct	4966 Aug 23 22:59	15° ♊ 35'08	
max. Earth dist.	4958 Nov 16 19:29	27° ℳ 38'35	31.33749 AU				
conjunction	4958 Nov 18 23:13	27° ℳ 43'41	16°23'34	conjunction	4966 Dec 09 18:17	18° ♊ 20'09	15°40'47
minimum elong	4958 Nov 18 23:07	27° ℳ 43'40	16°23'34	minimum elong	4966 Dec 09 18:28	18° ♊ 20'11	15°40'48
	4959 Jan 27 07:16	0° ♊		max. Earth dist.	4966 Dec 08 13:00	18° ♊ 17'12	30.68886 AU
retrograde	4959 Mar 02 21:03	0° ♊ 21'07		retrograde	4967 Mar 23 15:20	21° ♊ 00'49	
	4959 Apr 07 08:56	30° ♋ ℳ		opposition	4967 Jun 08 05:39	19° ♊ 37'31	16°38'25
opposition	4959 May 18 07:19	28° ℳ 58'43	17°30'25	min. Earth dist.	4967 Jun 09 08:54	19° ♊ 35'35	28.75174 AU
min. Earth dist.	4959 May 20 05:35	28° ℳ 55'28	29.36516 AU	direct	4967 Aug 26 21:26	18° ♊ 11'27	
direct	4959 Aug 05 19:44	27° ℳ 33'21		max. Earth dist.	4967 Dec 11 11:47	20° ♊ 53'43	30.66024 AU
	4959 Nov 15 05:00	0° ♊		conjunction	4967 Dec 12 14:54	20° ♊ 56'27	15°26'59
max. Earth dist.	4959 Nov 19 17:24	0° ♊ 10'41	31.22044 AU	minimum elong	4967 Dec 12 15:09	20° ♊ 56'28	15°26'59
conjunction	4959 Nov 21 19:00	0° ♊ 15'36	16°24'38	retrograde	4968 Mar 25 13:23	23° ♊ 37'05	
minimum elong	4959 Nov 21 18:57	0° ♊ 15'35	16°24'39	opposition	4968 Jun 10 03:22	22° ♊ 13'50	16°22'47
retrograde	4960 Mar 04 15:47	2° ♊ 53'47		min. Earth dist.	4968 Jun 11 03:04	22° ♊ 12'09	28.72661 AU
opposition	4960 May 20 02:59	1° ♊ 31'11	17°30'53	direct	4968 Aug 28 19:17	20° ♊ 47'51	
min. Earth dist.	4960 May 22 00:30	1° ♊ 27'59	29.25268 AU	conjunction	4968 Dec 14 11:27	23° ♊ 32'42	15°11'21
direct	4960 Aug 07 13:35	0° ♊ 05'38		minimum elong	4968 Dec 14 11:42	23° ♊ 32'44	15°11'22
max. Earth dist.	4960 Nov 21 15:49	2° ♊ 43'55	31.11252 AU	max. Earth dist.	4968 Dec 13 12:21	23° ♊ 30'23	30.64335 AU
conjunction	4960 Nov 23 14:54	2° ♊ 48'36	16°23'56	retrograde	4969 Mar 28 07:54	26° ♊ 13'14	
minimum elong	4960 Nov 23 14:52	2° ♊ 48'36	16°23'56	opposition	4969 Jun 13 01:16	24° ♊ 50'03	16°05'12
retrograde	4961 Mar 07 12:10	5° ♊ 27'27		min. Earth dist.	4969 Jun 13 23:03	24° ♊ 48'30	28.71270 AU
opposition	4961 May 22 22:58	4° ♊ 04'40	17°29'27	direct	4969 Aug 31 17:07	23° ♊ 24'11	
min. Earth dist.	4961 May 24 17:24	4° ♊ 01'41	29.14913 AU	evening set	4969 Dec 15 12:14	26° ♊ 04'23	
direct	4961 Aug 10 11:15	2° ♊ 38'57		max. Earth dist.	4969 Dec 16 11:02	26° ♊ 06'41	30.63784 AU
max. Earth dist.	4961 Nov 24 14:02	5° ♊ 18'02	31.01404 AU	conjunction	4969 Dec 17 07:49	26° ♊ 08'46	14°53'58
conjunction	4961 Nov 26 11:11	5° ♊ 22'32	16°21'26	minimum elong	4969 Dec 17 08:08	26° ♊ 08'48	14°53'58
minimum elong	4961 Nov 26 11:13	5° ♊ 22'32	16°21'27	morning rise	4969 Dec 19 04:01	26° ♊ 13'14	
retrograde	4962 Mar 10 08:11	8° ♊ 01'56		retrograde	4970 Mar 31 04:32	28° ♊ 49'04	
opposition	4962 May 25 19:21	6° ♊ 38'59	17°26'02	opposition	4970 Jun 15 22:48	27° ♊ 25'58	15°45'45
min. Earth dist.	4962 May 27 12:31	6° ♊ 36'04	29.05518 AU	min. Earth dist.	4970 Jun 16 16:56	27° ♊ 24'41	28.70972 AU
direct	4962 Aug 13 07:29	5° ♊ 13'06		direct	4970 Sep 03 15:34	26° ♊ 00'14	
max. Earth dist.	4962 Nov 27 13:50	7° ♊ 53'00	30.92587 AU	evening set	4970 Dec 16 11:20	28° ♊ 35'31	
				max. Earth dist.	4970 Dec 19 10:47	28° ♊ 42'43	30.64314 AU

conjunction	4970 Dec 20 04:08	28° \mathring{A} 44'27	14°34'52	opposition	4977 Jul 04 00:04	15° \mathring{B} 13'57	12°43'10
minimum elong	4970 Dec 20 04:26	28° \mathring{A} 44'29	14°34'53	min. Earth dist.	4977 Jul 03 22:09	15° \mathring{B} 14'04	28.98230 AU
morning rise	4970 Dec 23 21:23	28° \mathring{A} 53'26		direct	4977 Sep 21 22:46	13° \mathring{B} 49'32	
	4971 Jan 21 16:33	0° \mathring{B}		evening set	4977 Dec 27 17:31	16° \mathring{B} 05'12	
retrograde	4971 Apr 02 23:33	1° \mathring{B} 24'26					
opposition	4971 Jun 18 20:33	0° \mathring{B} 01'25	15°24'28	conjunction	4978 Jan 06 13:26	16° \mathring{B} 28'17	11°39'21
	4971 Jun 19 16:42	30° \mathring{R} \mathring{A}		minimum elong	4978 Jan 06 13:50	16° \mathring{B} 28'19	11°39'22
min. Earth dist.	4971 Jun 19 13:00	0° \mathring{B} 00'16	28.71724 AU	max. Earth dist.	4978 Jan 06 17:57	16° \mathring{B} 28'43	30.97879 AU
direct	4971 Sep 06 12:08	28° \mathring{A} 35'50		morning rise	4978 Jan 16 09:04	16° \mathring{B} 51'22	
	4971 Nov 18 12:08	0° \mathring{B}		retrograde	4978 Apr 20 01:39	19° \mathring{B} 03'31	
evening set	4971 Dec 18 00:53	1° \mathring{B} 07'35		opposition	4978 Jul 06 18:56	17° \mathring{B} 41'30	12°11'26
				min. Earth dist.	4978 Jul 06 14:21	17° \mathring{B} 41'49	29.06569 AU
conjunction	4971 Dec 22 23:59	1° \mathring{B} 19'33	14°14'08	direct	4978 Sep 24 19:39	16° \mathring{B} 17'23	
minimum elong	4971 Dec 23 00:20	1° \mathring{B} 19'35	14°14'08	evening set	4978 Dec 29 19:29	18° \mathring{B} 30'43	
max. Earth dist.	4971 Dec 22 09:18	1° \mathring{B} 18'05	30.65913 AU				
morning rise	4971 Dec 27 23:29	1° \mathring{B} 31'33		conjunction	4979 Jan 09 05:35	18° \mathring{B} 55'05	11°09'14
retrograde	4972 Apr 04 18:21	3° \mathring{B} 59'06		minimum elong	4979 Jan 09 05:58	18° \mathring{B} 55'07	11°09'15
opposition	4972 Jun 20 17:59	2° \mathring{B} 36'12	15°01'28	max. Earth dist.	4979 Jan 09 12:12	18° \mathring{B} 55'44	31.07193 AU
min. Earth dist.	4972 Jun 21 06:38	2° \mathring{B} 35'18	28.73503 AU	morning rise	4979 Jan 19 15:34	19° \mathring{B} 19'25	
direct	4972 Sep 08 11:36	1° \mathring{B} 10'46		retrograde	4979 Apr 22 19:11	21° \mathring{B} 29'24	
evening set	4972 Dec 18 19:23	3° \mathring{B} 39'27		opposition	4979 Jul 09 13:20	20° \mathring{B} 07'39	11°38'34
				min. Earth dist.	4979 Jul 09 04:47	20° \mathring{B} 08'14	29.16085 AU
conjunction	4972 Dec 24 19:34	3° \mathring{B} 53'53	13°51'50	direct	4979 Sep 27 15:40	18° \mathring{B} 43'53	
minimum elong	4972 Dec 24 19:55	3° \mathring{B} 53'55	13°51'51	evening set	4979 Dec 31 21:37	20° \mathring{B} 54'59	
max. Earth dist.	4972 Dec 24 07:45	3° \mathring{B} 52'42	30.68546 AU				
morning rise	4972 Dec 30 20:03	4° \mathring{B} 08'21		conjunction	4980 Jan 11 21:08	21° \mathring{B} 20'29	10°38'06
retrograde	4973 Apr 07 12:12	6° \mathring{B} 32'54		minimum elong	4980 Jan 11 21:31	21° \mathring{B} 20'31	10°38'06
opposition	4973 Jun 23 15:15	5° \mathring{B} 10'06	14°36'48	max. Earth dist.	4980 Jan 12 07:59	21° \mathring{B} 21'32	31.17646 AU
min. Earth dist.	4973 Jun 24 01:58	5° \mathring{B} 09'21	28.76318 AU	morning rise	4980 Jan 22 20:12	21° \mathring{B} 45'57	
direct	4973 Sep 11 08:34	3° \mathring{B} 44'51		retrograde	4980 Apr 24 09:05	23° \mathring{B} 53'53	
evening set	4973 Dec 20 16:38	6° \mathring{B} 10'42		opposition	4980 Jul 11 07:20	22° \mathring{B} 32'24	11°04'42
				min. Earth dist.	4980 Jul 10 20:41	22° \mathring{B} 33'07	29.26713 AU
conjunction	4973 Dec 27 14:38	6° \mathring{B} 27'15	13°28'02	direct	4980 Sep 29 10:47	21° \mathring{B} 09'01	
minimum elong	4973 Dec 27 15:01	6° \mathring{B} 27'17	13°28'02	evening set	4981 Jan 02 00:18	23° \mathring{B} 17'57	
max. Earth dist.	4973 Dec 27 06:01	6° \mathring{B} 26'23	30.72235 AU				
morning rise	4974 Jan 03 12:52	6° \mathring{B} 43'50		conjunction	4981 Jan 13 11:59	23° \mathring{B} 44'29	10°06'06
retrograde	4974 Apr 10 06:16	9° \mathring{B} 05'39		minimum elong	4981 Jan 13 12:21	23° \mathring{B} 44'31	10°06'07
opposition	4974 Jun 26 12:04	7° \mathring{B} 42'58	14°10'33	max. Earth dist.	4981 Jan 14 00:59	23° \mathring{B} 45'44	31.29185 AU
min. Earth dist.	4974 Jun 26 19:19	7° \mathring{B} 42'28	28.80154 AU	morning rise	4981 Jan 24 23:21	24° \mathring{B} 10'58	
direct	4974 Sep 14 07:14	6° \mathring{B} 17'53		retrograde	4981 Apr 26 23:53	26° \mathring{B} 16'53	
evening set	4974 Dec 22 15:26	8° \mathring{B} 41'03		min. Earth dist.	4981 Jul 13 09:54	24° \mathring{B} 56'42	29.38399 AU
				opposition	4981 Jul 14 00:30	24° \mathring{B} 55'43	10°29'57
conjunction	4974 Dec 30 09:14	8° \mathring{B} 59'30	13°02'48	direct	4981 Oct 02 05:16	23° \mathring{B} 32'43	
minimum elong	4974 Dec 30 09:36	8° \mathring{B} 59'32	13°02'49	evening set	4982 Jan 04 03:05	25° \mathring{B} 39'35	
max. Earth dist.	4974 Dec 30 03:03	8° \mathring{B} 58'53	30.76963 AU				
morning rise	4975 Jan 07 03:11	9° \mathring{B} 17'58		conjunction	4982 Jan 16 02:15	26° \mathring{B} 07'01	9°33'19
retrograde	4975 Apr 12 23:55	11° \mathring{B} 37'12		minimum elong	4982 Jan 16 02:37	26° \mathring{B} 07'03	9°33'19
opposition	4975 Jun 29 08:28	10° \mathring{B} 14'39	13°42'49	max. Earth dist.	4982 Jan 16 18:49	26° \mathring{B} 08'37	31.41716 AU
min. Earth dist.	4975 Jun 29 13:16	10° \mathring{B} 14'19	28.85058 AU	morning rise	4982 Jan 28 00:54	26° \mathring{B} 34'25	
direct	4975 Sep 17 03:52	8° \mathring{B} 49'45		retrograde	4982 Apr 29 13:00	28° \mathring{B} 38'25	
evening set	4975 Dec 24 15:30	11° \mathring{B} 10'19		opposition	4982 Jul 16 17:17	27° \mathring{B} 17'34	9°54'26
				min. Earth dist.	4982 Jul 16 00:56	27° \mathring{B} 18'40	29.51053 AU
conjunction	4976 Jan 02 03:19	11° \mathring{B} 30'28	12°36'14	direct	4982 Oct 04 22:08	25° \mathring{B} 54'58	
minimum elong	4976 Jan 02 03:43	11° \mathring{B} 30'30	12°36'14	evening set	4983 Jan 06 06:19	27° \mathring{B} 59'49	
max. Earth dist.	4976 Jan 02 01:07	11° \mathring{B} 30'15	30.82789 AU				
morning rise	4976 Jan 10 15:06	11° \mathring{B} 50'38		conjunction	4983 Jan 18 15:51	28° \mathring{B} 28'03	8°59'52
retrograde	4976 Apr 14 16:50	14° \mathring{B} 07'24		minimum elong	4983 Jan 18 16:12	28° \mathring{B} 28'05	8°59'53
opposition	4976 Jul 01 04:32	12° \mathring{B} 44'59	13°13'39	max. Earth dist.	4983 Jan 19 10:36	28° \mathring{B} 29'50	31.55171 AU
min. Earth dist.	4976 Jul 01 06:07	12° \mathring{B} 44'53	28.91059 AU	morning rise	4983 Jan 31 00:54	28° \mathring{B} 56'14	
direct	4976 Sep 19 02:50	11° \mathring{B} 20'19			4983 Mar 02 19:39	0° \mathring{A}	
evening set	4976 Dec 25 16:07	13° \mathring{B} 38'23		retrograde	4983 May 02 01:49	0° \mathring{A} 58'24	
					4983 Jul 05 09:46	30° \mathring{R} \mathring{B}	
conjunction	4977 Jan 03 20:32	14° \mathring{B} 00'04	12°08'24	opposition	4983 Jul 19 09:15	29° \mathring{B} 37'52	9°18'17
minimum elong	4977 Jan 03 20:55	14° \mathring{B} 00'07	12°08'25	min. Earth dist.	4983 Jul 18 13:29	29° \mathring{B} 39'12	29.64595 AU
max. Earth dist.	4977 Jan 03 20:44	14° \mathring{B} 00'06	30.89744 AU	direct	4983 Oct 07 15:35	28° \mathring{B} 15'40	
morning rise	4977 Jan 13 00:59	14° \mathring{B} 21'46			4983 Dec 30 23:23	0° \mathring{A}	
retrograde	4977 Apr 17 10:10	16° \mathring{B} 36'11		evening set	4984 Jan 08 09:41	0° \mathring{A} 18'33	

conjunction	4984 Jan 21 04:50	0°47'30	8°25'52	opposition	4990 Aug 04 06:19	15°10'10	4°55'33
minimum elong	4984 Jan 21 05:10	0°47'31	8°25'52		4990 Aug 10 21:03	15°	
max. Earth dist.	4984 Jan 22 02:08	0°49'31	31.69460 AU	direct	4990 Oct 23 20:26	13°50'34	
morning rise	4984 Feb 02 23:28	1°16'24			4990 Dec 31 15:31	15°	
retrograde	4984 May 03 12:50	3°16'46		evening set	4991 Jan 21 10:02	15°41'27	
min. Earth dist.	4984 Jul 20 03:13	1°57'59	29.78977 AU				
opposition	4984 Jul 21 00:51	1°56'33	8°41'35	conjunction	4991 Feb 05 02:47	16°12'57	4°19'41
direct	4984 Oct 09 06:56	0°34'45		minimum elong	4991 Feb 05 02:58	16°12'58	4°19'42
evening set	4985 Jan 09 13:07	2°35'43		max. Earth dist.	4991 Feb 06 16:45	16°16'21	32.90081 AU
				morning rise	4991 Feb 19 18:55	16°44'23	
conjunction	4985 Jan 22 17:05	3°05'16	7°51'24	retrograde	4991 May 19 06:04	18°33'59	
minimum elong	4985 Jan 22 17:24	3°05'18	7°51'25	min. Earth dist.	4991 Aug 05 02:40	17°18'15	31.00486 AU
max. Earth dist.	4985 Jan 23 17:00	3°07'32	31.84544 AU	opposition	4991 Aug 06 16:46	17°15'49	4°17'40
morning rise	4985 Feb 04 20:23	3°34'47		direct	4991 Oct 26 08:25	15°56'38	
retrograde	4985 May 05 23:22	5°33'25		evening set	4992 Jan 23 13:20	17°46'06	
opposition	4985 Jul 23 15:37	4°13'31	8°04'27				
min. Earth dist.	4985 Jul 22 15:21	4°15'07	29.94118 AU	conjunction	4992 Feb 07 09:48	18°17'40	3°44'16
direct	4985 Oct 11 22:48	2°52'05		minimum elong	4992 Feb 07 09:57	18°17'41	3°44'16
evening set	4986 Jan 11 16:47	4°51'13		max. Earth dist.	4992 Feb 09 01:31	18°21'13	33.10269 AU
				morning rise	4992 Feb 22 05:43	18°49'11	
conjunction	4986 Jan 25 04:38	5°21'18	7°16'34	retrograde	4992 May 20 11:57	20°37'33	
minimum elong	4986 Jan 25 04:55	5°21'19	7°16'35	min. Earth dist.	4992 Aug 06 09:07	19°22'21	31.20867 AU
max. Earth dist.	4986 Jan 26 06:13	5°23'41	32.00344 AU	opposition	4992 Aug 08 02:22	19°19'43	3°39'56
morning rise	4986 Feb 07 16:01	5°51'19		direct	4992 Oct 27 19:53	18°00'58	
retrograde	4986 May 08 10:42	7°48'18		evening set	4993 Jan 24 16:27	19°49'05	
min. Earth dist.	4986 Jul 25 02:55	6°30'26	30.09996 AU				
opposition	4986 Jul 26 05:32	6°28'41	7°26'59	conjunction	4993 Feb 08 16:00	20°20'40	3°09'00
direct	4986 Oct 14 12:08	5°07'37		minimum elong	4993 Feb 08 16:07	20°20'41	3°09'01
evening set	4987 Jan 13 20:23	7°04'58		max. Earth dist.	4993 Feb 10 09:59	20°24'24	33.31130 AU
				morning rise	4993 Feb 23 15:08	20°52'14	
conjunction	4987 Jan 27 15:35	7°35'29	6°41'27	retrograde	4993 May 22 16:47	22°39'26	
minimum elong	4987 Jan 27 15:51	7°35'30	6°41'29	min. Earth dist.	4993 Aug 08 16:30	21°24'40	31.41927 AU
max. Earth dist.	4987 Jan 28 20:12	7°38'08	32.16850 AU	opposition	4993 Aug 10 11:23	21°21'58	3°02'25
morning rise	4987 Feb 10 10:00	8°05'57		direct	4993 Oct 30 04:31	20°03'38	
retrograde	4987 May 10 20:06	10°01'18		evening set	4994 Jan 26 19:34	21°50'29	
opposition	4987 Jul 28 18:55	8°41'58	6°49'17				
min. Earth dist.	4987 Jul 27 14:27	8°43'50	30.26577 AU	conjunction	4994 Feb 10 21:44	22°22'03	2°33'56
direct	4987 Oct 17 04:18	7°21'16		minimum elong	4994 Feb 10 21:50	22°22'04	2°33'56
evening set	4988 Jan 15 23:55	9°16'53		max. Earth dist.	4994 Feb 12 17:55	22°25'56	33.52606 AU
				morning rise	4994 Feb 25 23:18	22°53'34	
conjunction	4988 Jan 30 01:25	9°47'45	6°06'09	retrograde	4994 May 24 20:43	24°39'41	
minimum elong	4988 Jan 30 01:39	9°47'46	6°06'09	min. Earth dist.	4994 Aug 10 22:41	23°25'24	31.63561 AU
max. Earth dist.	4988 Jan 31 07:19	9°50'30	32.34046 AU	opposition	4994 Aug 12 19:28	23°22'35	2°25'11
morning rise	4988 Feb 13 02:27	10°18'33		direct	4994 Nov 01 13:36	22°04'42	
retrograde	4988 May 12 07:11	12°12'23		evening set	4995 Jan 28 22:47	23°50'21	
min. Earth dist.	4988 Jul 28 23:54	10°55'22	30.43897 AU				
opposition	4988 Jul 30 07:30	10°53'19	6°11'26	conjunction	4995 Feb 13 02:42	24°21'50	1°59'08
direct	4988 Oct 18 17:48	9°32'58		minimum elong	4995 Feb 13 02:46	24°21'51	1°59'09
evening set	4989 Jan 17 03:18	11°26'55		max. Earth dist.	4995 Feb 15 00:03	24°25'48	33.74594 AU
				morning rise	4995 Feb 28 06:23	24°53'17	
conjunction	4989 Jan 31 10:42	11°58'04	5°30'42	retrograde	4995 May 27 02:31	26°38'22	
minimum elong	4989 Jan 31 10:55	11°58'05	5°30'43	min. Earth dist.	4995 Aug 13 04:10	25°24'33	31.85713 AU
max. Earth dist.	4989 Feb 01 20:02	12°01'06	32.51967 AU	opposition	4995 Aug 15 03:09	25°21'38	1°48'18
morning rise	4989 Feb 14 17:21	12°29'09		direct	4995 Nov 03 19:56	24°04'11	
retrograde	4989 May 14 14:26	14°21'29		evening set	4996 Jan 31 01:38	25°48'42	
min. Earth dist.	4989 Jul 31 10:19	13°04'50	30.61976 AU				
opposition	4989 Aug 01 19:20	13°02'42	5°33'29	conjunction	4996 Feb 15 07:05	26°20'04	1°24'39
direct	4989 Oct 21 06:57	11°42'43		minimum elong	4996 Feb 15 07:08	26°20'04	1°24'39
evening set	4990 Jan 19 06:45	13°35'06		max. Earth dist.	4996 Feb 17 07:00	26°24'12	33.97029 AU
				morning rise	4996 Mar 01 12:02	26°51'23	
conjunction	4990 Feb 02 19:04	14°06'26	4°55'11	retrograde	4996 May 28 06:18	28°35'30	
minimum elong	4990 Feb 02 19:16	14°06'27	4°55'11	min. Earth dist.	4996 Aug 14 10:19	27°22'05	32.08280 AU
max. Earth dist.	4990 Feb 04 05:49	14°09'35	32.70646 AU	opposition	4996 Aug 16 10:11	27°19'07	1°11'47
morning rise	4990 Feb 17 06:54	14°37'44		direct	4996 Nov 05 04:22	26°02'06	
	4990 Feb 28 00:20	15°		evening set	4997 Feb 01 04:41	27°45'33	
retrograde	4990 May 16 23:15	16°28'40					
min. Earth dist.	4990 Aug 02 17:44	15°12'31	30.80841 AU	conjunction	4997 Feb 16 10:50	28°16'44	0°50'32

minimum elong	4997 Feb 16 10:52	28° \approx 16'44	0°50'33	max. Earth dist.	5003 Mar 03 05:13	9° \mathbb{H} 27'53	35.62368 AU
max. Earth dist.	4997 Feb 18 11:03	28° \approx 20'52	34.19825 AU	morning rise	5003 Mar 15 21:25	9° \mathbb{H} 52'34	
morning rise	4997 Mar 03 16:50	28° \approx 47'53		retrograde	5003 Jun 11 14:28	11° \mathbb{H} 31'10	
	4997 Apr 14 15:25	0° \mathbb{H}		min. Earth dist.	5003 Aug 29 06:16	10° \mathbb{H} 20'23	33.74835 AU
retrograde	4997 May 30 12:06	0° \mathbb{H} 31'05		opposition	5003 Aug 31 15:56	10° \mathbb{H} 16'56	-2°49'31
	4997 Jul 17 04:25	30° \mathbb{R} \approx		direct	5003 Nov 20 17:00	9° \mathbb{H} 02'33	
min. Earth dist.	4997 Aug 16 14:07	29° \approx 18'08	32.31207 AU	evening set	5004 Feb 15 20:17	10° \mathbb{H} 39'49	
opposition	4997 Aug 18 16:19	29° \approx 15'03	0°35'44				
direct	4997 Nov 07 10:38	27° \approx 58'26		conjunction	5004 Mar 01 19:16	11° \mathbb{H} 08'47	-2°55'16
evening set	4998 Feb 03 07:30	29° \approx 40'53		minimum elong	5004 Mar 01 19:10	11° \mathbb{H} 08'47	2°55'16
	4998 Feb 12 18:53	0° \mathbb{H}		max. Earth dist.	5004 Mar 04 04:50	11° \mathbb{H} 13'28	35.87220 AU
				morning rise	5004 Mar 16 18:32	11° \mathbb{H} 37'46	
conjunction	4998 Feb 18 14:06	0° \mathbb{H} 11'51	0°16'50	retrograde	5004 Jun 12 15:20	13° \mathbb{H} 15'46	
minimum elong	4998 Feb 18 14:07	0° \mathbb{H} 11'51	0°16'50	min. Earth dist.	5004 Aug 30 05:33	12° \mathbb{H} 05'25	33.99951 AU
max. Earth dist.	4998 Feb 20 16:32	0° \mathbb{H} 16'08	34.42917 AU	opposition	5004 Sep 01 17:38	12° \mathbb{H} 01'51	-3°21'37
morning rise	4998 Mar 05 20:23	0° \mathbb{H} 42'47		direct	5004 Nov 21 16:52	10° \mathbb{H} 47'51	
retrograde	4998 Jun 01 14:30	2° \mathbb{H} 25'07		evening set	5005 Feb 16 21:43	12° \mathbb{H} 24'27	
min. Earth dist.	4998 Aug 18 19:35	1° \mathbb{H} 12'29	32.54418 AU				
opposition	4998 Aug 20 22:01	1° \mathbb{H} 09'24	0°00'09	conjunction	5005 Mar 03 18:09	12° \mathbb{H} 52'59	-3°25'21
desc. node	4998 Aug 22 09:23	1° \mathbb{H} 07'14		minimum elong	5005 Mar 03 18:03	12° \mathbb{H} 52'58	3°25'20
	4998 Oct 19 01:12	30° \mathbb{R} \approx		max. Earth dist.	5005 Mar 06 06:02	12° \mathbb{H} 57'49	36.12389 AU
direct	4998 Nov 09 17:02	29° \approx 53'12		morning rise	5005 Mar 18 14:41	13° \mathbb{H} 21'32	
	4998 Dec 01 02:51	0° \mathbb{H}		retrograde	5005 Jun 14 13:58	14° \mathbb{H} 59'00	
evening set	4999 Feb 05 10:10	1° \mathbb{H} 34'40		min. Earth dist.	5005 Sep 01 06:25	13° \mathbb{H} 48'58	34.25368 AU
				opposition	5005 Sep 03 18:39	13° \mathbb{H} 45'25	-3°53'03
conjunction	4999 Feb 20 16:34	2° \mathbb{H} 05'22	-0°16'30	direct	5005 Nov 23 18:56	12° \mathbb{H} 31'47	
minimum elong	4999 Feb 20 16:33	2° \mathbb{H} 05'22	0°16'29	evening set	5006 Feb 18 23:02	14° \mathbb{H} 07'46	
max. Earth dist.	4999 Feb 22 19:26	2° \mathbb{H} 09'40	34.66264 AU				
morning rise	4999 Mar 07 22:49	2° \mathbb{H} 36'04		conjunction	5006 Mar 05 16:25	14° \mathbb{H} 35'52	-3°54'49
retrograde	4999 Jun 03 16:02	4° \mathbb{H} 17'32		minimum elong	5006 Mar 05 16:17	14° \mathbb{H} 35'51	3°54'49
min. Earth dist.	4999 Aug 20 22:11	3° \mathbb{H} 05'22	32.77887 AU	max. Earth dist.	5006 Mar 08 04:33	14° \mathbb{H} 40'41	36.37825 AU
opposition	4999 Aug 23 02:55	3° \mathbb{H} 02'09	-0°34'56	morning rise	5006 Mar 20 10:02	15° \mathbb{H} 03'58	
direct	4999 Nov 12 00:39	1° \mathbb{H} 46'19		retrograde	5006 Jun 16 13:14	16° \mathbb{H} 40'55	
evening set	5000 Feb 07 12:41	3° \mathbb{H} 26'50		min. Earth dist.	5006 Sep 03 04:49	15° \mathbb{H} 31'19	34.51025 AU
				opposition	5006 Sep 05 19:07	15° \mathbb{H} 27'40	-4°23'48
conjunction	5000 Feb 22 18:27	3° \mathbb{H} 57'16	-0°49'17	direct	5006 Nov 25 20:42	14° \mathbb{H} 14'26	
minimum elong	5000 Feb 22 18:25	3° \mathbb{H} 57'16	0°49'17	evening set	5007 Feb 21 00:09	15° \mathbb{H} 49'50	
max. Earth dist.	5000 Feb 24 23:02	4° \mathbb{H} 01'40	34.89845 AU				
morning rise	5000 Mar 10 00:10	4° \mathbb{H} 27'41		conjunction	5007 Mar 07 14:06	16° \mathbb{H} 17'28	-4°23'40
retrograde	5000 Jun 05 16:31	6° \mathbb{H} 08'21		minimum elong	5007 Mar 07 13:58	16° \mathbb{H} 17'27	4°23'39
min. Earth dist.	5000 Aug 23 01:52	4° \mathbb{H} 56'29	33.01637 AU	max. Earth dist.	5007 Mar 10 03:50	16° \mathbb{H} 22'22	36.63443 AU
opposition	5000 Aug 25 07:16	4° \mathbb{H} 53'15	-1°09'28	morning rise	5007 Mar 22 04:25	16° \mathbb{H} 45'07	
direct	5000 Nov 14 06:27	3° \mathbb{H} 37'47		retrograde	5007 Jun 18 10:58	18° \mathbb{H} 21'36	
evening set	5001 Feb 09 14:46	5° \mathbb{H} 17'24		min. Earth dist.	5007 Sep 05 04:38	17° \mathbb{H} 12'19	34.76861 AU
				opposition	5007 Sep 07 19:16	17° \mathbb{H} 08'40	-4°53'53
conjunction	5001 Feb 24 19:36	5° \mathbb{H} 47'31	-1°21'36	direct	5007 Nov 27 21:19	15° \mathbb{H} 55'49	
minimum elong	5001 Feb 24 19:33	5° \mathbb{H} 47'30	1°21'35	evening set	5008 Feb 23 01:08	17° \mathbb{H} 30'41	
max. Earth dist.	5001 Feb 27 01:30	5° \mathbb{H} 52'00	35.13706 AU				
morning rise	5001 Mar 12 00:16	6° \mathbb{H} 17'36		conjunction	5008 Mar 08 11:30	17° \mathbb{H} 57'49	-4°51'53
retrograde	5001 Jun 07 15:32	7° \mathbb{H} 57'32		minimum elong	5008 Mar 08 11:20	17° \mathbb{H} 57'49	4°51'53
min. Earth dist.	5001 Aug 25 03:42	6° \mathbb{H} 46'03	33.25680 AU	max. Earth dist.	5008 Mar 11 02:05	18° \mathbb{H} 02'46	36.89199 AU
opposition	5001 Aug 27 10:46	6° \mathbb{H} 42'43	-1°43'25	morning rise	5008 Mar 22 22:03	18° \mathbb{H} 25'00	
direct	5001 Nov 16 12:14	5° \mathbb{H} 27'36		retrograde	5008 Jun 19 05:50	20° \mathbb{H} 01'04	
evening set	5002 Feb 11 16:55	7° \mathbb{H} 06'23		min. Earth dist.	5008 Sep 06 03:00	18° \mathbb{H} 52'09	35.02792 AU
				opposition	5008 Sep 08 18:42	18° \mathbb{H} 48'27	-5°23'16
conjunction	5002 Feb 26 20:05	7° \mathbb{H} 36'08	-1°53'22	direct	5008 Nov 28 22:56	17° \mathbb{H} 35'58	
minimum elong	5002 Feb 26 20:01	7° \mathbb{H} 36'07	1°53'23	evening set	5009 Feb 24 02:04	19° \mathbb{H} 10'20	
max. Earth dist.	5002 Mar 01 02:55	7° \mathbb{H} 40'40	35.37860 AU				
morning rise	5002 Mar 13 23:26	8° \mathbb{H} 05'53		conjunction	5009 Mar 10 08:17	19° \mathbb{H} 36'58	-5°19'29
retrograde	5002 Jun 09 15:26	9° \mathbb{H} 45'07		minimum elong	5009 Mar 10 08:08	19° \mathbb{H} 36'57	5°19'29
min. Earth dist.	5002 Aug 27 04:55	8° \mathbb{H} 33'59	33.50080 AU	max. Earth dist.	5009 Mar 12 23:02	19° \mathbb{H} 41'53	37.14997 AU
opposition	5002 Aug 29 13:36	8° \mathbb{H} 30'35	-2°16'47	morning rise	5009 Mar 24 15:02	20° \mathbb{H} 03'39	
direct	5002 Nov 18 14:32	7° \mathbb{H} 15'50		retrograde	5009 Jun 21 02:26	21° \mathbb{H} 39'19	
evening set	5003 Feb 13 18:41	8° \mathbb{H} 53'50		min. Earth dist.	5009 Sep 08 01:14	20° \mathbb{H} 30'44	35.28758 AU
				opposition	5009 Sep 10 17:44	20° \mathbb{H} 27'01	-5°51'58
conjunction	5003 Feb 28 20:06	9° \mathbb{H} 23'12	-2°24'37	direct	5009 Nov 30 21:47	19° \mathbb{H} 14'53	
minimum elong	5003 Feb 28 20:01	9° \mathbb{H} 23'11	2°24'36	evening set	5010 Feb 26 02:47	20° \mathbb{H} 48'46	

conjunction	5010 Mar 12 04:51	21° $\mathbf{\text{H}}$ 14'54	-5°46'27	retrograde	5016 Jul 01 13:16	2° $\mathbf{\text{P}}$ 33'08	
minimum elong	5010 Mar 12 04:40	21° $\mathbf{\text{H}}$ 14'53	5°46'27	min. Earth dist.	5016 Sep 18 23:31	1° $\mathbf{\text{P}}$ 26'31	37.09626 AU
max. Earth dist.	5010 Mar 14 20:53	21° $\mathbf{\text{H}}$ 19'53	37.40782 AU	opposition	5016 Sep 21 20:17	1° $\mathbf{\text{P}}$ 22'40	-8°53'32
morning rise	5010 Mar 26 07:08	21° $\mathbf{\text{H}}$ 41'03		direct	5016 Dec 12 03:41	0° $\mathbf{\text{P}}$ 12'45	
retrograde	5010 Jun 22 21:40	23° $\mathbf{\text{H}}$ 16'22		evening set	5017 Mar 10 02:17	1° $\mathbf{\text{P}}$ 44'10	
min. Earth dist.	5010 Sep 09 23:52	22° $\mathbf{\text{H}}$ 08'03	35.54675 AU				
opposition	5010 Sep 12 16:09	22° $\mathbf{\text{H}}$ 04'21	-6°19'59	conjunction	5017 Mar 22 14:42	2° $\mathbf{\text{P}}$ 06'20	-8°37'24
direct	5010 Dec 02 21:01	20° $\mathbf{\text{H}}$ 52'34		minimum elong	5017 Mar 22 14:30	2° $\mathbf{\text{P}}$ 06'19	8°37'25
evening set	5011 Feb 28 03:31	22° $\mathbf{\text{H}}$ 26'01		max. Earth dist.	5017 Mar 25 10:58	2° $\mathbf{\text{P}}$ 11'24	39.20324 AU
				morning rise	5017 Apr 04 03:32	2° $\mathbf{\text{P}}$ 28'33	
conjunction	5011 Mar 14 00:49	22° $\mathbf{\text{H}}$ 51'36	-6°12'48	retrograde	5017 Jul 03 06:08	4° $\mathbf{\text{P}}$ 02'05	
minimum elong	5011 Mar 14 00:38	22° $\mathbf{\text{H}}$ 51'35	6°12'47	min. Earth dist.	5017 Sep 20 18:52	2° $\mathbf{\text{P}}$ 55'43	37.35580 AU
max. Earth dist.	5011 Mar 16 16:17	22° $\mathbf{\text{H}}$ 56'31	37.66500 AU	opposition	5017 Sep 23 15:18	2° $\mathbf{\text{P}}$ 51'55	-9°16'41
morning rise	5011 Mar 27 22:40	23° $\mathbf{\text{H}}$ 17'14		direct	5017 Dec 13 23:07	1° $\mathbf{\text{P}}$ 42'19	
retrograde	5011 Jun 24 19:11	24° $\mathbf{\text{H}}$ 52'12		evening set	5018 Mar 12 01:31	3° $\mathbf{\text{P}}$ 13'31	
min. Earth dist.	5011 Sep 11 20:22	23° $\mathbf{\text{H}}$ 44'13	35.80532 AU				
opposition	5011 Sep 14 14:10	23° $\mathbf{\text{H}}$ 40'27	-6°47'19	conjunction	5018 Mar 24 07:28	3° $\mathbf{\text{P}}$ 35'06	-8°59'15
direct	5011 Dec 04 17:58	22° $\mathbf{\text{H}}$ 29'00		minimum elong	5018 Mar 24 07:15	3° $\mathbf{\text{P}}$ 35'05	8°59'15
evening set	5012 Mar 01 03:44	24° $\mathbf{\text{H}}$ 02'00		max. Earth dist.	5018 Mar 27 03:14	3° $\mathbf{\text{P}}$ 40'06	39.46080 AU
				morning rise	5018 Apr 05 14:01	3° $\mathbf{\text{P}}$ 56'43	
conjunction	5012 Mar 14 20:18	24° $\mathbf{\text{H}}$ 27'03	-6°38'30	retrograde	5018 Jul 05 01:08	5° $\mathbf{\text{P}}$ 30'07	
minimum elong	5012 Mar 14 20:06	24° $\mathbf{\text{H}}$ 27'02	6°38'30	min. Earth dist.	5018 Sep 22 11:49	4° $\mathbf{\text{P}}$ 24'07	37.61534 AU
max. Earth dist.	5012 Mar 17 13:14	24° $\mathbf{\text{H}}$ 32'02	37.92137 AU	opposition	5018 Sep 25 09:48	4° $\mathbf{\text{P}}$ 20'15	-9°39'09
morning rise	5012 Mar 28 13:15	24° $\mathbf{\text{H}}$ 52'08		direct	5018 Dec 15 15:44	3° $\mathbf{\text{P}}$ 11'00	
retrograde	5012 Jun 25 14:47	26° $\mathbf{\text{H}}$ 26'47		evening set	5019 Mar 14 00:31	4° $\mathbf{\text{P}}$ 42'02	
min. Earth dist.	5012 Sep 12 18:30	25° $\mathbf{\text{H}}$ 19'00	36.06320 AU				
opposition	5012 Sep 15 11:44	25° $\mathbf{\text{H}}$ 15'18	-7°13'57	conjunction	5019 Mar 26 00:00	5° $\mathbf{\text{P}}$ 03'00	-9°20'28
direct	5012 Dec 05 16:01	24° $\mathbf{\text{H}}$ 04'08		minimum elong	5019 Mar 25 23:48	5° $\mathbf{\text{P}}$ 02'59	9°20'28
evening set	5013 Mar 03 03:56	25° $\mathbf{\text{H}}$ 36'45		max. Earth dist.	5019 Mar 28 21:04	5° $\mathbf{\text{P}}$ 08'03	39.71804 AU
				morning rise	5019 Apr 07 00:02	5° $\mathbf{\text{P}}$ 24'01	
conjunction	5013 Mar 16 15:19	26° $\mathbf{\text{H}}$ 01'14	-7°03'34	retrograde	5019 Jul 06 19:06	6° $\mathbf{\text{P}}$ 57'19	
minimum elong	5013 Mar 16 15:08	26° $\mathbf{\text{H}}$ 01'14	7°03'34	min. Earth dist.	5019 Sep 24 06:47	5° $\mathbf{\text{P}}$ 51'34	37.87437 AU
max. Earth dist.	5013 Mar 19 08:02	26° $\mathbf{\text{H}}$ 06'10	38.17723 AU	opposition	5019 Sep 27 04:10	5° $\mathbf{\text{P}}$ 47'45	-10°00'56
morning rise	5013 Mar 30 03:10	26° $\mathbf{\text{H}}$ 25'46		direct	5019 Dec 17 09:15	4° $\mathbf{\text{P}}$ 38'50	
retrograde	5013 Jun 27 10:02	28° $\mathbf{\text{H}}$ 00'07		evening set	5020 Mar 14 23:23	6° $\mathbf{\text{P}}$ 09'43	
min. Earth dist.	5013 Sep 14 13:50	26° $\mathbf{\text{H}}$ 52'38	36.32076 AU				
opposition	5013 Sep 17 08:24	26° $\mathbf{\text{H}}$ 48'52	-7°39'54	conjunction	5020 Mar 26 16:08	6° $\mathbf{\text{P}}$ 30'04	-9°41'03
direct	5013 Dec 07 13:32	25° $\mathbf{\text{H}}$ 38'00		minimum elong	5020 Mar 26 15:55	6° $\mathbf{\text{P}}$ 30'03	9°41'02
evening set	5014 Mar 05 03:52	27° $\mathbf{\text{H}}$ 10'16		max. Earth dist.	5020 Mar 29 13:05	6° $\mathbf{\text{P}}$ 35'06	39.97445 AU
				morning rise	5020 Apr 07 09:19	6° $\mathbf{\text{P}}$ 50'28	
conjunction	5014 Mar 18 09:49	27° $\mathbf{\text{H}}$ 34'11	-7°28'00	retrograde	5020 Jul 07 10:35	8° $\mathbf{\text{P}}$ 23'43	
minimum elong	5014 Mar 18 09:36	27° $\mathbf{\text{H}}$ 34'10	7°28'00	min. Earth dist.	5020 Sep 24 23:48	7° $\mathbf{\text{P}}$ 18'16	38.13208 AU
max. Earth dist.	5014 Mar 21 03:25	27° $\mathbf{\text{H}}$ 39'09	38.43289 AU	opposition	5020 Sep 27 21:57	7° $\mathbf{\text{P}}$ 14'25	-10°22'04
morning rise	5014 Mar 31 16:21	27° $\mathbf{\text{H}}$ 58'09		direct	5020 Dec 18 03:49	6° $\mathbf{\text{P}}$ 05'50	
retrograde	5014 Jun 29 03:23	29° $\mathbf{\text{H}}$ 32'14		evening set	5021 Mar 16 22:18	7° $\mathbf{\text{P}}$ 36'36	
min. Earth dist.	5014 Sep 16 10:12	28° $\mathbf{\text{H}}$ 25'00	36.57864 AU				
opposition	5014 Sep 19 04:55	28° $\mathbf{\text{H}}$ 21'14	-8°05'09	conjunction	5021 Mar 28 08:00	7° $\mathbf{\text{P}}$ 56'20	-10°01'01
direct	5014 Dec 09 10:49	27° $\mathbf{\text{H}}$ 10'41		minimum elong	5021 Mar 28 07:47	7° $\mathbf{\text{P}}$ 56'19	10°01'02
evening set	5015 Mar 07 03:27	28° $\mathbf{\text{H}}$ 42'37		max. Earth dist.	5021 Mar 31 04:48	8° $\mathbf{\text{P}}$ 01'19	40.22912 AU
				morning rise	5021 Apr 08 18:22	8° $\mathbf{\text{P}}$ 16'07	
conjunction	5015 Mar 20 03:50	29° $\mathbf{\text{H}}$ 05'58	-7°51'47	retrograde	5021 Jul 09 01:20	9° $\mathbf{\text{P}}$ 49'18	
minimum elong	5015 Mar 20 03:38	29° $\mathbf{\text{H}}$ 05'57	7°51'48	min. Earth dist.	5021 Sep 26 17:32	8° $\mathbf{\text{P}}$ 44'06	38.38794 AU
max. Earth dist.	5015 Mar 22 22:31	29° $\mathbf{\text{H}}$ 10'59	38.68907 AU	opposition	5021 Sep 29 15:22	8° $\mathbf{\text{P}}$ 40'17	-10°42'33
morning rise	5015 Apr 02 04:35	29° $\mathbf{\text{H}}$ 29'21		direct	5021 Dec 19 22:24	7° $\mathbf{\text{P}}$ 32'00	
	5015 Apr 20 06:20	0° $\mathbf{\text{P}}$		evening set	5022 Mar 18 21:04	9° $\mathbf{\text{P}}$ 02'40	
retrograde	5015 Jun 30 18:39	1° $\mathbf{\text{P}}$ 03'12					
	5015 Sep 15 10:44	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		conjunction	5022 Mar 29 23:43	9° $\mathbf{\text{P}}$ 21'46	-10°20'24
min. Earth dist.	5015 Sep 18 05:15	29° $\mathbf{\text{H}}$ 56'16	36.83703 AU	minimum elong	5022 Mar 29 23:31	9° $\mathbf{\text{P}}$ 21'45	10°20'24
opposition	5015 Sep 21 00:50	29° $\mathbf{\text{H}}$ 52'29	-8°29'42	max. Earth dist.	5022 Apr 01 21:07	9° $\mathbf{\text{P}}$ 26'47	40.48158 AU
direct	5015 Dec 11 09:21	28° $\mathbf{\text{H}}$ 42'14		morning rise	5022 Apr 10 02:43	9° $\mathbf{\text{P}}$ 40'55	
	5016 Feb 29 02:29	0° $\mathbf{\text{P}}$		retrograde	5022 Jul 10 14:38	11° $\mathbf{\text{P}}$ 14'04	
evening set	5016 Mar 08 03:03	0° $\mathbf{\text{P}}$ 13'53		min. Earth dist.	5022 Sep 28 11:09	10° $\mathbf{\text{P}}$ 09'06	38.64110 AU
				opposition	5022 Oct 01 08:29	10° $\mathbf{\text{P}}$ 05'19	-11°02'24
conjunction	5016 Mar 20 21:24	0° $\mathbf{\text{P}}$ 36'39	-8°14'55	direct	5022 Dec 21 18:04	8° $\mathbf{\text{P}}$ 57'20	
minimum elong	5016 Mar 20 21:11	0° $\mathbf{\text{P}}$ 36'38	8°14'55	evening set	5023 Mar 20 19:44	10° $\mathbf{\text{P}}$ 27'53	
max. Earth dist.	5016 Mar 23 16:03	0° $\mathbf{\text{P}}$ 41'38	38.94583 AU				
morning rise	5016 Apr 02 16:26	0° $\mathbf{\text{P}}$ 59'27		conjunction	5023 Mar 31 14:51	10° $\mathbf{\text{P}}$ 46'21	-10°39'12

minimum elong	5023 Mar 31 14:38	10° Υ 46'20	10°39'13	evening set	5030 Apr 01 06:49	19° Υ 58'59	
max. Earth dist.	5023 Apr 03 11:06	10° Υ 51'15	40.73116 AU				
morning rise	5023 Apr 11 10:34	11° Υ 04'52		conjunction	5030 Apr 09 16:10	20° Υ 12'48	-12°34'50
retrograde	5023 Jul 12 07:22	12° Υ 38'00		minimum elong	5030 Apr 09 15:59	20° Υ 12'47	12°34'50
min. Earth dist.	5023 Sep 30 03:19	11° Υ 33'16	38.89135 AU	max. Earth dist.	5030 Apr 12 12:43	20° Υ 17'31	42.41398 AU
opposition	5023 Oct 03 01:19	11° Υ 29'29	-11°21'38	morning rise	5030 Apr 18 01:51	20° Υ 26'39	
direct	5023 Dec 23 09:42	10° Υ 21'45		retrograde	5030 Jul 21 08:15	22° Υ 00'01	
evening set	5024 Mar 21 18:14	11° Υ 52'13		min. Earth dist.	5030 Oct 09 13:53	20° Υ 56'39	40.58210 AU
				opposition	5030 Oct 12 11:55	20° Υ 52'58	-13°19'24
conjunction	5024 Apr 01 05:54	12° Υ 10'02	-10°57'26	direct	5031 Jan 01 21:39	19° Υ 46'54	
minimum elong	5024 Apr 01 05:41	12° Υ 10'01	10°57'25	evening set	5031 Apr 03 04:30	21° Υ 17'23	
max. Earth dist.	5024 Apr 04 02:55	12° Υ 14'57	40.97773 AU				
morning rise	5024 Apr 11 17:59	12° Υ 27'55		conjunction	5031 Apr 11 04:44	21° Υ 30'30	-12°49'07
retrograde	5024 Jul 12 22:39	14° Υ 01'01		minimum elong	5031 Apr 11 04:32	21° Υ 30'29	12°49'07
min. Earth dist.	5024 Sep 30 21:00	12° Υ 56'24	39.13857 AU	max. Earth dist.	5031 Apr 14 01:57	21° Υ 35'14	42.64809 AU
opposition	5024 Oct 03 17:42	12° Υ 52'42	-11°40'16	morning rise	5031 Apr 19 05:15	21° Υ 43'39	
direct	5024 Dec 24 02:13	11° Υ 45'13		retrograde	5031 Jul 22 21:38	23° Υ 17'11	
evening set	5025 Mar 23 16:41	13° Υ 15'35		min. Earth dist.	5031 Oct 11 05:04	22° Υ 13'58	40.81718 AU
				opposition	5031 Oct 14 01:59	22° Υ 10'21	-13°33'51
conjunction	5025 Apr 02 20:28	13° Υ 32'46	-11°15'05	direct	5032 Jan 03 10:48	21° Υ 04'34	
minimum elong	5025 Apr 02 20:15	13° Υ 32'45	11°15'06	evening set	5032 Apr 04 02:33	22° Υ 35'10	
max. Earth dist.	5025 Apr 05 16:35	13° Υ 37'36	41.22151 AU				
morning rise	5025 Apr 13 00:40	13° Υ 50'00		conjunction	5032 Apr 11 17:16	22° Υ 47'35	-13°02'52
retrograde	5025 Jul 14 14:16	15° Υ 23'04		minimum elong	5032 Apr 11 17:06	22° Υ 47'35	13°02'52
min. Earth dist.	5025 Oct 02 12:04	14° Υ 18'41	39.38313 AU	max. Earth dist.	5032 Apr 14 14:14	22° Υ 52'17	42.88015 AU
opposition	5025 Oct 05 09:35	14° Υ 14'58	-11°58'18	morning rise	5032 Apr 19 08:09	23° Υ 00'01	
direct	5025 Dec 25 17:10	13° Υ 07'42		retrograde	5032 Jul 23 09:09	24° Υ 33'44	
evening set	5026 Mar 25 14:50	14° Υ 38'01		min. Earth dist.	5032 Oct 11 18:18	23° Υ 30'46	41.04974 AU
				opposition	5032 Oct 14 15:27	23° Υ 27'09	-13°47'46
conjunction	5026 Apr 04 10:34	14° Υ 54'33	-11°32'11	direct	5033 Jan 04 00:43	22° Υ 21'37	
minimum elong	5026 Apr 04 10:22	14° Υ 54'32	11°32'11	evening set	5033 Apr 06 00:36	23° Υ 52'24	
max. Earth dist.	5026 Apr 07 07:04	14° Υ 59'21	41.46282 AU				
morning rise	5026 Apr 14 06:50	15° Υ 11'06		conjunction	5033 Apr 13 05:28	24° Υ 04'05	-13°16'06
retrograde	5026 Jul 16 04:46	16° Υ 44'10		minimum elong	5033 Apr 13 05:17	24° Υ 04'05	13°16'06
min. Earth dist.	5026 Oct 04 04:18	15° Υ 39'56	39.62570 AU	max. Earth dist.	5033 Apr 16 01:41	24° Υ 08'43	43.10935 AU
opposition	5026 Oct 07 01:13	15° Υ 36'15	-12°15'43	morning rise	5033 Apr 20 10:35	24° Υ 15'47	
direct	5026 Dec 27 08:15	14° Υ 29'13		retrograde	5033 Jul 24 21:40	25° Υ 49'43	
evening set	5027 Mar 27 12:57	15° Υ 59'30		min. Earth dist.	5033 Oct 13 08:13	24° Υ 46'57	41.27927 AU
				opposition	5033 Oct 16 04:52	24° Υ 43'22	-14°01'09
conjunction	5027 Apr 06 00:30	16° Υ 15'22	-11°48'42	direct	5034 Jan 05 14:11	23° Υ 38'05	
minimum elong	5027 Apr 06 00:17	16° Υ 15'21	11°48'43	evening set	5034 Apr 07 22:53	25° Υ 09'04	
max. Earth dist.	5027 Apr 08 21:23	16° Υ 20'11	41.70255 AU				
morning rise	5027 Apr 15 12:20	16° Υ 31'15		conjunction	5034 Apr 14 17:35	25° Υ 20'01	-13°28'50
retrograde	5027 Jul 17 15:48	18° Υ 04'21		minimum elong	5034 Apr 14 17:25	25° Υ 20'00	13°28'51
min. Earth dist.	5027 Oct 05 19:11	17° Υ 00'20	39.86673 AU	max. Earth dist.	5034 Apr 17 14:10	25° Υ 24'39	43.33518 AU
opposition	5027 Oct 08 16:24	16° Υ 56'38	-12°32'32	morning rise	5034 Apr 21 12:22	25° Υ 30'59	
direct	5027 Dec 29 02:00	15° Υ 49'50		retrograde	5034 Jul 26 07:41	27° Υ 05'09	
evening set	5028 Mar 28 10:54	17° Υ 20'07		min. Earth dist.	5034 Oct 14 22:21	26° Υ 02'32	41.50493 AU
				opposition	5034 Oct 17 17:56	25° Υ 59'01	-14°14'01
conjunction	5028 Apr 06 13:53	17° Υ 35'18	-12°04'38	direct	5035 Jan 07 05:35	24° Υ 53'59	
minimum elong	5028 Apr 06 13:42	17° Υ 35'17	12°04'38	evening set	5035 Apr 09 21:28	26° Υ 25'11	
max. Earth dist.	5028 Apr 09 10:11	17° Υ 40'03	41.94092 AU				
morning rise	5028 Apr 15 17:21	17° Υ 50'31		conjunction	5035 Apr 16 05:24	26° Υ 35'22	-13°41'06
retrograde	5028 Jul 18 04:34	19° Υ 23'40		minimum elong	5035 Apr 16 05:13	26° Υ 35'21	13°41'06
min. Earth dist.	5028 Oct 06 09:37	18° Υ 19'52	40.10661 AU	max. Earth dist.	5035 Apr 19 00:16	26° Υ 39'51	43.55710 AU
opposition	5028 Oct 09 07:19	18° Υ 16'10	-12°48'45	morning rise	5035 Apr 22 13:27	26° Υ 45'34	
direct	5028 Dec 29 17:44	17° Υ 09'36		retrograde	5035 Jul 27 21:28	28° Υ 20'00	
evening set	5029 Mar 30 08:49	18° Υ 39'55		min. Earth dist.	5035 Oct 16 10:57	27° Υ 17'35	41.72659 AU
				opposition	5035 Oct 19 06:47	27° Υ 14'04	-14°26'24
conjunction	5029 Apr 08 03:15	18° Υ 54'25	-12°20'01	direct	5036 Jan 08 17:23	26° Υ 09'15	
minimum elong	5029 Apr 08 03:03	18° Υ 54'24	12°20'01	evening set	5036 Apr 10 20:13	27° Υ 40'43	
max. Earth dist.	5029 Apr 11 00:42	18° Υ 59'14	42.17811 AU				
morning rise	5029 Apr 16 21:55	19° Υ 08'57		conjunction	5036 Apr 16 17:01	27° Υ 50'05	-13°52'53
retrograde	5029 Jul 19 17:19	20° Υ 42'12		minimum elong	5036 Apr 16 16:52	27° Υ 50'05	13°52'54
min. Earth dist.	5029 Oct 08 00:48	19° Υ 38'34	40.34510 AU	max. Earth dist.	5036 Apr 19 12:14	27° Υ 54'35	43.77484 AU
opposition	5029 Oct 10 21:43	19° Υ 34'55	-13°04'22	morning rise	5036 Apr 22 13:53	27° Υ 59'29	
direct	5029 Dec 31 09:14	18° Υ 28'36		retrograde	5036 Jul 28 11:10	29° Υ 34'13	

min. Earth dist.	5036 Oct 17 01:18	28° Υ 31'53	41.94400 AU	direct	5043 Jan 17 03:21	4° \mathcal{B} 37'31	
opposition	5036 Oct 19 19:25	28° Υ 28'29	-14°38'17				
direct	5037 Jan 09 04:42	27° Υ 23'51		conjunction	5043 Apr 25 18:43	6° \mathcal{B} 14'50	-15°02'26
evening set	5037 Apr 12 19:34	28° Υ 55'36		minimum elong	5043 Apr 25 18:37	6° \mathcal{B} 14'50	15°02'26
				max. Earth dist.	5043 Apr 28 11:34	6° \mathcal{B} 19'01	45.21561 AU
conjunction	5037 Apr 18 04:24	29° Υ 04'09	-14°04'13	retrograde	5043 Aug 06 13:03	7° \mathcal{B} 55'39	
minimum elong	5037 Apr 18 04:15	29° Υ 04'08	14°04'13	min. Earth dist.	5043 Oct 26 11:03	6° \mathcal{B} 54'21	43.38663 AU
max. Earth dist.	5037 Apr 20 22:33	29° Υ 08'33	43.98863 AU	opposition	5043 Oct 29 03:11	6° \mathcal{B} 51'08	-15°47'55
morning rise	5037 Apr 23 13:14	29° Υ 12'42		direct	5044 Jan 18 11:28	5° \mathcal{B} 47'51	
	5037 May 25 04:26	0° \mathcal{B}					
retrograde	5037 Jul 29 21:54	0° \mathcal{B} 47'45		conjunction	5044 Apr 26 04:28	7° \mathcal{B} 24'43	-15°10'33
	5037 Oct 06 16:20	30° $\mathcal{R}\Upsilon$		minimum elong	5044 Apr 26 04:22	7° \mathcal{B} 24'43	15°10'34
min. Earth dist.	5037 Oct 18 12:56	29° Υ 45'36	42.15755 AU	max. Earth dist.	5044 Apr 28 21:25	7° \mathcal{B} 28'54	45.41233 AU
opposition	5037 Oct 21 07:25	29° Υ 42'11	-14°49'42	retrograde	5044 Aug 06 19:55	9° \mathcal{B} 05'07	
direct	5038 Jan 10 16:15	28° Υ 37'45		min. Earth dist.	5044 Oct 26 21:45	8° \mathcal{B} 04'00	43.58301 AU
	5038 Apr 08 13:12	0° \mathcal{B}		opposition	5044 Oct 29 13:36	8° \mathcal{B} 00'47	-15°55'58
evening set	5038 Apr 14 19:19	0° \mathcal{B} 09'50		direct	5045 Jan 19 00:10	6° \mathcal{B} 57'42	
conjunction	5038 Apr 19 15:21	0° \mathcal{B} 17'31	-14°15'05	conjunction	5045 Apr 27 14:00	8° \mathcal{B} 34'10	-15°18'14
minimum elong	5038 Apr 19 15:13	0° \mathcal{B} 17'30	14°15'07	minimum elong	5045 Apr 27 13:55	8° \mathcal{B} 34'09	15°18'14
max. Earth dist.	5038 Apr 22 08:59	0° \mathcal{B} 21'51	44.19887 AU	max. Earth dist.	5045 Apr 30 05:26	8° \mathcal{B} 38'14	45.60581 AU
morning rise	5038 Apr 24 11:26	0° \mathcal{B} 25'10		retrograde	5045 Aug 08 04:20	10° \mathcal{B} 14'09	
retrograde	5038 Jul 31 07:47	2° \mathcal{B} 00'36		min. Earth dist.	5045 Oct 28 08:20	9° \mathcal{B} 13'11	43.77599 AU
min. Earth dist.	5038 Oct 20 01:53	0° \mathcal{B} 58'33	42.36805 AU	opposition	5045 Oct 30 23:46	9° \mathcal{B} 10'00	-16°03'36
opposition	5038 Oct 22 19:28	0° \mathcal{B} 55'12	-15°00'37	direct	5046 Jan 20 11:26	8° \mathcal{B} 07'07	
	5038 Dec 15 14:39	30° $\mathcal{R}\Upsilon$					
direct	5039 Jan 12 04:56	29° Υ 50'57		conjunction	5046 Apr 28 23:32	9° \mathcal{B} 43'10	-15°25'31
	5039 Feb 08 11:02	0° \mathcal{B}		minimum elong	5046 Apr 28 23:26	9° \mathcal{B} 43'10	15°25'32
evening set	5039 Apr 16 19:56	1° \mathcal{B} 23'28		max. Earth dist.	5046 May 01 15:20	9° \mathcal{B} 47'14	45.79557 AU
				retrograde	5046 Aug 09 13:13	11° \mathcal{B} 22'46	
conjunction	5039 Apr 21 02:04	1° \mathcal{B} 30'11	-14°25'30	min. Earth dist.	5046 Oct 29 20:08	10° \mathcal{B} 21'53	43.96480 AU
minimum elong	5039 Apr 21 01:56	1° \mathcal{B} 30'11	14°25'29	opposition	5046 Nov 01 09:55	10° \mathcal{B} 18'48	-16°10'49
max. Earth dist.	5039 Apr 23 20:13	1° \mathcal{B} 34'32	44.40645 AU	direct	5047 Jan 21 23:23	9° \mathcal{B} 16'06	
morning rise	5039 Apr 25 08:08	1° \mathcal{B} 36'54					
retrograde	5039 Aug 01 15:05	3° \mathcal{B} 12'47		conjunction	5047 Apr 30 08:44	10° \mathcal{B} 51'43	-15°32'25
min. Earth dist.	5039 Oct 21 13:52	2° \mathcal{B} 10'53	42.57594 AU	minimum elong	5047 Apr 30 08:40	10° \mathcal{B} 51'43	15°32'26
opposition	5039 Oct 24 07:08	2° \mathcal{B} 07'33	-15°11'03	max. Earth dist.	5047 May 02 22:55	10° \mathcal{B} 55'40	45.98103 AU
direct	5040 Jan 13 19:37	1° \mathcal{B} 03'28		retrograde	5047 Aug 11 00:07	12° \mathcal{B} 30'55	
evening set	5040 Apr 17 22:04	2° \mathcal{B} 36'32		min. Earth dist.	5047 Oct 31 05:51	11° \mathcal{B} 30'13	44.14903 AU
				opposition	5047 Nov 02 19:49	11° \mathcal{B} 27'07	-16°17'39
conjunction	5040 Apr 21 12:32	2° \mathcal{B} 42'12	-14°35'25	direct	5048 Jan 23 08:20	10° \mathcal{B} 24'35	
minimum elong	5040 Apr 21 12:24	2° \mathcal{B} 42'12	14°35'26				
max. Earth dist.	5040 Apr 24 05:34	2° \mathcal{B} 46'28	44.61174 AU	conjunction	5048 Apr 30 17:56	11° \mathcal{B} 59'47	-15°38'57
morning rise	5040 Apr 25 02:55	2° \mathcal{B} 47'52		minimum elong	5048 Apr 30 17:51	11° \mathcal{B} 59'47	15°38'57
retrograde	5040 Aug 02 02:01	4° \mathcal{B} 24'20		max. Earth dist.	5048 May 03 07:27	12° \mathcal{B} 03'41	46.16172 AU
min. Earth dist.	5040 Oct 22 00:45	3° \mathcal{B} 22'36	42.78182 AU	retrograde	5048 Aug 11 10:33	13° \mathcal{B} 38'35	
opposition	5040 Oct 24 18:24	3° \mathcal{B} 19'16	-15°20'59	min. Earth dist.	5048 Oct 31 17:24	12° \mathcal{B} 37'55	44.32849 AU
direct	5041 Jan 14 06:54	2° \mathcal{B} 15'22		opposition	5048 Nov 03 05:29	12° \mathcal{B} 34'56	-16°24'06
evening set	5041 Apr 20 02:46	3° \mathcal{B} 49'11		direct	5049 Jan 23 16:43	11° \mathcal{B} 32'33	
conjunction	5041 Apr 22 22:54	3° \mathcal{B} 53'37	-14°44'53	conjunction	5049 May 02 03:00	13° \mathcal{B} 07'20	-15°45'07
minimum elong	5041 Apr 22 22:47	3° \mathcal{B} 53'36	14°44'53	minimum elong	5049 May 02 02:56	13° \mathcal{B} 07'20	15°45'08
morning rise	5041 Apr 25 18:53	3° \mathcal{B} 58'03		max. Earth dist.	5049 May 04 15:57	13° \mathcal{B} 11'10	46.33788 AU
max. Earth dist.	5041 Apr 25 16:41	3° \mathcal{B} 57'54	44.81507 AU	retrograde	5049 Aug 12 17:57	14° \mathcal{B} 45'43	
retrograde	5041 Aug 03 12:48	5° \mathcal{B} 35'18		min. Earth dist.	5049 Nov 02 03:08	13° \mathcal{B} 45'09	44.50338 AU
min. Earth dist.	5041 Oct 23 13:04	4° \mathcal{B} 33'41	42.98560 AU	opposition	5049 Nov 04 14:51	13° \mathcal{B} 42'12	-16°30'11
opposition	5041 Oct 26 05:34	4° \mathcal{B} 30'24	-15°30'26	direct	5050 Jan 25 02:07	12° \mathcal{B} 39'57	
direct	5042 Jan 15 19:02	3° \mathcal{B} 26'43					
evening set	5042 Apr 22 13:28	5° \mathcal{B} 01'40		conjunction	5050 May 03 11:30	14° \mathcal{B} 14'20	-15°50'55
				minimum elong	5050 May 03 11:26	14° \mathcal{B} 14'20	15°50'55
conjunction	5042 Apr 24 08:53	5° \mathcal{B} 04'29	-14°53'53	max. Earth dist.	5050 May 05 23:02	14° \mathcal{B} 18'04	46.50979 AU
minimum elong	5042 Apr 24 08:45	5° \mathcal{B} 04'28	14°53'54		5050 Jun 04 00:05	15° \mathcal{B}	
morning rise	5042 Apr 26 04:06	5° \mathcal{B} 07'17		retrograde	5050 Aug 14 02:23	15° \mathcal{B} 52'19	
max. Earth dist.	5042 Apr 27 01:47	5° \mathcal{B} 08'42	45.01646 AU		5050 Oct 27 15:13	15° $\mathcal{R}\mathcal{B}$	
retrograde	5042 Aug 05 01:23	6° \mathcal{B} 45'43		min. Earth dist.	5050 Nov 03 12:59	14° \mathcal{B} 51'51	44.67450 AU
min. Earth dist.	5042 Oct 24 23:11	5° \mathcal{B} 44'18	43.18726 AU	opposition	5050 Nov 06 00:07	14° \mathcal{B} 48'56	-16°35'52
opposition	5042 Oct 27 16:24	5° \mathcal{B} 41'01	-15°39'25	direct	5051 Jan 26 11:38	13° \mathcal{B} 46'49	

	5051 Apr 20 20:49	15°♄	conjunction	5059 May 13 10:59	23°♄59'11 -16°26'25
			minimum elong	5059 May 13 10:58	23°♄59'11 16°26'26
conjunction	5051 May 04 20:07	15°♄20'48 -15°56'20	max. Earth dist.	5059 May 15 17:27	24°♄02'30 47.92047 AU
minimum elong	5051 May 04 20:04	15°♄20'48 15°56'22	retrograde	5059 Aug 24 04:18	25°♄34'17
max. Earth dist.	5051 May 07 08:09	15°♄24'33 46.67828 AU	min. Earth dist.	5059 Nov 13 22:07	24°♄34'50 46.07554 AU
retrograde	5051 Aug 15 08:26	16°♄58'24	opposition	5059 Nov 16 02:55	24°♄32'17 -17°09'53
min. Earth dist.	5051 Nov 04 23:08	15°♄58'01 44.84233 AU	direct	5060 Feb 05 13:38	23°♄31'35
opposition	5051 Nov 07 09:07	15°♄55'09 -16°41'09			
	5052 Jan 03 12:08	15°♄	conjunction	5060 May 13 18:22	25°♄02'41 -16°28'41
direct	5052 Jan 27 23:38	14°♄53'11	minimum elong	5060 May 13 18:23	25°♄02'41 16°28'42
	5052 Feb 20 23:58	15°♄	max. Earth dist.	5060 May 15 23:06	25°♄05'53 48.05763 AU
			retrograde	5060 Aug 24 12:24	26°♄37'28
conjunction	5052 May 05 04:24	16°♄26'47 -16°01'22	min. Earth dist.	5060 Nov 14 07:18	25°♄38'04 46.21052 AU
minimum elong	5052 May 05 04:21	16°♄26'46 16°01'23	opposition	5060 Nov 16 10:37	25°♄35'36 -17°11'58
max. Earth dist.	5052 May 07 15:00	16°♄30'26 46.84388 AU	direct	5061 Feb 05 19:45	24°♄35'00
retrograde	5052 Aug 15 18:30	18°♄04'01			
min. Earth dist.	5052 Nov 05 07:26	17°♄03'47 45.00740 AU	conjunction	5061 May 15 01:44	26°♄05'47 -16°30'40
opposition	5052 Nov 07 17:52	17°♄00'54 -16°46'03	minimum elong	5061 May 15 01:44	26°♄05'47 16°30'40
direct	5053 Jan 28 07:46	15°♄59'05	max. Earth dist.	5061 May 17 06:15	26°♄08'58 48.18964 AU
			retrograde	5061 Aug 25 15:16	27°♄40'16
conjunction	5053 May 06 12:35	17°♄32'20 -16°06'02	min. Earth dist.	5061 Nov 15 15:52	26°♄40'54 46.34032 AU
minimum elong	5053 May 06 12:33	17°♄32'20 16°06'03	opposition	5061 Nov 17 17:55	26°♄38'29 -17°13'45
max. Earth dist.	5053 May 08 23:16	17°♄35'58 47.00674 AU	direct	5062 Feb 07 06:37	25°♄37'59
retrograde	5053 Aug 17 05:16	19°♄09'14			
min. Earth dist.	5053 Nov 06 17:33	18°♄09'04 45.16982 AU	conjunction	5062 May 16 08:45	27°♄08'28 -16°32'21
opposition	5053 Nov 09 02:27	18°♄06'16 -16°50'33	minimum elong	5062 May 16 08:46	27°♄08'28 16°32'22
direct	5054 Jan 29 14:25	17°♄04'37	max. Earth dist.	5062 May 18 11:21	27°♄11'31 48.31696 AU
			retrograde	5062 Aug 26 21:18	28°♄42'37
conjunction	5054 May 07 20:39	18°♄37'31 -16°10'18	min. Earth dist.	5062 Nov 16 23:19	27°♄43'20 46.46583 AU
minimum elong	5054 May 07 20:37	18°♄37'31 16°10'18	opposition	5062 Nov 19 01:09	27°♄40'55 -17°15'14
max. Earth dist.	5054 May 10 06:59	18°♄41'07 47.16720 AU	direct	5063 Feb 08 15:44	26°♄40'31
retrograde	5054 Aug 18 12:06	20°♄14'05			
min. Earth dist.	5054 Nov 08 01:38	19°♄14'05 45.32958 AU	conjunction	5063 May 17 15:35	28°♄10'41 -16°33'44
opposition	5054 Nov 10 10:52	19°♄11'17 -16°54'40	minimum elong	5063 May 17 15:36	28°♄10'41 16°33'44
direct	5055 Jan 30 22:22	18°♄09'48	max. Earth dist.	5063 May 19 18:09	28°♄13'43 48.44019 AU
			retrograde	5063 Aug 28 05:33	29°♄44'33
conjunction	5055 May 09 04:20	19°♄42'23 -16°14'13	min. Earth dist.	5063 Nov 18 08:15	28°♄45'15 46.58750 AU
minimum elong	5055 May 09 04:18	19°♄42'22 16°14'14	opposition	5063 Nov 20 08:20	28°♄42'56 -17°16'24
max. Earth dist.	5055 May 11 13:30	19°♄45'54 47.32493 AU	direct	5064 Feb 09 23:55	27°♄42'37
retrograde	5055 Aug 19 19:07	21°♄18'38			
min. Earth dist.	5055 Nov 09 10:52	20°♄18'45 45.48659 AU	conjunction	5064 May 17 22:26	29°♄12'29 -16°34'48
opposition	5055 Nov 11 19:16	20°♄16'00 -16°58'24	minimum elong	5064 May 17 22:29	29°♄12'29 16°34'49
direct	5056 Feb 01 06:27	19°♄14'41	max. Earth dist.	5064 May 20 00:14	29°♄15'28 48.56003 AU
				5064 Jun 21 14:19	0°♄
conjunction	5056 May 09 12:13	20°♄46'58 -16°17'46	retrograde	5064 Aug 28 12:38	0°♄46'03
minimum elong	5056 May 09 12:13	20°♄46'58 16°17'46			
max. Earth dist.	5056 May 11 21:51	20°♄50'30 47.47973 AU	min. Earth dist.	5064 Nov 07 01:04	30°♄
retrograde	5056 Aug 20 00:34	22°♄22'55	opposition	5064 Nov 18 14:42	29°♄46'51 46.70588 AU
min. Earth dist.	5056 Nov 09 20:05	21°♄23'09 45.64021 AU	direct	5064 Nov 20 15:00	29°♄44'31 -17°17'14
opposition	5056 Nov 12 03:17	21°♄20'27 -17°01'46			
direct	5057 Feb 01 17:11	20°♄19'18		5065 Feb 10 05:36	28°♄44'17
				5065 May 09 11:48	0°♄
conjunction	5057 May 10 19:52	21°♄51'17 -16°20'58	conjunction	5065 May 19 05:02	0°♄13'53 -16°35'33
minimum elong	5057 May 10 19:51	21°♄51'17 16°20'59	minimum elong	5065 May 19 05:04	0°♄13'53 16°35'33
max. Earth dist.	5057 May 13 03:45	21°♄54'43 47.63101 AU	max. Earth dist.	5065 May 21 05:34	0°♄16'47 48.67673 AU
retrograde	5057 Aug 21 09:26	23°♄26'58	retrograde	5065 Aug 29 20:04	1°♄47'10
min. Earth dist.	5057 Nov 11 04:05	22°♄27'21 45.79004 AU	min. Earth dist.	5065 Nov 19 22:42	0°♄48'00 46.82134 AU
opposition	5057 Nov 13 11:15	22°♄24'40 -17°04'48	opposition	5065 Nov 21 21:50	0°♄45'44 -17°17'45
direct	5058 Feb 03 00:58	21°♄23'41		5066 Jan 05 23:14	30°♄
			direct	5066 Feb 11 10:31	29°♄45'36
conjunction	5058 May 12 03:22	22°♄55'22 -16°23'51		5066 Mar 19 09:41	0°♄
minimum elong	5058 May 12 03:22	22°♄55'22 16°23'51	conjunction	5066 May 20 11:32	1°♄14'56 -16°35'59
max. Earth dist.	5058 May 14 10:56	22°♄58'46 47.77806 AU	minimum elong	5066 May 20 11:34	1°♄14'57 16°36'00
retrograde	5058 Aug 22 19:03	24°♄30'46	max. Earth dist.	5066 May 22 12:30	1°♄17'51 48.79064 AU
min. Earth dist.	5058 Nov 12 14:05	23°♄31'13 45.93532 AU	retrograde	5066 Aug 30 23:38	2°♄47'58
opposition	5058 Nov 14 19:15	23°♄28'38 -17°07'30	min. Earth dist.	5066 Nov 21 06:03	1°♄48'52 46.93381 AU
direct	5059 Feb 04 08:32	22°♄27'48	opposition	5066 Nov 23 04:30	1°♄46'38 -17°17'56

direct	5067 Feb 12 18:36	0°II46'37	minimum elong	5075 May 29 18:58	10°II14'43	16°27'09
			max. Earth dist.	5075 May 31 10:05	10°II16'59	49.64322 AU
conjunction	5067 May 21 17:54	2°II15'42 -16°36'06	retrograde	5075 Sep 09 10:09	11°II45'49	
minimum elong	5067 May 21 17:57	2°II15'42 16°36'07	min. Earth dist.	5075 Nov 30 22:05	10°II47'10	47.76563 AU
max. Earth dist.	5067 May 23 17:13	2°II18'31 48.90173 AU	opposition	5075 Dec 02 11:22	10°II45'25	-17°06'42
retrograde	5067 Sep 01 05:56	3°II48'29	direct	5076 Feb 22 00:49	9°II46'14	
min. Earth dist.	5067 Nov 22 12:32	2°II49'30 47.04344 AU				
opposition	5067 Nov 24 10:58	2°II47'17 -17°17'48	conjunction	5076 May 30 00:40	11°II13'31	-16°24'50
direct	5068 Feb 14 01:02	1°II47'22	minimum elong	5076 May 30 00:45	11°II13'31	16°24'50
			max. Earth dist.	5076 May 31 16:01	11°II15'48	49.71616 AU
conjunction	5068 May 22 00:17	3°II16'14 -16°35'55	retrograde	5076 Sep 09 13:08	12°II44'25	
minimum elong	5068 May 22 00:20	3°II16'14 16°35'57	min. Earth dist.	5076 Dec 01 04:07	11°II45'49	47.83646 AU
max. Earth dist.	5068 May 23 23:33	3°II19'02 49.00972 AU	opposition	5076 Dec 02 16:52	11°II44'05	-17°04'07
retrograde	5068 Sep 01 12:40	4°II48'48	direct	5077 Feb 22 06:30	10°II44'57	
min. Earth dist.	5068 Nov 22 20:50	3°II49'51 47.14967 AU				
opposition	5068 Nov 24 17:26	3°II47'43 -17°17'21	conjunction	5077 May 31 06:08	12°II12'04	-16°22'16
direct	5069 Feb 14 09:12	2°II47'55	minimum elong	5077 May 31 06:15	12°II12'04	16°22'17
			max. Earth dist.	5077 Jun 01 19:44	12°II14'15	49.78594 AU
conjunction	5069 May 23 06:36	4°II16'35 -16°35'27	retrograde	5077 Sep 10 17:49	13°II42'47	
minimum elong	5069 May 23 06:40	4°II16'35 16°35'27	min. Earth dist.	5077 Dec 02 09:46	12°II44'14	47.90439 AU
max. Earth dist.	5069 May 25 04:54	4°II19'19 49.11425 AU	opposition	5077 Dec 03 22:14	12°II42'31	-17°01'14
retrograde	5069 Sep 02 20:50	5°II48'56	direct	5078 Feb 23 11:56	11°II43'27	
min. Earth dist.	5069 Nov 24 03:02	4°II50'06 47.25205 AU				
opposition	5069 Nov 25 23:35	4°II47'59 -17°16'37	conjunction	5078 Jun 01 11:41	13°II10'24	-16°19'26
direct	5070 Feb 15 13:43	3°II48'18	minimum elong	5078 Jun 01 11:47	13°II10'24	16°19'26
			max. Earth dist.	5078 Jun 03 01:17	13°II12'35	49.85287 AU
conjunction	5070 May 24 12:47	5°II16'46 -16°34'42	retrograde	5078 Sep 11 21:52	14°II40'58	
minimum elong	5070 May 24 12:50	5°II16'47 16°34'43	min. Earth dist.	5078 Dec 03 16:40	13°II42'25	47.96945 AU
max. Earth dist.	5070 May 26 09:37	5°II19'25 49.21461 AU	opposition	5078 Dec 05 03:39	13°II40'46	-16°58'05
retrograde	5070 Sep 04 05:15	6°II48'55	direct	5079 Feb 24 20:23	12°II41'47	
min. Earth dist.	5070 Nov 25 11:06	5°II50'07 47.35010 AU				
opposition	5070 Nov 27 05:55	5°II48'06 -17°15'37	conjunction	5079 Jun 02 17:04	14°II08'34	-16°16'18
direct	5071 Feb 16 16:52	4°II48'32	minimum elong	5079 Jun 02 17:10	14°II08'34	16°16'20
			max. Earth dist.	5079 Jun 04 05:51	14°II10'41	49.91714 AU
conjunction	5071 May 25 19:03	6°II16'49 -16°33'41	retrograde	5079 Sep 13 05:08	15°II38'58	
minimum elong	5071 May 25 19:08	6°II16'49 16°33'41	min. Earth dist.	5079 Dec 04 21:42	14°II40'31	48.03163 AU
max. Earth dist.	5071 May 27 15:37	6°II19'26 49.31035 AU	opposition	5079 Dec 06 08:53	14°II38'51	-16°54'39
retrograde	5071 Sep 05 08:51	7°II48'45	direct	5080 Feb 26 01:29	13°II39'57	
min. Earth dist.	5071 Nov 26 18:18	6°II50'01 47.44301 AU				
opposition	5071 Nov 28 12:03	6°II48'02 -17°14'21	conjunction	5080 Jun 02 22:28	15°II06'36	-16°12'55
direct	5072 Feb 18 00:59	5°II48'35	minimum elong	5080 Jun 02 22:35	15°II06'36	16°12'55
			max. Earth dist.	5080 Jun 04 09:59	15°II08'39	49.97831 AU
conjunction	5072 May 26 01:13	7°II16'40 -16°32'25	retrograde	5080 Sep 13 14:17	16°II36'50	
minimum elong	5072 May 26 01:17	7°II16'40 16°32'26	min. Earth dist.	5080 Dec 05 04:30	15°II38'24	48.09061 AU
max. Earth dist.	5072 May 27 19:26	7°II19'08 49.40090 AU	opposition	5080 Dec 06 14:02	15°II36'50	-16°50'56
retrograde	5072 Sep 05 13:28	8°II48'24	direct	5081 Feb 26 02:55	14°II38'00	
min. Earth dist.	5072 Nov 27 01:03	7°II49'43 47.53072 AU				
opposition	5072 Nov 28 17:58	7°II47'47 -17°12'49	conjunction	5081 Jun 04 03:57	16°II04'31	-16°09'16
direct	5073 Feb 18 08:26	6°II48'24	minimum elong	5081 Jun 04 04:04	16°II04'32	16°09'18
			max. Earth dist.	5081 Jun 05 15:25	16°II06'34	50.03614 AU
conjunction	5073 May 27 07:20	8°II16'17 -16°30'54	retrograde	5081 Sep 14 18:19	17°II34'38	
minimum elong	5073 May 27 07:26	8°II16'17 16°30'55	min. Earth dist.	5081 Dec 06 10:19	16°II36'14	48.14579 AU
max. Earth dist.	5073 May 29 01:08	8°II18'44 49.48622 AU	opposition	5081 Dec 07 19:08	16°II34'42	-16°46'58
retrograde	5073 Sep 06 19:51	9°II47'49	direct	5082 Feb 27 08:24	15°II35'57	
min. Earth dist.	5073 Nov 28 09:04	8°II49'07 47.61328 AU				
opposition	5073 Nov 29 23:57	8°II47'16 -17°11'03	conjunction	5082 Jun 05 09:07	17°II02'22	-16°05'22
direct	5074 Feb 19 16:19	7°II47'58	minimum elong	5082 Jun 05 09:15	17°II02'22	16°05'23
			max. Earth dist.	5082 Jun 06 18:35	17°II04'17	50.08994 AU
conjunction	5074 May 28 13:08	9°II15'38 -16°29'09	retrograde	5082 Sep 15 21:51	18°II32'20	
minimum elong	5074 May 28 13:12	9°II15'38 16°29'09	min. Earth dist.	5082 Dec 07 16:19	17°II33'59	48.19669 AU
max. Earth dist.	5074 May 30 05:40	9°II18'00 49.56684 AU	opposition	5082 Dec 09 00:17	17°II32'29	-16°42'44
retrograde	5074 Sep 08 02:57	10°II46'58	direct	5083 Feb 28 13:45	16°II33'49	
min. Earth dist.	5074 Nov 29 14:44	9°II48'20 47.69135 AU				
opposition	5074 Dec 01 05:42	9°II46'29 -17°09'01	conjunction	5083 Jun 06 14:38	18°II00'06	-16°01'15
direct	5075 Feb 20 21:21	8°II47'14	minimum elong	5083 Jun 06 14:45	18°II00'06	16°01'16
			max. Earth dist.	5083 Jun 07 23:35	18°II02'00	50.13898 AU
conjunction	5075 May 29 18:52	10°II14'43 -16°27'07	retrograde	5083 Sep 17 01:39	19°II29'57	

min. Earth dist.	5083 Dec 08 23:30	18°II31'34	48.24248 AU	conjunction	5092 Jun 14 12:43	26°II32'32	-15°13'51
opposition	5083 Dec 10 05:21	18°II30'10	-16°38'18	minimum elong	5092 Jun 14 12:52	26°II32'33	15°13'53
direct	5084 Feb 29 21:32	17°II31'33		max. Earth dist.	5092 Jun 15 11:33	26°II33'50	50.37707 AU
				retrograde	5092 Sep 25 00:56	28°II01'22	
conjunction	5084 Jun 06 20:06	18°II57'43	-15°56'54	opposition	5092 Dec 17 23:43	27°II02'01	-15°47'43
minimum elong	5084 Jun 06 20:15	18°II57'43	15°56'55	min. Earth dist.	5092 Dec 17 02:02	27°II03'01	48.45484 AU
max. Earth dist.	5084 Jun 08 03:24	18°II59'31	50.18289 AU	direct	5093 Mar 09 13:16	26°II03'41	
retrograde	5084 Sep 17 07:55	20°II27'25					
min. Earth dist.	5084 Dec 09 04:43	19°II29'05	48.28285 AU	conjunction	5093 Jun 15 17:39	27°II29'05	-15°07'23
opposition	5084 Dec 10 10:18	19°II27'42	-16°33'38	minimum elong	5093 Jun 15 17:49	27°II29'05	15°07'23
direct	5085 Mar 02 02:54	18°II29'07		max. Earth dist.	5093 Jun 16 16:15	27°II30'22	50.38596 AU
				retrograde	5093 Sep 26 03:27	28°II57'52	
conjunction	5085 Jun 08 01:21	19°II55'09	-15°52'20	min. Earth dist.	5093 Dec 18 08:14	27°II59'30	48.46072 AU
minimum elong	5085 Jun 08 01:28	19°II55'10	15°52'21	opposition	5093 Dec 19 04:14	27°II58'34	-15°40'52
max. Earth dist.	5085 Jun 09 06:50	19°II56'50	50.22128 AU	direct	5094 Mar 10 20:51	27°II00'18	
retrograde	5085 Sep 18 14:56	21°II24'43					
min. Earth dist.	5085 Dec 10 11:50	20°II26'19	48.31792 AU	conjunction	5094 Jun 16 22:38	28°II25'41	-15°00'41
opposition	5085 Dec 11 15:17	20°II25'02	-16°28'45	minimum elong	5094 Jun 16 22:47	28°II25'41	15°00'42
direct	5086 Mar 03 06:28	19°II26'29		max. Earth dist.	5094 Jun 17 19:53	28°II26'53	50.39091 AU
				retrograde	5094 Sep 27 09:42	29°II54'26	
conjunction	5086 Jun 09 06:40	20°II52'24	-15°47'33	opposition	5094 Dec 20 08:38	28°II55'12	-15°33'47
minimum elong	5086 Jun 09 06:49	20°II52'24	15°47'35	min. Earth dist.	5094 Dec 19 12:53	28°II56'07	48.46226 AU
max. Earth dist.	5086 Jun 10 11:56	20°II54'04	50.25473 AU	direct	5095 Mar 12 01:41	27°II56'58	
retrograde	5086 Sep 19 19:02	22°II21'48		evening set	5095 Jun 16 06:55	29°II19'47	
opposition	5086 Dec 12 20:05	21°II22'10	-16°23'38				
min. Earth dist.	5086 Dec 11 17:22	21°II23'25	48.34817 AU	conjunction	5095 Jun 18 03:37	29°II22'19	-14°53'46
direct	5087 Mar 04 10:51	20°II23'37		minimum elong	5095 Jun 18 03:48	29°II22'20	14°53'46
				max. Earth dist.	5095 Jun 18 23:05	29°II23'25	50.39100 AU
conjunction	5087 Jun 10 11:42	21°II49'25	-15°42'33	morning rise	5095 Jun 20 00:43	29°II24'52	
minimum elong	5087 Jun 10 11:50	21°II49'26	15°42'33		5095 Jul 16 18:25	0°☾	
max. Earth dist.	5087 Jun 11 14:49	21°II50'58	50.28372 AU	retrograde	5095 Sep 28 17:10	0°☾51'03	
retrograde	5087 Sep 20 23:36	23°II18'41			5095 Dec 14 05:01	30°☿II	
min. Earth dist.	5087 Dec 12 22:52	22°II20'17	48.37433 AU	opposition	5095 Dec 21 13:13	29°II51'51	-15°26'29
opposition	5087 Dec 14 00:51	22°II19'05	-16°18'16	min. Earth dist.	5095 Dec 20 19:45	29°II52'40	48.45868 AU
direct	5088 Mar 04 15:14	21°II20'33		direct	5096 Mar 12 04:30	28°II53'39	
					5096 Jun 04 06:46	0°☾	
conjunction	5088 Jun 10 16:53	22°II46'15	-15°37'18	evening set	5096 Jun 15 15:26	0°☾15'16	
minimum elong	5088 Jun 10 17:03	22°II46'15	15°37'19				
max. Earth dist.	5088 Jun 11 19:48	22°II47'47	50.30874 AU	conjunction	5096 Jun 18 08:50	0°☾18'58	-14°46'39
retrograde	5088 Sep 21 02:28	24°II15'24		minimum elong	5096 Jun 18 08:59	0°☾18'59	14°46'39
min. Earth dist.	5088 Dec 13 05:10	23°II16'58	48.39672 AU	max. Earth dist.	5096 Jun 19 03:42	0°☾20'02	50.38578 AU
opposition	5088 Dec 14 05:27	23°II15'49	-16°12'40	morning rise	5096 Jun 21 02:39	0°☾22'42	
direct	5089 Mar 05 22:26	22°II17'20		retrograde	5096 Sep 28 22:22	1°☾47'38	
				opposition	5096 Dec 21 17:31	0°☾48'28	-15°18'59
conjunction	5089 Jun 11 21:56	23°II42'55	-15°31'49	min. Earth dist.	5096 Dec 21 00:57	0°☾49'15	48.44950 AU
minimum elong	5089 Jun 11 22:05	23°II42'56	15°31'49		5097 Feb 10 23:00	30°☿II	
max. Earth dist.	5089 Jun 12 23:51	23°II44'24	50.33046 AU	direct	5097 Mar 13 07:36	29°II50'16	
retrograde	5089 Sep 22 08:06	25°II11'59			5097 Apr 12 10:12	0°☾	
min. Earth dist.	5089 Dec 14 09:33	24°II13'35	48.41590 AU	evening set	5097 Jun 16 04:37	1°☾10'58	
opposition	5089 Dec 15 10:01	24°II12'27	-16°06'49				
direct	5090 Mar 07 03:39	23°II13'58		conjunction	5097 Jun 19 13:48	1°☾15'34	-14°39'20
				minimum elong	5097 Jun 19 14:00	1°☾15'35	14°39'21
conjunction	5090 Jun 13 02:44	24°II39'30	-15°26'04	max. Earth dist.	5097 Jun 20 06:10	1°☾16'30	50.37508 AU
minimum elong	5090 Jun 13 02:53	24°II39'30	15°26'06	morning rise	5097 Jun 22 23:32	1°☾20'11	
max. Earth dist.	5090 Jun 14 03:22	24°II40'54	50.34898 AU	retrograde	5097 Sep 30 03:00	2°☾44'10	
retrograde	5090 Sep 23 16:35	26°II08'28		opposition	5097 Dec 22 21:57	1°☾45'00	-15°11'17
opposition	5090 Dec 16 14:45	25°II08'59	-16°00'42	min. Earth dist.	5097 Dec 22 06:32	1°☾45'43	48.43501 AU
min. Earth dist.	5090 Dec 15 15:52	25°II10'03	48.43204 AU	direct	5098 Mar 14 10:52	0°☾46'47	
direct	5091 Mar 08 05:17	24°II10'33		evening set	5098 Jun 16 19:58	2°☾06'41	
conjunction	5091 Jun 14 07:48	25°II36'01	-15°20'05	conjunction	5098 Jun 20 18:44	2°☾12'03	-14°31'49
minimum elong	5091 Jun 14 07:58	25°II36'02	15°20'06	minimum elong	5098 Jun 20 18:53	2°☾12'03	14°31'49
max. Earth dist.	5091 Jun 15 08:32	25°II37'26	50.36459 AU	max. Earth dist.	5098 Jun 21 10:32	2°☾12'56	50.35915 AU
retrograde	5091 Sep 24 21:09	27°II04'55		morning rise	5098 Jun 24 18:01	2°☾17'26	
opposition	5091 Dec 17 19:11	26°II05'29	-15°54'20	retrograde	5098 Oct 01 04:59	3°☾40'35	
min. Earth dist.	5091 Dec 16 20:40	26°II06'32	48.44506 AU	opposition	5098 Dec 24 02:24	2°☾41'25	-15°03'22
direct	5092 Mar 08 09:01	25°II07'07		min. Earth dist.	5098 Dec 23 12:50	2°☾42'03	48.41549 AU

direct	5099 Mar 15 17:34	1° 00 43'10
evening set	5099 Jun 17 13:01	3° 00 02'21
conjunction	5099 Jun 21 23:42	3° 00 08'23 -14°24'05
minimum elong	5099 Jun 21 23:53	3° 00 08'23 14°24'06
max. Earth dist.	5099 Jun 22 14:17	3° 00 09'12 50.33871 AU
morning rise	5099 Jun 26 11:00	3° 00 14'27
retrograde	5099 Oct 02 08:40	4° 00 36'52
opposition	5099 Dec 25 06:31	3° 00 37'40 -14°55'14
min. Earth dist.	5099 Dec 24 17:08	3° 00 38'18 48.39174 AU
direct	5100 Mar 17 00:20	2° 00 39'23
evening set	5100 Jun 18 06:51	3° 00 57'56
conjunction	5100 Jun 23 04:36	4° 00 04'34 -14°16'07
minimum elong	5100 Jun 23 04:47	4° 00 04'35 14°16'08
max. Earth dist.	5100 Jun 23 17:32	4° 00 05'18 50.31417 AU
morning rise	5100 Jun 28 03:02	4° 00 11'15
retrograde	5100 Oct 03 16:24	5° 00 33'00
opposition	5100 Dec 26 10:52	4° 00 33'48 -14°46'51
min. Earth dist.	5100 Dec 25 23:16	4° 00 34'20 48.36426 AU
direct	5101 Mar 18 03:35	3° 00 35'29
evening set	5101 Jun 19 01:27	4° 00 53'26
conjunction	5101 Jun 24 09:28	5° 00 00'38 -14°07'56
minimum elong	5101 Jun 24 09:39	5° 00 00'39 14°07'57
max. Earth dist.	5101 Jun 24 22:30	5° 00 01'22 50.28621 AU
morning rise	5101 Jun 29 18:08	5° 00 07'54
retrograde	5101 Oct 04 21:38	6° 00 29'01
opposition	5101 Dec 27 15:02	5° 00 29'48 -14°38'14
min. Earth dist.	5101 Dec 27 03:43	5° 00 30'20 48.33344 AU