

evening set	15600 Jan 23 14:08	2° ✕ 25'29		morning rise	15606 Mar 09 21:07	16° ✕ 49'42	
				retrograde	15606 Jun 06 23:53	18° ✕ 44'19	
conjunction	15600 Feb 08 16:22	3° ✕ 01'07 0°20'02		opposition	15606 Aug 24 11:06	17° ✕ 20'44	0°24'56
minimum elong	15600 Feb 08 16:22	3° ✕ 01'07 0°20'31		min. Earth dist.	15606 Aug 24 08:43	17° ✕ 20'54	29.15158 AU
max. Earth dist.	15600 Feb 08 21:50	3° ✕ 01'37 31.07565 AU		direct	15606 Nov 11 08:23	15° ✕ 56'33	
morning rise	15600 Feb 24 18:52	3° ✕ 36'48		evening set	15607 Feb 08 04:31	17° ✕ 50'32	
retrograde	15600 May 24 04:22	5° ✕ 32'06					
opposition	15600 Aug 10 20:10	4° ✕ 08'18 0°21'45		conjunction	15607 Feb 24 07:03	18° ✕ 26'04	0°23'32
min. Earth dist.	15600 Aug 10 15:31	4° ✕ 08'37 29.08042 AU		minimum elong	15607 Feb 24 07:03	18° ✕ 26'04	0°23'48
direct	15600 Oct 28 13:31	2° ✕ 44'09		max. Earth dist.	15607 Feb 24 09:49	18° ✕ 26'19	31.15884 AU
evening set	15601 Jan 25 02:44	4° ✕ 38'11		morning rise	15607 Mar 12 09:26	19° ✕ 01'36	
				retrograde	15607 Jun 09 12:19	20° ✕ 56'09	
conjunction	15601 Feb 10 04:52	5° ✕ 13'48 0°20'38		opposition	15607 Aug 26 21:25	19° ✕ 32'40	0°25'20
minimum elong	15601 Feb 10 04:52	5° ✕ 13'48 0°21'05		min. Earth dist.	15607 Aug 26 18:40	19° ✕ 32'51	29.16601 AU
max. Earth dist.	15601 Feb 10 08:48	5° ✕ 14'09 31.08521 AU		direct	15607 Nov 13 20:48	18° ✕ 08'32	
morning rise	15601 Feb 26 07:31	5° ✕ 49'27		evening set	15608 Feb 10 17:00	20° ✕ 02'33	
retrograde	15601 May 26 15:50	7° ✕ 44'37					
opposition	15601 Aug 13 06:49	6° ✕ 20'49 0°22'22		conjunction	15608 Feb 26 19:24	20° ✕ 38'04	0°23'53
min. Earth dist.	15601 Aug 13 02:41	6° ✕ 21'07 29.09018 AU		minimum elong	15608 Feb 26 19:24	20° ✕ 38'04	0°24'07
direct	15601 Oct 30 23:00	4° ✕ 56'38		max. Earth dist.	15608 Feb 26 20:59	20° ✕ 38'13	31.17298 AU
evening set	15602 Jan 27 14:56	6° ✕ 50'37		morning rise	15608 Mar 13 21:44	21° ✕ 13'35	
				retrograde	15608 Jun 10 22:47	23° ✕ 08'04	
conjunction	15602 Feb 12 17:19	7° ✕ 26'13 0°21'12		opposition	15608 Aug 28 07:51	21° ✕ 44'40	0°25'42
minimum elong	15602 Feb 12 17:19	7° ✕ 26'13 0°21'37		min. Earth dist.	15608 Aug 28 06:33	21° ✕ 44'45	29.17989 AU
max. Earth dist.	15602 Feb 12 22:00	7° ✕ 26'38 31.09512 AU		direct	15608 Nov 15 06:42	20° ✕ 20'34	
morning rise	15602 Feb 28 19:48	8° ✕ 01'51		evening set	15609 Feb 12 05:19	22° ✕ 14'37	
retrograde	15602 May 29 01:16	9° ✕ 56'53					
opposition	15602 Aug 15 17:24	8° ✕ 33'05 0°22'57		conjunction	15609 Feb 28 07:51	22° ✕ 50'07	0°24'13
min. Earth dist.	15602 Aug 15 13:43	8° ✕ 33'21 29.10034 AU		minimum elong	15609 Feb 28 07:51	22° ✕ 50'07	0°24'25
direct	15602 Nov 02 10:54	7° ✕ 08'52		max. Earth dist.	15609 Feb 28 09:31	22° ✕ 50'16	31.18635 AU
evening set	15603 Jan 30 03:24	9° ✕ 02'49		morning rise	15609 Mar 16 09:58	23° ✕ 25'37	
				retrograde	15609 Jun 13 09:09	25° ✕ 20'01	
conjunction	15603 Feb 15 05:42	9° ✕ 38'24 0°21'43		opposition	15609 Aug 30 18:15	23° ✕ 56'42	0°26'02
minimum elong	15603 Feb 15 05:42	9° ✕ 38'24 0°22'07		min. Earth dist.	15609 Aug 30 17:10	23° ✕ 56'46	29.19260 AU
max. Earth dist.	15603 Feb 15 09:02	9° ✕ 38'42 31.10577 AU		direct	15609 Nov 17 18:26	22° ✕ 32'38	
morning rise	15603 Mar 03 08:21	10° ✕ 14'00		evening set	15610 Feb 14 17:39	24° ✕ 26'40	
retrograde	15603 May 31 13:22	12° ✕ 08'55					
opposition	15603 Aug 18 03:44	10° ✕ 45'08 0°23'30		conjunction	15610 Mar 02 20:01	25° ✕ 02'10	0°24'31
min. Earth dist.	15603 Aug 17 23:50	10° ✕ 45'25 29.11153 AU		minimum elong	15610 Mar 02 20:01	25° ✕ 02'10	0°24'40
direct	15603 Nov 04 22:10	9° ✕ 20'53		max. Earth dist.	15610 Mar 02 19:51	25° ✕ 02'09	31.19845 AU
evening set	15604 Feb 01 15:44	11° ✕ 14'50		morning rise	15610 Mar 18 22:13	25° ✕ 37'39	
				retrograde	15610 Jun 15 20:39	27° ✕ 31'58	
conjunction	15604 Feb 17 18:11	11° ✕ 50'24 0°22'13		opposition	15610 Sep 02 04:41	26° ✕ 08'42	0°26'19
minimum elong	15604 Feb 17 18:11	11° ✕ 50'24 0°22'35		min. Earth dist.	15610 Sep 02 04:24	26° ✕ 08'43	29.20411 AU
max. Earth dist.	15604 Feb 17 22:09	11° ✕ 50'45 31.11740 AU		direct	15610 Nov 20 03:37	24° ✕ 44'37	
morning rise	15604 Mar 04 20:39	12° ✕ 25'59		evening set	15611 Feb 17 05:58	26° ✕ 38'40	
retrograde	15604 Jun 01 23:30	14° ✕ 20'47					
opposition	15604 Aug 19 14:17	12° ✕ 57'03 0°24'00		conjunction	15611 Mar 05 08:30	27° ✕ 14'09	0°24'46
min. Earth dist.	15604 Aug 19 11:22	12° ✕ 57'15 29.12377 AU		minimum elong	15611 Mar 05 08:30	27° ✕ 14'09	0°24'54
direct	15604 Nov 06 09:21	11° ✕ 32'47		max. Earth dist.	15611 Mar 05 08:32	27° ✕ 14'09	31.20926 AU
evening set	15605 Feb 03 03:57	13° ✕ 26'44		morning rise	15611 Mar 21 10:26	27° ✕ 49'37	
				retrograde	15611 Jun 18 05:34	29° ✕ 43'49	
conjunction	15605 Feb 19 06:22	14° ✕ 02'17 0°22'41		opposition	15611 Sep 04 14:56	28° ✕ 20'36	0°26'34
minimum elong	15605 Feb 19 06:22	14° ✕ 02'17 0°23'01		min. Earth dist.	15611 Sep 04 15:38	28° ✕ 20'33	29.21426 AU
max. Earth dist.	15605 Feb 19 09:33	14° ✕ 02'34 31.13034 AU		direct	15611 Nov 22 15:13	26° ✕ 56'31	
morning rise	15605 Mar 07 08:52	14° ✕ 37'51		evening set	15612 Feb 19 18:22	28° ✕ 50'33	
retrograde	15605 Jun 04 12:18	16° ✕ 32'33					
opposition	15605 Aug 22 00:40	15° ✕ 08'53 0°24'29		conjunction	15612 Mar 06 20:41	29° ✕ 26'01	0°24'59
min. Earth dist.	15605 Aug 21 20:56	15° ✕ 09'08 29.13724 AU		minimum elong	15612 Mar 06 20:41	29° ✕ 26'01	0°25'05
direct	15605 Nov 08 21:17	13° ✕ 44'39		max. Earth dist.	15612 Mar 06 18:55	29° ✕ 25'51	31.21898 AU
evening set	15606 Feb 05 16:14	15° ✕ 38'37		morning rise	15612 Mar 22 22:40	0° ° 01'27	
				retrograde	15612 Mar 22 06:34	0° °	
conjunction	15606 Feb 21 18:41	16° ✕ 14'09 0°23'08		retrograde	15612 Jun 19 17:00	1° ° 55'33	
minimum elong	15606 Feb 21 18:42	16° ✕ 14'09 0°23'26		opposition	15612 Sep 06 01:11	0° ° 32'21	0°26'47
max. Earth dist.	15606 Feb 21 21:47	16° ✕ 14'26 31.14427 AU		min. Earth dist.	15612 Sep 06 01:57	0° ° 32'18	29.22357 AU

	15612 Sep 25 21:48	30° \mathbb{R} \mathbb{H}		max. Earth dist.	15619 Mar 23 03:23	14° \mathbb{Y} 44'10	31.28663 AU
direct	15612 Nov 24 02:12	29° \mathbb{H} 08'15		morning rise	15619 Apr 08 08:53	15° \mathbb{Y} 19'51	
	15613 Jan 20 11:58	0° \mathbb{Y}		retrograde	15619 Jul 05 20:32	17° \mathbb{Y} 13'17	
evening set	15613 Feb 21 06:23	1° \mathbb{Y} 02'16		opposition	15619 Sep 21 23:54	15° \mathbb{Y} 50'20	0°27'10
				min. Earth dist.	15619 Sep 22 03:21	15° \mathbb{Y} 50'06	29.29243 AU
conjunction	15613 Mar 09 08:46	1° \mathbb{Y} 37'43	0°25'10	direct	15619 Dec 10 09:13	14° \mathbb{Y} 26'13	
minimum elong	15613 Mar 09 08:46	1° \mathbb{Y} 37'43	0°25'14	evening set	15620 Mar 08 17:54	16° \mathbb{Y} 20'13	
max. Earth dist.	15613 Mar 09 07:20	1° \mathbb{Y} 37'35	31.22786 AU				
morning rise	15613 Mar 25 10:29	2° \mathbb{Y} 13'08		conjunction	15620 Mar 24 19:46	16° \mathbb{Y} 55'33	0°25'25
retrograde	15613 Jun 22 02:23	4° \mathbb{Y} 07'08		minimum elong	15620 Mar 24 19:46	16° \mathbb{Y} 55'33	0°25'15
opposition	15613 Sep 08 11:31	2° \mathbb{Y} 43'57	0°26'57	max. Earth dist.	15620 Mar 24 15:49	16° \mathbb{Y} 55'11	31.29796 AU
min. Earth dist.	15613 Sep 08 13:38	2° \mathbb{Y} 43'48	29.23221 AU	morning rise	15620 Apr 09 20:25	17° \mathbb{Y} 30'49	
direct	15613 Nov 26 12:48	1° \mathbb{Y} 19'48		retrograde	15620 Jul 07 04:58	19° \mathbb{Y} 24'10	
evening set	15614 Feb 23 18:29	3° \mathbb{Y} 13'49		opposition	15620 Sep 23 10:06	18° \mathbb{Y} 01'18	0°27'04
				min. Earth dist.	15620 Sep 23 14:27	18° \mathbb{Y} 01'00	29.30339 AU
conjunction	15614 Mar 11 20:46	3° \mathbb{Y} 49'14	0°25'19	direct	15620 Dec 11 20:28	16° \mathbb{Y} 37'13	
minimum elong	15614 Mar 11 20:46	3° \mathbb{Y} 49'14	0°25'21	evening set	15621 Mar 11 05:46	18° \mathbb{Y} 31'13	
max. Earth dist.	15614 Mar 11 18:17	3° \mathbb{Y} 49'00	31.23647 AU				
morning rise	15614 Mar 27 22:29	4° \mathbb{Y} 24'38		conjunction	15621 Mar 27 07:20	19° \mathbb{Y} 06'32	0°25'18
retrograde	15614 Jun 24 14:23	6° \mathbb{Y} 18'30		minimum elong	15621 Mar 27 07:20	19° \mathbb{Y} 06'32	0°25'06
opposition	15614 Sep 10 21:30	4° \mathbb{Y} 55'20	0°27'05	max. Earth dist.	15621 Mar 27 01:43	19° \mathbb{Y} 06'01	31.30850 AU
min. Earth dist.	15614 Sep 10 23:05	4° \mathbb{Y} 55'13	29.24079 AU	morning rise	15621 Apr 12 07:58	19° \mathbb{Y} 41'47	
direct	15614 Nov 29 00:56	3° \mathbb{Y} 31'10		retrograde	15621 Jul 09 15:52	21° \mathbb{Y} 35'05	
evening set	15615 Feb 26 06:31	5° \mathbb{Y} 25'09		opposition	15621 Sep 25 20:15	20° \mathbb{Y} 12'16	0°26'55
				min. Earth dist.	15621 Sep 26 00:36	20° \mathbb{Y} 11'58	29.31337 AU
conjunction	15615 Mar 14 08:46	6° \mathbb{Y} 00'33	0°25'25	direct	15621 Dec 14 06:30	18° \mathbb{Y} 48'11	
minimum elong	15615 Mar 14 08:46	6° \mathbb{Y} 00'33	0°25'25	evening set	15622 Mar 13 17:39	20° \mathbb{Y} 42'13	
max. Earth dist.	15615 Mar 14 06:02	6° \mathbb{Y} 00'18	31.24505 AU				
morning rise	15615 Mar 30 10:19	6° \mathbb{Y} 35'55		conjunction	15622 Mar 29 19:13	21° \mathbb{Y} 17'31	0°25'09
retrograde	15615 Jun 27 01:25	8° \mathbb{Y} 29'41		minimum elong	15622 Mar 29 19:13	21° \mathbb{Y} 17'31	0°24'55
opposition	15615 Sep 13 07:43	7° \mathbb{Y} 06'32	0°27'11	max. Earth dist.	15622 Mar 29 13:42	21° \mathbb{Y} 17'01	31.31768 AU
min. Earth dist.	15615 Sep 13 10:35	7° \mathbb{Y} 06'20	29.24963 AU	morning rise	15622 Apr 14 19:31	21° \mathbb{Y} 52'44	
direct	15615 Dec 01 12:48	5° \mathbb{Y} 42'20		retrograde	15622 Jul 12 01:08	23° \mathbb{Y} 45'58	
evening set	15616 Feb 28 18:26	7° \mathbb{Y} 36'19		opposition	15622 Sep 28 06:24	22° \mathbb{Y} 23'12	0°26'44
				min. Earth dist.	15622 Sep 28 12:24	22° \mathbb{Y} 22'47	29.32183 AU
conjunction	15616 Mar 15 20:37	8° \mathbb{Y} 11'42	0°25'30	direct	15622 Dec 16 16:22	20° \mathbb{Y} 59'07	
minimum elong	15616 Mar 15 20:37	8° \mathbb{Y} 11'42	0°25'27	evening set	15623 Mar 16 05:37	22° \mathbb{Y} 53'09	
max. Earth dist.	15616 Mar 15 17:44	8° \mathbb{Y} 11'26	31.25421 AU				
morning rise	15616 Mar 31 21:59	8° \mathbb{Y} 47'02		conjunction	15623 Apr 01 06:59	23° \mathbb{Y} 28'25	0°24'58
retrograde	15616 Jun 28 12:42	10° \mathbb{Y} 40'42		minimum elong	15623 Apr 01 06:59	23° \mathbb{Y} 28'25	0°24'42
opposition	15616 Sep 14 17:43	9° \mathbb{Y} 17'34	0°27'14	max. Earth dist.	15623 Apr 01 00:07	23° \mathbb{Y} 27'47	31.32544 AU
min. Earth dist.	15616 Sep 14 19:54	9° \mathbb{Y} 17'25	29.25913 AU	morning rise	15623 Apr 17 07:12	24° \mathbb{Y} 03'37	
direct	15616 Dec 03 01:48	7° \mathbb{Y} 53'22		retrograde	15623 Jul 14 12:32	25° \mathbb{Y} 56'46	
evening set	15617 Mar 02 06:22	9° \mathbb{Y} 47'20		opposition	15623 Sep 30 16:31	24° \mathbb{Y} 34'02	0°26'31
				min. Earth dist.	15623 Sep 30 22:11	24° \mathbb{Y} 33'38	29.32877 AU
conjunction	15617 Mar 18 08:22	10° \mathbb{Y} 22'42	0°25'32	direct	15623 Dec 19 04:29	23° \mathbb{Y} 09'56	
minimum elong	15617 Mar 18 08:22	10° \mathbb{Y} 22'42	0°25'28	evening set	15624 Mar 17 17:23	25° \mathbb{Y} 03'58	
max. Earth dist.	15617 Mar 18 04:42	10° \mathbb{Y} 22'22	31.26416 AU				
morning rise	15617 Apr 03 09:38	10° \mathbb{Y} 58'01		conjunction	15624 Apr 02 18:36	25° \mathbb{Y} 39'13	0°24'44
retrograde	15617 Jun 30 22:57	12° \mathbb{Y} 51'36		minimum elong	15624 Apr 02 18:37	25° \mathbb{Y} 39'13	0°24'26
opposition	15617 Sep 17 03:52	11° \mathbb{Y} 28'30	0°27'15	max. Earth dist.	15624 Apr 02 11:09	25° \mathbb{Y} 38'32	31.33156 AU
min. Earth dist.	15617 Sep 17 06:55	11° \mathbb{Y} 28'17	29.26967 AU	morning rise	15624 Apr 18 18:33	26° \mathbb{Y} 14'24	
direct	15617 Dec 05 11:37	10° \mathbb{Y} 04'19		retrograde	15624 Jul 15 22:56	28° \mathbb{Y} 07'28	
evening set	15618 Mar 04 18:03	11° \mathbb{Y} 58'17		opposition	15624 Oct 02 02:43	26° \mathbb{Y} 44'44	0°26'15
				min. Earth dist.	15624 Oct 02 09:56	26° \mathbb{Y} 44'14	29.33430 AU
conjunction	15618 Mar 20 20:08	12° \mathbb{Y} 33'38	0°25'32	direct	15624 Dec 20 15:47	25° \mathbb{Y} 20'37	
minimum elong	15618 Mar 20 20:08	12° \mathbb{Y} 33'38	0°25'25	evening set	15625 Mar 20 05:03	27° \mathbb{Y} 14'38	
max. Earth dist.	15618 Mar 20 17:07	12° \mathbb{Y} 33'22	31.27517 AU				
morning rise	15618 Apr 05 21:10	13° \mathbb{Y} 08'56		conjunction	15625 Apr 05 06:10	27° \mathbb{Y} 49'53	0°24'29
retrograde	15618 Jul 03 09:25	15° \mathbb{Y} 02'25		minimum elong	15625 Apr 05 06:10	27° \mathbb{Y} 49'53	0°24'10
opposition	15618 Sep 19 13:56	13° \mathbb{Y} 39'24	0°27'14	max. Earth dist.	15625 Apr 04 22:18	27° \mathbb{Y} 49'10	31.33656 AU
min. Earth dist.	15618 Sep 19 16:54	13° \mathbb{Y} 39'12	29.28088 AU	morning rise	15625 Apr 21 05:55	28° \mathbb{Y} 25'02	
direct	15618 Dec 07 23:51	12° \mathbb{Y} 15'15			15625 Jun 15 11:46	0° \mathbb{B}	
evening set	15619 Mar 07 06:03	14° \mathbb{Y} 09'14		retrograde	15625 Jul 18 09:46	0° \mathbb{B} 18'01	
					15625 Aug 20 19:21	30° \mathbb{R} \mathbb{Y}	
conjunction	15619 Mar 23 07:52	14° \mathbb{Y} 44'35	0°25'29	opposition	15625 Oct 04 12:43	28° \mathbb{Y} 55'17	0°25'58
minimum elong	15619 Mar 23 07:52	14° \mathbb{Y} 44'35	0°25'21	min. Earth dist.	15625 Oct 04 19:37	28° \mathbb{Y} 54'49	29.33872 AU

direct	15625 Dec 23 04:44	27° Υ 31'08		minimum elong	15632 Apr 20 12:38	13° \mathcal{B} 01'13	0°21'14
evening set	15626 Mar 22 16:39	29° Υ 25'09		max. Earth dist.	15632 Apr 20 02:43	13° \mathcal{B} 00'19	31.36960 AU
				morning rise	15632 May 06 10:51	13° \mathcal{B} 36'16	
conjunction	15626 Apr 07 17:33	0° \mathcal{B} 00'22	0°24'12		15632 Jun 21 10:05	15° \mathcal{B}	
minimum elong	15626 Apr 07 17:34	0° \mathcal{B} 00'22	0°23'50	retrograde	15632 Aug 02 06:27	15° \mathcal{B} 28'53	
max. Earth dist.	15626 Apr 07 08:35	29° Υ 59'33	31.34058 AU		15632 Sep 14 05:05	15° \mathcal{R} \mathcal{B}	
	15626 Apr 07 13:27	0° \mathcal{B}		opposition	15632 Oct 19 10:49	14° \mathcal{B} 06'24	0°22'56
morning rise	15626 Apr 23 17:11	0° \mathcal{B} 35'30		min. Earth dist.	15632 Oct 19 19:14	14° \mathcal{B} 05'49	29.37269 AU
retrograde	15626 Jul 20 20:03	2° \mathcal{B} 28'25		direct	15633 Jan 07 06:42	12° \mathcal{B} 42'16	
opposition	15626 Oct 06 22:48	1° \mathcal{B} 05'41	0°25'38	evening set	15633 Apr 07 00:08	14° \mathcal{B} 36'23	
min. Earth dist.	15626 Oct 07 06:48	1° \mathcal{B} 05'08	29.34251 AU		15633 Apr 17 18:58	15° \mathcal{B}	
	15626 Nov 21 07:41	30° \mathcal{R} Υ					
direct	15626 Dec 25 15:03	29° Υ 41'30		conjunction	15633 Apr 22 23:44	15° \mathcal{B} 11'31	0°21'15
	15627 Jan 28 10:07	0° \mathcal{B}		minimum elong	15633 Apr 22 23:45	15° \mathcal{B} 11'31	0°20'43
evening set	15627 Mar 25 04:09	1° \mathcal{B} 35'30		max. Earth dist.	15633 Apr 22 13:31	15° \mathcal{B} 10'35	31.37546 AU
				morning rise	15633 May 08 21:40	15° \mathcal{B} 46'32	
conjunction	15627 Apr 10 05:01	2° \mathcal{B} 10'42	0°23'52	retrograde	15633 Aug 04 17:04	17° \mathcal{B} 39'09	
minimum elong	15627 Apr 10 05:01	2° \mathcal{B} 10'42	0°23'29	opposition	15633 Oct 21 20:58	16° \mathcal{B} 16'42	0°22'21
max. Earth dist.	15627 Apr 09 20:34	2° \mathcal{B} 09'56	31.34416 AU	min. Earth dist.	15633 Oct 22 06:46	16° \mathcal{B} 16'02	29.37826 AU
morning rise	15627 Apr 26 04:18	2° \mathcal{B} 45'49			15633 Dec 19 07:19	15° \mathcal{R} \mathcal{B}	
retrograde	15627 Jul 23 05:48	4° \mathcal{B} 38'37		direct	15634 Jan 09 17:04	14° \mathcal{B} 52'37	
opposition	15627 Oct 09 08:43	3° \mathcal{B} 15'54	0°25'16		15634 Jan 31 01:27	15° \mathcal{B}	
min. Earth dist.	15627 Oct 09 16:47	3° \mathcal{B} 15'21	29.34597 AU	evening set	15634 Apr 09 11:25	16° \mathcal{B} 46'46	
direct	15627 Dec 28 03:50	1° \mathcal{B} 51'42					
evening set	15628 Mar 26 15:42	3° \mathcal{B} 45'41		conjunction	15634 Apr 25 10:53	17° \mathcal{B} 21'53	0°20'43
				minimum elong	15634 Apr 25 10:53	17° \mathcal{B} 21'53	0°20'07
conjunction	15628 Apr 11 16:12	4° \mathcal{B} 20'53	0°23'31	max. Earth dist.	15634 Apr 25 00:23	17° \mathcal{B} 20'55	31.38052 AU
minimum elong	15628 Apr 11 16:12	4° \mathcal{B} 20'53	0°23'05	morning rise	15634 May 11 08:34	17° \mathcal{B} 56'53	
max. Earth dist.	15628 Apr 11 06:28	4° \mathcal{B} 19'59	31.34779 AU	retrograde	15634 Aug 07 03:50	19° \mathcal{B} 49'29	
morning rise	15628 Apr 27 15:24	4° \mathcal{B} 55'58		opposition	15634 Oct 24 07:06	18° \mathcal{B} 27'05	0°21'45
retrograde	15628 Jul 24 16:30	6° \mathcal{B} 48'43		min. Earth dist.	15634 Oct 24 16:38	18° \mathcal{B} 26'25	29.38259 AU
opposition	15628 Oct 10 18:45	5° \mathcal{B} 26'00	0°24'52	direct	15635 Jan 12 05:26	17° \mathcal{B} 02'59	
min. Earth dist.	15628 Oct 11 02:48	5° \mathcal{B} 25'27	29.34996 AU	evening set	15635 Apr 11 22:52	18° \mathcal{B} 57'10	
direct	15628 Dec 29 13:42	4° \mathcal{B} 01'47					
evening set	15629 Mar 29 02:50	5° \mathcal{B} 55'46		conjunction	15635 Apr 27 21:58	19° \mathcal{B} 32'16	0°20'08
				minimum elong	15635 Apr 27 21:59	19° \mathcal{B} 32'16	0°19'32
conjunction	15629 Apr 14 03:20	6° \mathcal{B} 30'56	0°23'08	max. Earth dist.	15635 Apr 27 10:15	19° \mathcal{B} 31'12	31.38413 AU
minimum elong	15629 Apr 14 03:20	6° \mathcal{B} 30'56	0°22'41	morning rise	15635 May 13 19:27	20° \mathcal{B} 07'15	
max. Earth dist.	15629 Apr 13 18:35	6° \mathcal{B} 30'08	31.35207 AU	retrograde	15635 Aug 09 14:47	21° \mathcal{B} 59'49	
morning rise	15629 Apr 30 02:08	7° \mathcal{B} 06'01		opposition	15635 Oct 26 17:20	20° \mathcal{B} 37'27	0°21'07
retrograde	15629 Jul 27 00:13	8° \mathcal{B} 58'43		min. Earth dist.	15635 Oct 27 03:56	20° \mathcal{B} 36'43	29.38559 AU
opposition	15629 Oct 13 04:51	7° \mathcal{B} 36'02	0°24'26	direct	15636 Jan 14 15:45	19° \mathcal{B} 13'21	
min. Earth dist.	15629 Oct 13 13:22	7° \mathcal{B} 35'26	29.35464 AU	evening set	15636 Apr 13 10:06	21° \mathcal{B} 07'33	
direct	15630 Jan 01 00:58	6° \mathcal{B} 11'49					
evening set	15630 Mar 31 14:15	8° \mathcal{B} 05'48		conjunction	15636 Apr 29 09:08	21° \mathcal{B} 42'38	0°19'32
				minimum elong	15636 Apr 29 09:08	21° \mathcal{B} 42'38	0°18'54
conjunction	15630 Apr 16 14:26	8° \mathcal{B} 40'58	0°22'42	max. Earth dist.	15636 Apr 28 21:50	21° \mathcal{B} 41'36	31.38640 AU
minimum elong	15630 Apr 16 14:26	8° \mathcal{B} 40'58	0°22'14	morning rise	15636 May 15 06:14	22° \mathcal{B} 17'35	
max. Earth dist.	15630 Apr 16 04:32	8° \mathcal{B} 40'04	31.35731 AU	retrograde	15636 Aug 11 01:19	24° \mathcal{B} 10'07	
morning rise	15630 May 02 13:11	9° \mathcal{B} 16'02		opposition	15636 Oct 28 03:36	22° \mathcal{B} 47'45	0°20'28
retrograde	15630 Jul 29 10:31	11° \mathcal{B} 08'41		min. Earth dist.	15636 Oct 28 14:28	22° \mathcal{B} 47'00	29.38709 AU
opposition	15630 Oct 15 14:41	9° \mathcal{B} 46'04	0°23'58	direct	15637 Jan 16 05:14	21° \mathcal{B} 23'38	
min. Earth dist.	15630 Oct 15 22:38	9° \mathcal{B} 45'31	29.36032 AU	evening set	15637 Apr 15 21:17	23° \mathcal{B} 17'49	
direct	15631 Jan 03 10:25	8° \mathcal{B} 21'51					
evening set	15631 Apr 03 01:33	10° \mathcal{B} 15'53		conjunction	15637 May 01 19:57	23° \mathcal{B} 52'54	0°18'54
				minimum elong	15637 May 01 19:57	23° \mathcal{B} 52'54	0°18'16
conjunction	15631 Apr 19 01:40	10° \mathcal{B} 51'03	0°22'15	max. Earth dist.	15637 May 01 07:06	23° \mathcal{B} 51'43	31.38729 AU
minimum elong	15631 Apr 19 01:40	10° \mathcal{B} 51'03	0°21'46	morning rise	15637 May 17 16:59	24° \mathcal{B} 27'50	
max. Earth dist.	15631 Apr 18 16:25	10° \mathcal{B} 50'12	31.36328 AU	retrograde	15637 Aug 13 12:01	26° \mathcal{B} 20'19	
morning rise	15631 May 05 00:02	11° \mathcal{B} 26'06		opposition	15637 Oct 30 13:50	24° \mathcal{B} 57'56	0°19'46
retrograde	15631 Jul 31 19:34	13° \mathcal{B} 18'44		min. Earth dist.	15637 Oct 31 00:54	24° \mathcal{B} 57'10	29.38741 AU
opposition	15631 Oct 18 00:49	11° \mathcal{B} 56'10	0°23'28	direct	15638 Jan 18 16:03	23° \mathcal{B} 33'48	
min. Earth dist.	15631 Oct 18 09:57	11° \mathcal{B} 55'33	29.36651 AU	evening set	15638 Apr 18 08:24	25° \mathcal{B} 27'58	
direct	15632 Jan 05 19:07	10° \mathcal{B} 32'01					
evening set	15632 Apr 04 12:49	12° \mathcal{B} 26'05		conjunction	15638 May 04 07:02	26° \mathcal{B} 03'01	0°18'15
				minimum elong	15638 May 04 07:02	26° \mathcal{B} 03'01	0°17'34
conjunction	15632 Apr 20 12:38	13° \mathcal{B} 01'13	0°21'46	max. Earth dist.	15638 May 03 18:47	26° \mathcal{B} 01'54	31.38701 AU

morning rise	15638 May 20 03:39	26° 8 37'57		minimum elong	15644 May 16 22:47	9° II 01'09	0°13'03
retrograde	15638 Aug 15 19:46	28° 8 30'21		behind sun begin	15644 May 16 18:53	9° II 00'49	
opposition	15638 Nov 01 23:59	27° 8 07'58	0°19'03	behind sun end	15644 May 17 02:40	9° II 01'30	
min. Earth dist.	15638 Nov 02 11:59	27° 8 07'08	29.38662 AU	max. Earth dist.	15644 May 16 09:32	8° II 59'56	31.38576 AU
direct	15639 Jan 21 03:49	25° 8 43'47		morning rise	15644 Jun 01 17:59	9° II 36'00	
evening set	15639 Apr 20 19:35	27° 8 37'56		retrograde	15644 Aug 28 07:35	11° II 28'20	
				opposition	15644 Nov 14 13:36	10° II 05'59	0°14'15
conjunction	15639 May 06 17:49	28° 8 12'58	0°17'34	min. Earth dist.	15644 Nov 15 01:23	10° II 05'11	29.38665 AU
minimum elong	15639 May 06 17:49	28° 8 12'58	0°16'53	direct	15645 Feb 02 18:34	8° II 41'48	
max. Earth dist.	15639 May 06 04:19	28° 8 11'44	31.38597 AU	evening set	15645 May 03 12:27	10° II 36'02	
morning rise	15639 May 22 14:21	28° 8 47'53					
	15639 Jun 29 11:21	0° II		conjunction	15645 May 19 09:21	11° II 11'01	0°13'01
retrograde	15639 Aug 18 05:50	0° II 40'14		minimum elong	15645 May 19 09:21	11° II 11'01	0°12'14
	15639 Oct 08 14:49	30° 8		behind sun begin	15645 May 19 05:01	11° II 10'38	
opposition	15639 Nov 04 10:09	29° 8 17'49	0°18'19	behind sun end	15645 May 19 13:41	11° II 11'24	
min. Earth dist.	15639 Nov 04 21:35	29° 8 17'02	29.38539 AU	max. Earth dist.	15645 May 18 21:04	11° II 09'53	31.38722 AU
direct	15640 Jan 23 14:21	27° 8 53'35		morning rise	15645 Jun 04 04:12	11° II 45'51	
evening set	15640 Apr 22 06:24	29° 8 47'43		retrograde	15645 Aug 30 18:17	13° II 38'13	
	15640 Apr 27 21:45	0° II		opposition	15645 Nov 17 00:05	12° II 15'56	0°13'22
				min. Earth dist.	15645 Nov 17 12:00	12° II 15'07	29.38777 AU
conjunction	15640 May 08 04:30	0° II 22'44	0°16'52	direct	15646 Feb 05 07:28	10° II 51'47	
minimum elong	15640 May 08 04:29	0° II 22'44	0°16'09	evening set	15646 May 05 23:28	12° II 46'05	
max. Earth dist.	15640 May 07 15:42	0° II 21'34	31.38459 AU				
morning rise	15640 May 24 00:37	0° II 57'38		conjunction	15646 May 21 19:57	13° II 21'03	0°12'11
retrograde	15640 Aug 19 14:14	2° II 49'57		minimum elong	15646 May 21 19:57	13° II 21'03	0°11'22
opposition	15640 Nov 05 20:30	1° II 27'31	0°17'33	behind sun begin	15646 May 21 15:13	13° II 20'38	
min. Earth dist.	15640 Nov 06 08:56	1° II 26'39	29.38417 AU	behind sun end	15646 May 22 00:41	13° II 21'28	
direct	15641 Jan 24 24:00	0° II 03'15		max. Earth dist.	15646 May 21 06:19	13° II 19'48	31.38799 AU
evening set	15641 Apr 24 17:16	1° II 57'21		morning rise	15646 Jun 06 14:41	13° II 55'53	
				retrograde	15646 Sep 02 05:48	15° II 48'17	
conjunction	15641 May 10 15:04	2° II 32'21	0°16'08	opposition	15646 Nov 19 10:29	14° II 26'03	0°12'28
minimum elong	15641 May 10 15:04	2° II 32'21	0°15'25	min. Earth dist.	15646 Nov 19 22:23	14° II 25'14	29.38812 AU
behind sun begin	15641 May 10 13:19	2° II 32'12		direct	15647 Feb 07 17:58	13° II 01'57	
behind sun end	15641 May 10 16:48	2° II 32'31		evening set	15647 May 08 10:22	14° II 56'18	
max. Earth dist.	15641 May 10 01:59	2° II 31'09	31.38370 AU				
morning rise	15641 May 26 11:01	3° II 07'14		conjunction	15647 May 24 06:45	15° II 31'16	0°11'20
retrograde	15641 Aug 21 23:58	4° II 59'31		minimum elong	15647 May 24 06:44	15° II 31'15	0°10'32
opposition	15641 Nov 08 06:33	3° II 37'04	0°16'46	behind sun begin	15647 May 24 01:41	15° II 30'49	
min. Earth dist.	15641 Nov 08 17:53	3° II 36'18	29.38363 AU	behind sun end	15647 May 24 11:48	15° II 31'42	
direct	15642 Jan 27 11:28	2° II 12'47		max. Earth dist.	15647 May 23 17:48	15° II 30'04	31.38767 AU
evening set	15642 Apr 27 04:07	4° II 06'54		morning rise	15647 Jun 09 01:01	16° II 06'04	
				retrograde	15647 Sep 04 14:28	17° II 58'31	
conjunction	15642 May 13 01:41	4° II 41'54	0°15'23	opposition	15647 Nov 21 21:14	16° II 36'19	0°11'33
minimum elong	15642 May 13 01:41	4° II 41'54	0°14'38	min. Earth dist.	15647 Nov 22 10:03	16° II 35'26	29.38711 AU
behind sun begin	15642 May 12 22:59	4° II 41'40		direct	15648 Feb 10 05:35	15° II 12'15	
behind sun end	15642 May 13 04:23	4° II 42'08		evening set	15648 May 09 21:15	17° II 06'37	
max. Earth dist.	15642 May 12 12:37	4° II 40'42	31.38354 AU				
morning rise	15642 May 28 21:22	5° II 16'46		conjunction	15648 May 25 17:12	17° II 41'35	0°10'28
retrograde	15642 Aug 24 09:55	7° II 09'03		minimum elong	15648 May 25 17:12	17° II 41'35	0°09'38
opposition	15642 Nov 10 16:56	5° II 46'37	0°15'57	behind sun begin	15648 May 25 11:50	17° II 41'06	
min. Earth dist.	15642 Nov 11 05:01	5° II 45'47	29.38400 AU	behind sun end	15648 May 25 22:33	17° II 42'03	
direct	15643 Jan 29 21:07	4° II 22'20		max. Earth dist.	15648 May 25 03:04	17° II 40'17	31.38602 AU
evening set	15643 Apr 29 14:54	6° II 16'29		morning rise	15648 Jun 10 11:22	18° II 16'23	
				retrograde	15648 Sep 06 01:18	20° II 08'52	
conjunction	15643 May 15 12:16	6° II 51'28	0°14'37	opposition	15648 Nov 23 07:53	18° II 46'41	0°10'36
minimum elong	15643 May 15 12:16	6° II 51'28	0°13'52	min. Earth dist.	15648 Nov 23 20:08	18° II 45'51	29.38472 AU
behind sun begin	15643 May 15 08:55	6° II 51'10		direct	15649 Feb 11 16:16	17° II 22'37	
behind sun end	15643 May 15 15:37	6° II 51'46		evening set	15649 May 12 08:07	19° II 17'01	
max. Earth dist.	15643 May 14 23:42	6° II 50'19	31.38439 AU				
morning rise	15643 May 31 07:38	7° II 26'19		conjunction	15649 May 28 03:56	19° II 51'59	0°09'35
retrograde	15643 Aug 26 20:13	9° II 18'37		minimum elong	15649 May 28 03:55	19° II 51'58	0°08'46
opposition	15643 Nov 13 03:11	7° II 56'13	0°15'07	behind sun begin	15649 May 27 22:18	19° II 51'29	
min. Earth dist.	15643 Nov 13 14:28	7° II 55'27	29.38509 AU	behind sun end	15649 May 28 09:32	19° II 52'28	
direct	15644 Feb 01 08:46	6° II 31'59		max. Earth dist.	15649 May 27 14:06	19° II 50'42	31.38279 AU
evening set	15644 May 01 01:47	8° II 26'11		morning rise	15649 Jun 12 21:43	20° II 26'47	
				retrograde	15649 Sep 08 10:23	22° II 19'16	
conjunction	15644 May 16 22:47	9° II 01'09	0°13'50	opposition	15649 Nov 25 18:35	20° II 57'06	0°09'39

min. Earth dist.	15649 Nov 26 08:11	20°II56'10	29.38079 AU	conjunction	15655 Jun 10 18:27	2°☾53'25	0°04'05
direct	15650 Feb 14 01:52	19°II33'02		minimum elong	15655 Jun 10 18:28	2°☾53'25	0°03'14
evening set	15650 May 14 19:02	21°II27'27		behind sun begin	15655 Jun 10 12:01	2°☾52'50	
				behind sun end	15655 Jun 11 00:54	2°☾53'59	
conjunction	15650 May 30 14:33	22°II02'23	0°08'42	max. Earth dist.	15655 Jun 10 04:12	2°☾52'06	31.34717 AU
minimum elong	15650 May 30 14:33	22°II02'23	0°07'51	morning rise	15655 Jun 26 10:57	3°☾28'09	
behind sun begin	15650 May 30 08:43	22°II01'52		retrograde	15655 Sep 22 01:07	5°☾20'47	
behind sun end	15650 May 30 20:23	22°II02'54		opposition	15655 Dec 09 11:21	3°☾58'26	0°03'44
max. Earth dist.	15650 May 30 00:10	22°II01'03	31.37821 AU	min. Earth dist.	15655 Dec 09 23:33	3°☾57'36	29.34487 AU
morning rise	15650 Jun 15 08:11	22°II37'11		direct	15656 Feb 27 21:11	2°☾34'14	
retrograde	15650 Sep 10 20:01	24°II29'41		evening set	15656 May 27 10:38	4°☾28'42	
opposition	15650 Nov 28 05:15	23°II07'30	0°08'41				
min. Earth dist.	15650 Nov 28 18:05	23°II06'37	29.37546 AU	conjunction	15656 Jun 12 04:43	5°☾03'35	0°03'08
direct	15651 Feb 16 13:52	21°II43'24		minimum elong	15656 Jun 12 04:42	5°☾03'35	0°02'16
evening set	15651 May 17 05:49	23°II37'49		behind sun begin	15656 Jun 11 22:13	5°☾03'00	
max. Earth dist.	15651 Jun 01 10:21	24°II11'24	31.37225 AU	behind sun end	15656 Jun 12 11:10	5°☾04'09	
				max. Earth dist.	15656 Jun 11 15:45	5°☾02'23	31.34244 AU
conjunction	15651 Jun 02 01:04	24°II12'45	0°07'47	morning rise	15656 Jun 27 20:48	5°☾38'19	
minimum elong	15651 Jun 02 01:03	24°II12'45	0°06'57	retrograde	15656 Sep 23 10:28	7°☾31'00	
behind sun begin	15651 Jun 01 19:02	24°II12'13		opposition	15656 Dec 10 22:23	6°☾08'40	0°02'43
behind sun end	15651 Jun 02 07:04	24°II13'17		min. Earth dist.	15656 Dec 11 11:03	6°☾07'48	29.34031 AU
morning rise	15651 Jun 17 18:25	24°II47'32		direct	15657 Mar 01 09:08	4°☾44'30	
retrograde	15651 Sep 13 05:49	26°II40'04		evening set	15657 May 29 21:15	6°☾39'00	
opposition	15651 Nov 30 16:05	25°II17'50	0°07'43				
min. Earth dist.	15651 Dec 01 05:53	25°II16'53	29.36912 AU	conjunction	15657 Jun 14 14:56	7°☾13'52	0°02'10
direct	15652 Feb 18 23:21	23°II53'42		minimum elong	15657 Jun 14 14:57	7°☾13'52	0°01'19
evening set	15652 May 18 16:28	25°II48'07		behind sun begin	15657 Jun 14 08:28	7°☾13'18	
				behind sun end	15657 Jun 14 21:25	7°☾14'27	
conjunction	15652 Jun 03 11:31	26°II23'02	0°06'53	max. Earth dist.	15657 Jun 14 01:22	7°☾12'37	31.33806 AU
minimum elong	15652 Jun 03 11:31	26°II23'02	0°06'01	morning rise	15657 Jun 30 06:59	7°☾48'37	
behind sun begin	15652 Jun 03 05:21	26°II22'29		retrograde	15657 Sep 25 22:04	9°☾41'21	
behind sun end	15652 Jun 03 17:42	26°II23'35		opposition	15657 Dec 13 09:13	8°☾19'02	0°01'42
max. Earth dist.	15652 Jun 02 21:20	26°II21'43	31.36566 AU	min. Earth dist.	15657 Dec 13 20:57	8°☾18'14	29.33584 AU
morning rise	15652 Jun 19 04:36	26°II57'48		direct	15658 Mar 03 20:35	6°☾54'53	
retrograde	15652 Sep 14 15:44	28°II50'20		evening set	15658 Jun 01 07:52	8°☾49'26	
opposition	15652 Dec 02 02:48	27°II28'04	0°06'44				
min. Earth dist.	15652 Dec 02 15:53	27°II27'10	29.36232 AU	conjunction	15658 Jun 17 01:25	9°☾24'19	0°01'10
direct	15653 Feb 20 10:53	26°II03'53		minimum elong	15658 Jun 17 01:24	9°☾24'19	0°00'18
evening set	15653 May 21 03:04	27°II58'18		behind sun begin	15658 Jun 16 18:58	9°☾23'44	
				behind sun end	15658 Jun 17 07:50	9°☾24'53	
conjunction	15653 Jun 05 21:45	28°II33'12	0°05'58	max. Earth dist.	15658 Jun 16 12:25	9°☾23'07	31.33331 AU
minimum elong	15653 Jun 05 21:46	28°II33'12	0°05'06	morning rise	15658 Jul 02 17:06	9°☾59'03	
behind sun begin	15653 Jun 05 15:28	28°II32'39		retrograde	15658 Sep 28 07:41	11°☾51'52	
behind sun end	15653 Jun 06 04:04	28°II33'46		opposition	15658 Dec 15 20:27	10°☾29'34	0°00'40
max. Earth dist.	15653 Jun 05 06:58	28°II31'50	31.35888 AU	min. Earth dist.	15658 Dec 16 09:15	10°☾28'41	29.33080 AU
morning rise	15653 Jun 21 14:44	29°II07'58		direct	15659 Mar 06 06:56	9°☾05'27	
	15653 Jul 17 09:07	0°☾		evening set	15659 Jun 03 18:29	11°☾00'01	
retrograde	15653 Sep 17 03:04	1°☾00'31					
	15653 Nov 21 03:26	30°☾II		conjunction	15659 Jun 19 11:42	11°☾34'53	0°00'11
opposition	15653 Dec 04 13:38	29°II38'12	0°05'44	minimum elong	15659 Jun 19 11:42	11°☾34'53	0°00'41
min. Earth dist.	15653 Dec 05 02:54	29°II37'18	29.35581 AU	behind sun begin	15659 Jun 19 05:14	11°☾34'19	
direct	15654 Feb 22 21:30	28°II14'00		behind sun end	15659 Jun 19 18:09	11°☾35'27	
	15654 May 19 15:48	0°☾		max. Earth dist.	15659 Jun 18 22:38	11°☾33'41	31.32788 AU
evening set	15654 May 23 13:37	0°☾08'25		morning rise	15659 Jul 05 03:13	12°☾09'38	
				desc. node	15659 Aug 28 07:55	13°☾43'53	
conjunction	15654 Jun 08 08:13	0°☾43'19	0°05'02	retrograde	15659 Sep 30 17:35	14°☾02'30	
minimum elong	15654 Jun 08 08:12	0°☾43'19	0°04'10	opposition	15659 Dec 18 07:40	12°☾40'13	-0°00'21
behind sun begin	15654 Jun 08 01:49	0°☾42'45		min. Earth dist.	15659 Dec 18 19:27	12°☾39'25	29.32479 AU
behind sun end	15654 Jun 08 14:35	0°☾43'53		direct	15660 Mar 07 18:38	11°☾16'07	
max. Earth dist.	15654 Jun 07 18:43	0°☾42'04	31.35261 AU	evening set	15660 Jun 05 05:12	13°☾10'43	
morning rise	15654 Jun 24 00:46	1°☾18'04					
retrograde	15654 Sep 19 13:41	3°☾10'38		conjunction	15660 Jun 20 22:06	13°☾45'35	-0°00'49
opposition	15654 Dec 07 00:26	1°☾48'18	0°04'44	minimum elong	15660 Jun 20 22:08	13°☾45'35	0°01'41
min. Earth dist.	15654 Dec 07 13:25	1°☾47'25	29.34986 AU	behind sun begin	15660 Jun 20 15:39	13°☾45'00	
direct	15655 Feb 25 10:41	0°☾24'05		behind sun end	15660 Jun 21 04:36	13°☾46'09	
evening set	15655 May 26 00:19	2°☾18'32		max. Earth dist.	15660 Jun 20 08:43	13°☾44'21	31.32124 AU
				morning rise	15660 Jul 06 13:26	14°☾20'19	

retrograde	15660 Oct 02 03:55	16°☾13'17		minimum elong	15666 Jul 04 12:20	26°☾50'28	0°07'17
opposition	15660 Dec 19 19:01	14°☾50'59 -0°01'22		behind sun begin	15666 Jul 04 06:24	26°☾49'56	
min. Earth dist.	15660 Dec 20 07:43	14°☾50'07 29.31762 AU		behind sun end	15666 Jul 04 18:16	26°☾51'00	
direct	15661 Mar 10 03:51	13°☾26'53		max. Earth dist.	15666 Jul 03 23:34	26°☾49'17	31.25750 AU
evening set	15661 Jun 07 15:48	15°☾21'30		morning rise	15666 Jul 20 02:35	27°☾25'12	
				retrograde	15666 Oct 15 22:22	29°☾18'32	
conjunction	15661 Jun 23 08:37	15°☾56'22 -0°01'47		opposition	15667 Jan 02 15:39	27°☾55'57 -0°07'24	
minimum elong	15661 Jun 23 08:37	15°☾56'22 0°02'38		min. Earth dist.	15667 Jan 03 02:34	27°☾55'12	29.25202 AU
behind sun begin	15661 Jun 23 02:10	15°☾55'48		direct	15667 Mar 24 02:53	26°☾31'43	
behind sun end	15661 Jun 23 15:04	15°☾56'57		evening set	15667 Jun 21 07:07	28°☾26'24	
max. Earth dist.	15661 Jun 22 19:40	15°☾55'11 31.31337 AU					
morning rise	15661 Jul 08 23:40	16°☾31'07		conjunction	15667 Jul 06 22:30	29°☾01'15 -0°07'23	
retrograde	15661 Oct 04 14:15	18°☾24'08		minimum elong	15667 Jul 06 22:31	29°☾01'15 0°08'10	
opposition	15661 Dec 22 06:23	17°☾01'49 -0°02'24		behind sun begin	15667 Jul 06 16:46	29°☾00'45	
min. Earth dist.	15661 Dec 22 18:34	17°☾00'59 29.30888 AU		behind sun end	15667 Jul 07 04:15	29°☾01'46	
direct	15662 Mar 12 15:34	15°☾37'43		max. Earth dist.	15667 Jul 06 10:47	29°☾00'10	31.24662 AU
evening set	15662 Jun 10 02:37	17°☾32'21		morning rise	15667 Jul 22 12:28	29°☾36'00	
					15667 Aug 02 18:20	0°☾	
conjunction	15662 Jun 25 19:02	18°☾07'13 -0°02'44		retrograde	15667 Oct 18 08:12	1°☾29'26	
minimum elong	15662 Jun 25 19:03	18°☾07'13 0°03'35		opposition	15668 Jan 05 03:22	0°☾06'49 -0°08'22	
behind sun begin	15662 Jun 25 12:38	18°☾06'39		min. Earth dist.	15668 Jan 05 14:43	0°☾06'02	29.24174 AU
behind sun end	15662 Jun 26 01:27	18°☾07'47			15668 Jan 09 07:09	30°☾	
max. Earth dist.	15662 Jun 25 05:07	18°☾05'56 31.30388 AU		direct	15668 Mar 25 13:44	28°☾42'36	
morning rise	15662 Jul 11 10:00	18°☾41'58			15668 Jun 04 21:21	0°☾	
retrograde	15662 Oct 07 02:00	20°☾35'03		evening set	15668 Jun 22 17:33	0°☾37'19	
opposition	15662 Dec 24 17:47	19°☾12'42 -0°03'24					
min. Earth dist.	15662 Dec 25 06:22	19°☾11'50 29.29876 AU		conjunction	15668 Jul 08 08:44	1°☾12'10 -0°08'17	
direct	15663 Mar 15 02:07	17°☾48'34		minimum elong	15668 Jul 08 08:44	1°☾12'10 0°09'04	
evening set	15663 Jun 12 13:14	19°☾43'14		behind sun begin	15668 Jul 08 03:14	1°☾11'40	
				behind sun end	15668 Jul 08 14:14	1°☾12'39	
conjunction	15663 Jun 28 05:36	20°☾18'05 -0°03'41		max. Earth dist.	15668 Jul 07 21:34	1°☾11'08	31.23694 AU
minimum elong	15663 Jun 28 05:35	20°☾18'05 0°04'31		morning rise	15668 Jul 23 22:35	1°☾46'55	
behind sun begin	15663 Jun 27 23:15	20°☾17'31		retrograde	15668 Oct 19 18:00	3°☾40'27	
behind sun end	15663 Jun 28 11:55	20°☾18'39		opposition	15669 Jan 06 14:50	2°☾17'49 -0°09'20	
max. Earth dist.	15663 Jun 27 16:44	20°☾16'54 31.29310 AU		min. Earth dist.	15669 Jan 07 00:40	2°☾17'09	29.23246 AU
morning rise	15663 Jul 13 20:12	20°☾52'49		direct	15669 Mar 28 01:22	0°☾53'38	
retrograde	15663 Oct 09 12:47	22°☾45'59		evening set	15669 Jun 25 04:01	2°☾48'23	
opposition	15663 Dec 27 05:19	21°☾23'34 -0°04'25					
min. Earth dist.	15663 Dec 27 17:55	21°☾22'42 29.28735 AU		conjunction	15669 Jul 10 18:58	3°☾23'15 -0°09'11	
direct	15664 Mar 16 15:08	19°☾59'24		minimum elong	15669 Jul 10 18:58	3°☾23'15 0°09'56	
evening set	15664 Jun 13 23:46	21°☾54'04		behind sun begin	15669 Jul 10 13:43	3°☾22'46	
				behind sun end	15669 Jul 11 00:13	3°☾23'43	
conjunction	15664 Jun 29 15:44	22°☾28'55 -0°04'37		max. Earth dist.	15669 Jul 10 07:54	3°☾22'13	31.22800 AU
minimum elong	15664 Jun 29 15:44	22°☾28'55 0°05'28		morning rise	15669 Jul 26 08:43	3°☾58'00	
behind sun begin	15664 Jun 29 09:30	22°☾28'22		retrograde	15669 Oct 22 04:35	5°☾51'39	
behind sun end	15664 Jun 29 21:58	22°☾29'28		opposition	15670 Jan 09 02:36	4°☾29'01 -0°10'17	
max. Earth dist.	15664 Jun 29 02:00	22°☾27'39 31.28136 AU		min. Earth dist.	15670 Jan 09 12:49	4°☾28'20	29.22382 AU
morning rise	15664 Jul 15 06:22	23°☾03'39		direct	15670 Mar 30 10:21	3°☾04'52	
retrograde	15664 Oct 11 00:36	24°☾56'52		evening set	15670 Jun 27 14:28	4°☾59'39	
opposition	15664 Dec 28 16:45	23°☾34'23 -0°05'25					
min. Earth dist.	15664 Dec 29 04:42	23°☾33'34 29.27537 AU		conjunction	15670 Jul 13 05:19	5°☾34'32 -0°10'04	
direct	15665 Mar 19 02:00	22°☾10'11		minimum elong	15670 Jul 13 05:18	5°☾34'32 0°10'49	
evening set	15665 Jun 16 10:12	24°☾04'51		behind sun begin	15670 Jul 13 00:22	5°☾34'05	
				behind sun end	15670 Jul 13 10:15	5°☾34'58	
conjunction	15665 Jul 02 02:08	24°☾39'42 -0°05'33		max. Earth dist.	15670 Jul 12 19:19	5°☾33'36	31.21950 AU
minimum elong	15665 Jul 02 02:07	24°☾39'42 0°06'21		morning rise	15670 Jul 28 18:48	6°☾09'18	
behind sun begin	15665 Jul 01 20:01	24°☾39'10		retrograde	15670 Oct 24 15:06	8°☾03'04	
behind sun end	15665 Jul 02 08:13	24°☾40'15		opposition	15671 Jan 11 14:19	6°☾40'26 -0°11'13	
max. Earth dist.	15665 Jul 01 13:38	24°☾38'33 31.26921 AU		min. Earth dist.	15671 Jan 11 23:38	6°☾39'48	29.21523 AU
morning rise	15665 Jul 17 16:25	25°☾14'27		direct	15671 Apr 01 21:39	5°☾16'19	
retrograde	15665 Oct 13 10:18	27°☾07'43		evening set	15671 Jun 30 01:05	7°☾11'09	
opposition	15665 Dec 31 04:10	25°☾45'10 -0°06'24					
min. Earth dist.	15665 Dec 31 16:31	25°☾44'19 29.26332 AU		conjunction	15671 Jul 15 15:35	7°☾46'01 -0°10'56	
direct	15666 Mar 21 14:37	24°☾20'57		minimum elong	15671 Jul 15 15:35	7°☾46'01 0°11'39	
evening set	15666 Jun 18 20:47	26°☾15'37		behind sun begin	15671 Jul 15 10:59	7°☾45'36	
				behind sun end	15671 Jul 15 20:12	7°☾46'26	
conjunction	15666 Jul 04 12:20	26°☾50'28 -0°06'28		max. Earth dist.	15671 Jul 15 05:01	7°☾45'02	31.21086 AU

morning rise	15671 Jul 31 05:05	8°Ω20'48	direct	15677 Apr 14 19:58	18°Ω27'35
retrograde	15671 Oct 27 03:17	10°Ω14'42	evening set	15677 Jul 12 16:54	20°Ω22'28
opposition	15672 Jan 14 02:16	8°Ω52'03 -0°12'09			
min. Earth dist.	15672 Jan 14 11:35	8°Ω51'25 29.20651 AU	conjunction	15677 Jul 28 06:34	20°Ω57'20 -0°15'47
direct	15672 Apr 03 07:45	7°Ω27'58	minimum elong	15677 Jul 28 06:33	20°Ω57'20 0°16'23
evening set	15672 Jul 01 11:30	9°Ω22'50	max. Earth dist.	15677 Jul 27 22:00	20°Ω56'33 31.14114 AU
			morning rise	15677 Aug 12 19:23	21°Ω32'10
conjunction	15672 Jul 17 02:00	9°Ω57'42 -0°11'47	retrograde	15677 Nov 09 00:17	23°Ω26'35
minimum elong	15672 Jul 17 02:00	9°Ω57'42 0°12'30	opposition	15678 Jan 27 02:59	22°Ω03'36 -0°17'16
behind sun begin	15672 Jul 16 21:47	9°Ω57'20	min. Earth dist.	15678 Jan 27 10:28	22°Ω03'06 29.13421 AU
behind sun end	15672 Jul 17 06:13	9°Ω58'05	direct	15678 Apr 17 08:57	20°Ω39'25
max. Earth dist.	15672 Jul 16 16:49	9°Ω56'51 31.20179 AU	evening set	15678 Jul 15 03:30	22°Ω34'17
morning rise	15672 Aug 01 15:13	10°Ω32'29			
retrograde	15672 Oct 28 14:26	12°Ω26'30	conjunction	15678 Jul 30 16:55	23°Ω09'10 -0°16'31
opposition	15673 Jan 15 14:17	11°Ω03'51 -0°13'03	minimum elong	15678 Jul 30 16:55	23°Ω09'10 0°17'06
min. Earth dist.	15673 Jan 15 23:33	11°Ω03'13 29.19697 AU	max. Earth dist.	15678 Jul 30 08:30	23°Ω08'23 31.12736 AU
direct	15673 Apr 05 19:43	9°Ω39'47	morning rise	15678 Aug 15 05:41	23°Ω44'00
evening set	15673 Jul 03 22:17	11°Ω34'40	retrograde	15678 Nov 11 11:13	25°Ω38'30
			opposition	15679 Jan 29 15:20	24°Ω15'26 -0°18'02
conjunction	15673 Jul 19 12:25	12°Ω09'33 -0°12'37	min. Earth dist.	15679 Jan 29 22:57	24°Ω14'55 29.12092 AU
minimum elong	15673 Jul 19 12:25	12°Ω09'33 0°13'18	direct	15679 Apr 19 19:30	22°Ω51'14
behind sun begin	15673 Jul 19 08:39	12°Ω09'12	evening set	15679 Jul 17 14:01	24°Ω46'04
behind sun end	15673 Jul 19 16:11	12°Ω09'53			
max. Earth dist.	15673 Jul 19 02:17	12°Ω08'36 31.19181 AU	conjunction	15679 Aug 02 03:25	25°Ω20'58 -0°17'13
morning rise	15673 Aug 04 01:41	12°Ω44'21	minimum elong	15679 Aug 02 03:24	25°Ω20'57 0°17'46
retrograde	15673 Oct 31 02:59	14°Ω38'27	max. Earth dist.	15679 Aug 01 20:27	25°Ω20'19 31.11458 AU
opposition	15674 Jan 18 02:11	13°Ω15'46 -0°13'56	morning rise	15679 Aug 17 16:00	25°Ω55'48
min. Earth dist.	15674 Jan 18 10:51	13°Ω15'11 29.18649 AU	retrograde	15679 Nov 13 21:36	27°Ω50'25
direct	15674 Apr 08 06:01	11°Ω51'42	opposition	15680 Feb 01 03:36	26°Ω27'17 -0°18'47
evening set	15674 Jul 06 08:57	13°Ω46'37	min. Earth dist.	15680 Feb 01 09:51	26°Ω26'52 29.10866 AU
			direct	15680 Apr 21 07:42	25°Ω03'05
conjunction	15674 Jul 21 23:04	14°Ω21'30 -0°13'26	evening set	15680 Jul 19 00:34	26°Ω57'56
minimum elong	15674 Jul 21 23:04	14°Ω21'30 0°14'07			
behind sun begin	15674 Jul 21 19:50	14°Ω21'12	conjunction	15680 Aug 03 13:43	27°Ω32'49 -0°17'55
behind sun end	15674 Jul 22 02:17	14°Ω21'47	minimum elong	15680 Aug 03 13:43	27°Ω32'49 0°18'27
max. Earth dist.	15674 Jul 21 13:55	14°Ω20'39 31.18065 AU	max. Earth dist.	15680 Aug 03 06:32	27°Ω32'09 31.10296 AU
morning rise	15674 Aug 06 12:03	14°Ω56'18	morning rise	15680 Aug 19 02:26	28°Ω07'41
	15674 Aug 08 04:36	15°Ω		15680 Nov 03 11:02	0°൬
retrograde	15674 Nov 02 14:13	16°Ω50'30	retrograde	15680 Nov 15 09:30	0°൬02'24
opposition	15675 Jan 20 14:28	15°Ω27'46 -0°14'48		15680 Nov 27 11:46	30°℞Ω
min. Earth dist.	15675 Jan 20 23:43	15°Ω27'08 29.17470 AU	opposition	15681 Feb 02 15:57	28°Ω39'15 -0°19'30
	15675 Feb 06 20:26	15°℞Ω	min. Earth dist.	15681 Feb 02 21:46	28°Ω38'51 29.09769 AU
direct	15675 Apr 10 19:11	14°Ω03'41	direct	15681 Apr 23 17:37	27°Ω15'03
	15675 Jun 09 16:29	15°Ω	evening set	15681 Jul 21 11:06	29°Ω09'56
evening set	15675 Jul 08 19:38	15°Ω58'36			
			conjunction	15681 Aug 06 00:18	29°Ω44'50 -0°18'34
conjunction	15675 Jul 24 09:28	16°Ω33'29 -0°14'14	minimum elong	15681 Aug 06 00:18	29°Ω44'50 0°19'04
minimum elong	15675 Jul 24 09:28	16°Ω33'29 0°14'53	max. Earth dist.	15681 Aug 05 18:53	29°Ω44'20 31.09247 AU
behind sun begin	15675 Jul 24 06:54	16°Ω33'15		15681 Aug 12 17:06	0°൬
behind sun end	15675 Jul 24 12:02	16°Ω33'43	morning rise	15681 Aug 21 12:48	0°൬19'42
max. Earth dist.	15675 Jul 23 23:49	16°Ω32'35 31.16836 AU	retrograde	15681 Nov 17 20:24	2°൬14'34
morning rise	15675 Aug 08 22:28	17°Ω08'17	opposition	15682 Feb 05 04:16	0°൬51'23 -0°20'12
retrograde	15675 Nov 05 03:23	19°Ω02'35	min. Earth dist.	15682 Feb 05 09:37	0°൬51'01 29.08758 AU
opposition	15676 Jan 23 02:38	17°Ω39'46 -0°15'39		15682 Mar 10 18:28	30°℞Ω
min. Earth dist.	15676 Jan 23 10:44	17°Ω39'13 29.16182 AU	direct	15682 Apr 26 05:04	29°Ω27'14
direct	15676 Apr 12 08:16	16°Ω15'40		15682 Jun 10 03:05	0°൬
evening set	15676 Jul 10 06:17	18°Ω10'34	evening set	15682 Jul 23 21:52	1°൬22'09
conjunction	15676 Jul 25 20:03	18°Ω45'27 -0°15'01	conjunction	15682 Aug 08 10:47	1°൬57'04 -0°19'12
minimum elong	15676 Jul 25 20:03	18°Ω45'27 0°15'40	minimum elong	15682 Aug 08 10:47	1°൬57'04 0°19'42
behind sun begin	15676 Jul 25 18:27	18°Ω45'18	max. Earth dist.	15682 Aug 08 04:59	1°൬56'32 31.08284 AU
behind sun end	15676 Jul 25 21:39	18°Ω45'35	morning rise	15682 Aug 23 23:25	2°൬31'57
max. Earth dist.	15676 Jul 25 11:00	18°Ω44'37 31.15495 AU	retrograde	15682 Nov 20 09:44	4°൬26'58
morning rise	15676 Aug 10 08:55	19°Ω20'16	opposition	15683 Feb 07 16:46	3°൬03'47 -0°20'52
retrograde	15676 Nov 06 13:42	21°Ω14'38	min. Earth dist.	15683 Feb 07 21:01	3°൬03'29 29.07825 AU
opposition	15677 Jan 24 14:50	19°Ω51'44 -0°16'28	direct	15683 Apr 28 15:02	1°൬39'41
min. Earth dist.	15677 Jan 24 23:45	19°Ω51'07 29.14811 AU	evening set	15683 Jul 26 08:24	3°൬34'38

conjunction	15683 Aug 10 21:22	4° \mathring{M} 09'33	-0°19'49	direct	15690 May 14 04:32	17° \mathring{M} 12'27	
minimum elong	15683 Aug 10 21:22	4° \mathring{M} 09'33	0°20'16	evening set	15690 Aug 10 13:05	19° \mathring{M} 07'28	
max. Earth dist.	15683 Aug 10 17:00	4° \mathring{M} 09'09	31.07359 AU				
morning rise	15683 Aug 26 09:49	4° \mathring{M} 44'28		conjunction	15690 Aug 26 01:42	19° \mathring{M} 42'28	-0°23'12
retrograde	15683 Nov 22 21:47	6° \mathring{M} 39'37		minimum elong	15690 Aug 26 01:42	19° \mathring{M} 42'28	0°23'26
opposition	15684 Feb 10 05:27	5° \mathring{M} 16'26	-0°21'30	max. Earth dist.	15690 Aug 25 23:51	19° \mathring{M} 42'18	30.99173 AU
min. Earth dist.	15684 Feb 10 09:58	5° \mathring{M} 16'07	29.06905 AU	morning rise	15690 Sep 10 14:16	20° \mathring{M} 17'30	
direct	15684 Apr 30 03:39	3° \mathring{M} 52'24		retrograde	15690 Dec 08 09:07	22° \mathring{M} 13'27	
evening set	15684 Jul 27 19:16	5° \mathring{M} 47'23		opposition	15691 Feb 25 23:10	20° \mathring{M} 49'54	-0°24'59
				min. Earth dist.	15691 Feb 26 01:04	20° \mathring{M} 49'46	28.98494 AU
conjunction	15684 Aug 12 08:03	6° \mathring{M} 22'19	-0°20'24	direct	15691 May 16 16:23	19° \mathring{M} 25'53	
minimum elong	15684 Aug 12 08:03	6° \mathring{M} 22'19	0°20'50	evening set	15691 Aug 12 23:59	21° \mathring{M} 20'51	
max. Earth dist.	15684 Aug 12 03:30	6° \mathring{M} 21'54	31.06442 AU				
morning rise	15684 Aug 27 20:37	6° \mathring{M} 57'15		conjunction	15691 Aug 28 12:26	21° \mathring{M} 55'52	-0°23'33
retrograde	15684 Nov 24 12:04	8° \mathring{M} 52'33		minimum elong	15691 Aug 28 12:26	21° \mathring{M} 55'52	0°23'44
opposition	15685 Feb 11 17:54	7° \mathring{M} 29'21	-0°22'06	max. Earth dist.	15691 Aug 28 10:19	21° \mathring{M} 55'40	30.97835 AU
min. Earth dist.	15685 Feb 11 21:11	7° \mathring{M} 29'07	29.05968 AU	morning rise	15691 Sep 13 01:14	22° \mathring{M} 30'55	
direct	15685 May 02 16:07	6° \mathring{M} 05'21		retrograde	15691 Dec 10 22:19	24° \mathring{M} 26'58	
evening set	15685 Jul 30 06:12	8° \mathring{M} 00'24		opposition	15692 Feb 28 12:05	23° \mathring{M} 03'19	-0°25'20
				min. Earth dist.	15692 Feb 28 12:49	23° \mathring{M} 03'16	28.97209 AU
conjunction	15685 Aug 14 18:57	8° \mathring{M} 35'21	-0°20'57	direct	15692 May 18 03:05	21° \mathring{M} 39'16	
minimum elong	15685 Aug 14 18:57	8° \mathring{M} 35'21	0°21'20	evening set	15692 Aug 14 10:54	23° \mathring{M} 34'14	
max. Earth dist.	15685 Aug 14 14:58	8° \mathring{M} 34'59	31.05466 AU				
morning rise	15685 Aug 30 07:26	9° \mathring{M} 10'18		conjunction	15692 Aug 29 23:28	24° \mathring{M} 09'15	-0°23'51
retrograde	15685 Nov 26 23:44	11° \mathring{M} 05'45		minimum elong	15692 Aug 29 23:28	24° \mathring{M} 09'15	0°24'02
opposition	15686 Feb 14 06:46	9° \mathring{M} 42'31	-0°22'40	max. Earth dist.	15692 Aug 29 22:54	24° \mathring{M} 09'12	30.96595 AU
min. Earth dist.	15686 Feb 14 10:52	9° \mathring{M} 42'15	29.04958 AU	morning rise	15692 Sep 14 12:12	24° \mathring{M} 44'19	
direct	15686 May 05 03:40	8° \mathring{M} 18'34		retrograde	15692 Dec 12 09:49	26° \mathring{M} 40'28	
evening set	15686 Aug 01 17:08	10° \mathring{M} 13'39		opposition	15693 Mar 02 00:56	25° \mathring{M} 16'45	-0°25'39
				min. Earth dist.	15693 Mar 02 01:37	25° \mathring{M} 16'42	28.96031 AU
conjunction	15686 Aug 17 05:48	10° \mathring{M} 48'36	-0°21'28	direct	15693 May 20 15:32	23° \mathring{M} 52'42	
minimum elong	15686 Aug 17 05:48	10° \mathring{M} 48'36	0°21'50	evening set	15693 Aug 16 21:56	25° \mathring{M} 47'39	
max. Earth dist.	15686 Aug 17 02:14	10° \mathring{M} 48'16	31.04411 AU				
morning rise	15686 Sep 01 18:16	11° \mathring{M} 23'34		conjunction	15693 Sep 01 10:26	26° \mathring{M} 22'41	-0°24'08
retrograde	15686 Nov 29 11:55	13° \mathring{M} 19'08		minimum elong	15693 Sep 01 10:27	26° \mathring{M} 22'41	0°24'16
opposition	15687 Feb 16 19:35	11° \mathring{M} 55'54	-0°23'12	max. Earth dist.	15693 Sep 01 09:59	26° \mathring{M} 22'39	30.95488 AU
min. Earth dist.	15687 Feb 16 22:24	11° \mathring{M} 55'42	29.03842 AU	morning rise	15693 Sep 16 23:20	26° \mathring{M} 57'46	
direct	15687 May 07 17:08	10° \mathring{M} 31'58		retrograde	15693 Dec 14 23:46	28° \mathring{M} 54'02	
evening set	15687 Aug 04 04:14	12° \mathring{M} 27'03		opposition	15694 Mar 04 13:51	27° \mathring{M} 30'15	-0°25'56
				min. Earth dist.	15694 Mar 04 12:51	27° \mathring{M} 30'19	28.94978 AU
conjunction	15687 Aug 19 16:47	13° \mathring{M} 02'01	-0°21'57	direct	15694 May 23 03:25	26° \mathring{M} 06'13	
minimum elong	15687 Aug 19 16:47	13° \mathring{M} 02'01	0°22'16	evening set	15694 Aug 19 08:52	28° \mathring{M} 01'11	
max. Earth dist.	15687 Aug 19 12:53	13° \mathring{M} 01'40	31.03233 AU				
morning rise	15687 Sep 04 05:20	13° \mathring{M} 37'00		conjunction	15694 Sep 03 21:23	28° \mathring{M} 36'13	-0°24'23
retrograde	15687 Dec 02 00:33	15° \mathring{M} 32'42		minimum elong	15694 Sep 03 21:24	28° \mathring{M} 36'13	0°24'30
opposition	15688 Feb 19 08:31	14° \mathring{M} 09'24	-0°23'42	max. Earth dist.	15694 Sep 03 21:58	28° \mathring{M} 36'17	30.94481 AU
min. Earth dist.	15688 Feb 19 11:56	14° \mathring{M} 09'10	29.02614 AU	morning rise	15694 Sep 19 10:19	29° \mathring{M} 11'20	
direct	15688 May 09 04:31	12° \mathring{M} 45'28			15694 Oct 12 19:39	0° \mathring{A}	
evening set	15688 Aug 05 15:08	14° \mathring{M} 40'32		retrograde	15694 Dec 17 11:53	1° \mathring{A} 07'42	
					15695 Feb 25 07:05	30° \mathring{R} \mathring{M}	
conjunction	15688 Aug 21 03:48	15° \mathring{M} 15'31	-0°22'24	opposition	15695 Mar 07 03:00	29° \mathring{M} 43'54	-0°26'10
minimum elong	15688 Aug 21 03:48	15° \mathring{M} 15'31	0°22'43	min. Earth dist.	15695 Mar 07 02:22	29° \mathring{M} 43'56	28.94024 AU
max. Earth dist.	15688 Aug 21 00:53	15° \mathring{M} 15'15	31.01949 AU	direct	15695 May 25 14:48	28° \mathring{M} 19'53	
morning rise	15688 Sep 05 16:18	15° \mathring{M} 50'31			15695 Aug 15 00:52	0° \mathring{A}	
retrograde	15688 Dec 03 11:13	17° \mathring{M} 46'18		evening set	15695 Aug 21 19:54	0° \mathring{A} 14'51	
opposition	15689 Feb 20 21:21	16° \mathring{M} 22'56	-0°24'10				
min. Earth dist.	15689 Feb 20 23:52	16° \mathring{M} 22'46	29.01268 AU	conjunction	15695 Sep 06 08:31	0° \mathring{A} 49'54	-0°24'35
direct	15689 May 11 17:49	14° \mathring{M} 58'59		minimum elong	15695 Sep 06 08:31	0° \mathring{A} 49'54	0°24'40
evening set	15689 Aug 08 02:13	16° \mathring{M} 54'02		max. Earth dist.	15695 Sep 06 09:56	0° \mathring{A} 50'02	30.93576 AU
				morning rise	15695 Sep 21 21:32	1° \mathring{A} 25'02	
conjunction	15689 Aug 23 14:41	17° \mathring{M} 29'01	-0°22'49	retrograde	15695 Dec 20 01:31	3° \mathring{A} 21'31	
minimum elong	15689 Aug 23 14:42	17° \mathring{M} 29'01	0°23'04	opposition	15696 Mar 08 15:55	1° \mathring{A} 57'41	-0°26'22
max. Earth dist.	15689 Aug 23 11:09	17° \mathring{M} 28'41	31.00570 AU	min. Earth dist.	15696 Mar 08 13:43	1° \mathring{A} 57'50	28.93144 AU
morning rise	15689 Sep 08 03:23	18° \mathring{M} 04'03		direct	15696 May 27 04:34	0° \mathring{A} 33'42	
retrograde	15689 Dec 05 22:40	19° \mathring{M} 59'55		evening set	15696 Aug 23 07:04	2° \mathring{A} 28'41	
opposition	15690 Feb 23 10:12	18° \mathring{M} 36'27	-0°24'35				
min. Earth dist.	15690 Feb 23 12:39	18° \mathring{M} 36'17	28.99875 AU	conjunction	15696 Sep 07 19:38	3° \mathring{A} 03'46	-0°24'45

minimum elong	15696 Sep 07 19:38	3° <u>03</u> '46	0°24'49	evening set	15703 Sep 09 14:45	18° <u>09</u> '06	
max. Earth dist.	15696 Sep 07 21:05	3° <u>03</u> '54	30.92712 AU				
morning rise	15696 Sep 23 08:52	3° <u>38</u> '55		conjunction	15703 Sep 25 03:55	18° <u>44</u> '18	-0°24'53
retrograde	15696 Dec 21 15:12	5° <u>03</u> '31		minimum elong	15703 Sep 25 03:55	18° <u>44</u> '18	0°24'41
opposition	15697 Mar 11 05:06	4° <u>11</u> '39	-0°26'32	max. Earth dist.	15703 Sep 25 08:20	18° <u>44</u> '43	30.85410 AU
min. Earth dist.	15697 Mar 11 03:19	4° <u>11</u> '47	28.92295 AU	morning rise	15703 Oct 10 18:06	19° <u>19</u> '36	
direct	15697 May 29 16:21	2° <u>47</u> '43		retrograde	15704 Jan 08 05:50	21° <u>16</u> '52	
evening set	15697 Aug 25 18:15	4° <u>42</u> '42		opposition	15704 Mar 28 01:45	19° <u>52</u> '36	-0°26'30
				min. Earth dist.	15704 Mar 27 21:32	19° <u>52</u> '54	28.84881 AU
conjunction	15697 Sep 10 06:58	5° <u>17</u> '48	-0°24'53	direct	15704 Jun 15 04:21	18° <u>28</u> '37	
minimum elong	15697 Sep 10 06:58	5° <u>17</u> '48	0°24'53	evening set	15704 Sep 11 02:08	20° <u>23</u> '31	
max. Earth dist.	15697 Sep 10 09:37	5° <u>18</u> '03	30.91858 AU				
morning rise	15697 Sep 25 20:10	5° <u>52</u> '58		conjunction	15704 Sep 26 15:28	20° <u>58</u> '43	-0°24'45
retrograde	15697 Dec 24 02:44	7° <u>49</u> '42		minimum elong	15704 Sep 26 15:29	20° <u>58</u> '43	0°24'32
opposition	15698 Mar 13 18:13	6° <u>25</u> '49	-0°26'39	max. Earth dist.	15704 Sep 26 20:44	20° <u>59</u> '13	30.84369 AU
min. Earth dist.	15698 Mar 13 15:22	6° <u>26</u> '01	28.91420 AU	morning rise	15704 Oct 12 05:50	21° <u>34</u> '03	
direct	15698 Jun 01 05:44	5° <u>01</u> '54		retrograde	15705 Jan 09 20:01	23° <u>31</u> '23	
evening set	15698 Aug 28 05:42	6° <u>56</u> '55		opposition	15705 Mar 30 14:49	22° <u>07</u> '03	-0°26'21
				min. Earth dist.	15705 Mar 30 08:53	22° <u>07</u> '28	28.83900 AU
conjunction	15698 Sep 12 18:18	7° <u>32</u> '01	-0°24'59	direct	15705 Jun 17 18:32	20° <u>43</u> '04	
minimum elong	15698 Sep 12 18:18	7° <u>32</u> '01	0°24'58	evening set	15705 Sep 13 13:33	22° <u>37</u> '58	
max. Earth dist.	15698 Sep 12 20:18	7° <u>32</u> '12	30.90962 AU				
morning rise	15698 Sep 28 07:46	8° <u>07</u> '14		conjunction	15705 Sep 29 02:54	23° <u>13</u> '11	-0°24'35
retrograde	15698 Dec 26 15:38	10° <u>04</u> '04		minimum elong	15705 Sep 29 02:54	23° <u>13</u> '11	0°24'19
opposition	15699 Mar 16 07:33	8° <u>40</u> '09	-0°26'43	max. Earth dist.	15705 Sep 29 08:22	23° <u>13</u> '42	30.83451 AU
min. Earth dist.	15699 Mar 16 04:46	8° <u>40</u> '21	28.90500 AU	morning rise	15705 Oct 14 17:29	23° <u>48</u> '32	
direct	15699 Jun 03 16:45	7° <u>16</u> '16		retrograde	15706 Jan 12 09:59	25° <u>45</u> '58	
evening set	15699 Aug 30 16:58	9° <u>11</u> '16		opposition	15706 Apr 02 04:03	24° <u>21</u> '35	-0°26'09
				min. Earth dist.	15706 Apr 01 22:15	24° <u>21</u> '59	28.83066 AU
conjunction	15699 Sep 15 05:49	9° <u>46</u> '24	-0°25'02	direct	15706 Jun 20 06:35	22° <u>57</u> '36	
minimum elong	15699 Sep 15 05:49	9° <u>46</u> '24	0°24'58	evening set	15706 Sep 16 00:54	24° <u>52</u> '29	
max. Earth dist.	15699 Sep 15 09:11	9° <u>46</u> '43	30.89992 AU				
morning rise	15699 Sep 30 19:16	10° <u>21</u> '37		conjunction	15706 Oct 01 14:32	25° <u>27</u> '44	-0°24'23
retrograde	15699 Dec 29 03:00	12° <u>18</u> '35		minimum elong	15706 Oct 01 14:32	25° <u>27</u> '44	0°24'06
opposition	15700 Mar 18 20:53	10° <u>54</u> '37	-0°26'45	max. Earth dist.	15706 Oct 01 21:30	25° <u>28</u> '23	30.82697 AU
min. Earth dist.	15700 Mar 18 17:54	10° <u>54</u> '49	28.89474 AU	morning rise	15706 Oct 17 05:12	26° <u>03</u> '07	
direct	15700 Jun 06 05:17	9° <u>30</u> '44		retrograde	15707 Jan 14 21:59	28° <u>00</u> '37	
evening set	15700 Sep 02 04:34	11° <u>25</u> '44		opposition	15707 Apr 04 17:11	26° <u>36</u> '13	-0°25'54
				min. Earth dist.	15707 Apr 04 09:55	26° <u>36</u> '43	28.82377 AU
conjunction	15700 Sep 17 17:21	12° <u>00</u> '53	-0°25'03	direct	15707 Jun 22 19:54	25° <u>12</u> '15	
minimum elong	15700 Sep 17 17:22	12° <u>00</u> '53	0°24'58	evening set	15707 Sep 18 12:23	27° <u>07</u> '08	
max. Earth dist.	15700 Sep 17 19:52	12° <u>01</u> '07	30.88921 AU				
morning rise	15700 Oct 03 07:07	12° <u>36</u> '08		conjunction	15707 Oct 04 02:01	27° <u>42</u> '24	-0°24'09
retrograde	15700 Dec 31 16:30	14° <u>33</u> '10		minimum elong	15707 Oct 04 02:01	27° <u>42</u> '24	0°23'49
opposition	15701 Mar 21 10:01	13° <u>09</u> '09	-0°26'45	max. Earth dist.	15707 Oct 04 08:42	27° <u>43</u> '02	30.82077 AU
min. Earth dist.	15701 Mar 21 06:29	13° <u>09</u> '23	28.88355 AU	morning rise	15707 Oct 19 17:05	28° <u>17</u> '49	
direct	15701 Jun 08 16:32	11° <u>45</u> '15			15707 Dec 17 22:22	0° <u>11</u> '	
evening set	15701 Sep 04 16:01	13° <u>40</u> '13		retrograde	15708 Jan 17 11:46	0° <u>11</u> '15'24	
					15708 Feb 17 13:03	30° <u>R</u> <u>11</u> '	
conjunction	15701 Sep 20 05:02	14° <u>15</u> '23	-0°25'02	opposition	15708 Apr 06 06:25	28° <u>50</u> '59	-0°25'38
minimum elong	15701 Sep 20 05:02	14° <u>15</u> '23	0°24'54	min. Earth dist.	15708 Apr 05 22:58	28° <u>51</u> '30	28.81822 AU
max. Earth dist.	15701 Sep 20 08:37	14° <u>15</u> '43	30.87757 AU	direct	15708 Jun 24 07:36	27° <u>27</u> '04	
morning rise	15701 Oct 05 18:48	14° <u>50</u> '39		evening set	15708 Sep 19 23:53	29° <u>21</u> '57	
retrograde	15702 Jan 03 03:52	16° <u>47</u> '46					
opposition	15702 Mar 23 23:23	15° <u>23</u> '40	-0°26'43	conjunction	15708 Oct 05 13:51	29° <u>57</u> '14	-0°23'52
min. Earth dist.	15702 Mar 23 20:08	15° <u>23</u> '54	28.87163 AU	minimum elong	15708 Oct 05 13:51	29° <u>57</u> '14	0°23'31
direct	15702 Jun 11 05:04	13° <u>59</u> '45		max. Earth dist.	15708 Oct 05 22:12	29° <u>58</u> '02	30.81568 AU
evening set	15702 Sep 07 03:22	15° <u>54</u> '41			15708 Oct 06 18:53	0° <u>11</u> '	
				morning rise	15708 Oct 21 04:57	0° <u>11</u> '32'40	
conjunction	15702 Sep 22 16:24	16° <u>29</u> '52	-0°24'58	retrograde	15709 Jan 18 23:55	2° <u>11</u> '30'20	
minimum elong	15702 Sep 22 16:24	16° <u>29</u> '52	0°24'50	opposition	15709 Apr 08 19:31	1° <u>05</u> '55	-0°25'19
max. Earth dist.	15702 Sep 22 19:55	16° <u>30</u> '11	30.86568 AU	min. Earth dist.	15709 Apr 08 11:35	1° <u>06</u> '28	28.81347 AU
morning rise	15702 Oct 08 06:27	17° <u>05</u> '09			15709 May 24 10:21	30° <u>R</u> <u>11</u> '	
retrograde	15703 Jan 05 17:37	19° <u>02</u> '21		direct	15709 Jun 26 20:38	29° <u>42</u> '02	
opposition	15703 Mar 26 12:35	17° <u>38</u> '09	-0°26'38		15709 Jul 29 09:14	0° <u>11</u> '	
min. Earth dist.	15703 Mar 26 07:54	17° <u>38</u> '28	28.85984 AU	evening set	15709 Sep 22 11:39	1° <u>11</u> '36'56	
direct	15703 Jun 13 16:52	16° <u>14</u> '11					

conjunction	15709 Oct 08 01:36	2°M.12'14	-0°23'33	retrograde	15716 Feb 04 19:14	18°M.17'34	
minimum elong	15709 Oct 08 01:36	2°M.12'14	0°23'10	opposition	15716 Apr 24 16:32	16°M.52'52	-0°22'00
max. Earth dist.	15709 Oct 08 09:27	2°M.12'58	30.81134 AU	min. Earth dist.	15716 Apr 24 06:25	16°M.53'34	28.77625 AU
morning rise	15709 Oct 23 17:05	2°M.47'42		direct	15716 Jul 12 10:35	15°M.28'56	
retrograde	15710 Jan 21 13:22	4°M.45'28		evening set	15716 Oct 07 22:58	17°M.23'38	
opposition	15710 Apr 11 08:50	3°M.21'02	-0°24'57				
min. Earth dist.	15710 Apr 11 00:11	3°M.21'38	28.80938 AU	conjunction	15716 Oct 23 14:19	17°M.59'03	-0°20'21
direct	15710 Jun 29 07:57	1°M.57'11		minimum elong	15716 Oct 23 14:19	17°M.59'03	0°19'47
evening set	15710 Sep 24 23:15	3°M.52'05		max. Earth dist.	15716 Oct 23 23:59	17°M.59'58	30.77351 AU
				morning rise	15716 Nov 08 07:30	18°M.34'39	
conjunction	15710 Oct 10 13:30	4°M.27'24	-0°23'12	retrograde	15717 Feb 06 09:35	20°M.32'41	
minimum elong	15710 Oct 10 13:30	4°M.27'24	0°22'48	opposition	15717 Apr 27 05:37	19°M.07'55	-0°21'24
max. Earth dist.	15710 Oct 10 22:37	4°M.28'16	30.80721 AU	min. Earth dist.	15717 Apr 26 19:32	19°M.08'37	28.77129 AU
morning rise	15710 Oct 26 05:03	5°M.02'54		direct	15717 Jul 14 22:57	17°M.43'57	
retrograde	15711 Jan 24 00:25	7°M.00'45		evening set	15717 Oct 10 10:51	19°M.38'38	
opposition	15711 Apr 13 22:14	5°M.36'18	-0°24'33				
min. Earth dist.	15711 Apr 13 13:54	5°M.36'53	28.80518 AU	conjunction	15717 Oct 26 02:34	20°M.14'04	-0°19'46
direct	15711 Jul 01 19:56	4°M.12'30		minimum elong	15717 Oct 26 02:34	20°M.14'04	0°19'10
evening set	15711 Sep 27 11:13	6°M.07'23		max. Earth dist.	15717 Oct 26 13:55	20°M.15'09	30.76916 AU
				morning rise	15717 Nov 10 19:49	20°M.49'41	
conjunction	15711 Oct 13 01:34	6°M.42'43	-0°22'48	retrograde	15718 Feb 08 21:56	22°M.47'44	
minimum elong	15711 Oct 13 01:34	6°M.42'43	0°22'22	opposition	15718 Apr 29 18:44	21°M.22'56	-0°20'45
max. Earth dist.	15711 Oct 13 10:14	6°M.43'32	30.80289 AU	min. Earth dist.	15718 Apr 29 07:55	21°M.23'41	28.76761 AU
morning rise	15711 Oct 28 17:27	7°M.18'14		direct	15718 Jul 17 12:43	19°M.58'59	
retrograde	15712 Jan 26 14:43	9°M.16'09		evening set	15718 Oct 12 22:46	21°M.53'38	
opposition	15712 Apr 15 11:24	7°M.51'41	-0°24'07				
min. Earth dist.	15712 Apr 15 02:06	7°M.52'20	28.80055 AU	conjunction	15718 Oct 28 14:34	22°M.29'05	-0°19'09
direct	15712 Jul 03 07:05	6°M.27'52		minimum elong	15718 Oct 28 14:34	22°M.29'05	0°18'33
evening set	15712 Sep 28 23:13	8°M.22'45		max. Earth dist.	15718 Oct 29 01:31	22°M.30'07	30.76630 AU
				morning rise	15718 Nov 13 08:16	23°M.04'44	
conjunction	15712 Oct 14 13:47	8°M.58'07	-0°22'23	retrograde	15719 Feb 11 11:32	25°M.02'49	
minimum elong	15712 Oct 14 13:48	8°M.58'07	0°21'56	opposition	15719 May 02 07:50	23°M.38'00	-0°20'04
max. Earth dist.	15712 Oct 14 22:47	8°M.58'58	30.79774 AU	min. Earth dist.	15719 May 01 20:18	23°M.38'48	28.76555 AU
morning rise	15712 Oct 30 05:52	9°M.33'39		direct	15719 Jul 20 00:16	22°M.14'03	
retrograde	15713 Jan 28 02:53	11°M.31'37		evening set	15719 Oct 15 10:45	24°M.08'42	
opposition	15713 Apr 18 00:51	10°M.07'07	-0°23'38				
min. Earth dist.	15713 Apr 17 16:26	10°M.07'42	28.79499 AU	conjunction	15719 Oct 31 02:56	24°M.44'10	-0°18'31
direct	15713 Jul 05 18:54	8°M.43'17		minimum elong	15719 Oct 31 02:56	24°M.44'10	0°17'52
evening set	15713 Oct 01 11:07	10°M.38'08		max. Earth dist.	15719 Oct 31 15:17	24°M.45'20	30.76489 AU
				morning rise	15719 Nov 15 20:46	25°M.19'50	
conjunction	15713 Oct 17 01:56	11°M.13'30	-0°21'55	retrograde	15720 Feb 13 22:51	27°M.17'57	
minimum elong	15713 Oct 17 01:56	11°M.13'30	0°21'26	opposition	15720 May 03 20:46	25°M.53'09	-0°19'22
max. Earth dist.	15713 Oct 17 11:12	11°M.14'22	30.79186 AU	min. Earth dist.	15720 May 03 09:18	25°M.53'57	28.76483 AU
morning rise	15713 Nov 01 18:13	11°M.49'03		direct	15720 Jul 21 12:25	24°M.29'14	
retrograde	15714 Jan 30 16:51	13°M.47'02		evening set	15720 Oct 16 22:51	26°M.23'53	
opposition	15714 Apr 20 14:06	12°M.22'28	-0°23'08				
min. Earth dist.	15714 Apr 20 04:31	12°M.23'08	28.78870 AU	conjunction	15720 Nov 01 15:12	26°M.59'23	-0°17'50
direct	15714 Jul 08 08:47	10°M.58'37		minimum elong	15720 Nov 01 15:12	26°M.59'23	0°17'11
evening set	15714 Oct 03 23:08	12°M.53'25		max. Earth dist.	15720 Nov 02 03:18	27°M.00'31	30.76492 AU
				morning rise	15720 Nov 17 09:25	27°M.35'04	
conjunction	15714 Oct 19 14:04	13°M.28'48	-0°21'26	retrograde	15721 Feb 15 13:25	29°M.33'13	
minimum elong	15714 Oct 19 14:04	13°M.28'48	0°20'55	opposition	15721 May 06 09:45	28°M.08'27	-0°18'38
max. Earth dist.	15714 Oct 19 23:08	13°M.29'39	30.78538 AU	min. Earth dist.	15721 May 05 21:03	28°M.09'20	28.76542 AU
morning rise	15714 Nov 04 06:42	14°M.04'22		direct	15721 Jul 23 23:27	26°M.44'34	
	15714 Dec 01 06:40	15°M.		evening set	15721 Oct 19 10:55	28°M.39'14	
retrograde	15715 Feb 02 06:15	16°M.02'23					
	15715 Apr 09 14:18	15°R.M.		conjunction	15721 Nov 04 03:30	29°M.14'45	-0°17'08
opposition	15715 Apr 23 03:26	14°M.37'44	-0°22'35	minimum elong	15721 Nov 04 03:30	29°M.14'45	0°16'27
min. Earth dist.	15715 Apr 22 18:31	14°M.38'21	28.78229 AU	max. Earth dist.	15721 Nov 04 16:22	29°M.15'58	30.76591 AU
direct	15715 Jul 10 20:30	13°M.13'50		morning rise	15721 Nov 19 21:56	29°M.50'27	
	15715 Oct 02 13:36	15°M.			15721 Nov 24 05:45	0°X	
evening set	15715 Oct 06 10:56	15°M.08'35		retrograde	15722 Feb 18 01:09	1°X.48'41	
				opposition	15722 May 08 22:55	0°X.23'56	-0°17'51
conjunction	15715 Oct 22 02:14	15°M.43'59	-0°20'55	min. Earth dist.	15722 May 08 10:55	0°X.24'46	28.76682 AU
minimum elong	15715 Oct 22 02:14	15°M.43'59	0°20'21		15722 May 23 11:45	30°R.M.	
max. Earth dist.	15715 Oct 22 12:27	15°M.44'56	30.77913 AU	direct	15722 Jul 26 10:48	29°M.00'06	
morning rise	15715 Nov 06 19:02	16°M.19'34			15722 Sep 25 06:43	0°X	

evening set	15722 Oct 21 23:08	0°♄54'47		morning rise	15727 Dec 04 03:53	13°♄25'24	
				retrograde	15728 Mar 03 12:33	15°♄23'38	
conjunction	15722 Nov 06 16:01	1°♄30'19 -0°16'24		opposition	15728 May 22 04:54	13°♄58'51 -0°12'42	
minimum elong	15722 Nov 06 16:01	1°♄30'19 0°15'43		min. Earth dist.	15728 May 21 16:28	13°♄59'43	28.76876 AU
behind sun begin	15722 Nov 06 14:41	1°♄30'11		direct	15728 Aug 08 14:51	12°♄34'59	
behind sun end	15722 Nov 06 17:22	1°♄30'26		evening set	15728 Nov 04 01:58	14°♄29'34	
max. Earth dist.	15722 Nov 07 05:14	1°♄31'34	30.76766 AU				
morning rise	15722 Nov 22 10:43	2°♄06'03		conjunction	15728 Nov 19 20:28	15°♄05'12 -0°11'32	
retrograde	15723 Feb 20 15:13	4°♄04'19		minimum elong	15728 Nov 19 20:29	15°♄05'12 0°10'45	
opposition	15723 May 11 11:52	2°♄39'36 -0°17'03		behind sun begin	15728 Nov 19 15:30	15°♄04'44	
min. Earth dist.	15723 May 10 22:46	2°♄40'31	28.76864 AU	behind sun end	15728 Nov 20 01:28	15°♄05'39	
direct	15723 Jul 28 23:18	1°♄15'49		max. Earth dist.	15728 Nov 20 09:55	15°♄06'27	30.76832 AU
evening set	15723 Oct 24 11:34	3°♄10'32		morning rise	15728 Dec 05 16:48	15°♄41'00	
				retrograde	15729 Mar 06 00:43	17°♄39'11	
conjunction	15723 Nov 09 04:37	3°♄46'04 -0°15'39		opposition	15729 May 24 17:44	16°♄14'22 -0°11'46	
minimum elong	15723 Nov 09 04:37	3°♄46'04 0°14'55		min. Earth dist.	15729 May 24 05:33	16°♄15'13	28.76829 AU
behind sun begin	15723 Nov 09 02:10	3°♄45'51		direct	15729 Aug 11 04:40	14°♄50'28	
behind sun end	15723 Nov 09 07:05	3°♄46'18		evening set	15729 Nov 06 14:18	16°♄45'00	
max. Earth dist.	15723 Nov 09 17:29	3°♄47'17	30.76934 AU				
morning rise	15723 Nov 24 23:40	4°♄21'49		conjunction	15729 Nov 22 09:00	17°♄20'38 -0°10'40	
retrograde	15724 Feb 23 04:45	6°♄20'08		minimum elong	15729 Nov 22 08:59	17°♄20'38 0°09'52	
opposition	15724 May 13 01:02	4°♄55'27 -0°16'14		behind sun begin	15729 Nov 22 03:42	17°♄20'09	
min. Earth dist.	15724 May 12 12:59	4°♄56'17	28.77016 AU	behind sun end	15729 Nov 22 14:17	17°♄21'07	
direct	15724 Jul 30 09:50	3°♄31'41		max. Earth dist.	15729 Nov 22 21:58	17°♄21'51	30.76838 AU
evening set	15724 Oct 25 24:00	5°♄26'24		morning rise	15729 Dec 08 05:42	17°♄56'27	
				retrograde	15730 Mar 08 14:50	19°♄54'36	
conjunction	15724 Nov 10 17:25	6°♄01'58 -0°14'52		opposition	15730 May 27 06:27	18°♄29'44 -0°10'50	
minimum elong	15724 Nov 10 17:26	6°♄01'58 0°14'08		min. Earth dist.	15730 May 26 17:11	18°♄30'40	28.76892 AU
behind sun begin	15724 Nov 10 14:15	6°♄01'41		direct	15730 Aug 13 17:02	17°♄05'48	
behind sun end	15724 Nov 10 20:36	6°♄02'16		evening set	15730 Nov 09 02:44	19°♄00'18	
max. Earth dist.	15724 Nov 11 06:50	6°♄03'14	30.77048 AU				
morning rise	15724 Nov 26 12:36	6°♄37'44		conjunction	15730 Nov 24 21:43	19°♄35'56 -0°09'47	
retrograde	15725 Feb 24 18:39	8°♄36'03		minimum elong	15730 Nov 24 21:43	19°♄35'56 0°08'58	
opposition	15725 May 15 14:01	7°♄11'23 -0°15'23		behind sun begin	15730 Nov 24 16:09	19°♄35'25	
min. Earth dist.	15725 May 15 01:13	7°♄12'17	28.77078 AU	behind sun end	15730 Nov 25 03:17	19°♄36'26	
direct	15725 Aug 01 23:49	5°♄47'38		max. Earth dist.	15730 Nov 25 11:25	19°♄37'13	30.76954 AU
evening set	15725 Oct 28 12:38	7°♄42'21		morning rise	15730 Dec 10 18:38	20°♄11'46	
				retrograde	15731 Mar 11 01:20	22°♄09'52	
conjunction	15725 Nov 13 06:10	8°♄17'55 -0°14'04		opposition	15731 May 29 19:05	20°♄44'59 -0°09'52	
minimum elong	15725 Nov 13 06:10	8°♄17'55 0°13'18		min. Earth dist.	15731 May 29 06:30	20°♄45'52	28.77080 AU
behind sun begin	15725 Nov 13 02:25	8°♄17'35		direct	15731 Aug 16 04:45	19°♄21'01	
behind sun end	15725 Nov 13 09:55	8°♄18'16		evening set	15731 Nov 11 15:09	21°♄15'29	
max. Earth dist.	15725 Nov 13 18:27	8°♄19'04	30.77066 AU				
morning rise	15725 Nov 29 01:46	8°♄53'42		conjunction	15731 Nov 27 10:28	21°♄51'08 -0°08'53	
retrograde	15726 Feb 27 10:01	10°♄52'01		minimum elong	15731 Nov 27 10:28	21°♄51'08 0°08'03	
opposition	15726 May 18 03:11	9°♄27'19 -0°14'30		behind sun begin	15731 Nov 27 04:40	21°♄50'36	
min. Earth dist.	15726 May 17 15:00	9°♄28'10	28.77059 AU	behind sun end	15731 Nov 27 16:15	21°♄51'39	
direct	15726 Aug 04 12:30	8°♄03'32		max. Earth dist.	15731 Nov 28 00:24	21°♄52'26	30.77220 AU
evening set	15726 Oct 31 00:58	9°♄58'13		morning rise	15731 Dec 13 07:40	22°♄26'58	
				retrograde	15732 Mar 12 14:25	24°♄25'01	
conjunction	15726 Nov 15 18:58	10°♄33'49 -0°13'14		opposition	15732 May 31 07:35	23°♄00'09 -0°08'53	
minimum elong	15726 Nov 15 18:58	10°♄33'49 0°12'28		min. Earth dist.	15732 May 30 17:45	23°♄01'07	28.77412 AU
behind sun begin	15726 Nov 15 14:45	10°♄33'26		direct	15732 Aug 17 16:50	21°♄36'10	
behind sun end	15726 Nov 15 23:11	10°♄34'12		evening set	15732 Nov 13 03:37	23°♄30'37	
max. Earth dist.	15726 Nov 16 08:18	10°♄35'04	30.77009 AU				
morning rise	15726 Dec 01 14:43	11°♄09'37		conjunction	15732 Nov 28 23:06	24°♄06'16 -0°07'58	
retrograde	15727 Mar 01 22:33	13°♄07'54		minimum elong	15732 Nov 28 23:06	24°♄06'16 0°07'08	
opposition	15727 May 20 16:10	11°♄43'10 -0°13'37		behind sun begin	15732 Nov 28 17:06	24°♄05'44	
min. Earth dist.	15727 May 20 03:49	11°♄44'01	28.76965 AU	behind sun end	15732 Nov 29 05:06	24°♄06'49	
direct	15727 Aug 07 02:48	10°♄19'21		max. Earth dist.	15732 Nov 29 13:01	24°♄07'35	30.77615 AU
evening set	15727 Nov 02 13:33	12°♄13'59		morning rise	15732 Dec 14 20:36	24°♄42'07	
				retrograde	15733 Mar 15 02:46	26°♄40'09	
conjunction	15727 Nov 18 07:41	12°♄49'35 -0°12'24		opposition	15733 Jun 02 20:13	25°♄15'17 -0°07'54	
minimum elong	15727 Nov 18 07:41	12°♄49'35 0°11'37		min. Earth dist.	15733 Jun 02 07:08	25°♄16'12	28.77882 AU
behind sun begin	15727 Nov 18 03:03	12°♄49'10		direct	15733 Aug 20 02:50	23°♄51'19	
behind sun end	15727 Nov 18 12:18	12°♄50'00		evening set	15733 Nov 15 16:03	25°♄45'45	
max. Earth dist.	15727 Nov 18 20:00	12°♄50'45	30.76911 AU				

conjunction	15733 Dec 01 11:56	26° \mathring{A} 21'25	-0°07'02	max. Earth dist.	15738 Dec 13 17:59	7° \mathring{B} 39'15	30.81222 AU
minimum elong	15733 Dec 01 11:56	26° \mathring{A} 21'25	0°06'12	morning rise	15738 Dec 29 03:56	8° \mathring{B} 13'55	
behind sun begin	15733 Dec 01 05:46	26° \mathring{A} 20'51		retrograde	15739 Mar 29 12:55	10° \mathring{B} 11'43	
behind sun end	15733 Dec 01 18:06	26° \mathring{A} 21'58		opposition	15739 Jun 16 22:51	8° \mathring{B} 47'02	-0°01'46
max. Earth dist.	15733 Dec 02 02:43	26° \mathring{A} 22'48	30.78157 AU	min. Earth dist.	15739 Jun 16 09:53	8° \mathring{B} 47'57	28.81455 AU
morning rise	15733 Dec 17 09:37	26° \mathring{A} 57'17		direct	15739 Sep 03 06:48	7° \mathring{B} 23'07	
retrograde	15734 Mar 17 15:50	28° \mathring{A} 55'16		evening set	15739 Nov 29 20:34	9° \mathring{B} 17'32	
opposition	15734 Jun 05 08:42	27° \mathring{A} 30'27	-0°06'54				
min. Earth dist.	15734 Jun 04 18:34	27° \mathring{A} 31'26	28.78473 AU	conjunction	15739 Dec 15 18:01	9° \mathring{B} 53'16	-0°01'14
direct	15734 Aug 22 16:17	26° \mathring{A} 06'30		minimum elong	15739 Dec 15 18:01	9° \mathring{B} 53'16	0°00'24
evening set	15734 Nov 18 04:38	28° \mathring{A} 00'56		behind sun begin	15739 Dec 15 11:31	9° \mathring{B} 52'41	
				behind sun end	15739 Dec 16 00:31	9° \mathring{B} 53'51	
conjunction	15734 Dec 04 00:39	28° \mathring{A} 36'37	-0°06'06	max. Earth dist.	15739 Dec 16 07:17	9° \mathring{B} 54'30	30.81656 AU
minimum elong	15734 Dec 04 00:39	28° \mathring{A} 36'37	0°05'16	morning rise	15739 Dec 31 17:14	10° \mathring{B} 29'10	
behind sun begin	15734 Dec 03 18:21	28° \mathring{A} 36'02		retrograde	15740 Mar 30 23:56	12° \mathring{B} 26'53	
behind sun end	15734 Dec 04 06:57	28° \mathring{A} 37'11		opposition	15740 Jun 18 11:09	11° \mathring{B} 02'12	-0°00'44
max. Earth dist.	15734 Dec 04 14:38	28° \mathring{A} 37'55	30.78794 AU	min. Earth dist.	15740 Jun 17 23:19	11° \mathring{B} 03'02	28.81876 AU
morning rise	15734 Dec 19 22:45	29° \mathring{A} 12'29		direct	15740 Sep 04 18:56	9° \mathring{B} 38'15	
	15735 Jan 11 18:22	0° \mathring{B}		evening set	15740 Dec 01 09:13	11° \mathring{B} 32'38	
retrograde	15735 Mar 20 06:04	1° \mathring{B} 10'28					
	15735 May 30 07:00	30° \mathring{R} \mathring{A}		conjunction	15740 Dec 17 06:56	12° \mathring{B} 08'21	-0°00'14
opposition	15735 Jun 07 21:16	29° \mathring{A} 45'40	-0°05'53	minimum elong	15740 Dec 17 06:55	12° \mathring{B} 08'21	0°00'37
min. Earth dist.	15735 Jun 07 07:45	29° \mathring{A} 46'37	28.79145 AU	behind sun begin	15740 Dec 17 00:25	12° \mathring{B} 07'46	
direct	15735 Aug 25 03:24	28° \mathring{A} 21'45		behind sun end	15740 Dec 17 13:26	12° \mathring{B} 08'56	
	15735 Nov 13 06:31	0° \mathring{B}		max. Earth dist.	15740 Dec 17 19:57	12° \mathring{B} 09'34	30.82087 AU
evening set	15735 Nov 20 17:17	0° \mathring{B} 16'12		morning rise	15741 Jan 02 06:23	12° \mathring{B} 44'16	
				asc. node	15741 Mar 13 16:02	14° \mathring{B} 35'22	
conjunction	15735 Dec 06 13:43	0° \mathring{B} 51'54	-0°05'09	retrograde	15741 Apr 02 13:09	14° \mathring{B} 41'54	
minimum elong	15735 Dec 06 13:43	0° \mathring{B} 51'54	0°04'19	opposition	15741 Jun 20 23:13	13° \mathring{B} 17'12	0°00'19
behind sun begin	15735 Dec 06 07:19	0° \mathring{B} 51'19		min. Earth dist.	15741 Jun 20 10:31	13° \mathring{B} 18'05	28.82317 AU
behind sun end	15735 Dec 06 20:08	0° \mathring{B} 52'28		direct	15741 Sep 07 07:13	11° \mathring{B} 53'12	
max. Earth dist.	15735 Dec 07 04:40	0° \mathring{B} 53'18	30.79476 AU	evening set	15741 Dec 03 21:57	13° \mathring{B} 47'33	
morning rise	15735 Dec 22 11:54	1° \mathring{B} 27'46					
retrograde	15736 Mar 21 18:49	3° \mathring{B} 25'44		conjunction	15741 Dec 19 19:50	14° \mathring{B} 23'17	0°00'46
opposition	15736 Jun 09 09:34	2° \mathring{B} 00'59	-0°04'52	minimum elong	15741 Dec 19 19:51	14° \mathring{B} 23'17	0°01'36
min. Earth dist.	15736 Jun 08 20:02	2° \mathring{B} 01'56	28.79817 AU	behind sun begin	15741 Dec 19 13:19	14° \mathring{B} 22'42	
direct	15736 Aug 26 16:35	0° \mathring{B} 37'05		behind sun end	15741 Dec 20 02:23	14° \mathring{B} 23'52	
evening set	15736 Nov 22 06:12	2° \mathring{B} 31'34		max. Earth dist.	15741 Dec 20 08:39	14° \mathring{B} 24'29	30.82553 AU
				morning rise	15742 Jan 04 19:35	14° \mathring{B} 59'11	
conjunction	15736 Dec 08 02:45	3° \mathring{B} 07'16	-0°04'12	retrograde	15742 Apr 05 00:39	16° \mathring{B} 56'45	
minimum elong	15736 Dec 08 02:43	3° \mathring{B} 07'16	0°03'21	opposition	15742 Jun 23 11:20	15° \mathring{B} 32'03	0°01'20
behind sun begin	15736 Dec 07 20:15	3° \mathring{B} 06'41		min. Earth dist.	15742 Jun 22 23:41	15° \mathring{B} 32'52	28.82835 AU
behind sun end	15736 Dec 08 09:12	3° \mathring{B} 07'51		direct	15742 Sep 09 17:08	14° \mathring{B} 08'01	
max. Earth dist.	15736 Dec 08 16:21	3° \mathring{B} 08'32	30.80134 AU	evening set	15742 Dec 06 10:30	16° \mathring{B} 02'20	
morning rise	15736 Dec 24 01:18	3° \mathring{B} 43'09					
retrograde	15737 Mar 24 09:45	5° \mathring{B} 41'05		conjunction	15742 Dec 22 08:48	16° \mathring{B} 38'04	0°01'45
opposition	15737 Jun 11 22:06	4° \mathring{B} 16'22	-0°03'50	minimum elong	15742 Dec 22 08:47	16° \mathring{B} 38'04	0°02'35
min. Earth dist.	15737 Jun 11 08:49	4° \mathring{B} 17'18	28.80452 AU	behind sun begin	15742 Dec 22 02:16	16° \mathring{B} 37'28	
direct	15737 Aug 29 04:22	2° \mathring{B} 52'29		behind sun end	15742 Dec 22 15:18	16° \mathring{B} 38'39	
evening set	15737 Nov 24 18:51	4° \mathring{B} 46'57		max. Earth dist.	15742 Dec 22 22:11	16° \mathring{B} 39'19	30.83124 AU
				morning rise	15743 Jan 07 08:40	17° \mathring{B} 13'58	
conjunction	15737 Dec 10 15:47	5° \mathring{B} 22'40	-0°03'13	retrograde	15743 Apr 07 12:18	19° \mathring{B} 11'26	
minimum elong	15737 Dec 10 15:47	5° \mathring{B} 22'40	0°02'23	opposition	15743 Jun 25 23:13	17° \mathring{B} 46'45	0°02'22
behind sun begin	15737 Dec 10 09:16	5° \mathring{B} 22'04		min. Earth dist.	15743 Jun 25 10:38	17° \mathring{B} 47'37	28.83456 AU
behind sun end	15737 Dec 10 22:18	5° \mathring{B} 23'15		direct	15743 Sep 12 06:34	16° \mathring{B} 22'41	
max. Earth dist.	15737 Dec 11 06:07	5° \mathring{B} 24'00	30.80718 AU	evening set	15743 Dec 08 23:16	18° \mathring{B} 16'59	
morning rise	15737 Dec 26 14:27	5° \mathring{B} 58'33					
retrograde	15738 Mar 26 22:44	7° \mathring{B} 56'26		conjunction	15743 Dec 24 21:37	18° \mathring{B} 52'43	0°02'43
opposition	15738 Jun 14 10:37	6° \mathring{B} 31'45	-0°02'48	minimum elong	15743 Dec 24 21:38	18° \mathring{B} 52'43	0°03'32
min. Earth dist.	15738 Jun 13 22:02	6° \mathring{B} 32'37	28.80987 AU	behind sun begin	15743 Dec 24 15:09	18° \mathring{B} 52'08	
direct	15738 Aug 31 18:15	5° \mathring{B} 07'51		behind sun end	15743 Dec 25 04:07	18° \mathring{B} 53'18	
evening set	15738 Nov 27 07:45	7° \mathring{B} 02'18		max. Earth dist.	15743 Dec 25 10:09	18° \mathring{B} 53'53	30.83807 AU
				morning rise	15744 Jan 09 21:50	19° \mathring{B} 28'37	
conjunction	15738 Dec 13 04:54	7° \mathring{B} 38'01	-0°02'14	retrograde	15744 Apr 09 00:51	21° \mathring{B} 26'01	
minimum elong	15738 Dec 13 04:53	7° \mathring{B} 38'01	0°01'24	opposition	15744 Jun 27 11:03	20° \mathring{B} 01'20	0°03'24
behind sun begin	15738 Dec 12 22:22	7° \mathring{B} 37'26		min. Earth dist.	15744 Jun 26 23:02	20° \mathring{B} 02'10	28.84218 AU
behind sun end	15738 Dec 13 11:24	7° \mathring{B} 38'36		direct	15744 Sep 13 16:43	18° \mathring{B} 37'15	

evening set	15744 Dec 10 11:48	20°31'33		conjunction	15750 Jan 07 03:20	2°20'03	0°08'19
				minimum elong	15750 Jan 07 03:20	2°20'03	0°09'04
conjunction	15744 Dec 26 10:35	21°07'17	0°03'40	behind sun begin	15750 Jan 06 21:47	2°19'33	
minimum elong	15744 Dec 26 10:35	21°07'17	0°04'29	behind sun end	15750 Jan 07 08:53	2°20'33	
behind sun begin	15744 Dec 26 04:10	21°06'42		max. Earth dist.	15750 Jan 07 15:23	2°21'10	30.90337 AU
behind sun end	15744 Dec 26 16:59	21°07'51		morning rise	15750 Jan 23 04:33	2°55'55	
max. Earth dist.	15744 Dec 27 00:13	21°08'33	30.84643 AU	retrograde	15750 Apr 23 08:17	4°52'53	
morning rise	15745 Jan 11 10:49	21°43'10		opposition	15750 Jul 11 09:29	3°28'31	0°09'23
retrograde	15745 Apr 11 12:53	23°40'30		min. Earth dist.	15750 Jul 10 21:59	3°29'19	28.90894 AU
opposition	15745 Jun 29 22:53	22°15'51	0°04'25	direct	15750 Sep 27 18:42	2°04'32	
min. Earth dist.	15745 Jun 29 10:24	22°16'43	28.85124 AU	evening set	15750 Dec 24 16:29	3°58'49	
direct	15745 Sep 16 04:54	20°51'46					
evening set	15745 Dec 13 00:23	22°46'04		conjunction	15751 Jan 09 16:28	4°34'34	0°09'13
				minimum elong	15751 Jan 09 16:28	4°34'34	0°09'58
conjunction	15745 Dec 28 23:15	23°21'47	0°04'37	behind sun begin	15751 Jan 09 11:12	4°34'05	
minimum elong	15745 Dec 28 23:15	23°21'47	0°05'25	behind sun end	15751 Jan 09 21:45	4°35'02	
behind sun begin	15745 Dec 28 16:57	23°21'13		max. Earth dist.	15751 Jan 10 03:47	4°35'37	30.91407 AU
behind sun end	15745 Dec 29 05:33	23°22'21		morning rise	15751 Jan 25 17:53	5°10'26	
max. Earth dist.	15745 Dec 29 11:56	23°22'58	30.85631 AU	retrograde	15751 Apr 25 19:25	7°07'18	
morning rise	15746 Jan 13 23:53	23°57'41		opposition	15751 Jul 13 21:14	5°42'57	0°10'20
retrograde	15746 Apr 14 03:11	25°54'57		min. Earth dist.	15751 Jul 13 11:18	5°43'39	28.91919 AU
opposition	15746 Jul 02 10:44	24°30'20	0°05'26	direct	15751 Sep 30 05:31	4°18'57	
min. Earth dist.	15746 Jul 01 22:14	24°31'13	28.86186 AU	evening set	15751 Dec 27 05:21	6°13'12	
direct	15746 Sep 18 16:25	23°06'17					
evening set	15746 Dec 15 13:02	25°00'34		conjunction	15752 Jan 12 05:38	6°48'56	0°10'06
				minimum elong	15752 Jan 12 05:38	6°48'56	0°10'49
conjunction	15746 Dec 31 12:17	25°36'18	0°05'33	behind sun begin	15752 Jan 12 00:41	6°48'29	
minimum elong	15746 Dec 31 12:17	25°36'18	0°06'21	behind sun end	15752 Jan 12 10:36	6°49'22	
behind sun begin	15746 Dec 31 06:07	25°35'45		max. Earth dist.	15752 Jan 12 16:50	6°49'58	30.92392 AU
behind sun end	15746 Dec 31 18:27	25°36'52		morning rise	15752 Jan 28 07:05	7°24'47	
max. Earth dist.	15747 Jan 01 02:00	25°37'35	30.86748 AU	retrograde	15752 Apr 27 06:39	9°21'31	
morning rise	15747 Jan 16 12:57	26°12'12		opposition	15752 Jul 15 08:37	7°57'12	0°11'17
retrograde	15747 Apr 16 15:56	28°09'23		min. Earth dist.	15752 Jul 14 22:19	7°57'55	28.92859 AU
opposition	15747 Jul 04 22:23	26°44'50	0°06'26	direct	15752 Oct 01 18:30	6°33'09	
min. Earth dist.	15747 Jul 04 10:26	26°45'41	28.87348 AU	evening set	15752 Dec 28 18:14	8°27'22	
direct	15747 Sep 21 05:49	25°20'49					
evening set	15747 Dec 18 01:51	27°15'07		conjunction	15753 Jan 13 18:34	9°03'05	0°10'58
				minimum elong	15753 Jan 13 18:34	9°03'06	0°11'41
conjunction	15748 Jan 03 01:14	27°50'51	0°06'29	behind sun begin	15753 Jan 13 13:59	9°02'41	
minimum elong	15748 Jan 03 01:14	27°50'51	0°07'16	behind sun end	15753 Jan 13 23:10	9°03'30	
behind sun begin	15748 Jan 02 19:14	27°50'19		max. Earth dist.	15753 Jan 14 04:27	9°04'00	30.93310 AU
behind sun end	15748 Jan 03 07:13	27°51'24		morning rise	15753 Jan 29 20:17	9°38'56	
max. Earth dist.	15748 Jan 03 13:50	27°52'02	30.87955 AU	retrograde	15753 Apr 29 18:26	11°35'33	
morning rise	15748 Jan 19 02:12	28°26'45		opposition	15753 Jul 17 20:08	10°11'14	0°12'12
	15748 Mar 10 23:54	0°		min. Earth dist.	15753 Jul 17 10:49	10°11'53	28.93774 AU
retrograde	15748 Apr 18 05:52	0°23'52		direct	15753 Oct 04 04:26	8°47'09	
	15748 May 27 02:43	30°R3		evening set	15753 Dec 31 06:49	10°41'19	
opposition	15748 Jul 06 10:04	28°59'24	0°07'26				
min. Earth dist.	15748 Jul 05 21:43	29°00'15	28.88572 AU	conjunction	15754 Jan 16 07:32	11°17'02	0°11'49
direct	15748 Sep 22 17:41	27°35'24		minimum elong	15754 Jan 16 07:31	11°17'02	0°12'30
evening set	15748 Dec 19 14:36	29°29'43		behind sun begin	15754 Jan 16 03:20	11°16'39	
	15749 Jan 02 04:14	0°		behind sun end	15754 Jan 16 11:42	11°17'24	
				max. Earth dist.	15754 Jan 16 18:04	11°18'00	30.94224 AU
conjunction	15749 Jan 04 14:12	0°05'27	0°07'24	morning rise	15754 Feb 01 09:14	11°52'52	
minimum elong	15749 Jan 04 14:12	0°05'27	0°08'11	retrograde	15754 May 02 05:30	13°49'21	
behind sun begin	15749 Jan 04 08:25	0°04'56		opposition	15754 Jul 20 07:27	12°25'02	0°13'06
behind sun end	15749 Jan 04 20:00	0°05'58		min. Earth dist.	15754 Jul 19 22:08	12°25'42	28.94688 AU
max. Earth dist.	15749 Jan 05 03:03	0°06'39	30.89165 AU	direct	15754 Oct 06 16:46	11°00'55	
morning rise	15749 Jan 20 15:13	0°41'20		evening set	15755 Jan 02 19:39	12°55'04	
retrograde	15749 Apr 20 18:03	2°38'23					
opposition	15749 Jul 08 21:54	1°13'58	0°08'25	conjunction	15755 Jan 18 20:22	13°30'45	0°12'39
min. Earth dist.	15749 Jul 08 10:50	1°14'45	28.89768 AU	minimum elong	15755 Jan 18 20:23	13°30'46	0°13'19
	15749 Aug 31 16:58	30°R3		behind sun begin	15755 Jan 18 16:41	13°30'26	
direct	15749 Sep 25 05:55	29°50'00		behind sun end	15755 Jan 19 00:04	13°31'05	
	15749 Oct 19 10:31	0°		max. Earth dist.	15755 Jan 19 05:32	13°31'36	30.95162 AU
evening set	15749 Dec 22 03:31	1°44'18		morning rise	15755 Feb 03 22:23	14°06'35	
					15755 Mar 02 05:15	15°	

retrograde	15755 May 04 18:11	16°02'57		morning rise	15761 Feb 17 03:27	27°26'52	
	15755 Jul 09 22:18	15°00'		retrograde	15761 May 17 19:18	29°22'42	
opposition	15755 Jul 22 18:35	14°38'38	0°13'58	opposition	15761 Aug 04 12:58	27°58'48	0°18'44
min. Earth dist.	15755 Jul 22 09:35	14°39'16	28.95663 AU	min. Earth dist.	15761 Aug 04 05:14	27°59'20	29.03517 AU
direct	15755 Oct 09 03:53	13°14'29		direct	15761 Oct 22 03:18	26°34'47	
	15756 Jan 01 08:57	15°00'		evening set	15762 Jan 18 12:11	28°28'57	
evening set	15756 Jan 05 08:18	15°08'36					
				conjunction	15762 Feb 03 13:53	29°04'38	0°17'51
conjunction	15756 Jan 21 09:20	15°44'18	0°13'28	minimum elong	15762 Feb 03 13:53	29°04'38	0°18'21
minimum elong	15756 Jan 21 09:20	15°44'18	0°14'06	max. Earth dist.	15762 Feb 03 20:59	29°05'17	31.04215 AU
behind sun begin	15756 Jan 21 06:12	15°44'01		morning rise	15762 Feb 19 16:23	29°40'22	
behind sun end	15756 Jan 21 12:27	15°44'35			15762 Feb 28 20:51	0°00'	
max. Earth dist.	15756 Jan 21 19:22	15°45'14	30.96168 AU	retrograde	15762 May 20 07:21	1°36'07	
morning rise	15756 Feb 06 11:15	16°20'06		opposition	15762 Aug 07 00:03	0°12'17	0°19'26
retrograde	15756 May 06 05:32	18°16'21		min. Earth dist.	15762 Aug 06 17:35	0°12'44	29.04900 AU
opposition	15756 Jul 24 05:48	16°52'05	0°14'50		15762 Aug 14 08:27	30°00'	
min. Earth dist.	15756 Jul 23 21:20	16°52'40	28.96714 AU	direct	15762 Oct 24 12:29	28°48'18	
direct	15756 Oct 10 16:39	15°27'55			15762 Dec 31 10:31	0°00'	
evening set	15757 Jan 06 20:51	17°22'01		evening set	15763 Jan 21 00:58	0°42'29	
conjunction	15757 Jan 22 21:54	17°57'42	0°14'15	conjunction	15763 Feb 06 02:56	1°18'08	0°18'30
minimum elong	15757 Jan 22 21:54	17°57'42	0°14'53	minimum elong	15763 Feb 06 02:56	1°18'08	0°18'59
behind sun begin	15757 Jan 22 19:33	17°57'29		max. Earth dist.	15763 Feb 06 10:08	1°18'48	31.05534 AU
behind sun end	15757 Jan 23 00:16	17°57'55		morning rise	15763 Feb 22 05:18	1°53'52	
max. Earth dist.	15757 Jan 23 06:53	17°58'32	30.97281 AU	retrograde	15763 May 22 17:46	3°49'31	
morning rise	15757 Feb 08 00:04	18°33'29		opposition	15763 Aug 09 10:54	2°25'45	0°20'07
retrograde	15757 May 08 18:47	20°29'39		min. Earth dist.	15763 Aug 09 04:52	2°26'10	29.06146 AU
opposition	15757 Jul 26 16:55	19°05'24	0°15'40	direct	15763 Oct 27 00:23	1°01'45	
min. Earth dist.	15757 Jul 26 07:50	19°06'02	28.97890 AU	evening set	15764 Jan 23 13:51	2°55'56	
direct	15757 Oct 13 04:09	17°41'14					
evening set	15758 Jan 09 09:27	19°35'20		conjunction	15764 Feb 08 15:44	3°31'34	0°19'07
				minimum elong	15764 Feb 08 15:44	3°31'34	0°19'33
conjunction	15758 Jan 25 10:44	20°11'01	0°15'01	max. Earth dist.	15764 Feb 08 21:03	3°32'03	31.06722 AU
minimum elong	15758 Jan 25 10:44	20°11'01	0°15'37	morning rise	15764 Feb 24 18:17	4°07'17	
behind sun begin	15758 Jan 25 09:31	20°10'55		retrograde	15764 May 24 05:24	6°02'49	
behind sun end	15758 Jan 25 11:57	20°11'08		opposition	15764 Aug 10 21:52	4°39'04	0°20'45
max. Earth dist.	15758 Jan 25 20:11	20°11'53	30.98512 AU	min. Earth dist.	15764 Aug 10 16:28	4°39'27	29.07281 AU
morning rise	15758 Feb 10 12:53	20°46'48		direct	15764 Oct 28 11:09	3°15'04	
retrograde	15758 May 11 06:40	22°42'52		evening set	15765 Jan 25 02:19	5°09'12	
opposition	15758 Jul 29 04:01	21°18'41	0°16'28				
min. Earth dist.	15758 Jul 28 19:56	21°19'15	28.99186 AU	conjunction	15765 Feb 10 04:28	5°44'50	0°19'42
direct	15758 Oct 15 16:10	19°54'32		minimum elong	15765 Feb 10 04:28	5°44'50	0°20'07
evening set	15759 Jan 11 22:05	21°48'39		max. Earth dist.	15765 Feb 10 10:13	5°45'22	31.07798 AU
				morning rise	15765 Feb 26 06:52	6°20'31	
conjunction	15759 Jan 27 23:31	22°24'20	0°15'46	retrograde	15765 May 26 15:39	8°15'56	
minimum elong	15759 Jan 27 23:31	22°24'20	0°16'21	opposition	15765 Aug 13 08:46	6°52'13	0°21'21
max. Earth dist.	15759 Jan 28 08:25	22°25'09	30.99877 AU	min. Earth dist.	15765 Aug 13 04:22	6°52'31	29.08307 AU
morning rise	15759 Feb 13 01:49	23°00'06		direct	15765 Oct 30 23:12	5°28'10	
retrograde	15759 May 13 20:44	24°56'04		evening set	15766 Jan 27 15:00	7°22'16	
opposition	15759 Jul 31 14:59	23°31'58	0°17'15				
min. Earth dist.	15759 Jul 31 06:10	23°32'35	29.00593 AU	conjunction	15766 Feb 12 17:07	7°57'53	0°20'15
direct	15759 Oct 18 04:44	22°07'52		minimum elong	15766 Feb 12 17:07	7°57'53	0°20'38
evening set	15760 Jan 14 10:46	24°02'00		max. Earth dist.	15766 Feb 12 21:17	7°58'16	31.08800 AU
				morning rise	15766 Feb 28 19:42	8°33'33	
conjunction	15760 Jan 30 12:16	24°37'41	0°16'29	retrograde	15766 May 29 04:13	10°28'50	
minimum elong	15760 Jan 30 12:16	24°37'41	0°17'02	opposition	15766 Aug 15 19:21	9°05'06	0°21'55
max. Earth dist.	15760 Jan 30 20:50	24°38'28	31.01315 AU	min. Earth dist.	15766 Aug 15 14:51	9°05'25	29.09285 AU
morning rise	15760 Feb 15 14:36	25°13'27		direct	15766 Nov 02 10:16	7°41'00	
retrograde	15760 May 15 07:41	27°09'21		evening set	15767 Jan 30 03:33	9°35'05	
opposition	15760 Aug 02 02:02	25°45'20	0°18'01				
min. Earth dist.	15760 Aug 01 18:37	25°45'52	29.02060 AU	conjunction	15767 Feb 15 05:49	10°10'41	0°20'46
direct	15760 Oct 19 15:04	24°21'17		minimum elong	15767 Feb 15 05:49	10°10'41	0°21'09
evening set	15761 Jan 15 23:25	26°15'27		max. Earth dist.	15767 Feb 15 10:04	10°11'04	31.09754 AU
				morning rise	15767 Mar 03 08:16	10°46'19	
conjunction	15761 Feb 01 01:08	26°51'07	0°17'11	retrograde	15767 May 31 15:17	12°41'28	
minimum elong	15761 Feb 01 01:08	26°51'07	0°17'43	opposition	15767 Aug 18 06:03	11°17'44	0°22'28
max. Earth dist.	15761 Feb 01 09:41	26°51'54	31.02793 AU	min. Earth dist.	15767 Aug 18 02:52	11°17'58	29.10238 AU

direct	15767 Nov 04 23:03	9° ✕ 53'36		retrograde	15774 Jun 15 19:49	28° ✕ 04'59	
evening set	15768 Feb 01 15:57	11° ✕ 47'38		opposition	15774 Sep 02 07:01	26° ✕ 41'37	0°25'16
				min. Earth dist.	15774 Sep 02 06:16	26° ✕ 41'40	29.18731 AU
conjunction	15768 Feb 17 18:12	12° ✕ 23'13	0°21'15	direct	15774 Nov 20 05:23	25° ✕ 17'30	
minimum elong	15768 Feb 17 18:12	12° ✕ 23'13	0°21'35	evening set	15775 Feb 17 06:16	27° ✕ 11'32	
max. Earth dist.	15768 Feb 17 21:41	12° ✕ 23'32	31.10721 AU				
morning rise	15768 Mar 04 20:42	12° ✕ 58'50		conjunction	15775 Mar 05 08:36	27° ✕ 47'01	0°23'47
retrograde	15768 Jun 02 03:54	14° ✕ 53'50		minimum elong	15775 Mar 05 08:36	27° ✕ 47'01	0°23'55
opposition	15768 Aug 19 16:31	13° ✕ 30'06	0°22'58	max. Earth dist.	15775 Mar 05 08:46	27° ✕ 47'02	31.19348 AU
min. Earth dist.	15768 Aug 19 12:41	13° ✕ 30'22	29.11220 AU	morning rise	15775 Mar 21 10:43	28° ✕ 22'30	
direct	15768 Nov 06 12:16	12° ✕ 05'55			15775 May 17 12:28	0° ✕	
evening set	15769 Feb 03 04:21	13° ✕ 59'56		retrograde	15775 Jun 18 08:07	0° ✕ 16'49	
					15775 Jul 20 15:06	30° ✕	
conjunction	15769 Feb 19 06:38	14° ✕ 35'30	0°21'43	opposition	15775 Sep 04 17:24	28° ✕ 53'30	0°25'31
minimum elong	15769 Feb 19 06:37	14° ✕ 35'30	0°22'02	min. Earth dist.	15775 Sep 04 16:35	28° ✕ 53'34	29.19940 AU
max. Earth dist.	15769 Feb 19 09:47	14° ✕ 35'47	31.11729 AU	direct	15775 Nov 22 15:53	27° ✕ 29'25	
morning rise	15769 Mar 07 09:04	15° ✕ 11'05		evening set	15776 Feb 19 18:31	29° ✕ 23'27	
retrograde	15769 Jun 04 14:18	17° ✕ 05'57					
opposition	15769 Aug 22 03:04	15° ✕ 42'15	0°23'26	conjunction	15776 Mar 06 20:53	29° ✕ 58'55	0°24'00
min. Earth dist.	15769 Aug 22 00:30	15° ✕ 42'26	29.12281 AU	minimum elong	15776 Mar 06 20:53	29° ✕ 58'55	0°24'05
direct	15769 Nov 08 23:03	14° ✕ 18'02		max. Earth dist.	15776 Mar 06 20:55	29° ✕ 58'56	31.20482 AU
evening set	15770 Feb 05 16:34	16° ✕ 12'01			15776 Mar 07 08:36	0° ✕	
				morning rise	15776 Mar 22 22:46	0° ✕ 34'23	
conjunction	15770 Feb 21 18:59	16° ✕ 47'34	0°22'09	retrograde	15776 Jun 19 18:45	2° ✕ 28'37	
minimum elong	15770 Feb 21 18:59	16° ✕ 47'34	0°22'24	opposition	15776 Sep 06 03:53	1° ✕ 05'21	0°25'44
max. Earth dist.	15770 Feb 21 22:19	16° ✕ 47'52	31.12842 AU	min. Earth dist.	15776 Sep 06 04:38	1° ✕ 05'18	29.21013 AU
morning rise	15770 Mar 09 21:22	17° ✕ 23'08			15776 Oct 20 22:31	30° ✕	
retrograde	15770 Jun 07 01:42	19° ✕ 17'52		direct	15776 Nov 24 03:59	29° ✕ 41'16	
opposition	15770 Aug 24 13:28	17° ✕ 54'12	0°23'53		15776 Dec 27 23:36	0° ✕	
min. Earth dist.	15770 Aug 24 10:16	17° ✕ 54'25	29.13436 AU	evening set	15777 Feb 21 06:48	1° ✕ 35'18	
direct	15770 Nov 11 11:40	16° ✕ 29'58					
evening set	15771 Feb 08 05:00	18° ✕ 23'56		conjunction	15777 Mar 09 09:07	2° ✕ 10'45	0°24'12
				minimum elong	15777 Mar 09 09:07	2° ✕ 10'45	0°24'16
conjunction	15771 Feb 24 07:18	18° ✕ 59'29	0°22'32	max. Earth dist.	15777 Mar 09 07:59	2° ✕ 10'39	31.21503 AU
minimum elong	15771 Feb 24 07:18	18° ✕ 59'29	0°22'47	morning rise	15777 Mar 25 10:59	2° ✕ 46'12	
max. Earth dist.	15771 Feb 24 09:33	18° ✕ 59'41	31.14049 AU	retrograde	15777 Jun 22 07:06	4° ✕ 40'20	
morning rise	15771 Mar 12 09:43	19° ✕ 35'02		opposition	15777 Sep 08 14:04	3° ✕ 17'06	0°25'55
retrograde	15771 Jun 09 13:10	21° ✕ 29'39		min. Earth dist.	15777 Sep 08 14:31	3° ✕ 17'04	29.21972 AU
opposition	15771 Aug 26 23:52	20° ✕ 06'02	0°24'17	direct	15777 Nov 26 16:49	1° ✕ 52'59	
min. Earth dist.	15771 Aug 26 21:27	20° ✕ 06'12	29.14705 AU	evening set	15778 Feb 23 19:01	3° ✕ 47'01	
direct	15771 Nov 13 21:19	18° ✕ 41'50					
evening set	15772 Feb 10 17:12	20° ✕ 35'48		conjunction	15778 Mar 11 21:18	4° ✕ 22'28	0°24'21
				minimum elong	15778 Mar 11 21:18	4° ✕ 22'28	0°24'22
conjunction	15772 Feb 26 19:41	21° ✕ 11'20	0°22'54	max. Earth dist.	15778 Mar 11 19:26	4° ✕ 22'18	31.22406 AU
minimum elong	15772 Feb 26 19:41	21° ✕ 11'20	0°23'06	morning rise	15778 Mar 27 23:03	4° ✕ 57'53	
max. Earth dist.	15772 Feb 26 22:35	21° ✕ 11'35	31.15366 AU	retrograde	15778 Jun 24 17:29	6° ✕ 51'55	
morning rise	15772 Mar 13 21:54	21° ✕ 46'52		opposition	15778 Sep 11 00:25	5° ✕ 28'42	0°26'04
retrograde	15772 Jun 10 22:46	23° ✕ 41'24		min. Earth dist.	15778 Sep 11 02:29	5° ✕ 28'33	29.22836 AU
opposition	15772 Aug 28 10:16	22° ✕ 17'52	0°24'39	direct	15778 Nov 29 03:37	4° ✕ 04'34	
min. Earth dist.	15772 Aug 28 07:53	22° ✕ 18'02	29.16046 AU	evening set	15779 Feb 26 07:08	5° ✕ 58'35	
direct	15772 Nov 15 08:57	20° ✕ 53'42					
evening set	15773 Feb 12 05:27	22° ✕ 47'40		conjunction	15779 Mar 14 09:26	6° ✕ 34'01	0°24'28
				minimum elong	15779 Mar 14 09:26	6° ✕ 34'01	0°24'28
conjunction	15773 Feb 28 07:46	23° ✕ 23'11	0°23'14	max. Earth dist.	15779 Mar 14 07:22	6° ✕ 33'49	31.23237 AU
minimum elong	15773 Feb 28 07:46	23° ✕ 23'11	0°23'25	morning rise	15779 Mar 30 11:01	7° ✕ 09'24	
max. Earth dist.	15773 Feb 28 09:13	23° ✕ 23'19	31.16734 AU	retrograde	15779 Jun 27 04:41	9° ✕ 03'18	
morning rise	15773 Mar 16 10:06	23° ✕ 58'42		opposition	15779 Sep 13 10:28	7° ✕ 40'07	0°26'10
retrograde	15773 Jun 13 09:58	25° ✕ 53'10		min. Earth dist.	15779 Sep 13 12:18	7° ✕ 40'00	29.23634 AU
opposition	15773 Aug 30 20:41	24° ✕ 29'43	0°24'58	direct	15779 Dec 01 16:36	6° ✕ 15'58	
min. Earth dist.	15773 Aug 30 18:45	24° ✕ 29'51	29.17421 AU	evening set	15780 Feb 28 19:13	8° ✕ 09'58	
direct	15773 Nov 17 18:36	23° ✕ 05'35					
evening set	15774 Feb 14 17:46	24° ✕ 59'35		conjunction	15780 Mar 15 21:19	8° ✕ 45'22	0°24'33
				minimum elong	15780 Mar 15 21:19	8° ✕ 45'22	0°24'30
conjunction	15774 Mar 02 20:14	25° ✕ 35'05	0°23'31	max. Earth dist.	15780 Mar 15 18:01	8° ✕ 45'04	31.24025 AU
minimum elong	15774 Mar 02 20:15	25° ✕ 35'05	0°23'40	morning rise	15780 Mar 31 22:52	9° ✕ 20'45	
max. Earth dist.	15774 Mar 02 22:11	25° ✕ 35'16	31.18082 AU	retrograde	15780 Jun 28 16:01	11° ✕ 14'32	
morning rise	15774 Mar 18 22:19	26° ✕ 10'35		opposition	15780 Sep 14 20:39	9° ✕ 51'22	0°26'14

min. Earth dist.	15780 Sep 14 23:20	9° Υ 51'10	29.24433 AU	morning rise	15787 Apr 17 07:33	24° Υ 36'56	
direct	15780 Dec 03 02:48	8° Υ 27'10		retrograde	15787 Jul 14 14:21	26° Υ 30'12	
evening set	15781 Mar 02 06:55	10° Υ 21'09		opposition	15787 Sep 30 19:01	25° Υ 07'23	0°25'40
				min. Earth dist.	15787 Oct 01 00:23	25° Υ 07'00	29.31612 AU
conjunction	15781 Mar 18 09:08	10° Υ 56'32	0°24'36	direct	15787 Dec 19 05:21	23° Υ 43'17	
minimum elong	15781 Mar 18 09:08	10° Υ 56'32	0°24'32	evening set	15788 Mar 17 17:34	25° Υ 37'19	
max. Earth dist.	15781 Mar 18 06:27	10° Υ 56'18	31.24833 AU				
morning rise	15781 Apr 03 10:26	11° Υ 31'53		conjunction	15788 Apr 02 18:56	26° Υ 12'35	0°23'58
retrograde	15781 Jul 01 00:27	13° Υ 25'34		minimum elong	15788 Apr 02 18:56	26° Υ 12'35	0°23'40
opposition	15781 Sep 17 06:45	12° Υ 02'25	0°26'16	max. Earth dist.	15788 Apr 02 13:17	26° Υ 12'05	31.32079 AU
min. Earth dist.	15781 Sep 17 09:32	12° Υ 02'13	29.25256 AU	morning rise	15788 Apr 18 19:02	26° Υ 47'47	
direct	15781 Dec 05 14:57	10° Υ 38'13		retrograde	15788 Jul 16 01:51	28° Υ 40'58	
evening set	15782 Mar 04 18:53	12° Υ 32'09		opposition	15788 Oct 02 05:08	27° Υ 18'12	0°25'26
				min. Earth dist.	15788 Oct 02 10:22	27° Υ 17'50	29.32523 AU
conjunction	15782 Mar 20 20:51	13° Υ 07'32	0°24'37	direct	15788 Dec 20 18:31	25° Υ 54'07	
minimum elong	15782 Mar 20 20:51	13° Υ 07'32	0°24'30	evening set	15789 Mar 20 05:20	27° Υ 48'09	
max. Earth dist.	15782 Mar 20 16:46	13° Υ 07'09	31.25693 AU				
morning rise	15782 Apr 05 22:10	13° Υ 42'52		conjunction	15789 Apr 05 06:28	28° Υ 23'25	0°23'44
retrograde	15782 Jul 03 10:24	15° Υ 36'26		minimum elong	15789 Apr 05 06:28	28° Υ 23'25	0°23'25
opposition	15782 Sep 19 16:41	14° Υ 13'19	0°26'16	max. Earth dist.	15789 Apr 04 23:18	28° Υ 22'45	31.32918 AU
min. Earth dist.	15782 Sep 19 19:32	14° Υ 13'07	29.26168 AU	morning rise	15789 Apr 21 06:29	28° Υ 58'35	
direct	15782 Dec 08 00:27	12° Υ 49'05			15789 May 22 12:47	0° \mathcal{B}	
evening set	15783 Mar 07 06:39	14° Υ 43'02		retrograde	15789 Jul 18 13:16	0° \mathcal{B} 51'42	
					15789 Sep 15 11:54	30° $\mathcal{R}\Upsilon$	
conjunction	15783 Mar 23 08:41	15° Υ 18'24	0°24'36	opposition	15789 Oct 04 15:19	29° Υ 28'57	0°25'10
minimum elong	15783 Mar 23 08:41	15° Υ 18'24	0°24'28	min. Earth dist.	15789 Oct 04 21:37	29° Υ 28'31	29.33299 AU
max. Earth dist.	15783 Mar 23 05:30	15° Υ 18'06	31.26648 AU	direct	15789 Dec 23 05:22	28° Υ 04'52	
morning rise	15783 Apr 08 09:39	15° Υ 53'42		evening set	15790 Mar 22 17:04	29° Υ 58'53	
retrograde	15783 Jul 05 19:19	17° Υ 47'11			15790 Mar 23 05:31	0° \mathcal{B}	
opposition	15783 Sep 22 02:50	16° Υ 24'06	0°26'13				
min. Earth dist.	15783 Sep 22 06:22	16° Υ 23'52	29.27172 AU	conjunction	15790 Apr 07 18:13	0° \mathcal{B} 34'08	0°23'28
direct	15783 Dec 10 10:26	14° Υ 59'54		minimum elong	15790 Apr 07 18:13	0° \mathcal{B} 34'08	0°23'06
evening set	15784 Mar 08 18:22	16° Υ 53'50		max. Earth dist.	15790 Apr 07 11:15	0° \mathcal{B} 33'30	31.33620 AU
				morning rise	15790 Apr 23 17:53	1° \mathcal{B} 09'17	
conjunction	15784 Mar 24 20:08	17° Υ 29'11	0°24'32	retrograde	15790 Jul 20 21:56	3° \mathcal{B} 02'18	
minimum elong	15784 Mar 24 20:08	17° Υ 29'11	0°24'22	opposition	15790 Oct 07 01:21	1° \mathcal{B} 39'35	0°24'51
max. Earth dist.	15784 Mar 24 15:53	17° Υ 28'47	31.27714 AU	min. Earth dist.	15790 Oct 07 08:12	1° \mathcal{B} 39'07	29.33925 AU
morning rise	15784 Apr 09 21:06	18° Υ 04'28		direct	15790 Dec 25 17:38	0° \mathcal{B} 15'28	
retrograde	15784 Jul 07 06:24	19° Υ 57'54		evening set	15791 Mar 25 04:53	2° \mathcal{B} 09'29	
opposition	15784 Sep 23 12:50	18° Υ 34'53	0°26'08				
min. Earth dist.	15784 Sep 23 15:42	18° Υ 34'41	29.28283 AU	conjunction	15791 Apr 10 05:42	2° \mathcal{B} 44'42	0°23'10
direct	15784 Dec 11 20:18	17° Υ 10'41		minimum elong	15791 Apr 10 05:42	2° \mathcal{B} 44'42	0°22'48
evening set	15785 Mar 11 06:04	19° Υ 04'39		max. Earth dist.	15791 Apr 09 21:00	2° \mathcal{B} 43'55	31.34194 AU
				morning rise	15791 Apr 26 05:19	3° \mathcal{B} 19'51	
conjunction	15785 Mar 27 07:50	19° Υ 39'59	0°24'27	retrograde	15791 Jul 23 08:18	5° \mathcal{B} 12'46	
minimum elong	15785 Mar 27 07:50	19° Υ 39'59	0°24'16	opposition	15791 Oct 09 11:27	3° \mathcal{B} 50'04	0°24'31
max. Earth dist.	15785 Mar 27 03:56	19° Υ 39'37	31.28852 AU	min. Earth dist.	15791 Oct 09 18:35	3° \mathcal{B} 49'34	29.34453 AU
morning rise	15785 Apr 12 08:30	20° Υ 15'15		direct	15791 Dec 28 03:48	2° \mathcal{B} 25'55	
retrograde	15785 Jul 09 16:03	22° Υ 08'37		evening set	15792 Mar 26 16:15	4° \mathcal{B} 19'54	
opposition	15785 Sep 25 22:52	20° Υ 45'40	0°26'01				
min. Earth dist.	15785 Sep 26 03:05	20° Υ 45'23	29.29439 AU	conjunction	15792 Apr 11 17:04	4° \mathcal{B} 55'07	0°22'50
direct	15785 Dec 14 07:21	19° Υ 21'32		minimum elong	15792 Apr 11 17:04	4° \mathcal{B} 55'07	0°22'25
evening set	15786 Mar 13 17:53	21° Υ 15'31		max. Earth dist.	15792 Apr 11 09:01	4° \mathcal{B} 54'23	31.34673 AU
				morning rise	15792 Apr 27 16:19	5° \mathcal{B} 30'14	
conjunction	15786 Mar 29 19:31	21° Υ 50'50	0°24'19	retrograde	15792 Jul 24 16:47	7° \mathcal{B} 23'05	
minimum elong	15786 Mar 29 19:31	21° Υ 50'50	0°24'05	opposition	15792 Oct 10 21:35	6° \mathcal{B} 00'23	0°24'09
max. Earth dist.	15786 Mar 29 14:46	21° Υ 50'24	31.30012 AU	min. Earth dist.	15792 Oct 11 05:46	5° \mathcal{B} 59'49	29.34897 AU
morning rise	15786 Apr 14 20:06	22° Υ 26'04		direct	15792 Dec 29 14:21	4° \mathcal{B} 36'13	
retrograde	15786 Jul 12 03:45	24° Υ 19'23		evening set	15793 Mar 29 03:48	6° \mathcal{B} 30'11	
opposition	15786 Sep 28 08:52	22° Υ 56'31	0°25'52				
min. Earth dist.	15786 Sep 28 12:38	22° Υ 56'15	29.30570 AU	conjunction	15793 Apr 14 04:19	7° \mathcal{B} 05'22	0°22'28
direct	15786 Dec 16 19:08	21° Υ 32'24		minimum elong	15793 Apr 14 04:19	7° \mathcal{B} 05'22	0°22'03
evening set	15787 Mar 16 05:46	23° Υ 26'25		max. Earth dist.	15793 Apr 13 19:02	7° \mathcal{B} 04'31	31.35106 AU
				morning rise	15793 Apr 30 03:31	7° \mathcal{B} 40'28	
conjunction	15787 Apr 01 07:12	24° Υ 01'43	0°24'10	retrograde	15793 Jul 27 03:07	9° \mathcal{B} 33'14	
minimum elong	15787 Apr 01 07:12	24° Υ 01'43	0°23'54	opposition	15793 Oct 13 07:26	8° \mathcal{B} 10'32	0°23'44
max. Earth dist.	15787 Apr 01 01:47	24° Υ 01'13	31.31095 AU	min. Earth dist.	15793 Oct 13 15:05	8° \mathcal{B} 10'01	29.35324 AU

direct	15794 Jan 01 00:43	6°8'46"20		minimum elong	15800 Apr 30 09:55	22°8'16"18	0°18'27
evening set	15794 Mar 31 15:12	8°8'40"18		max. Earth dist.	15800 Apr 29 22:39	22°8'15"16	31.38995 AU
				morning rise	15800 May 16 07:28	22°8'51"17	
conjunction	15794 Apr 16 15:38	9°8'15"28	0°22'04	retrograde	15800 Aug 12 04:04	24°8'43"51	
minimum elong	15794 Apr 16 15:38	9°8'15"28	0°21'36	opposition	15800 Oct 29 06:10	23°8'21"30	0°19'59
max. Earth dist.	15794 Apr 16 06:39	9°8'14"39	31.35529 AU	min. Earth dist.	15800 Oct 29 15:47	23°8'20"51	29.39212 AU
morning rise	15794 May 02 14:30	9°8'50"33		direct	15801 Jan 17 06:09	21°8'57"29	
retrograde	15794 Jul 29 12:00	11°8'43"15		evening set	15801 Apr 16 22:05	23°8'51"39	
opposition	15794 Oct 15 17:33	10°8'20"34	0°23'18				
min. Earth dist.	15794 Oct 16 02:20	10°8'19"57	29.35770 AU	conjunction	15801 May 02 21:07	24°8'26"45	0°18'27
direct	15795 Jan 03 11:28	8°8'56"21		minimum elong	15801 May 02 21:08	24°8'26"45	0°17'51
evening set	15795 Apr 03 02:31	10°8'50"18		max. Earth dist.	15801 May 02 10:21	24°8'25"46	31.39365 AU
				morning rise	15801 May 18 18:16	25°8'01"43	
conjunction	15795 Apr 19 02:43	11°8'25"28	0°21'39	retrograde	15801 Aug 14 13:07	26°8'54"15	
minimum elong	15795 Apr 19 02:43	11°8'25"28	0°21'10	opposition	15801 Oct 31 16:24	25°8'31"57	0°19'19
max. Earth dist.	15795 Apr 18 17:19	11°8'24"36	31.36009 AU	min. Earth dist.	15801 Nov 01 03:18	25°8'31"12	29.39503 AU
morning rise	15795 May 05 01:23	12°8'00"31		direct	15802 Jan 19 16:41	24°8'07"56	
retrograde	15795 Jul 31 22:46	13°8'53"10		evening set	15802 Apr 19 09:29	26°8'02"06	
opposition	15795 Oct 18 03:31	12°8'30"31	0°22'49				
min. Earth dist.	15795 Oct 18 11:21	12°8'29"58	29.36285 AU	conjunction	15802 May 05 08:11	26°8'37"11	0°17'50
direct	15796 Jan 05 22:50	11°8'06"18		minimum elong	15802 May 05 08:11	26°8'37"11	0°17'11
evening set	15796 Apr 04 13:49	13°8'00"17		max. Earth dist.	15802 May 04 19:57	26°8'36"04	31.39582 AU
				morning rise	15802 May 21 05:13	27°8'12"08	
conjunction	15796 Apr 20 13:48	13°8'35"26	0°21'11	retrograde	15802 Aug 16 23:04	29°8'04"39	
minimum elong	15796 Apr 20 13:48	13°8'35"26	0°20'40	opposition	15802 Nov 03 02:38	27°8'42"21	0°18'38
max. Earth dist.	15796 Apr 20 04:11	13°8'34"33	31.36565 AU	min. Earth dist.	15802 Nov 03 13:07	27°8'41"38	29.39638 AU
morning rise	15796 May 06 12:13	14°8'10"28		direct	15803 Jan 22 03:28	26°8'18"19	
	15796 May 31 01:29	15°8'		evening set	15803 Apr 21 20:38	28°8'12"29	
retrograde	15796 Aug 02 09:08	16°8'03"06					
	15796 Oct 07 16:22	15°8'		conjunction	15803 May 07 19:10	28°8'47"33	0°17'11
opposition	15796 Oct 19 13:37	14°8'40"29	0°22'19	minimum elong	15803 May 07 19:10	28°8'47"33	0°16'31
min. Earth dist.	15796 Oct 19 22:26	14°8'39"53	29.36892 AU	max. Earth dist.	15803 May 07 06:56	28°8'46"26	31.39631 AU
direct	15797 Jan 07 08:28	13°8'16"19		morning rise	15803 May 23 15:49	29°8'22"29	
	15797 Apr 02 04:46	15°8'			15803 Jun 10 19:39	0°II	
evening set	15797 Apr 07 00:56	15°8'10"20		retrograde	15803 Aug 19 07:19	1°II14'58	
					15803 Nov 01 02:08	30°8'	
conjunction	15797 Apr 23 00:50	15°8'45"28	0°20'42	opposition	15803 Nov 05 13:03	29°8'52"40	0°17'55
minimum elong	15797 Apr 23 00:51	15°8'45"28	0°20'10	min. Earth dist.	15803 Nov 06 00:56	29°8'51"51	29.39620 AU
max. Earth dist.	15797 Apr 22 15:40	15°8'44"37	31.37210 AU	direct	15804 Jan 24 13:48	28°8'28"36	
morning rise	15797 May 08 23:02	16°8'20"29			15804 Apr 12 12:34	0°II	
retrograde	15797 Aug 04 20:31	18°8'13"05		evening set	15804 Apr 23 07:47	0°II22'45	
opposition	15797 Oct 21 23:38	16°8'50"33	0°21'47				
min. Earth dist.	15797 Oct 22 08:00	16°8'49"59	29.37543 AU	conjunction	15804 May 09 06:04	0°II57'48	0°16'30
direct	15798 Jan 09 21:22	15°8'26"25		minimum elong	15804 May 09 06:04	0°II57'48	0°15'49
evening set	15798 Apr 09 12:20	17°8'20"29		behind sun begin	15804 May 09 05:12	0°II57'43	
				behind sun end	15804 May 09 06:56	0°II57'53	
conjunction	15798 Apr 25 11:54	17°8'55"37	0°20'11	max. Earth dist.	15804 May 08 17:14	0°II56'37	31.39558 AU
minimum elong	15798 Apr 25 11:54	17°8'55"37	0°19'37	morning rise	15804 May 25 02:32	1°II32'43	
max. Earth dist.	15798 Apr 25 01:35	17°8'54"40	31.37865 AU	retrograde	15804 Aug 20 17:29	3°II25'08	
morning rise	15798 May 11 09:56	18°8'30"37		opposition	15804 Nov 06 23:11	2°II02'49	0°17'11
retrograde	15798 Aug 07 08:17	20°8'23"13		min. Earth dist.	15804 Nov 07 10:29	2°II02'03	29.39486 AU
opposition	15798 Oct 24 09:42	19°8'00"45	0°21'13	direct	15805 Jan 26 00:42	0°II38'42	
min. Earth dist.	15798 Oct 24 18:44	19°8'00"08	29.38193 AU	evening set	15805 Apr 25 18:50	2°II32'51	
direct	15799 Jan 12 07:57	17°8'36"40					
evening set	15799 Apr 11 23:34	19°8'30"47		conjunction	15805 May 11 16:53	3°II07'52	0°15'49
				minimum elong	15805 May 11 16:53	3°II07'52	0°15'07
conjunction	15799 Apr 27 23:04	20°8'05"54	0°19'38	behind sun begin	15805 May 11 14:43	3°II07'41	
minimum elong	15799 Apr 27 23:04	20°8'05"54	0°19'04	behind sun end	15805 May 11 19:03	3°II08'04	
max. Earth dist.	15799 Apr 27 13:21	20°8'05"01	31.38482 AU	max. Earth dist.	15805 May 11 03:30	3°II06'39	31.39377 AU
morning rise	15799 May 13 20:42	20°8'40"54		morning rise	15805 May 27 13:07	3°II42'46	
retrograde	15799 Aug 09 17:12	22°8'33"29		retrograde	15805 Aug 23 03:26	5°II35'10	
opposition	15799 Oct 26 19:55	21°8'11"05	0°20'36	opposition	15805 Nov 09 09:31	4°II12'48	0°16'26
min. Earth dist.	15799 Oct 27 05:25	21°8'10"26	29.38759 AU	min. Earth dist.	15805 Nov 09 21:57	4°II11'57	29.39280 AU
direct	15800 Jan 14 19:45	19°8'47"03		direct	15806 Jan 28 10:58	2°II48'37	
evening set	15800 Apr 14 10:49	21°8'41"12		evening set	15806 Apr 28 05:47	4°II42'45	
conjunction	15800 Apr 30 09:55	22°8'16"18	0°19'04	conjunction	15806 May 14 03:40	5°II17'46	0°15'06

minimum elong	15806 May 14 03:40	5°II17'46	0°14'22	min. Earth dist.	15811 Nov 23 10:57	17°II10'10	29.38802 AU
behind sun begin	15806 May 14 00:44	5°II17'30		direct	15812 Feb 11 07:02	15°II46'48	
behind sun end	15806 May 14 06:36	5°II18'01		evening set	15812 May 10 22:35	17°II41'03	
max. Earth dist.	15806 May 13 14:47	5°II16'35	31.39155 AU				
morning rise	15806 May 29 23:35	5°II52'38		conjunction	15812 May 26 18:55	18°II16'01	0°10'24
retrograde	15806 Aug 25 13:47	7°II44'58		minimum elong	15812 May 26 18:56	18°II16'01	0°09'37
opposition	15806 Nov 11 19:41	6°II22'35	0°15'39	behind sun begin	15812 May 26 13:34	18°II15'32	
min. Earth dist.	15806 Nov 12 07:39	6°II21'46	29.39050 AU	behind sun end	15812 May 27 00:18	18°II16'29	
direct	15807 Jan 31 00:14	4°II58'22		max. Earth dist.	15812 May 26 05:54	18°II14'49	31.38766 AU
evening set	15807 Apr 30 16:46	6°II52'29		morning rise	15812 Jun 11 13:19	18°II50'49	
				retrograde	15812 Sep 07 01:19	20°II43'13	
conjunction	15807 May 16 14:15	7°II27'28	0°14'22	opposition	15812 Nov 24 10:02	19°II20'58	0°10'34
minimum elong	15807 May 16 14:15	7°II27'28	0°13'38	min. Earth dist.	15812 Nov 24 22:45	19°II20'05	29.38733 AU
behind sun begin	15807 May 16 10:44	7°II27'10		direct	15813 Feb 12 16:35	17°II56'50	
behind sun end	15807 May 16 17:46	7°II27'47		evening set	15813 May 13 09:26	19°II51'08	
max. Earth dist.	15807 May 16 00:30	7°II26'13	31.38943 AU				
morning rise	15807 Jun 01 10:00	8°II02'20		conjunction	15813 May 29 05:32	20°II26'05	0°09'34
retrograde	15807 Aug 28 00:56	9°II54'38		minimum elong	15813 May 29 05:32	20°II26'05	0°08'46
opposition	15807 Nov 14 06:03	8°II32'13	0°14'51	behind sun begin	15813 May 28 23:55	20°II25'35	
min. Earth dist.	15807 Nov 14 18:04	8°II31'24	29.38880 AU	behind sun end	15813 May 29 11:08	20°II26'35	
direct	15808 Feb 02 10:59	7°II07'58		max. Earth dist.	15813 May 28 16:08	20°II24'51	31.38648 AU
evening set	15808 May 02 03:22	9°II02'05		morning rise	15813 Jun 13 23:43	21°II00'53	
				retrograde	15813 Sep 09 11:49	22°II53'19	
conjunction	15808 May 18 00:47	9°II37'04	0°13'36	opposition	15813 Nov 26 20:36	21°II31'06	0°09'40
minimum elong	15808 May 18 00:47	9°II37'04	0°12'51	min. Earth dist.	15813 Nov 27 08:39	21°II30'16	29.38543 AU
behind sun begin	15808 May 17 20:47	9°II36'43		direct	15814 Feb 15 03:07	20°II06'59	
behind sun end	15808 May 18 04:47	9°II37'25		evening set	15814 May 15 20:20	22°II01'20	
max. Earth dist.	15808 May 17 12:12	9°II35'55	31.38809 AU				
morning rise	15808 Jun 02 20:09	10°II11'55		conjunction	15814 May 31 16:06	22°II36'16	0°08'43
retrograde	15808 Aug 29 09:45	12°II04'12		minimum elong	15814 May 31 16:06	22°II36'16	0°07'54
opposition	15808 Nov 15 16:24	10°II41'47	0°14'02	behind sun begin	15814 May 31 10:16	22°II35'45	
min. Earth dist.	15808 Nov 16 04:23	10°II40'58	29.38784 AU	behind sun end	15814 May 31 21:55	22°II36'47	
direct	15809 Feb 03 22:57	9°II17'33		max. Earth dist.	15814 May 31 02:03	22°II34'59	31.38383 AU
evening set	15809 May 04 14:16	11°II11'41		morning rise	15814 Jun 16 10:01	23°II11'04	
				retrograde	15814 Sep 11 22:20	25°II03'33	
conjunction	15809 May 20 11:17	11°II46'39	0°12'50	opposition	15814 Nov 29 07:19	23°II41'20	0°08'44
minimum elong	15809 May 20 11:17	11°II46'39	0°12'05	min. Earth dist.	15814 Nov 29 20:28	23°II40'26	29.38218 AU
behind sun begin	15809 May 20 06:53	11°II46'16		direct	15815 Feb 17 12:54	22°II17'14	
behind sun end	15809 May 20 15:41	11°II47'02		evening set	15815 May 18 07:07	24°II11'36	
max. Earth dist.	15809 May 19 21:42	11°II45'24	31.38764 AU				
morning rise	15809 Jun 05 06:34	12°II21'29		conjunction	15815 Jun 03 02:44	24°II46'32	0°07'51
retrograde	15809 Aug 31 20:54	14°II13'46		minimum elong	15815 Jun 03 02:43	24°II46'32	0°07'03
opposition	15809 Nov 18 02:35	12°II51'23	0°13'12	behind sun begin	15815 Jun 02 20:43	24°II46'00	
min. Earth dist.	15809 Nov 18 14:04	12°II50'36	29.38777 AU	behind sun end	15815 Jun 03 08:43	24°II47'04	
direct	15810 Feb 06 09:42	11°II27'09		max. Earth dist.	15815 Jun 02 13:08	24°II45'17	31.37989 AU
evening set	15810 May 07 01:02	13°II21'20		morning rise	15815 Jun 18 20:19	25°II21'19	
				retrograde	15815 Sep 14 09:14	27°II13'50	
conjunction	15810 May 22 21:57	13°II56'18	0°12'03	opposition	15815 Dec 01 18:04	25°II51'37	0°07'48
minimum elong	15810 May 22 21:57	13°II56'18	0°11'16	min. Earth dist.	15815 Dec 02 06:55	25°II50'44	29.37746 AU
behind sun begin	15810 May 22 17:11	13°II55'53		direct	15816 Feb 20 01:47	24°II27'30	
behind sun end	15810 May 23 02:43	13°II56'43		evening set	15816 May 19 17:52	26°II21'54	
max. Earth dist.	15810 May 22 09:26	13°II55'09	31.38776 AU				
morning rise	15810 Jun 07 16:49	14°II31'07		conjunction	15816 Jun 04 13:05	26°II56'49	0°06'59
retrograde	15810 Sep 03 06:07	16°II23'26		minimum elong	15816 Jun 04 13:05	26°II56'49	0°06'09
opposition	15810 Nov 20 13:04	15°II01'06	0°12'20	behind sun begin	15816 Jun 04 06:56	26°II56'16	
min. Earth dist.	15810 Nov 21 01:24	15°II00'15	29.38797 AU	behind sun end	15816 Jun 04 19:15	26°II57'22	
direct	15811 Feb 08 20:27	13°II36'55		max. Earth dist.	15816 Jun 03 22:20	26°II55'28	31.37453 AU
evening set	15811 May 09 11:48	15°II31'07		morning rise	15816 Jun 20 06:36	27°II31'36	
				retrograde	15816 Sep 15 20:54	29°II24'08	
conjunction	15811 May 25 08:20	16°II06'05	0°11'14	opposition	15816 Dec 03 04:49	28°II01'53	0°06'52
minimum elong	15811 May 25 08:20	16°II06'05	0°10'28	min. Earth dist.	15816 Dec 03 17:59	28°II00'59	29.37153 AU
behind sun begin	15811 May 25 03:15	16°II05'38		direct	15817 Feb 21 12:32	26°II37'45	
behind sun end	15811 May 25 13:25	16°II06'32		evening set	15817 May 22 04:32	28°II32'10	
max. Earth dist.	15811 May 24 19:04	16°II04'51	31.38801 AU				
morning rise	15811 Jun 10 03:04	16°II40'54		conjunction	15817 Jun 06 23:41	29°II07'05	0°06'06
retrograde	15811 Sep 05 16:23	18°II33'15		minimum elong	15817 Jun 06 23:41	29°II07'05	0°05'17
opposition	15811 Nov 22 23:29	17°II10'57	0°11'28	behind sun begin	15817 Jun 06 17:25	29°II06'31	

behind sun end	15817 Jun 07 05:58	29°11'07.38		opposition	15822 Dec 16 21:42	11°02'39	0°01'03
max. Earth dist.	15817 Jun 06 09:46	29°11'05.48	31.36802 AU	min. Earth dist.	15822 Dec 17 09:16	11°01'51	29.33404 AU
morning rise	15817 Jun 22 16:48	29°11'41.51		direct	15823 Mar 07 07:50	9°03'38.27	
	15817 Jul 01 04:59	0°00'		evening set	15823 Jun 04 19:45	11°03'32.56	
retrograde	15817 Sep 18 06:00	1°03'34.23					
opposition	15817 Dec 05 15:29	0°03'12.07	0°05'55	conjunction	15823 Jun 20 13:14	12°03'07.48	0°00'34
min. Earth dist.	15817 Dec 06 05:01	0°03'11.12	29.36451 AU	minimum elong	15823 Jun 20 13:14	12°03'07.48	0°00'15
	15817 Dec 13 01:04	30°08'11		behind sun begin	15823 Jun 20 06:49	12°03'07.14	
direct	15818 Feb 24 00:43	28°11'47.57		behind sun end	15823 Jun 20 19:39	12°03'08.22	
	15818 May 04 00:33	0°00'		max. Earth dist.	15823 Jun 20 00:04	12°03'06.35	31.33183 AU
evening set	15818 May 24 15:18	0°03'42.22		morning rise	15823 Jul 06 05:04	12°03'42.33	
				retrograde	15823 Oct 01 18:10	14°03'35.20	
conjunction	15818 Jun 09 10:02	1°03'17.16	0°05'12	opposition	15823 Dec 19 08:47	13°03'12.59	0°00'04
minimum elong	15818 Jun 09 10:02	1°03'17.16	0°04'23	min. Earth dist.	15823 Dec 19 20:56	13°03'12.10	29.32982 AU
behind sun begin	15818 Jun 09 03:39	1°03'16.42		desc. node	15824 Jan 15 11:22	12°03'30.32	
behind sun end	15818 Jun 09 16:24	1°03'17.50		direct	15824 Mar 08 17:23	11°03'48.50	
max. Earth dist.	15818 Jun 08 19:04	1°03'15.53	31.36080 AU	evening set	15824 Jun 06 06:08	13°03'43.21	
morning rise	15818 Jun 25 03:04	1°03'52.02					
retrograde	15818 Sep 20 17:39	3°03'44.34		conjunction	15824 Jun 21 23:30	14°03'18.13	-0°00'24
opposition	15818 Dec 08 02:15	2°03'22.16	0°04'57	minimum elong	15824 Jun 21 23:31	14°03'18.13	0°01'13
min. Earth dist.	15818 Dec 08 15:11	2°03'21.23	29.35721 AU	behind sun begin	15824 Jun 21 17:03	14°03'17.38	
direct	15819 Feb 26 12:48	0°03'58.04		behind sun end	15824 Jun 22 05:58	14°03'18.47	
evening set	15819 May 27 01:40	2°03'52.28		max. Earth dist.	15824 Jun 21 11:19	14°03'17.06	31.32752 AU
				morning rise	15824 Jul 07 15:04	14°03'52.57	
conjunction	15819 Jun 11 20:16	3°03'27.22	0°04'18	retrograde	15824 Oct 03 04:42	16°03'45.49	
minimum elong	15819 Jun 11 20:17	3°03'27.22	0°03'29	opposition	15824 Dec 20 19:54	15°03'23.29	-0°00'55
behind sun begin	15819 Jun 11 13:51	3°03'26.48		min. Earth dist.	15824 Dec 21 07:35	15°03'22.42	29.32517 AU
behind sun end	15819 Jun 12 02:43	3°03'27.56		direct	15825 Mar 11 05:17	13°03'59.22	
max. Earth dist.	15819 Jun 11 06:34	3°03'26.06	31.35346 AU	evening set	15825 Jun 08 16:52	15°03'53.55	
morning rise	15819 Jun 27 12:55	4°03'02.07					
retrograde	15819 Sep 23 03:02	5°03'54.41		conjunction	15825 Jun 24 09:50	16°03'28.47	-0°01'20
opposition	15819 Dec 10 13:10	4°03'32.20	0°03'59	minimum elong	15825 Jun 24 09:50	16°03'28.47	0°02'09
min. Earth dist.	15819 Dec 11 02:40	4°03'31.25	29.35011 AU	behind sun begin	15825 Jun 24 03:22	16°03'28.12	
direct	15820 Feb 29 00:32	3°03'08.07		behind sun end	15825 Jun 24 16:18	16°03'29.21	
evening set	15820 May 28 12:14	5°03'02.31		max. Earth dist.	15825 Jun 23 20:39	16°03'27.34	31.32253 AU
				morning rise	15825 Jul 10 01:18	17°03'03.31	
conjunction	15820 Jun 13 06:29	5°03'37.24	0°03'24	retrograde	15825 Oct 05 16:44	18°03'56.28	
minimum elong	15820 Jun 13 06:29	5°03'37.24	0°02'34	opposition	15825 Dec 23 07:02	17°03'34.08	-0°01'54
behind sun begin	15820 Jun 13 00:01	5°03'36.49		min. Earth dist.	15825 Dec 23 18:49	17°03'33.20	29.31981 AU
behind sun end	15820 Jun 13 12:56	5°03'37.58		direct	15826 Mar 13 15:08	16°03'10.01	
max. Earth dist.	15820 Jun 12 16:27	5°03'36.06	31.34680 AU	evening set	15826 Jun 11 03:29	18°03'04.37	
morning rise	15820 Jun 28 23:01	6°03'12.09					
retrograde	15820 Sep 24 12:40	8°03'04.44		conjunction	15826 Jun 26 20:21	18°03'39.29	-0°02'16
opposition	15820 Dec 11 23:49	6°03'42.22	0°03'01	minimum elong	15826 Jun 26 20:22	18°03'39.29	0°03'05
min. Earth dist.	15820 Dec 12 11:58	6°03'41.32	29.34390 AU	behind sun begin	15826 Jun 26 13:55	18°03'38.55	
direct	15821 Mar 02 11:43	5°03'18.08		behind sun end	15826 Jun 27 02:48	18°03'40.03	
evening set	15821 May 30 22:44	7°03'12.33		max. Earth dist.	15826 Jun 26 08:10	18°03'38.22	31.31658 AU
				morning rise	15826 Jul 12 11:26	19°03'14.13	
conjunction	15821 Jun 15 16:47	7°03'47.26	0°02'28	retrograde	15826 Oct 08 02:58	21°03'07.14	
minimum elong	15821 Jun 15 16:48	7°03'47.26	0°01'39	opposition	15826 Dec 25 18:28	19°03'44.54	-0°02'53
behind sun begin	15821 Jun 15 10:19	7°03'46.52		min. Earth dist.	15826 Dec 26 06:33	19°03'44.05	29.31321 AU
behind sun end	15821 Jun 15 23:16	7°03'48.01		direct	15827 Mar 16 03:21	18°03'20.49	
max. Earth dist.	15821 Jun 15 03:22	7°03'46.12	31.34101 AU	evening set	15827 Jun 13 14:08	20°03'15.26	
morning rise	15821 Jul 01 09:02	8°03'22.11					
retrograde	15821 Sep 26 21:22	10°03'14.49		conjunction	15827 Jun 29 06:36	20°03'50.17	-0°03'12
opposition	15821 Dec 14 10:49	8°03'52.27	0°02'02	minimum elong	15827 Jun 29 06:36	20°03'50.17	0°03'59
min. Earth dist.	15821 Dec 14 23:35	8°03'51.35	29.33863 AU	behind sun begin	15827 Jun 29 00:13	20°03'49.43	
direct	15822 Mar 04 21:28	7°03'28.14		behind sun end	15827 Jun 29 12:59	20°03'50.51	
evening set	15822 Jun 02 09:12	9°03'22.40		max. Earth dist.	15827 Jun 28 17:21	20°03'49.04	31.30938 AU
				morning rise	15827 Jul 14 21:39	21°03'25.01	
conjunction	15822 Jun 18 03:01	9°03'57.33	0°01'31	retrograde	15827 Oct 10 15:41	23°03'18.07	
minimum elong	15822 Jun 18 03:00	9°03'57.33	0°00'42	opposition	15827 Dec 28 05:51	21°03'55.46	-0°03'52
behind sun begin	15822 Jun 17 20:32	9°03'56.59		min. Earth dist.	15827 Dec 28 17:24	21°03'54.58	29.30534 AU
behind sun end	15822 Jun 18 09:27	9°03'58.08		direct	15828 Mar 17 15:27	20°03'31.40	
max. Earth dist.	15822 Jun 17 13:59	9°03'56.21	31.33622 AU	evening set	15828 Jun 15 00:46	22°03'26.18	
morning rise	15822 Jul 03 19:01	10°03'32.18					
retrograde	15822 Sep 29 07:37	12°03'25.00		conjunction	15828 Jun 30 17:09	23°03'01.10	-0°04'06

minimum elong	15828 Jun 30 17:09	23°01'10	0°04'53	morning rise	15833 Jul 27 10:35	4°03'09	
behind sun begin	15828 Jun 30 10:51	23°00'36		retrograde	15833 Oct 23 05:00	6°02'39	
behind sun end	15828 Jun 30 23:28	23°01'43		opposition	15834 Jan 10 02:58	5°01'02	-0°09'34
max. Earth dist.	15828 Jun 30 04:42	23°00'01	31.30070 AU	min. Earth dist.	15834 Jan 10 13:20	5°00'19	29.24090 AU
morning rise	15828 Jul 16 07:52	23°03'54		direct	15834 Mar 31 11:19	3°03'50	
retrograde	15828 Oct 12 01:47	25°02'03		evening set	15834 Jun 28 15:57	5°03'32	
opposition	15828 Dec 29 17:16	24°06'40	-0°04'51				
min. Earth dist.	15828 Dec 30 05:48	24°05'48	29.29594 AU	conjunction	15834 Jul 14 06:55	6°06'23	-0°09'23
direct	15829 Mar 20 03:26	22°04'23		minimum elong	15834 Jul 14 06:55	6°06'23	0°10'05
evening set	15829 Jun 17 11:30	24°03'12		behind sun begin	15834 Jul 14 01:43	6°05'55	
				behind sun end	15834 Jul 14 12:07	6°06'51	
conjunction	15829 Jul 03 03:36	25°01'23	-0°05'00	max. Earth dist.	15834 Jul 13 19:29	6°05'19	31.23610 AU
minimum elong	15829 Jul 03 03:35	25°01'23	0°05'47	morning rise	15834 Jul 29 20:46	6°04'08	
behind sun begin	15829 Jul 02 21:24	25°01'30		retrograde	15834 Oct 25 17:20	8°03'45	
behind sun end	15829 Jul 03 09:46	25°01'36		opposition	15835 Jan 12 14:43	7°01'20	-0°10'28
max. Earth dist.	15829 Jul 02 14:31	25°01'51	31.29072 AU	min. Earth dist.	15835 Jan 13 00:30	7°01'26	29.23165 AU
morning rise	15829 Jul 18 18:14	25°04'47		direct	15835 Apr 02 20:36	5°04'56	
retrograde	15829 Oct 14 12:31	27°03'59		evening set	15835 Jul 01 02:12	7°04'41	
opposition	15830 Jan 01 04:41	26°01'34	-0°05'49				
min. Earth dist.	15830 Jan 01 16:11	26°01'47	29.28529 AU	conjunction	15835 Jul 16 17:09	8°01'32	-0°10'13
direct	15830 Mar 22 15:31	24°05'25		minimum elong	15835 Jul 16 17:09	8°01'32	0°10'55
evening set	15830 Jun 19 22:02	26°04'05		behind sun begin	15835 Jul 16 12:15	8°01'06	
				behind sun end	15835 Jul 16 22:04	8°01'58	
conjunction	15830 Jul 05 13:56	27°02'56	-0°05'54	max. Earth dist.	15835 Jul 16 07:18	8°01'38	31.22714 AU
minimum elong	15830 Jul 05 13:56	27°02'56	0°06'40	morning rise	15835 Aug 01 06:44	8°05'18	
behind sun begin	15830 Jul 05 07:53	27°02'23		retrograde	15835 Oct 28 04:05	10°04'02	
behind sun end	15830 Jul 05 19:59	27°02'28		opposition	15836 Jan 15 02:32	9°02'24	-0°11'22
max. Earth dist.	15830 Jul 05 01:09	27°02'45	31.27951 AU	min. Earth dist.	15836 Jan 15 12:13	9°02'24	29.22284 AU
morning rise	15830 Jul 21 04:20	27°05'40		direct	15836 Apr 04 08:33	7°05'17	
retrograde	15830 Oct 16 21:56	29°05'55		evening set	15836 Jul 02 12:49	9°05'40	
opposition	15831 Jan 03 16:19	28°02'26	-0°06'46				
min. Earth dist.	15831 Jan 04 04:38	28°02'36	29.27381 AU	conjunction	15836 Jul 18 03:26	10°02'55	-0°11'03
direct	15831 Mar 25 02:18	27°04'16		minimum elong	15836 Jul 18 03:25	10°02'55	0°11'44
evening set	15831 Jun 22 08:31	28°05'54		behind sun begin	15836 Jul 17 22:51	10°02'31	
max. Earth dist.	15831 Jul 07 11:57	29°03'27	31.26794 AU	behind sun end	15836 Jul 18 08:00	10°02'20	
				max. Earth dist.	15836 Jul 17 16:59	10°02'57	31.21853 AU
conjunction	15831 Jul 08 00:13	29°03'34	-0°06'47	morning rise	15836 Aug 02 17:02	11°03'41	
minimum elong	15831 Jul 08 00:13	29°03'34	0°07'32	retrograde	15836 Oct 29 17:47	12°05'33	
behind sun begin	15831 Jul 07 18:20	29°03'14		opposition	15837 Jan 16 14:11	11°03'45	-0°12'15
behind sun end	15831 Jul 08 06:06	29°03'17		min. Earth dist.	15837 Jan 16 22:59	11°03'49	29.21422 AU
	15831 Jul 19 17:52	0°00		direct	15837 Apr 06 20:35	10°01'50	
morning rise	15831 Jul 23 14:28	0°08'30		evening set	15837 Jul 04 23:23	12°05'40	
retrograde	15831 Oct 19 08:12	2°01'49					
opposition	15832 Jan 06 03:45	0°03'16	-0°07'43	conjunction	15837 Jul 20 13:56	12°04'32	-0°11'52
min. Earth dist.	15832 Jan 06 14:49	0°03'31	29.26221 AU	minimum elong	15837 Jul 20 13:56	12°04'32	0°12'31
	15832 Jan 31 01:09	30°00		behind sun begin	15837 Jul 20 09:44	12°04'10	
direct	15832 Mar 26 13:38	29°01'50		behind sun end	15837 Jul 20 18:08	12°04'55	
	15832 May 18 20:51	0°00		max. Earth dist.	15837 Jul 20 04:36	12°03'41	31.20968 AU
evening set	15832 Jun 23 18:57	1°09'43		morning rise	15837 Aug 05 03:16	13°01'59	
					15837 Oct 08 14:38	15°00	
conjunction	15832 Jul 09 10:23	1°04'34	-0°07'40	retrograde	15837 Nov 01 04:52	15°09'18	
minimum elong	15832 Jul 09 10:23	1°04'34	0°08'25		15837 Nov 25 01:51	15°00	
behind sun begin	15832 Jul 09 04:42	1°04'03		opposition	15838 Jan 19 02:16	13°04'39	-0°13'07
behind sun end	15832 Jul 09 16:04	1°04'50		min. Earth dist.	15838 Jan 19 11:45	13°04'01	29.20514 AU
max. Earth dist.	15832 Jul 08 22:03	1°04'25	31.25649 AU	direct	15838 Apr 09 08:21	12°02'27	
morning rise	15832 Jul 25 00:33	2°01'18		evening set	15838 Jul 07 10:00	14°01'30	
retrograde	15832 Oct 20 18:42	4°01'24					
opposition	15833 Jan 07 15:25	2°05'07	-0°08'39	conjunction	15838 Jul 23 00:16	14°05'22	-0°12'40
min. Earth dist.	15833 Jan 08 02:42	2°04'20	29.25117 AU	minimum elong	15838 Jul 23 00:16	14°05'22	0°13'18
direct	15833 Mar 28 23:41	1°02'54		behind sun begin	15838 Jul 22 20:30	14°05'02	
evening set	15833 Jun 26 05:23	3°02'03		behind sun end	15838 Jul 23 04:02	14°05'42	
				max. Earth dist.	15838 Jul 22 14:45	14°05'29	31.20033 AU
conjunction	15833 Jul 11 20:42	3°05'24	-0°08'32		15838 Jul 26 09:32	15°00	
minimum elong	15833 Jul 11 20:43	3°05'24	0°09'15	morning rise	15838 Aug 07 13:34	15°02'09	
behind sun begin	15833 Jul 11 15:15	3°05'45		retrograde	15838 Nov 03 16:37	17°02'15	
behind sun end	15833 Jul 12 02:10	3°05'54		opposition	15839 Jan 21 14:18	15°05'36	-0°13'57
max. Earth dist.	15833 Jul 11 09:46	3°05'24	31.24584 AU	min. Earth dist.	15839 Jan 21 22:32	15°05'02	29.19533 AU

	15839 Mar 02 03:10	15° κ δ δ			15845 Jan 02 23:22	30° κ δ δ	
direct	15839 Apr 11 20:42	14° Ω 34'35		opposition	15845 Feb 03 15:39	29° Ω 11'18	-0°18'32
	15839 May 21 08:59	15° Ω		min. Earth dist.	15845 Feb 03 23:01	29° Ω 10'48	29.11470 AU
evening set	15839 Jul 09 20:43	16° Ω 29'30		direct	15845 Apr 24 18:04	27° Ω 47'07	
				evening set	15845 Jul 22 12:51	29° Ω 41'58	
					15845 Jul 30 15:05	0° η	
conjunction	15839 Jul 25 10:50	17° Ω 04'23	-0°13'26				
minimum elong	15839 Jul 25 10:50	17° Ω 04'23	0°14'03				
behind sun begin	15839 Jul 25 07:34	17° Ω 04'05		conjunction	15845 Aug 07 02:05	0° η 16'51	-0°17'39
behind sun end	15839 Jul 25 14:06	17° Ω 04'40		minimum elong	15845 Aug 07 02:05	0° η 16'51	0°18'07
max. Earth dist.	15839 Jul 25 01:31	17° Ω 03'31	31.18992 AU	max. Earth dist.	15845 Aug 06 18:22	0° η 16'08	31.10781 AU
morning rise	15839 Aug 09 23:58	17° Ω 39'11		morning rise	15845 Aug 22 14:52	0° η 51'42	
retrograde	15839 Nov 06 03:36	19° Ω 33'23		retrograde	15845 Nov 18 22:52	2° η 46'25	
opposition	15840 Jan 24 02:28	18° Ω 10'42	-0°14'47	opposition	15846 Feb 06 03:57	1° η 23'15	-0°19'12
min. Earth dist.	15840 Jan 24 11:35	18° Ω 10'05	29.18444 AU	min. Earth dist.	15846 Feb 06 09:57	1° η 22'51	29.10129 AU
direct	15840 Apr 13 08:11	16° Ω 46'42			15846 Apr 19 17:08	30° κ δ δ	
evening set	15840 Jul 11 07:25	18° Ω 41'37		direct	15846 Apr 27 05:38	29° Ω 59'03	
					15846 May 04 18:54	0° η	
conjunction	15840 Jul 26 21:26	19° Ω 16'30	-0°14'12	evening set	15846 Jul 24 23:17	1° η 53'54	
minimum elong	15840 Jul 26 21:26	19° Ω 16'30	0°14'48				
behind sun begin	15840 Jul 26 18:47	19° Ω 16'16		conjunction	15846 Aug 09 12:30	2° η 28'48	-0°18'16
behind sun end	15840 Jul 27 00:05	19° Ω 16'45		minimum elong	15846 Aug 09 12:30	2° η 28'48	0°18'43
max. Earth dist.	15840 Jul 26 12:28	19° Ω 15'40	31.17843 AU	max. Earth dist.	15846 Aug 09 06:20	2° η 28'14	31.09490 AU
morning rise	15840 Aug 11 10:28	19° Ω 51'19		morning rise	15846 Aug 25 01:06	3° η 03'40	
retrograde	15840 Nov 07 14:52	21° Ω 45'37		retrograde	15846 Nov 21 09:51	4° η 58'30	
opposition	15841 Jan 25 14:37	20° Ω 22'53	-0°15'34	opposition	15847 Feb 08 16:26	3° η 35'17	-0°19'51
min. Earth dist.	15841 Jan 25 22:43	20° Ω 22'20	29.17216 AU	min. Earth dist.	15847 Feb 08 22:35	3° η 34'51	29.08901 AU
direct	15841 Apr 15 20:47	18° Ω 58'52		direct	15847 Apr 29 17:08	2° η 11'05	
evening set	15841 Jul 13 18:16	20° Ω 53'48		evening set	15847 Jul 27 09:54	4° η 05'57	
conjunction	15841 Jul 29 08:01	21° Ω 28'41	-0°14'56	conjunction	15847 Aug 11 22:59	4° η 40'51	-0°18'52
minimum elong	15841 Jul 29 08:01	21° Ω 28'41	0°15'30	minimum elong	15847 Aug 11 22:59	4° η 40'51	0°19'17
behind sun begin	15841 Jul 29 06:11	21° Ω 28'31		max. Earth dist.	15847 Aug 11 17:09	4° η 40'19	31.08330 AU
behind sun end	15841 Jul 29 09:51	21° Ω 28'51		morning rise	15847 Aug 27 11:39	5° η 15'44	
max. Earth dist.	15841 Jul 28 22:30	21° Ω 27'48	31.16544 AU	retrograde	15847 Nov 23 22:37	7° η 10'41	
morning rise	15841 Aug 13 21:01	22° Ω 03'31		opposition	15848 Feb 11 04:41	5° η 47'26	-0°20'28
retrograde	15841 Nov 10 01:11	23° Ω 57'54		min. Earth dist.	15848 Feb 11 09:08	5° η 47'08	29.07788 AU
opposition	15842 Jan 28 02:54	22° Ω 35'06	-0°16'21	direct	15848 May 01 05:35	4° η 23'16	
min. Earth dist.	15842 Jan 28 11:35	22° Ω 34'31	29.15860 AU	evening set	15848 Jul 28 20:33	6° η 18'10	
direct	15842 Apr 18 07:23	21° Ω 11'03					
evening set	15842 Jul 16 04:56	23° Ω 05'58		conjunction	15848 Aug 13 09:34	6° η 53'05	-0°19'26
				minimum elong	15848 Aug 13 09:34	6° η 53'05	0°19'50
conjunction	15842 Jul 31 18:42	23° Ω 40'51	-0°15'39	max. Earth dist.	15848 Aug 13 04:20	6° η 52'36	31.07253 AU
minimum elong	15842 Jul 31 18:42	23° Ω 40'51	0°16'12	morning rise	15848 Aug 28 22:12	7° η 27'59	
max. Earth dist.	15842 Jul 31 10:20	23° Ω 40'05	31.15136 AU	retrograde	15848 Nov 25 10:41	9° η 23'04	
morning rise	15842 Aug 16 07:30	24° Ω 15'41		opposition	15849 Feb 12 17:15	7° η 59'48	-0°21'03
retrograde	15842 Nov 12 10:58	26° Ω 10'09		min. Earth dist.	15849 Feb 12 22:08	7° η 59'28	29.06747 AU
opposition	15843 Jan 30 15:12	24° Ω 47'16	-0°17'06	direct	15849 May 03 17:15	6° η 35'41	
min. Earth dist.	15843 Jan 30 23:13	24° Ω 46'43	29.14401 AU	evening set	15849 Jul 31 07:12	8° η 30'37	
direct	15843 Apr 20 19:31	23° Ω 23'10					
evening set	15843 Jul 18 15:34	25° Ω 18'03		conjunction	15849 Aug 15 20:09	9° η 05'32	-0°19'58
				minimum elong	15849 Aug 15 20:09	9° η 05'33	0°20'20
conjunction	15843 Aug 03 05:03	25° Ω 52'56	-0°16'20	max. Earth dist.	15849 Aug 15 15:51	9° η 05'09	31.06238 AU
minimum elong	15843 Aug 03 05:03	25° Ω 52'56	0°16'52	morning rise	15849 Aug 31 08:43	9° η 40'28	
max. Earth dist.	15843 Aug 02 20:04	25° Ω 52'06	31.13657 AU	retrograde	15849 Nov 27 22:38	11° η 35'41	
morning rise	15843 Aug 18 17:58	26° Ω 27'46		opposition	15850 Feb 15 05:46	10° η 12'24	-0°21'37
retrograde	15843 Nov 14 23:11	28° Ω 22'19		min. Earth dist.	15850 Feb 15 09:13	10° η 12'10	29.05735 AU
opposition	15844 Feb 02 03:28	26° Ω 59'20	-0°17'50	direct	15850 May 06 06:02	8° η 48'20	
min. Earth dist.	15844 Feb 02 11:04	26° Ω 58'48	29.12921 AU	evening set	15850 Aug 02 18:04	10° η 43'18	
direct	15844 Apr 22 05:26	25° Ω 35'11					
evening set	15844 Jul 20 02:07	27° Ω 30'02		conjunction	15850 Aug 18 06:50	11° η 18'14	-0°20'28
				minimum elong	15850 Aug 18 06:50	11° η 18'14	0°20'49
conjunction	15844 Aug 04 15:38	28° Ω 04'55	-0°17'00	max. Earth dist.	15850 Aug 18 02:21	11° η 17'49	31.05229 AU
minimum elong	15844 Aug 04 15:38	28° Ω 04'55	0°17'30	morning rise	15850 Sep 02 19:28	11° η 53'11	
max. Earth dist.	15844 Aug 04 08:13	28° Ω 04'14	31.12180 AU	retrograde	15850 Nov 30 10:06	13° η 48'33	
morning rise	15844 Aug 20 04:19	28° Ω 39'46		opposition	15851 Feb 17 18:31	12° η 25'16	-0°22'09
	15844 Oct 01 14:47	0° η		min. Earth dist.	15851 Feb 17 22:17	12° η 25'00	29.04729 AU
retrograde	15844 Nov 16 09:29	0° η 34'23		direct	15851 May 08 16:21	11° η 01'14	

evening set	15851 Aug 05 04:46	12° <u>17</u> 56'14		opposition	15858 Mar 05 12:30	27° <u>17</u> 59'01	-0°24'53
				min. Earth dist.	15858 Mar 05 13:35	27° <u>17</u> 58'56	28.95873 AU
conjunction	15851 Aug 20 17:38	13° <u>17</u> 31'11	-0°20'57	direct	15858 May 24 03:53	26° <u>17</u> 34'57	
minimum elong	15851 Aug 20 17:38	13° <u>17</u> 31'11	0°21'16	evening set	15858 Aug 20 09:39	28° <u>17</u> 29'55	
max. Earth dist.	15851 Aug 20 14:31	13° <u>17</u> 30'54	31.04201 AU				
morning rise	15851 Sep 05 06:10	14° <u>17</u> 06'09		conjunction	15858 Sep 04 22:18	29° <u>17</u> 04'57	-0°23'24
retrograde	15851 Dec 02 20:46	16° <u>17</u> 01'40		minimum elong	15858 Sep 04 22:18	29° <u>17</u> 04'57	0°23'30
opposition	15852 Feb 20 07:15	14° <u>17</u> 38'21	-0°22'38	max. Earth dist.	15858 Sep 04 22:06	29° <u>17</u> 04'56	30.95280 AU
min. Earth dist.	15852 Feb 20 10:20	14° <u>17</u> 38'09	29.03662 AU	morning rise	15858 Sep 20 11:11	29° <u>17</u> 40'02	
direct	15852 May 10 04:22	13° <u>17</u> 14'22			15858 Sep 29 15:30	0° <u>17</u>	
evening set	15852 Aug 06 15:52	15° <u>17</u> 09'23		retrograde	15858 Dec 18 12:51	1° <u>17</u> 36'17	
				opposition	15859 Mar 08 01:20	0° <u>17</u> 12'29	-0°25'08
conjunction	15852 Aug 22 04:29	15° <u>17</u> 44'22	-0°21'24	min. Earth dist.	15859 Mar 08 00:39	0° <u>17</u> 12'32	28.94731 AU
minimum elong	15852 Aug 22 04:29	15° <u>17</u> 44'22	0°21'41		15859 Mar 15 15:42	30° <u>17</u>	
max. Earth dist.	15852 Aug 22 00:32	15° <u>17</u> 44'00	31.03096 AU	direct	15859 May 26 17:19	28° <u>17</u> 48'25	
morning rise	15852 Sep 06 17:11	16° <u>17</u> 19'21			15859 Aug 02 03:46	0° <u>17</u>	
retrograde	15852 Dec 04 09:56	18° <u>17</u> 15'00		evening set	15859 Aug 22 20:37	0° <u>17</u> 43'23	
opposition	15853 Feb 21 19:58	16° <u>17</u> 51'40	-0°23'06				
min. Earth dist.	15853 Feb 21 22:50	16° <u>17</u> 51'28	29.02518 AU	conjunction	15859 Sep 07 09:11	1° <u>17</u> 18'26	-0°23'37
direct	15853 May 12 14:09	15° <u>17</u> 27'41		minimum elong	15859 Sep 07 09:11	1° <u>17</u> 18'26	0°23'41
evening set	15853 Aug 09 02:51	17° <u>17</u> 22'44		max. Earth dist.	15859 Sep 07 09:04	1° <u>17</u> 18'26	30.94205 AU
				morning rise	15859 Sep 22 22:17	1° <u>17</u> 53'33	
conjunction	15853 Aug 24 15:35	17° <u>17</u> 57'43	-0°21'49	retrograde	15859 Dec 21 00:41	3° <u>17</u> 49'54	
minimum elong	15853 Aug 24 15:36	17° <u>17</u> 57'43	0°22'04	opposition	15860 Mar 09 14:19	2° <u>17</u> 26'03	-0°25'20
max. Earth dist.	15853 Aug 24 12:52	17° <u>17</u> 57'28	31.01893 AU	min. Earth dist.	15860 Mar 09 13:38	2° <u>17</u> 26'06	28.93728 AU
morning rise	15853 Sep 09 04:07	18° <u>17</u> 32'43		direct	15860 May 28 04:21	1° <u>17</u> 02'00	
retrograde	15853 Dec 06 20:57	20° <u>17</u> 28'30		evening set	15860 Aug 24 07:35	2° <u>17</u> 56'58	
opposition	15854 Feb 24 08:56	19° <u>17</u> 05'07	-0°23'32				
min. Earth dist.	15854 Feb 24 11:49	19° <u>17</u> 04'55	29.01256 AU	conjunction	15860 Sep 08 20:19	3° <u>17</u> 32'02	-0°23'48
direct	15854 May 15 02:52	17° <u>17</u> 41'09		minimum elong	15860 Sep 08 20:19	3° <u>17</u> 32'02	0°23'50
evening set	15854 Aug 11 13:52	19° <u>17</u> 36'11		max. Earth dist.	15860 Sep 08 21:54	3° <u>17</u> 32'11	30.93260 AU
				morning rise	15860 Sep 24 09:21	4° <u>17</u> 07'10	
conjunction	15854 Aug 27 02:26	20° <u>17</u> 11'10	-0°22'12	retrograde	15860 Dec 22 11:58	6° <u>17</u> 03'37	
minimum elong	15854 Aug 27 02:26	20° <u>17</u> 11'10	0°22'25	opposition	15861 Mar 12 03:10	4° <u>17</u> 39'45	-0°25'31
max. Earth dist.	15854 Aug 26 23:04	20° <u>17</u> 10'52	31.00592 AU	min. Earth dist.	15861 Mar 12 01:24	4° <u>17</u> 39'52	28.92829 AU
morning rise	15854 Sep 11 15:10	20° <u>17</u> 46'12		direct	15861 May 30 17:28	3° <u>17</u> 15'44	
retrograde	15854 Dec 09 10:49	22° <u>17</u> 42'05		evening set	15861 Aug 26 18:45	5° <u>17</u> 10'42	
opposition	15855 Feb 26 21:50	21° <u>17</u> 18'37	-0°23'55				
min. Earth dist.	15855 Feb 26 23:46	21° <u>17</u> 18'29	28.99911 AU	conjunction	15861 Sep 11 07:21	5° <u>17</u> 45'47	-0°23'57
direct	15855 May 17 14:23	19° <u>17</u> 54'37		minimum elong	15861 Sep 11 07:21	5° <u>17</u> 45'47	0°23'57
evening set	15855 Aug 14 00:50	21° <u>17</u> 49'39		max. Earth dist.	15861 Sep 11 08:33	5° <u>17</u> 45'54	30.92416 AU
				morning rise	15861 Sep 26 20:39	6° <u>17</u> 20'56	
conjunction	15855 Aug 29 13:30	22° <u>17</u> 24'39	-0°22'33	retrograde	15861 Dec 25 01:22	8° <u>17</u> 17'31	
minimum elong	15855 Aug 29 13:30	22° <u>17</u> 24'39	0°22'45	opposition	15862 Mar 14 16:16	6° <u>17</u> 53'37	-0°25'39
max. Earth dist.	15855 Aug 29 11:15	22° <u>17</u> 24'27	30.99209 AU	min. Earth dist.	15862 Mar 14 13:56	6° <u>17</u> 53'47	28.92030 AU
morning rise	15855 Sep 14 02:11	22° <u>17</u> 59'42		direct	15862 Jun 02 03:57	5° <u>17</u> 29'38	
retrograde	15855 Dec 11 22:00	24° <u>17</u> 55'40		evening set	15862 Aug 29 05:44	7° <u>17</u> 24'37	
opposition	15856 Feb 29 10:40	23° <u>17</u> 32'07	-0°24'16				
min. Earth dist.	15856 Feb 29 13:09	23° <u>17</u> 31'57	28.98515 AU	conjunction	15862 Sep 13 18:33	7° <u>17</u> 59'43	-0°24'03
direct	15856 May 19 01:39	22° <u>17</u> 08'05		minimum elong	15862 Sep 13 18:34	7° <u>17</u> 59'43	0°24'02
evening set	15856 Aug 15 11:49	24° <u>17</u> 03'06		max. Earth dist.	15862 Sep 13 21:25	7° <u>17</u> 59'59	30.91641 AU
				morning rise	15862 Sep 29 07:49	8° <u>17</u> 34'54	
conjunction	15856 Aug 31 00:27	24° <u>17</u> 38'07	-0°22'52	retrograde	15862 Dec 27 12:01	10° <u>17</u> 31'35	
minimum elong	15856 Aug 31 00:27	24° <u>17</u> 38'07	0°23'02	opposition	15863 Mar 17 05:26	9° <u>17</u> 07'41	-0°25'44
max. Earth dist.	15856 Aug 30 22:24	24° <u>17</u> 37'55	30.97825 AU	min. Earth dist.	15863 Mar 17 02:51	9° <u>17</u> 07'51	28.91266 AU
morning rise	15856 Sep 15 13:16	25° <u>17</u> 13'10		direct	15863 Jun 04 16:21	7° <u>17</u> 43'44	
retrograde	15856 Dec 13 11:35	27° <u>17</u> 09'13		evening set	15863 Aug 31 17:06	9° <u>17</u> 38'43	
opposition	15857 Mar 02 23:29	25° <u>17</u> 45'34	-0°24'36				
min. Earth dist.	15857 Mar 03 00:21	25° <u>17</u> 45'31	28.97148 AU	conjunction	15863 Sep 16 05:50	10° <u>17</u> 13'50	-0°24'08
direct	15857 May 21 15:14	24° <u>17</u> 21'31		minimum elong	15863 Sep 16 05:50	10° <u>17</u> 13'50	0°24'04
evening set	15857 Aug 17 22:44	26° <u>17</u> 16'30		max. Earth dist.	15863 Sep 16 08:12	10° <u>17</u> 14'03	30.90889 AU
				morning rise	15863 Oct 01 19:23	10° <u>17</u> 49'02	
conjunction	15857 Sep 02 11:18	26° <u>17</u> 51'32	-0°23'09	retrograde	15863 Dec 30 01:45	12° <u>17</u> 45'51	
minimum elong	15857 Sep 02 11:19	26° <u>17</u> 51'32	0°23'17	opposition	15864 Mar 18 18:25	11° <u>17</u> 21'55	-0°25'48
max. Earth dist.	15857 Sep 02 09:57	26° <u>17</u> 51'24	30.96487 AU	min. Earth dist.	15864 Mar 18 14:56	11° <u>17</u> 22'10	28.90510 AU
morning rise	15857 Sep 18 00:10	27° <u>17</u> 26'36		direct	15864 Jun 06 02:55	9° <u>17</u> 58'01	
retrograde	15857 Dec 16 00:35	29° <u>17</u> 22'45		evening set	15864 Sep 02 04:29	11° <u>17</u> 53'01	

conjunction	15864 Sep 17 17:23	12° <u>♂</u> 28'09	-0°24'10	direct	15871 Jun 22 19:05	25° <u>♂</u> 39'57	
minimum elong	15864 Sep 17 17:23	12° <u>♂</u> 28'09	0°24'04	evening set	15871 Sep 18 12:50	27° <u>♂</u> 34'50	
max. Earth dist.	15864 Sep 17 20:46	12° <u>♂</u> 28'28	30.90101 AU				
morning rise	15864 Oct 03 06:56	13° <u>♂</u> 03'22		conjunction	15871 Oct 04 02:33	28° <u>♂</u> 10'05	-0°23'22
retrograde	15864 Dec 31 13:45	15° <u>♂</u> 00'18		minimum elong	15871 Oct 04 02:33	28° <u>♂</u> 10'05	0°23'04
opposition	15865 Mar 21 07:47	13° <u>♂</u> 36'21	-0°25'49	max. Earth dist.	15871 Oct 04 09:10	28° <u>♂</u> 10'42	30.83163 AU
min. Earth dist.	15865 Mar 21 04:55	13° <u>♂</u> 36'33	28.89691 AU	morning rise	15871 Oct 19 17:16	28° <u>♂</u> 45'28	
direct	15865 Jun 08 14:08	12° <u>♂</u> 12'28			15871 Nov 26 18:12	0° <u>♂</u>	
evening set	15865 Sep 04 15:56	14° <u>♂</u> 07'28		retrograde	15872 Jan 17 07:42	0° <u>♂</u> 42'56	
					15872 Mar 11 01:18	30° <u>♂</u>	
conjunction	15865 Sep 20 04:51	14° <u>♂</u> 42'37	-0°24'09	opposition	15872 Apr 06 04:34	29° <u>♂</u> 18'33	-0°24'49
minimum elong	15865 Sep 20 04:50	14° <u>♂</u> 42'37	0°24'02	min. Earth dist.	15872 Apr 05 22:15	29° <u>♂</u> 18'59	28.82783 AU
max. Earth dist.	15865 Sep 20 08:09	14° <u>♂</u> 42'56	30.89246 AU	direct	15872 Jun 24 07:49	27° <u>♂</u> 54'37	
morning rise	15865 Oct 05 18:34	15° <u>♂</u> 17'52		evening set	15872 Sep 20 00:28	29° <u>♂</u> 49'29	
retrograde	15866 Jan 03 04:05	17° <u>♂</u> 14'54			15872 Sep 24 17:09	0° <u>♂</u>	
opposition	15866 Mar 23 21:05	15° <u>♂</u> 50'55	-0°25'47				
min. Earth dist.	15866 Mar 23 16:58	15° <u>♂</u> 51'12	28.88785 AU	conjunction	15872 Oct 05 14:11	0° <u>♂</u> 24'45	-0°23'07
direct	15866 Jun 11 03:26	14° <u>♂</u> 27'02		minimum elong	15872 Oct 05 14:11	0° <u>♂</u> 24'45	0°22'46
evening set	15866 Sep 07 03:30	16° <u>♂</u> 22'02		max. Earth dist.	15872 Oct 05 20:30	0° <u>♂</u> 25'21	30.82426 AU
				morning rise	15872 Oct 21 05:15	1° <u>♂</u> 00'10	
conjunction	15866 Sep 22 16:29	16° <u>♂</u> 57'12	-0°24'07	retrograde	15873 Jan 18 21:24	2° <u>♂</u> 57'43	
minimum elong	15866 Sep 22 16:30	16° <u>♂</u> 57'12	0°23'58	opposition	15873 Apr 08 17:46	1° <u>♂</u> 33'19	-0°24'31
max. Earth dist.	15866 Sep 22 19:56	16° <u>♂</u> 57'31	30.88281 AU	min. Earth dist.	15873 Apr 08 10:15	1° <u>♂</u> 33'50	28.82113 AU
morning rise	15866 Oct 08 06:23	17° <u>♂</u> 32'28		direct	15873 Jun 26 18:22	0° <u>♂</u> 09'24	
retrograde	15867 Jan 05 17:33	19° <u>♂</u> 29'36		evening set	15873 Sep 22 11:54	2° <u>♂</u> 04'16	
opposition	15867 Mar 26 10:29	18° <u>♂</u> 05'32	-0°25'43				
min. Earth dist.	15867 Mar 26 07:09	18° <u>♂</u> 05'46	28.87776 AU	conjunction	15873 Oct 08 01:51	2° <u>♂</u> 39'34	-0°22'49
direct	15867 Jun 13 15:44	16° <u>♂</u> 41'39		minimum elong	15873 Oct 08 01:51	2° <u>♂</u> 39'34	0°22'28
evening set	15867 Sep 09 14:57	18° <u>♂</u> 36'38		max. Earth dist.	15873 Oct 08 09:36	2° <u>♂</u> 40'17	30.81809 AU
				morning rise	15873 Oct 23 17:00	3° <u>♂</u> 15'00	
conjunction	15867 Sep 25 04:10	19° <u>♂</u> 11'49	-0°24'02	retrograde	15874 Jan 21 09:11	5° <u>♂</u> 12'39	
minimum elong	15867 Sep 25 04:10	19° <u>♂</u> 11'49	0°23'51	opposition	15874 Apr 11 07:07	3° <u>♂</u> 48'14	-0°24'11
max. Earth dist.	15867 Sep 25 08:11	19° <u>♂</u> 12'11	30.87234 AU	min. Earth dist.	15874 Apr 10 23:48	3° <u>♂</u> 48'45	28.81552 AU
morning rise	15867 Oct 10 18:12	19° <u>♂</u> 47'06		direct	15874 Jun 29 05:25	2° <u>♂</u> 24'21	
retrograde	15868 Jan 08 06:39	21° <u>♂</u> 44'18		evening set	15874 Sep 24 23:34	4° <u>♂</u> 19'14	
opposition	15868 Mar 27 23:42	20° <u>♂</u> 20'10	-0°25'37				
min. Earth dist.	15868 Mar 27 19:06	20° <u>♂</u> 20'29	28.86683 AU	conjunction	15874 Oct 10 13:39	4° <u>♂</u> 54'32	-0°22'30
direct	15868 Jun 15 05:38	18° <u>♂</u> 56'15		minimum elong	15874 Oct 10 13:39	4° <u>♂</u> 54'32	0°22'06
evening set	15868 Sep 11 02:31	20° <u>♂</u> 51'13		max. Earth dist.	15874 Oct 10 21:38	4° <u>♂</u> 55'17	30.81309 AU
				morning rise	15874 Oct 26 05:06	5° <u>♂</u> 30'00	
conjunction	15868 Sep 26 15:42	21° <u>♂</u> 26'24	-0°23'55	retrograde	15875 Jan 23 23:16	7° <u>♂</u> 27'44	
minimum elong	15868 Sep 26 15:42	21° <u>♂</u> 26'24	0°23'42	opposition	15875 Apr 13 20:14	6° <u>♂</u> 03'19	-0°23'49
max. Earth dist.	15868 Sep 26 19:25	21° <u>♂</u> 26'45	30.86122 AU	min. Earth dist.	15875 Apr 13 11:31	6° <u>♂</u> 03'56	28.81090 AU
morning rise	15868 Oct 12 06:00	22° <u>♂</u> 01'43		direct	15875 Jul 01 17:58	4° <u>♂</u> 39'28	
retrograde	15869 Jan 09 19:33	23° <u>♂</u> 58'58		evening set	15875 Sep 27 11:19	6° <u>♂</u> 34'22	
opposition	15869 Mar 30 12:59	22° <u>♂</u> 34'46	-0°25'28				
min. Earth dist.	15869 Mar 30 08:46	22° <u>♂</u> 35'03	28.85580 AU	conjunction	15875 Oct 13 01:33	7° <u>♂</u> 09'42	-0°22'08
direct	15869 Jun 17 17:38	21° <u>♂</u> 10'50		minimum elong	15875 Oct 13 01:33	7° <u>♂</u> 09'42	0°21'43
evening set	15869 Sep 13 13:55	23° <u>♂</u> 05'45		max. Earth dist.	15875 Oct 13 09:59	7° <u>♂</u> 10'29	30.80866 AU
				morning rise	15875 Oct 28 17:14	7° <u>♂</u> 45'11	
conjunction	15869 Sep 29 03:22	23° <u>♂</u> 40'58	-0°23'46	retrograde	15876 Jan 26 12:34	9° <u>♂</u> 43'01	
minimum elong	15869 Sep 29 03:22	23° <u>♂</u> 40'58	0°23'31	opposition	15876 Apr 15 09:34	8° <u>♂</u> 18'36	-0°23'24
max. Earth dist.	15869 Sep 29 08:40	23° <u>♂</u> 41'27	30.85040 AU	min. Earth dist.	15876 Apr 15 01:32	8° <u>♂</u> 19'09	28.80668 AU
morning rise	15869 Oct 14 17:42	24° <u>♂</u> 16'17		direct	15876 Jul 03 05:05	6° <u>♂</u> 54'46	
retrograde	15870 Jan 12 07:57	26° <u>♂</u> 13'36		evening set	15876 Sep 28 23:05	8° <u>♂</u> 49'41	
opposition	15870 Apr 02 02:14	24° <u>♂</u> 49'20	-0°25'17				
min. Earth dist.	15870 Apr 01 20:55	24° <u>♂</u> 49'42	28.84529 AU	conjunction	15876 Oct 14 13:33	9° <u>♂</u> 25'02	-0°21'44
direct	15870 Jun 20 07:46	23° <u>♂</u> 25'23		minimum elong	15876 Oct 14 13:33	9° <u>♂</u> 25'02	0°21'17
evening set	15870 Sep 16 01:23	25° <u>♂</u> 20'16		max. Earth dist.	15876 Oct 14 22:38	9° <u>♂</u> 25'53	30.80451 AU
				morning rise	15876 Oct 30 05:22	10° <u>♂</u> 00'32	
conjunction	15870 Oct 01 14:47	25° <u>♂</u> 55'30	-0°23'35	retrograde	15877 Jan 28 02:27	11° <u>♂</u> 58'27	
minimum elong	15870 Oct 01 14:48	25° <u>♂</u> 55'30	0°23'18	opposition	15877 Apr 17 22:47	10° <u>♂</u> 34'02	-0°22'58
max. Earth dist.	15870 Oct 01 19:44	25° <u>♂</u> 55'58	30.84040 AU	min. Earth dist.	15877 Apr 17 13:30	10° <u>♂</u> 34'40	28.80237 AU
morning rise	15870 Oct 17 05:29	26° <u>♂</u> 30'51		direct	15877 Jul 05 18:10	9° <u>♂</u> 10'14	
retrograde	15871 Jan 14 21:13	28° <u>♂</u> 28'15		evening set	15877 Oct 01 11:09	11° <u>♂</u> 05'10	
opposition	15871 Apr 04 15:30	27° <u>♂</u> 03'54	-0°25'04				
min. Earth dist.	15871 Apr 04 09:40	27° <u>♂</u> 04'19	28.83597 AU	conjunction	15877 Oct 17 01:40	11° <u>♂</u> 40'31	-0°21'18

minimum elong	15877 Oct 17 01:40	11° M 40'31	0°20'50	opposition	15884 May 03 19:19	26° M 21'32	-0°18'56
max. Earth dist.	15877 Oct 17 10:15	11° M 41'20	30.79996 AU	min. Earth dist.	15884 May 03 08:11	26° M 22'19	28.76190 AU
morning rise	15877 Nov 01 17:48	12° M 16'03		direct	15884 Jul 21 11:50	24° M 57'32	
retrograde	15878 Jan 30 16:58	14° M 14'02		evening set	15884 Oct 16 23:06	26° M 52'12	
opposition	15878 Apr 20 12:15	12° M 49'35	-0°22'29				
min. Earth dist.	15878 Apr 20 03:39	12° M 50'11	28.79761 AU	conjunction	15884 Nov 01 15:12	27° M 27'40	-0°17'27
direct	15878 Jul 08 06:35	11° M 25'48		minimum elong	15884 Nov 01 15:12	27° M 27'40	0°16'48
evening set	15878 Oct 03 23:02	13° M 20'42		max. Earth dist.	15884 Nov 02 02:26	27° M 28'44	30.76016 AU
				morning rise	15884 Nov 17 09:05	28° M 03'20	
conjunction	15878 Oct 19 13:55	13° M 56'05	-0°20'50		15885 Feb 06 06:37	0° ∞	
minimum elong	15878 Oct 19 13:55	13° M 56'05	0°20'20	retrograde	15885 Feb 15 09:52	0° ∞ 01'25	
max. Earth dist.	15878 Oct 19 23:33	13° M 57'00	30.79476 AU		15885 Feb 24 17:15	30° R M	
morning rise	15878 Nov 04 06:11	14° M 31'38		opposition	15885 May 06 08:27	28° M 36'34	-0°18'14
	15878 Nov 17 09:15	15° M		min. Earth dist.	15885 May 05 21:45	28° M 37'19	28.75911 AU
retrograde	15879 Feb 02 06:54	16° M 29'40		direct	15885 Jul 23 22:34	27° M 12'34	
opposition	15879 Apr 23 01:34	15° M 05'10	-0°21'58	evening set	15885 Oct 19 11:04	29° M 07'13	
min. Earth dist.	15879 Apr 22 16:20	15° M 05'49	28.79184 AU				
	15879 Apr 26 04:20	15° R M		conjunction	15885 Nov 04 03:30	29° M 42'42	-0°16'47
direct	15879 Jul 10 21:27	13° M 41'22		minimum elong	15885 Nov 04 03:29	29° M 42'42	0°16'09
	15879 Sep 19 10:40	15° M		max. Earth dist.	15885 Nov 04 15:32	29° M 43'50	30.75824 AU
evening set	15879 Oct 06 11:15	15° M 36'15			15885 Nov 11 17:27	0° ∞	
				morning rise	15885 Nov 19 21:36	0° ∞ 18'23	
conjunction	15879 Oct 22 02:11	16° M 11'39	-0°20'21	retrograde	15886 Feb 17 23:37	2° ∞ 16'30	
minimum elong	15879 Oct 22 02:11	16° M 11'39	0°19'50	opposition	15886 May 08 21:22	0° ∞ 51'39	-0°17'31
max. Earth dist.	15879 Oct 22 10:46	16° M 12'27	30.78858 AU	min. Earth dist.	15886 May 08 09:07	0° ∞ 52'30	28.75792 AU
morning rise	15879 Nov 06 18:51	16° M 47'13			15886 Jun 11 03:54	30° R M	
retrograde	15880 Feb 04 20:08	18° M 45'16		direct	15886 Jul 26 11:13	29° M 27'40	
opposition	15880 Apr 24 14:47	17° M 20'42	-0°21'25		15886 Sep 08 10:18	0° ∞	
min. Earth dist.	15880 Apr 24 05:46	17° M 21'20	28.78531 AU	evening set	15886 Oct 21 23:09	1° ∞ 22'19	
direct	15880 Jul 12 09:17	15° M 56'52					
evening set	15880 Oct 07 23:14	17° M 51'42		conjunction	15886 Nov 06 15:43	1° ∞ 57'49	-0°16'06
				minimum elong	15886 Nov 06 15:43	1° ∞ 57'49	0°15'25
conjunction	15880 Oct 23 14:33	18° M 27'07	-0°19'49	behind sun begin	15886 Nov 06 13:52	1° ∞ 57'39	
minimum elong	15880 Oct 23 14:33	18° M 27'07	0°19'16	behind sun end	15886 Nov 06 17:34	1° ∞ 57'59	
max. Earth dist.	15880 Oct 24 00:22	18° M 28'02	30.78175 AU	max. Earth dist.	15886 Nov 07 03:37	1° ∞ 58'56	30.75774 AU
morning rise	15880 Nov 08 07:18	19° M 02'42		morning rise	15886 Nov 22 10:14	2° ∞ 33'31	
retrograde	15881 Feb 06 07:45	21° M 00'44		retrograde	15887 Feb 20 13:46	4° ∞ 31'40	
opposition	15881 Apr 27 04:04	19° M 36'07	-0°20'50	opposition	15887 May 11 10:27	3° ∞ 06'50	-0°16'45
min. Earth dist.	15881 Apr 26 18:52	19° M 36'45	28.77833 AU	min. Earth dist.	15887 May 10 22:39	3° ∞ 07'39	28.75812 AU
direct	15881 Jul 14 23:22	18° M 12'14		direct	15887 Jul 28 22:56	1° ∞ 42'53	
evening set	15881 Oct 10 11:10	20° M 07'00		evening set	15887 Oct 24 11:15	3° ∞ 37'32	
conjunction	15881 Oct 26 02:34	20° M 42'25	-0°19'16	conjunction	15887 Nov 09 04:13	4° ∞ 13'04	-0°15'23
minimum elong	15881 Oct 26 02:34	20° M 42'25	0°18'42	minimum elong	15887 Nov 09 04:13	4° ∞ 13'04	0°14'42
max. Earth dist.	15881 Oct 26 11:49	20° M 43'18	30.77495 AU	behind sun begin	15887 Nov 09 01:32	4° ∞ 12'50	
morning rise	15881 Nov 10 19:45	21° M 18'02		behind sun end	15887 Nov 09 06:53	4° ∞ 13'19	
retrograde	15882 Feb 08 21:44	23° M 16'04		max. Earth dist.	15887 Nov 09 17:24	4° ∞ 14'19	30.75851 AU
opposition	15882 Apr 29 17:16	21° M 51'22	-0°20'14	morning rise	15887 Nov 24 22:50	4° ∞ 48'47	
min. Earth dist.	15882 Apr 29 07:14	21° M 52'04	28.77182 AU	retrograde	15888 Feb 23 03:43	6° ∞ 46'58	
direct	15882 Jul 17 11:27	20° M 27'26		opposition	15888 May 12 23:17	5° ∞ 22'10	-0°15'59
evening set	15882 Oct 12 23:09	22° M 22'09		min. Earth dist.	15888 May 12 10:38	5° ∞ 23'03	28.75926 AU
				direct	15888 Jul 30 12:46	3° ∞ 58'15	
conjunction	15882 Oct 28 14:51	22° M 57'36	-0°18'41	evening set	15888 Oct 25 23:36	5° ∞ 52'57	
minimum elong	15882 Oct 28 14:51	22° M 57'36	0°18'06				
max. Earth dist.	15882 Oct 29 01:21	22° M 58'35	30.76874 AU	conjunction	15888 Nov 10 16:37	6° ∞ 28'29	-0°14'39
morning rise	15882 Nov 13 08:11	23° M 33'13		minimum elong	15888 Nov 10 16:38	6° ∞ 28'29	0°13'56
retrograde	15883 Feb 11 08:41	25° M 31'16		behind sun begin	15888 Nov 10 13:18	6° ∞ 28'11	
opposition	15883 May 02 06:20	24° M 06'29	-0°19'36	behind sun end	15888 Nov 10 19:57	6° ∞ 28'48	
min. Earth dist.	15883 May 01 20:37	24° M 07'10	28.76617 AU	max. Earth dist.	15888 Nov 11 05:06	6° ∞ 29'40	30.76005 AU
direct	15883 Jul 19 23:42	22° M 42'31		morning rise	15888 Nov 26 11:41	7° ∞ 04'14	
evening set	15883 Oct 15 11:09	24° M 37'12		retrograde	15889 Feb 24 17:55	9° ∞ 02'28	
				opposition	15889 May 15 12:23	7° ∞ 37'42	-0°15'10
conjunction	15883 Oct 31 03:04	25° M 12'39	-0°18'05	min. Earth dist.	15889 May 14 23:54	7° ∞ 38'34	28.76109 AU
minimum elong	15883 Oct 31 03:04	25° M 12'39	0°17'28	direct	15889 Aug 01 23:51	6° ∞ 13'50	
max. Earth dist.	15883 Oct 31 13:39	25° M 13'39	30.76379 AU	evening set	15889 Oct 28 11:47	8° ∞ 08'32	
morning rise	15883 Nov 15 20:43	25° M 48'18					
retrograde	15884 Feb 13 21:42	27° M 46'21		conjunction	15889 Nov 13 05:14	8° ∞ 44'06	-0°13'53

minimum elong	15889 Nov 13 05:13	8° \mathring{A} 44'06	0°13'11	min. Earth dist.	15895 May 29 04:41	21° \mathring{A} 12'51	28.76415 AU
behind sun begin	15889 Nov 13 01:24	8° \mathring{A} 43'45		direct	15895 Aug 16 02:47	19° \mathring{A} 47'59	
behind sun end	15889 Nov 13 09:03	8° \mathring{A} 44'27		evening set	15895 Nov 11 14:45	21° \mathring{A} 42'33	
max. Earth dist.	15889 Nov 13 18:56	8° \mathring{A} 45'23	30.76187 AU				
morning rise	15889 Nov 29 00:23	9° \mathring{A} 19'52		conjunction	15895 Nov 27 09:39	22° \mathring{A} 18'11	-0°08'56
retrograde	15890 Feb 27 07:13	11° \mathring{A} 18'08		minimum elong	15895 Nov 27 09:39	22° \mathring{A} 18'11	0°08'09
opposition	15890 May 18 01:27	9° \mathring{A} 53'23	-0°14'21	behind sun begin	15895 Nov 27 03:52	22° \mathring{A} 17'40	
min. Earth dist.	15890 May 17 12:57	9° \mathring{A} 54'15	28.76277 AU	behind sun end	15895 Nov 27 15:25	22° \mathring{A} 18'42	
direct	15890 Aug 04 13:55	8° \mathring{A} 29'34		max. Earth dist.	15895 Nov 27 22:31	22° \mathring{A} 19'23	30.76457 AU
evening set	15890 Oct 31 00:23	10° \mathring{A} 24'16		morning rise	15895 Dec 13 06:35	22° \mathring{A} 54'02	
				retrograde	15896 Mar 12 11:58	24° \mathring{A} 52'09	
conjunction	15890 Nov 15 17:56	10° \mathring{A} 59'51	-0°13'06	opposition	15896 May 31 06:22	23° \mathring{A} 27'17	-0°08'58
minimum elong	15890 Nov 15 17:56	10° \mathring{A} 59'51	0°12'22	min. Earth dist.	15896 May 30 17:59	23° \mathring{A} 28'09	28.76555 AU
behind sun begin	15890 Nov 15 13:40	10° \mathring{A} 59'28		direct	15896 Aug 17 14:12	22° \mathring{A} 03'19	
behind sun end	15890 Nov 15 22:13	11° \mathring{A} 00'15		evening set	15896 Nov 13 03:08	23° \mathring{A} 57'50	
max. Earth dist.	15890 Nov 16 06:31	11° \mathring{A} 01'03	30.76337 AU				
morning rise	15890 Dec 01 13:31	11° \mathring{A} 35'38		conjunction	15896 Nov 28 22:26	24° \mathring{A} 33'29	-0°08'03
retrograde	15891 Mar 01 22:25	13° \mathring{A} 33'55		minimum elong	15896 Nov 28 22:26	24° \mathring{A} 33'29	0°07'15
opposition	15891 May 20 14:20	12° \mathring{A} 09'11	-0°13'29	behind sun begin	15896 Nov 28 16:28	24° \mathring{A} 32'57	
min. Earth dist.	15891 May 20 01:34	12° \mathring{A} 10'05	28.76397 AU	behind sun end	15896 Nov 29 04:24	24° \mathring{A} 34'02	
direct	15891 Aug 07 02:07	10° \mathring{A} 45'22		max. Earth dist.	15896 Nov 29 12:29	24° \mathring{A} 34'49	30.76664 AU
evening set	15891 Nov 02 12:55	12° \mathring{A} 40'05		morning rise	15896 Dec 14 19:30	25° \mathring{A} 09'20	
				retrograde	15897 Mar 15 00:53	27° \mathring{A} 07'25	
conjunction	15891 Nov 18 06:51	13° \mathring{A} 15'41	-0°12'18	opposition	15897 Jun 02 18:56	25° \mathring{A} 42'32	-0°08'01
minimum elong	15891 Nov 18 06:50	13° \mathring{A} 15'41	0°11'34	min. Earth dist.	15897 Jun 02 05:33	25° \mathring{A} 43'28	28.76827 AU
behind sun begin	15891 Nov 18 02:11	13° \mathring{A} 15'16		direct	15897 Aug 20 03:14	24° \mathring{A} 18'32	
behind sun end	15891 Nov 18 11:29	13° \mathring{A} 16'07		evening set	15897 Nov 15 15:34	26° \mathring{A} 13'03	
max. Earth dist.	15891 Nov 18 20:02	13° \mathring{A} 16'56	30.76406 AU				
morning rise	15891 Dec 04 02:34	13° \mathring{A} 51'29		conjunction	15897 Dec 01 10:59	26° \mathring{A} 48'42	-0°07'10
retrograde	15892 Mar 03 09:43	15° \mathring{A} 49'46		minimum elong	15897 Dec 01 10:59	26° \mathring{A} 48'42	0°06'23
opposition	15892 May 22 03:23	14° \mathring{A} 25'02	-0°12'37	behind sun begin	15897 Dec 01 04:51	26° \mathring{A} 48'09	
min. Earth dist.	15892 May 21 15:24	14° \mathring{A} 25'52	28.76423 AU	behind sun end	15897 Dec 01 17:07	26° \mathring{A} 49'15	
direct	15892 Aug 08 14:53	13° \mathring{A} 01'12		max. Earth dist.	15897 Dec 02 00:23	26° \mathring{A} 49'57	30.77012 AU
evening set	15892 Nov 04 01:22	14° \mathring{A} 55'53		morning rise	15897 Dec 17 08:30	27° \mathring{A} 24'33	
				retrograde	15898 Mar 17 14:53	29° \mathring{A} 22'36	
conjunction	15892 Nov 19 19:30	15° \mathring{A} 31'29	-0°11'29	opposition	15898 Jun 05 07:33	27° \mathring{A} 57'43	-0°07'03
minimum elong	15892 Nov 19 19:30	15° \mathring{A} 31'29	0°10'43	min. Earth dist.	15898 Jun 04 18:19	27° \mathring{A} 58'38	28.77258 AU
behind sun begin	15892 Nov 19 14:31	15° \mathring{A} 31'02		direct	15898 Aug 22 14:19	26° \mathring{A} 33'43	
behind sun end	15892 Nov 20 00:29	15° \mathring{A} 31'57		evening set	15898 Nov 18 04:00	28° \mathring{A} 28'12	
max. Earth dist.	15892 Nov 20 08:10	15° \mathring{A} 32'41	30.76410 AU				
morning rise	15892 Dec 05 15:34	16° \mathring{A} 07'18		conjunction	15898 Dec 03 23:52	29° \mathring{A} 03'52	-0°06'16
retrograde	15893 Mar 05 22:42	18° \mathring{A} 05'33		minimum elong	15898 Dec 03 23:52	29° \mathring{A} 03'52	0°05'28
opposition	15893 May 24 16:15	16° \mathring{A} 40'48	-0°11'44	behind sun begin	15898 Dec 03 17:36	29° \mathring{A} 03'18	
min. Earth dist.	15893 May 24 03:26	16° \mathring{A} 41'41	28.76402 AU	behind sun end	15898 Dec 04 06:09	29° \mathring{A} 04'26	
direct	15893 Aug 11 03:12	15° \mathring{A} 16'56		max. Earth dist.	15898 Dec 04 14:36	29° \mathring{A} 05'15	30.77513 AU
evening set	15893 Nov 06 13:51	17° \mathring{A} 11'34		morning rise	15898 Dec 19 21:29	29° \mathring{A} 39'43	
					15898 Dec 29 05:44	0° \mathring{A}	
conjunction	15893 Nov 22 08:15	17° \mathring{A} 47'12	-0°10'39	retrograde	15899 Mar 20 04:18	1° \mathring{A} 37'43	
minimum elong	15893 Nov 22 08:15	17° \mathring{A} 47'12	0°09'53	opposition	15899 Jun 07 19:55	0° \mathring{A} 12'52	-0°06'05
behind sun begin	15893 Nov 22 02:58	17° \mathring{A} 46'43		min. Earth dist.	15899 Jun 07 06:26	0° \mathring{A} 13'48	28.77824 AU
behind sun end	15893 Nov 22 13:32	17° \mathring{A} 47'41			15899 Jun 15 12:35	30° \mathring{A} \mathring{A}	
max. Earth dist.	15893 Nov 22 21:09	17° \mathring{A} 48'25	30.76375 AU	direct	15899 Aug 25 04:28	28° \mathring{A} 48'52	
morning rise	15893 Dec 08 04:35	18° \mathring{A} 23'01			15899 Oct 30 23:29	0° \mathring{A}	
retrograde	15894 Mar 08 10:45	20° \mathring{A} 21'14		evening set	15899 Nov 20 16:37	0° \mathring{A} 43'21	
opposition	15894 May 27 05:05	18° \mathring{A} 56'26	-0°10'49				
min. Earth dist.	15894 May 26 17:15	18° \mathring{A} 57'16	28.76381 AU	conjunction	15899 Dec 06 12:37	1° \mathring{A} 19'02	-0°05'21
direct	15894 Aug 13 13:47	17° \mathring{A} 32'32		minimum elong	15899 Dec 06 12:37	1° \mathring{A} 19'02	0°04'34
evening set	15894 Nov 09 02:14	19° \mathring{A} 27'08		behind sun begin	15899 Dec 06 06:15	1° \mathring{A} 18'27	
				behind sun end	15899 Dec 06 19:00	1° \mathring{A} 19'36	
conjunction	15894 Nov 24 21:00	20° \mathring{A} 02'46	-0°09'48	max. Earth dist.	15899 Dec 07 02:28	1° \mathring{A} 20'20	30.78154 AU
minimum elong	15894 Nov 24 21:01	20° \mathring{A} 02'46	0°09'00	morning rise	15899 Dec 22 10:39	1° \mathring{A} 54'54	
behind sun begin	15894 Nov 24 15:28	20° \mathring{A} 02'16		retrograde	15900 Mar 22 19:00	3° \mathring{A} 52'51	
behind sun end	15894 Nov 25 02:34	20° \mathring{A} 03'16		opposition	15900 Jun 10 08:24	2° \mathring{A} 28'02	-0°05'06
max. Earth dist.	15894 Nov 25 10:15	20° \mathring{A} 04'00	30.76383 AU	min. Earth dist.	15900 Jun 09 18:26	2° \mathring{A} 29'01	28.78527 AU
morning rise	15894 Dec 10 17:37	20° \mathring{A} 38'36		direct	15900 Aug 27 16:38	1° \mathring{A} 04'04	
retrograde	15895 Mar 10 23:26	22° \mathring{A} 36'45		evening set	15900 Nov 23 05:03	2° \mathring{A} 58'33	
opposition	15895 May 29 17:43	21° \mathring{A} 11'56	-0°09'54				

conjunction	15900 Dec 09 01:26	3°33'14" -0°04'26"	retrograde	15906 Apr 05 23:10	17°32'43"	
minimum elong	15900 Dec 09 01:25	3°33'14" 0°03'37"	opposition	15906 Jun 24 10:54	15°35'53"	0°00'54"
behind sun begin	15900 Dec 08 18:57	3°33'39"	min. Earth dist.	15906 Jun 23 22:22	16°30'46"	28.82590 AU
behind sun end	15900 Dec 09 07:52	3°34'49"	direct	15906 Sep 10 17:02	14°33'56"	
max. Earth dist.	15900 Dec 09 16:18	3°35'38" 30.78897 AU	evening set	15906 Dec 07 10:05	16°30'21"	
morning rise	15900 Dec 24 23:33	4°31'07"				
retrograde	15901 Mar 25 07:01	6°30'08"	conjunction	15906 Dec 23 07:55	17°30'04"	0°01'19"
opposition	15901 Jun 12 20:58	4°34'17" -0°04'06"	minimum elong	15906 Dec 23 07:54	17°30'04"	0°02'07"
min. Earth dist.	15901 Jun 12 07:35	4°34'13" 28.79303 AU	behind sun begin	15906 Dec 23 01:23	17°30'52"	
direct	15901 Aug 30 05:08	3°31'21"	behind sun end	15906 Dec 23 14:26	17°30'39"	
evening set	15901 Nov 25 17:48	5°31'34"	max. Earth dist.	15906 Dec 23 20:11	17°30'71"	30.82834 AU
			morning rise	15907 Jan 08 07:37	17°34'15"	
conjunction	15901 Dec 11 14:22	5°34'31" -0°03'30"	retrograde	15907 Apr 08 12:25	19°33'34"	
minimum elong	15901 Dec 11 14:22	5°34'31" 0°02'42"	opposition	15907 Jun 26 22:59	18°31'45"	0°01'54"
behind sun begin	15901 Dec 11 07:52	5°34'56"	min. Earth dist.	15907 Jun 26 11:10	18°31'54"	28.83098 AU
behind sun end	15901 Dec 11 20:52	5°35'07"	direct	15907 Sep 13 04:06	16°35'05"	
max. Earth dist.	15901 Dec 12 04:38	5°35'52" 30.79703 AU	evening set	15907 Dec 09 22:46	18°34'19"	
morning rise	15901 Dec 27 12:51	6°32'52"				
retrograde	15902 Mar 27 21:23	8°32'19"	conjunction	15907 Dec 25 20:59	19°32'10"	0°02'16"
opposition	15902 Jun 15 09:18	6°35'36" -0°03'07"	minimum elong	15907 Dec 25 21:00	19°32'10"	0°03'02"
min. Earth dist.	15902 Jun 14 19:21	6°35'35" 28.80110 AU	behind sun begin	15907 Dec 25 14:30	19°32'07"	
direct	15902 Sep 01 17:27	5°33'42"	behind sun end	15907 Dec 26 03:30	19°32'13"	
evening set	15902 Nov 28 06:39	7°32'11"	max. Earth dist.	15907 Dec 26 10:17	19°32'17"	30.83354 AU
			morning rise	15908 Jan 10 20:45	19°35'56"	
conjunction	15902 Dec 14 03:30	8°30'45" -0°02'33"	retrograde	15908 Apr 10 01:12	21°35'42"	
minimum elong	15902 Dec 14 03:29	8°30'45" 0°01'44"	opposition	15908 Jun 28 11:01	20°32'48"	0°02'54"
behind sun begin	15902 Dec 13 20:58	8°30'41"	min. Earth dist.	15908 Jun 27 23:10	20°33'37"	28.83642 AU
behind sun end	15902 Dec 14 10:00	8°30'52"	direct	15908 Sep 14 18:05	19°30'54"	
max. Earth dist.	15902 Dec 14 17:45	8°30'61" 30.80482 AU	evening set	15908 Dec 11 11:25	21°30'08"	
morning rise	15902 Dec 30 02:10	8°34'04"				
retrograde	15903 Mar 30 09:56	10°33'40"	conjunction	15908 Dec 27 09:44	21°33'52"	0°03'11"
opposition	15903 Jun 17 21:52	9°31'59" -0°02'06"	minimum elong	15908 Dec 27 09:43	21°33'52"	0°03'58"
min. Earth dist.	15903 Jun 17 09:14	9°31'45" 28.80861 AU	behind sun begin	15908 Dec 27 03:17	21°33'17"	
direct	15903 Sep 04 04:35	7°35'06"	behind sun end	15908 Dec 27 16:10	21°33'26"	
evening set	15903 Nov 30 19:30	9°34'43"	max. Earth dist.	15908 Dec 27 21:55	21°33'70"	30.83944 AU
			morning rise	15909 Jan 12 09:51	22°31'14"	
conjunction	15903 Dec 16 16:37	10°32'01" -0°01'35"	retrograde	15909 Apr 12 15:03	24°30'91"	
minimum elong	15903 Dec 16 16:38	10°32'01" 0°00'47"	opposition	15909 Jun 30 23:00	22°34'43"	0°03'53"
behind sun begin	15903 Dec 16 10:07	10°31'43"	min. Earth dist.	15909 Jun 30 10:52	22°34'52"	28.84285 AU
behind sun end	15903 Dec 16 23:08	10°32'05"	direct	15909 Sep 17 06:06	21°32'02"	
max. Earth dist.	15903 Dec 17 06:33	10°32'13" 30.81193 AU	evening set	15909 Dec 14 00:05	23°31'45"	
morning rise	15904 Jan 01 15:30	10°35'61"				
retrograde	15904 Mar 31 22:33	12°35'40"	conjunction	15909 Dec 29 22:45	23°35'03"	0°04'06"
opposition	15904 Jun 19 10:12	11°32'23" -0°01'06"	minimum elong	15909 Dec 29 22:46	23°35'03"	0°04'51"
min. Earth dist.	15904 Jun 18 20:53	11°33'01" 28.81516 AU	behind sun begin	15909 Dec 29 16:23	23°34'59"	
direct	15904 Sep 05 17:30	10°30'52"	behind sun end	15909 Dec 30 05:08	23°35'10"	
evening set	15904 Dec 02 08:28	11°35'57"	max. Earth dist.	15909 Dec 30 11:52	23°35'14"	30.84633 AU
			morning rise	15910 Jan 14 22:57	24°32'27"	
conjunction	15904 Dec 18 05:46	12°33'54" -0°00'36"	retrograde	15910 Apr 15 02:59	26°32'34"	
minimum elong	15904 Dec 18 05:45	12°33'54" 0°00'12"	opposition	15910 Jul 03 10:49	24°35'10"	0°04'52"
behind sun begin	15904 Dec 17 23:18	12°33'50"	min. Earth dist.	15910 Jul 02 23:15	24°35'59"	28.85037 AU
behind sun end	15904 Dec 18 12:12	12°33'61"	direct	15910 Sep 19 18:36	23°33'50"	
max. Earth dist.	15904 Dec 18 18:45	12°33'53" 30.81797 AU	evening set	15910 Dec 16 12:49	25°32'26"	
morning rise	15905 Jan 03 04:57	13°31'13"				
retrograde	15905 Apr 03 10:42	15°30'92"	conjunction	15911 Jan 01 11:40	26°30'51"	0°05'01"
opposition	15905 Jun 21 22:41	13°34'42" -0°00'06"	minimum elong	15911 Jan 01 11:40	26°30'51"	0°05'46"
min. Earth dist.	15905 Jun 21 10:35	13°34'53" 28.82085 AU	behind sun begin	15911 Jan 01 05:25	26°30'43"	
asc. node	15905 Jul 30 00:42	12°34'45"	behind sun end	15911 Jan 01 17:55	26°30'54"	
direct	15905 Sep 08 04:22	12°32'04"	max. Earth dist.	15911 Jan 02 00:05	26°30'62"	30.85460 AU
evening set	15905 Dec 04 21:08	14°31'51"	morning rise	15911 Jan 17 12:10	26°34'10"	
			retrograde	15911 Apr 17 17:33	28°33'19"	
conjunction	15905 Dec 20 18:52	14°35'57" 0°00'22"	opposition	15911 Jul 05 22:34	27°31'34"	0°05'50"
minimum elong	15905 Dec 20 18:52	14°35'57" 0°01'09"	min. Earth dist.	15911 Jul 05 10:11	27°31'43"	28.85929 AU
behind sun begin	15905 Dec 20 12:21	14°35'02"	direct	15911 Sep 22 07:29	25°34'49"	
behind sun end	15905 Dec 21 01:23	14°35'13"	evening set	15911 Dec 19 01:29	27°34'35"	
max. Earth dist.	15905 Dec 21 08:22	14°35'21" 30.82337 AU				
morning rise	15906 Jan 05 18:12	15°32'51"	conjunction	15912 Jan 04 00:33	28°31'44"	0°05'55"

minimum elong	15912 Jan 04 00:33	28°31'44"	0°06'39"	morning rise	15917 Jan 30 19:10	10°08'37"	
behind sun begin	15912 Jan 03 18:26	28°31'11"		retrograde	15917 Apr 30 17:32	12°05'25"	
behind sun end	15912 Jan 04 06:40	28°32'01"		opposition	15917 Jul 18 20:52	10°41'08"	0°11'25"
max. Earth dist.	15912 Jan 04 13:23	28°32'05"	30.86408 AU	min. Earth dist.	15917 Jul 18 10:58	10°41'50"	28.92452 AU
morning rise	15912 Jan 20 01:09	28°35'37"		direct	15917 Oct 05 04:45	9°17'08"	
	15912 Feb 21 08:17	0°00'		evening set	15918 Jan 01 06:37	11°11'26"	
retrograde	15912 Apr 19 05:33	0°52'49"					
	15912 Jun 18 01:38	30°03'		conjunction	15918 Jan 17 06:54	11°47'09"	0°11'05"
opposition	15912 Jul 07 10:26	29°32'16"	0°06'48"	minimum elong	15918 Jan 17 06:54	11°47'09"	0°11'43"
min. Earth dist.	15912 Jul 06 23:02	29°32'04"	28.86944 AU	behind sun begin	15918 Jan 17 02:19	11°46'45"	
direct	15912 Sep 23 18:55	28°30'14"		behind sun end	15918 Jan 17 11:28	11°47'34"	
evening set	15912 Dec 20 14:10	29°35'33"		max. Earth dist.	15918 Jan 17 16:39	11°48'03"	30.92902 AU
	15912 Dec 21 05:58	0°00'		morning rise	15918 Feb 02 08:33	12°23'01"	
				retrograde	15918 May 03 06:50	14°19'42"	
conjunction	15913 Jan 05 13:31	0°34'18"	0°06'48"	opposition	15918 Jul 21 08:16	12°55'25"	0°12'17"
minimum elong	15913 Jan 05 13:31	0°34'18"	0°07'33"	min. Earth dist.	15918 Jul 20 22:40	12°56'05"	28.93346 AU
behind sun begin	15913 Jan 05 07:35	0°33'46"		direct	15918 Oct 07 15:59	11°31'21"	
behind sun end	15913 Jan 05 19:27	0°34'50"		evening set	15919 Jan 03 19:27	13°25'37"	
max. Earth dist.	15913 Jan 06 02:19	0°35'29"	30.87494 AU				
morning rise	15913 Jan 21 14:18	1°10'11"		conjunction	15919 Jan 19 20:03	14°01'20"	0°11'53"
retrograde	15913 Apr 21 17:45	3°07'18"		minimum elong	15919 Jan 19 20:03	14°01'20"	0°12'31"
opposition	15913 Jul 09 22:06	1°42'50"	0°07'45"	behind sun begin	15919 Jan 19 15:52	14°00'58"	
min. Earth dist.	15913 Jul 09 09:47	1°43'41"	28.88073 AU	behind sun end	15919 Jan 20 00:13	14°01'43"	
direct	15913 Sep 26 07:16	0°18'49"		max. Earth dist.	15919 Jan 20 06:12	14°02'17"	30.93760 AU
evening set	15913 Dec 23 02:57	2°13'09"		morning rise	15919 Feb 04 21:41	14°37'11"	
					15919 Feb 15 13:46	15°00'	
conjunction	15914 Jan 08 02:27	2°48'53"	0°07'41"	retrograde	15919 May 05 18:23	16°33'44"	
minimum elong	15914 Jan 08 02:26	2°48'53"	0°08'24"	opposition	15919 Jul 23 19:44	15°09'27"	0°13'08"
behind sun begin	15914 Jan 07 20:42	2°48'22"		min. Earth dist.	15919 Jul 23 11:07	15°10'03"	28.94182 AU
behind sun end	15914 Jan 08 08:11	2°49'24"			15919 Jul 29 10:45	15°00'	
max. Earth dist.	15914 Jan 08 14:38	2°50'01"	30.88653 AU	direct	15919 Oct 10 04:49	13°45'21"	
morning rise	15914 Jan 24 03:29	3°24'47"			15919 Dec 18 08:26	15°00'	
retrograde	15914 Apr 24 05:43	5°21'51"		evening set	15920 Jan 06 08:10	15°39'34"	
opposition	15914 Jul 12 09:54	3°57'26"	0°08'41"				
min. Earth dist.	15914 Jul 11 22:49	3°58'13"	28.89253 AU	conjunction	15920 Jan 22 08:51	16°15'16"	0°12'40"
direct	15914 Sep 28 17:17	2°33'27"		minimum elong	15920 Jan 22 08:50	16°15'16"	0°13'16"
evening set	15914 Dec 25 15:49	4°27'47"		behind sun begin	15920 Jan 22 05:07	16°14'56"	
				behind sun end	15920 Jan 22 12:34	16°15'36"	
conjunction	15915 Jan 10 15:38	5°03'32"	0°08'33"	max. Earth dist.	15920 Jan 22 17:54	16°16'06"	30.94601 AU
minimum elong	15915 Jan 10 15:38	5°03'32"	0°09'16"	morning rise	15920 Feb 07 10:42	16°51'05"	
behind sun begin	15915 Jan 10 10:09	5°03'03"		retrograde	15920 May 07 08:16	18°47'31"	
behind sun end	15915 Jan 10 21:08	5°04'02"		opposition	15920 Jul 25 07:01	17°23'13"	0°13'58"
max. Earth dist.	15915 Jan 11 04:07	5°04'42"	30.89830 AU	min. Earth dist.	15920 Jul 24 21:55	17°23'51"	28.95031 AU
morning rise	15915 Jan 26 16:42	5°39'25"		direct	15920 Oct 11 18:06	15°59'04"	
retrograde	15915 Apr 26 17:54	7°36'24"		evening set	15921 Jan 07 20:52	17°53'15"	
opposition	15915 Jul 14 21:26	6°12'04"	0°09'37"				
min. Earth dist.	15915 Jul 14 10:07	6°12'52"	28.90403 AU	conjunction	15921 Jan 23 21:44	18°28'57"	0°13'26"
direct	15915 Oct 01 04:54	4°48'06"		minimum elong	15921 Jan 23 21:44	18°28'57"	0°14'02"
evening set	15915 Dec 28 04:52	6°42'26"		behind sun begin	15921 Jan 23 18:34	18°28'40"	
				behind sun end	15921 Jan 24 00:55	18°29'14"	
conjunction	15916 Jan 13 04:43	7°18'11"	0°09'25"	max. Earth dist.	15921 Jan 24 06:59	18°29'48"	30.95462 AU
minimum elong	15916 Jan 13 04:43	7°18'11"	0°10'05"	morning rise	15921 Feb 08 23:38	19°04'45"	
behind sun begin	15916 Jan 12 23:29	7°17'42"		retrograde	15921 May 09 19:19	21°01'03"	
behind sun end	15916 Jan 13 09:56	7°18'39"		opposition	15921 Jul 27 18:16	19°36'45"	0°14'46"
max. Earth dist.	15916 Jan 13 15:42	7°19'12"	30.90946 AU	min. Earth dist.	15921 Jul 27 10:25	19°37'18"	28.95928 AU
morning rise	15916 Jan 29 06:03	7°54'04"		direct	15921 Oct 14 05:57	18°12'34"	
retrograde	15916 Apr 28 06:05	9°50'58"		evening set	15922 Jan 10 09:27	20°06'42"	
opposition	15916 Jul 16 09:12	8°26'40"	0°10'31"				
min. Earth dist.	15916 Jul 15 22:53	8°27'23"	28.91484 AU	conjunction	15922 Jan 26 10:33	20°42'24"	0°14'11"
direct	15916 Oct 02 15:47	7°02'41"		minimum elong	15922 Jan 26 10:33	20°42'24"	0°14'44"
evening set	15916 Dec 29 17:36	8°57'01"		behind sun begin	15922 Jan 26 08:02	20°42'10"	
				behind sun end	15922 Jan 26 13:04	20°42'37"	
conjunction	15917 Jan 14 17:49	9°32'45"	0°10'15"	max. Earth dist.	15922 Jan 26 19:31	20°43'13"	30.96406 AU
minimum elong	15917 Jan 14 17:50	9°32'45"	0°10'55"	morning rise	15922 Feb 11 12:35	21°18'11"	
behind sun begin	15917 Jan 14 12:54	9°32'18"		retrograde	15922 May 12 07:40	23°14'21"	
behind sun end	15917 Jan 14 22:45	9°33'11"		opposition	15922 Jul 30 05:20	21°50'04"	0°15'33"
max. Earth dist.	15917 Jan 15 05:20	9°33'49"	30.91973 AU	min. Earth dist.	15922 Jul 29 20:38	21°50'41"	28.96914 AU




























































































































direct	15922 Oct 16 18:39	20° \approx 25'51		conjunction	15929 Feb 11 03:38	6° \mathbb{H} 14'51	0°18'45
evening set	15923 Jan 12 22:08	22° \approx 19'58		minimum elong	15929 Feb 11 03:38	6° \mathbb{H} 14'51	0°19'09
				max. Earth dist.	15929 Feb 11 09:42	6° \mathbb{H} 15'25	31.05615 AU
conjunction	15923 Jan 28 23:16	22° \approx 55'39	0°14'54	morning rise	15929 Feb 27 06:05	6° \mathbb{H} 50'34	
minimum elong	15923 Jan 28 23:16	22° \approx 55'39	0°15'27	retrograde	15929 May 27 18:47	8° \mathbb{H} 46'09	
behind sun begin	15923 Jan 28 21:43	22° \approx 55'31		opposition	15929 Aug 14 10:00	7° \mathbb{H} 22'21	0°20'21
behind sun end	15923 Jan 29 00:49	22° \approx 55'48		min. Earth dist.	15929 Aug 14 03:50	7° \mathbb{H} 22'47	29.06259 AU
max. Earth dist.	15923 Jan 29 07:42	22° \approx 56'26	30.97439 AU	direct	15929 Nov 01 00:48	5° \mathbb{H} 58'18	
morning rise	15923 Feb 14 01:24	23° \approx 31'26		evening set	15930 Jan 28 14:32	7° \mathbb{H} 52'30	
retrograde	15923 May 14 19:08	25° \approx 27'29					
opposition	15923 Aug 01 16:23	24° \approx 03'14	0°16'19	conjunction	15930 Feb 13 16:32	8° \mathbb{H} 28'08	0°19'18
min. Earth dist.	15923 Aug 01 08:42	24° \approx 03'47	28.98019 AU	minimum elong	15930 Feb 13 16:32	8° \mathbb{H} 28'08	0°19'40
direct	15923 Oct 19 04:57	22° \approx 39'01		max. Earth dist.	15930 Feb 13 22:17	8° \mathbb{H} 28'40	31.06859 AU
evening set	15924 Jan 15 10:38	24° \approx 33'07		morning rise	15930 Mar 01 18:55	9° \mathbb{H} 03'49	
				retrograde	15930 May 30 05:42	10° \mathbb{H} 59'18	
conjunction	15924 Jan 31 12:01	25° \approx 08'48	0°15'36	opposition	15930 Aug 16 20:57	9° \mathbb{H} 35'33	0°20'55
minimum elong	15924 Jan 31 12:01	25° \approx 08'48	0°16'07	min. Earth dist.	15930 Aug 16 16:29	9° \mathbb{H} 35'51	29.07449 AU
max. Earth dist.	15924 Jan 31 20:58	25° \approx 09'37	30.98616 AU	direct	15930 Nov 03 12:30	8° \mathbb{H} 11'29	
morning rise	15924 Feb 16 14:08	25° \approx 44'34		evening set	15931 Jan 31 03:12	10° \mathbb{H} 05'40	
retrograde	15924 May 16 06:28	27° \approx 40'31					
opposition	15924 Aug 03 03:24	26° \approx 16'20	0°17'03	conjunction	15931 Feb 16 05:16	10° \mathbb{H} 41'17	0°19'49
min. Earth dist.	15924 Aug 02 19:01	26° \approx 16'55	28.99257 AU	minimum elong	15931 Feb 16 05:16	10° \mathbb{H} 41'17	0°20'10
direct	15924 Oct 20 16:31	24° \approx 52'07		max. Earth dist.	15931 Feb 16 10:11	10° \mathbb{H} 41'44	31.08004 AU
evening set	15925 Jan 16 23:08	26° \approx 46'13		morning rise	15931 Mar 04 07:40	11° \mathbb{H} 16'57	
				retrograde	15931 Jun 01 18:17	13° \mathbb{H} 12'17	
conjunction	15925 Feb 02 00:31	27° \approx 21'53	0°16'17	opposition	15931 Aug 19 07:36	11° \mathbb{H} 48'34	0°21'27
minimum elong	15925 Feb 02 00:31	27° \approx 21'53	0°16'47	min. Earth dist.	15931 Aug 19 02:44	11° \mathbb{H} 48'55	29.08545 AU
max. Earth dist.	15925 Feb 02 08:28	27° \approx 22'37	30.99924 AU	direct	15931 Nov 06 01:28	10° \mathbb{H} 24'30	
morning rise	15925 Feb 18 02:51	27° \approx 57'39		evening set	15932 Feb 02 15:49	12° \mathbb{H} 18'38	
retrograde	15925 May 18 17:45	29° \approx 53'32					
opposition	15925 Aug 05 14:26	28° \approx 29'25	0°17'46	conjunction	15932 Feb 18 17:53	12° \mathbb{H} 54'15	0°20'18
min. Earth dist.	15925 Aug 05 06:42	28° \approx 29'57	29.00632 AU	minimum elong	15932 Feb 18 17:53	12° \mathbb{H} 54'15	0°20'37
direct	15925 Oct 23 02:30	27° \approx 05'14		max. Earth dist.	15932 Feb 18 21:52	12° \mathbb{H} 54'37	31.09066 AU
evening set	15926 Jan 19 11:39	28° \approx 59'21		morning rise	15932 Mar 05 20:19	13° \mathbb{H} 29'54	
				retrograde	15932 Jun 03 06:18	15° \mathbb{H} 25'06	
conjunction	15926 Feb 04 13:21	29° \approx 35'01	0°16'57	opposition	15932 Aug 20 18:23	14° \mathbb{H} 01'24	0°21'57
minimum elong	15926 Feb 04 13:21	29° \approx 35'01	0°17'24	min. Earth dist.	15932 Aug 20 14:54	14° \mathbb{H} 01'38	29.09595 AU
max. Earth dist.	15926 Feb 04 22:08	29° \approx 35'50	31.01345 AU	direct	15932 Nov 07 12:36	12° \mathbb{H} 37'17	
	15926 Feb 15 17:56	0° \mathbb{H}		evening set	15933 Feb 04 04:08	14° \mathbb{H} 31'23	
morning rise	15926 Feb 20 15:35	0° \mathbb{H} 10'46					
retrograde	15926 May 21 04:25	2° \mathbb{H} 06'34		conjunction	15933 Feb 20 06:25	15° \mathbb{H} 06'59	0°20'46
opposition	15926 Aug 08 01:14	0° \mathbb{H} 42'33	0°18'28	minimum elong	15933 Feb 20 06:25	15° \mathbb{H} 06'59	0°21'03
min. Earth dist.	15926 Aug 07 17:49	0° \mathbb{H} 43'04	29.02077 AU	max. Earth dist.	15933 Feb 20 10:31	15° \mathbb{H} 07'22	31.10107 AU
	15926 Sep 03 14:06	30° \mathbb{R}		morning rise	15933 Mar 08 08:46	15° \mathbb{H} 42'37	
direct	15926 Oct 25 13:58	29° \approx 18'26		retrograde	15933 Jun 05 16:45	17° \mathbb{H} 37'41	
	15926 Dec 15 05:11	0° \mathbb{H}		opposition	15933 Aug 23 04:56	16° \mathbb{H} 13'59	0°22'25
evening set	15927 Jan 22 00:27	1° \mathbb{H} 12'35		min. Earth dist.	15933 Aug 23 01:12	16° \mathbb{H} 14'15	29.10622 AU
				direct	15933 Nov 10 01:08	14° \mathbb{H} 49'51	
conjunction	15927 Feb 07 02:04	1° \mathbb{H} 48'14	0°17'34	evening set	15934 Feb 06 16:42	16° \mathbb{H} 43'54	
minimum elong	15927 Feb 07 02:04	1° \mathbb{H} 48'14	0°18'02				
max. Earth dist.	15927 Feb 07 09:17	1° \mathbb{H} 48'54	31.02814 AU	conjunction	15934 Feb 22 18:52	17° \mathbb{H} 19'29	0°21'11
morning rise	15927 Feb 23 04:31	2° \mathbb{H} 23'58		minimum elong	15934 Feb 22 18:52	17° \mathbb{H} 19'29	0°21'26
retrograde	15927 May 23 17:32	4° \mathbb{H} 19'43		max. Earth dist.	15934 Feb 22 21:37	17° \mathbb{H} 19'44	31.11143 AU
opposition	15927 Aug 10 12:10	2° \mathbb{H} 55'47	0°19'07	morning rise	15934 Mar 10 21:20	17° \mathbb{H} 55'06	
min. Earth dist.	15927 Aug 10 04:58	2° \mathbb{H} 56'17	29.03548 AU	retrograde	15934 Jun 08 02:51	19° \mathbb{H} 50'01	
direct	15927 Oct 27 23:47	1° \mathbb{H} 31'42		opposition	15934 Aug 25 15:24	18° \mathbb{H} 26'20	0°22'51
evening set	15928 Jan 24 12:59	3° \mathbb{H} 25'53		min. Earth dist.	15934 Aug 25 12:31	18° \mathbb{H} 26'33	29.11686 AU
				direct	15934 Nov 12 11:20	17° \mathbb{H} 02'10	
conjunction	15928 Feb 09 14:49	4° \mathbb{H} 01'32	0°18'11	evening set	15935 Feb 09 05:00	18° \mathbb{H} 56'11	
minimum elong	15928 Feb 09 14:50	4° \mathbb{H} 01'32	0°18'36				
max. Earth dist.	15928 Feb 09 22:26	4° \mathbb{H} 02'14	31.04252 AU	conjunction	15935 Feb 25 07:22	19° \mathbb{H} 31'45	0°21'35
morning rise	15928 Feb 25 17:07	4° \mathbb{H} 37'15		minimum elong	15935 Feb 25 07:22	19° \mathbb{H} 31'45	0°21'49
retrograde	15928 May 25 04:51	6° \mathbb{H} 32'56		max. Earth dist.	15935 Feb 25 10:54	19° \mathbb{H} 32'04	31.12231 AU
opposition	15928 Aug 11 23:11	5° \mathbb{H} 09'05	0°19'45	morning rise	15935 Mar 13 09:37	20° \mathbb{H} 07'20	
min. Earth dist.	15928 Aug 11 17:08	5° \mathbb{H} 09'30	29.04950 AU	retrograde	15935 Jun 10 12:12	22° \mathbb{H} 02'08	
direct	15928 Oct 29 11:53	3° \mathbb{H} 45'02		opposition	15935 Aug 28 01:55	20° \mathbb{H} 38'28	0°23'15
evening set	15929 Jan 26 01:48	5° \mathbb{H} 39'13		min. Earth dist.	15935 Aug 27 23:12	20° \mathbb{H} 38'40	29.12807 AU

direct	15935 Nov 14 22:34	19° $\mathbf{\text{H}}$ 14'16		minimum elong	15942 Mar 12 21:18	4° $\mathbf{\text{Y}}$ 55'07	0°23'26
evening set	15936 Feb 11 17:14	21° $\mathbf{\text{H}}$ 08'16		max. Earth dist.	15942 Mar 12 21:09	4° $\mathbf{\text{Y}}$ 55'06	31.21482 AU
				morning rise	15942 Mar 28 23:03	5° $\mathbf{\text{Y}}$ 30'33	
conjunction	15936 Feb 27 19:27	21° $\mathbf{\text{H}}$ 43'48	0°21'57	retrograde	15942 Jun 25 19:48	7° $\mathbf{\text{Y}}$ 24'43	
minimum elong	15936 Feb 27 19:27	21° $\mathbf{\text{H}}$ 43'48	0°22'08	opposition	15942 Sep 12 02:41	6° $\mathbf{\text{Y}}$ 01'31	0°25'05
max. Earth dist.	15936 Feb 27 21:40	21° $\mathbf{\text{H}}$ 44'00	31.13404 AU	min. Earth dist.	15942 Sep 12 02:57	6° $\mathbf{\text{Y}}$ 01'30	29.22032 AU
morning rise	15936 Mar 14 21:50	22° $\mathbf{\text{H}}$ 19'22		direct	15942 Nov 30 06:08	4° $\mathbf{\text{Y}}$ 37'27	
retrograde	15936 Jun 11 23:59	24° $\mathbf{\text{H}}$ 14'04		evening set	15943 Feb 27 07:23	6° $\mathbf{\text{Y}}$ 31'30	
opposition	15936 Aug 29 12:24	22° $\mathbf{\text{H}}$ 50'26	0°23'38				
min. Earth dist.	15936 Aug 29 09:30	22° $\mathbf{\text{H}}$ 50'38	29.14040 AU	conjunction	15943 Mar 15 09:30	7° $\mathbf{\text{Y}}$ 06'57	0°23'33
direct	15936 Nov 16 08:13	21° $\mathbf{\text{H}}$ 26'13		minimum elong	15943 Mar 15 09:30	7° $\mathbf{\text{Y}}$ 06'57	0°23'32
evening set	15937 Feb 13 05:27	23° $\mathbf{\text{H}}$ 20'12		max. Earth dist.	15943 Mar 15 07:38	7° $\mathbf{\text{Y}}$ 06'46	31.22540 AU
				morning rise	15943 Mar 31 11:15	7° $\mathbf{\text{Y}}$ 42'22	
conjunction	15937 Mar 01 07:51	23° $\mathbf{\text{H}}$ 55'43	0°22'17	retrograde	15943 Jun 28 06:25	9° $\mathbf{\text{Y}}$ 36'26	
minimum elong	15937 Mar 01 07:51	23° $\mathbf{\text{H}}$ 55'43	0°22'27	opposition	15943 Sep 14 13:07	8° $\mathbf{\text{Y}}$ 13'16	0°25'11
max. Earth dist.	15937 Mar 01 10:47	23° $\mathbf{\text{H}}$ 55'59	31.14686 AU	min. Earth dist.	15943 Sep 14 14:26	8° $\mathbf{\text{Y}}$ 13'10	29.23032 AU
morning rise	15937 Mar 17 10:01	24° $\mathbf{\text{H}}$ 31'16		direct	15943 Dec 02 16:16	6° $\mathbf{\text{Y}}$ 49'12	
retrograde	15937 Jun 14 09:28	26° $\mathbf{\text{H}}$ 25'51		evening set	15944 Feb 29 19:23	8° $\mathbf{\text{Y}}$ 43'13	
opposition	15937 Aug 31 22:48	25° $\mathbf{\text{H}}$ 02'16	0°23'58				
min. Earth dist.	15937 Aug 31 20:44	25° $\mathbf{\text{H}}$ 02'25	29.15373 AU	conjunction	15944 Mar 16 21:38	9° $\mathbf{\text{Y}}$ 18'39	0°23'38
direct	15937 Nov 18 19:41	23° $\mathbf{\text{H}}$ 38'05		minimum elong	15944 Mar 16 21:38	9° $\mathbf{\text{Y}}$ 18'39	0°23'35
evening set	15938 Feb 15 17:47	25° $\mathbf{\text{H}}$ 32'04		max. Earth dist.	15944 Mar 16 20:11	9° $\mathbf{\text{Y}}$ 18'31	31.23477 AU
				morning rise	15944 Apr 01 23:07	9° $\mathbf{\text{Y}}$ 54'03	
conjunction	15938 Mar 03 20:06	26° $\mathbf{\text{H}}$ 07'34	0°22'35	retrograde	15944 Jun 29 15:37	11° $\mathbf{\text{Y}}$ 48'01	
minimum elong	15938 Mar 03 20:06	26° $\mathbf{\text{H}}$ 07'34	0°22'43	opposition	15944 Sep 15 23:28	10° $\mathbf{\text{Y}}$ 24'52	0°25'16
max. Earth dist.	15938 Mar 03 21:52	26° $\mathbf{\text{H}}$ 07'44	31.16077 AU	min. Earth dist.	15944 Sep 16 01:27	10° $\mathbf{\text{Y}}$ 24'44	29.23905 AU
morning rise	15938 Mar 19 22:21	26° $\mathbf{\text{H}}$ 43'05		direct	15944 Dec 04 03:38	9° $\mathbf{\text{Y}}$ 00'47	
retrograde	15938 Jun 16 22:03	28° $\mathbf{\text{H}}$ 37'35		evening set	15945 Mar 03 07:38	10° $\mathbf{\text{Y}}$ 54'47	
opposition	15938 Sep 03 09:08	27° $\mathbf{\text{H}}$ 14'05	0°24'15				
min. Earth dist.	15938 Sep 03 06:35	27° $\mathbf{\text{H}}$ 14'16	29.16795 AU	conjunction	15945 Mar 19 09:40	11° $\mathbf{\text{Y}}$ 30'12	0°23'41
direct	15938 Nov 21 07:19	25° $\mathbf{\text{H}}$ 49'55		minimum elong	15945 Mar 19 09:40	11° $\mathbf{\text{Y}}$ 30'12	0°23'37
evening set	15939 Feb 18 06:02	27° $\mathbf{\text{H}}$ 43'55		max. Earth dist.	15945 Mar 19 06:26	11° $\mathbf{\text{Y}}$ 29'55	31.24312 AU
				morning rise	15945 Apr 04 11:13	12° $\mathbf{\text{Y}}$ 05'35	
conjunction	15939 Mar 06 08:22	28° $\mathbf{\text{H}}$ 19'25	0°22'50	retrograde	15945 Jul 02 02:50	13° $\mathbf{\text{Y}}$ 59'26	
minimum elong	15939 Mar 06 08:22	28° $\mathbf{\text{H}}$ 19'25	0°22'57	opposition	15945 Sep 18 09:33	12° $\mathbf{\text{Y}}$ 36'19	0°25'18
max. Earth dist.	15939 Mar 06 10:16	28° $\mathbf{\text{H}}$ 19'35	31.17509 AU	min. Earth dist.	15945 Sep 18 11:45	12° $\mathbf{\text{Y}}$ 36'10	29.24709 AU
morning rise	15939 Mar 22 10:25	28° $\mathbf{\text{H}}$ 54'55		direct	15945 Dec 06 13:16	11° $\mathbf{\text{Y}}$ 12'12	
	15939 Apr 24 17:19	0° $\mathbf{\text{Y}}$		evening set	15946 Mar 05 19:40	13° $\mathbf{\text{Y}}$ 06'11	
retrograde	15939 Jun 19 08:35	0° $\mathbf{\text{Y}}$ 49'20					
	15939 Aug 15 19:55	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		conjunction	15946 Mar 21 21:48	13° $\mathbf{\text{Y}}$ 41'35	0°23'43
opposition	15939 Sep 05 19:36	29° $\mathbf{\text{H}}$ 25'55	0°24'31	minimum elong	15946 Mar 21 21:48	13° $\mathbf{\text{Y}}$ 41'35	0°23'36
min. Earth dist.	15939 Sep 05 18:34	29° $\mathbf{\text{H}}$ 26'00	29.18233 AU	max. Earth dist.	15946 Mar 21 18:57	13° $\mathbf{\text{Y}}$ 41'19	31.25082 AU
direct	15939 Nov 23 17:54	28° $\mathbf{\text{H}}$ 01'48		morning rise	15946 Apr 06 23:03	14° $\mathbf{\text{Y}}$ 16'57	
evening set	15940 Feb 20 18:19	29° $\mathbf{\text{H}}$ 55'49		retrograde	15946 Jul 04 11:21	16° $\mathbf{\text{Y}}$ 10'41	
	15940 Feb 22 16:33	0° $\mathbf{\text{Y}}$		opposition	15946 Sep 20 19:48	14° $\mathbf{\text{Y}}$ 47'35	0°25'18
				min. Earth dist.	15946 Sep 20 23:07	14° $\mathbf{\text{Y}}$ 47'21	29.25464 AU
conjunction	15940 Mar 07 20:38	0° $\mathbf{\text{Y}}$ 31'18	0°23'04	direct	15946 Dec 09 00:46	13° $\mathbf{\text{Y}}$ 23'26	
minimum elong	15940 Mar 07 20:38	0° $\mathbf{\text{Y}}$ 31'18	0°23'09	evening set	15947 Mar 08 07:36	15° $\mathbf{\text{Y}}$ 17'24	
max. Earth dist.	15940 Mar 07 21:51	0° $\mathbf{\text{Y}}$ 31'25	31.18939 AU				
morning rise	15940 Mar 23 22:38	1° $\mathbf{\text{Y}}$ 06'47		conjunction	15947 Mar 24 09:31	15° $\mathbf{\text{Y}}$ 52'47	0°23'42
retrograde	15940 Jun 20 21:16	3° $\mathbf{\text{Y}}$ 01'08		minimum elong	15947 Mar 24 09:31	15° $\mathbf{\text{Y}}$ 52'47	0°23'34
opposition	15940 Sep 07 05:54	1° $\mathbf{\text{Y}}$ 37'48	0°24'44	max. Earth dist.	15947 Mar 24 05:28	15° $\mathbf{\text{Y}}$ 52'25	31.25842 AU
min. Earth dist.	15940 Sep 07 04:30	1° $\mathbf{\text{Y}}$ 37'53	29.19625 AU	morning rise	15947 Apr 09 10:44	16° $\mathbf{\text{Y}}$ 28'07	
direct	15940 Nov 25 06:30	0° $\mathbf{\text{Y}}$ 13'42		retrograde	15947 Jul 06 22:41	18° $\mathbf{\text{Y}}$ 21'46	
evening set	15941 Feb 22 06:38	2° $\mathbf{\text{Y}}$ 07'45		opposition	15947 Sep 23 05:51	16° $\mathbf{\text{Y}}$ 58'40	0°25'16
				min. Earth dist.	15947 Sep 23 08:36	16° $\mathbf{\text{Y}}$ 58'28	29.26236 AU
conjunction	15941 Mar 10 08:53	2° $\mathbf{\text{Y}}$ 43'13	0°23'16	direct	15947 Dec 11 12:09	15° $\mathbf{\text{Y}}$ 34'29	
minimum elong	15941 Mar 10 08:53	2° $\mathbf{\text{Y}}$ 43'13	0°23'18	evening set	15948 Mar 09 19:26	17° $\mathbf{\text{Y}}$ 28'27	
max. Earth dist.	15941 Mar 10 09:02	2° $\mathbf{\text{Y}}$ 43'14	31.20273 AU				
morning rise	15941 Mar 26 10:50	3° $\mathbf{\text{Y}}$ 18'41		conjunction	15948 Mar 25 21:19	18° $\mathbf{\text{Y}}$ 03'48	0°23'39
retrograde	15941 Jun 23 09:17	5° $\mathbf{\text{Y}}$ 12'57		minimum elong	15948 Mar 25 21:19	18° $\mathbf{\text{Y}}$ 03'48	0°23'30
opposition	15941 Sep 09 16:25	3° $\mathbf{\text{Y}}$ 49'40	0°24'56	max. Earth dist.	15948 Mar 25 17:30	18° $\mathbf{\text{Y}}$ 03'28	31.26631 AU
min. Earth dist.	15941 Sep 09 16:35	3° $\mathbf{\text{Y}}$ 49'40	29.20904 AU	morning rise	15948 Apr 10 22:17	18° $\mathbf{\text{Y}}$ 39'07	
direct	15941 Nov 27 17:32	2° $\mathbf{\text{Y}}$ 25'37		retrograde	15948 Jul 08 08:18	20° $\mathbf{\text{Y}}$ 32'41	
evening set	15942 Feb 24 18:59	4° $\mathbf{\text{Y}}$ 19'39		opposition	15948 Sep 24 15:59	19° $\mathbf{\text{Y}}$ 09'36	0°25'12
				min. Earth dist.	15948 Sep 24 19:59	19° $\mathbf{\text{Y}}$ 09'19	29.27068 AU
conjunction	15942 Mar 12 21:18	4° $\mathbf{\text{Y}}$ 55'07	0°23'25	direct	15948 Dec 12 22:06	17° $\mathbf{\text{Y}}$ 45'24	

evening set	15949 Mar 12 07:11	19° Υ 39'22		max. Earth dist.	15955 Apr 11 00:03	3° \mathcal{B} 19'12	31.33216 AU
				morning rise	15955 Apr 27 06:25	3° \mathcal{B} 54'59	
conjunction	15949 Mar 28 09:00	20° Υ 14'42	0°23'35	retrograde	15955 Jul 24 09:23	5° \mathcal{B} 48'04	
minimum elong	15949 Mar 28 09:00	20° Υ 14'42	0°23'23	opposition	15955 Oct 10 14:42	4° \mathcal{B} 25'21	0°23'43
max. Earth dist.	15949 Mar 28 04:52	20° Υ 14'19	31.27512 AU	min. Earth dist.	15955 Oct 10 21:39	4° \mathcal{B} 24'52	29.33549 AU
morning rise	15949 Apr 13 09:52	20° Υ 49'59		direct	15955 Dec 29 04:59	3° \mathcal{B} 01'16	
retrograde	15949 Jul 10 20:12	22° Υ 43'27		evening set	15956 Mar 27 17:26	4° \mathcal{B} 55'17	
opposition	15949 Sep 27 02:00	21° Υ 20'25	0°25'06				
min. Earth dist.	15949 Sep 27 05:11	21° Υ 20'12	29.27987 AU	conjunction	15956 Apr 12 18:14	5° \mathcal{B} 30'31	0°22'06
direct	15949 Dec 15 11:03	19° Υ 56'14		minimum elong	15956 Apr 12 18:14	5° \mathcal{B} 30'31	0°21'43
evening set	15950 Mar 14 19:02	21° Υ 50'12		max. Earth dist.	15956 Apr 12 10:05	5° \mathcal{B} 29'46	31.33836 AU
				morning rise	15956 Apr 28 17:50	6° \mathcal{B} 05'40	
conjunction	15950 Mar 30 20:40	22° Υ 25'32	0°23'28	retrograde	15956 Jul 25 20:11	7° \mathcal{B} 58'39	
minimum elong	15950 Mar 30 20:40	22° Υ 25'32	0°23'14	opposition	15956 Oct 12 00:42	6° \mathcal{B} 35'58	0°23'22
max. Earth dist.	15950 Mar 30 15:57	22° Υ 25'06	31.28472 AU	min. Earth dist.	15956 Oct 12 07:20	6° \mathcal{B} 35'30	29.34103 AU
morning rise	15950 Apr 15 21:23	23° Υ 00'47		direct	15956 Dec 30 15:39	5° \mathcal{B} 11'50	
retrograde	15950 Jul 13 07:58	24° Υ 54'11		evening set	15957 Mar 30 05:01	7° \mathcal{B} 05'50	
opposition	15950 Sep 29 12:04	23° Υ 31'12	0°24'58				
min. Earth dist.	15950 Sep 29 16:16	23° Υ 30'55	29.28997 AU	conjunction	15957 Apr 15 05:45	7° \mathcal{B} 41'04	0°21'45
direct	15950 Dec 17 22:07	22° Υ 07'03		minimum elong	15957 Apr 15 05:45	7° \mathcal{B} 41'04	0°21'20
evening set	15951 Mar 17 06:43	24° Υ 01'02		max. Earth dist.	15957 Apr 14 21:24	7° \mathcal{B} 40'18	31.34323 AU
				morning rise	15957 May 01 05:03	8° \mathcal{B} 16'11	
conjunction	15951 Apr 02 08:21	24° Υ 36'21	0°23'19	retrograde	15957 Jul 28 05:21	10° \mathcal{B} 09'05	
minimum elong	15951 Apr 02 08:21	24° Υ 36'21	0°23'04	opposition	15957 Oct 14 10:51	8° \mathcal{B} 46'24	0°23'00
max. Earth dist.	15951 Apr 02 03:58	24° Υ 35'57	31.29519 AU	min. Earth dist.	15957 Oct 14 19:05	8° \mathcal{B} 45'49	29.34541 AU
morning rise	15951 Apr 18 08:49	25° Υ 11'36		direct	15958 Jan 02 01:31	7° \mathcal{B} 22'14	
retrograde	15951 Jul 15 18:03	27° Υ 04'56		evening set	15958 Apr 01 16:32	9° \mathcal{B} 16'13	
opposition	15951 Oct 01 22:08	25° Υ 42'01	0°24'47				
min. Earth dist.	15951 Oct 02 02:03	25° Υ 41'45	29.30050 AU	conjunction	15958 Apr 17 17:05	9° \mathcal{B} 51'25	0°21'23
direct	15951 Dec 20 10:26	24° Υ 17'54		minimum elong	15958 Apr 17 17:06	9° \mathcal{B} 51'25	0°20'56
evening set	15952 Mar 18 18:25	26° Υ 11'55		max. Earth dist.	15958 Apr 17 08:13	9° \mathcal{B} 50'36	31.34723 AU
				morning rise	15958 May 03 16:12	10° \mathcal{B} 26'31	
conjunction	15952 Apr 03 19:47	26° Υ 47'13	0°23'09	retrograde	15958 Jul 30 16:08	12° \mathcal{B} 19'20	
minimum elong	15952 Apr 03 19:47	26° Υ 47'13	0°22'51	opposition	15958 Oct 16 20:47	10° \mathcal{B} 56'38	0°22'35
max. Earth dist.	15952 Apr 03 14:08	26° Υ 46'42	31.30575 AU	min. Earth dist.	15958 Oct 17 04:29	10° \mathcal{B} 56'06	29.34900 AU
morning rise	15952 Apr 19 20:12	27° Υ 22'27		direct	15959 Jan 04 14:33	9° \mathcal{B} 32'26	
retrograde	15952 Jul 17 05:07	29° Υ 15'43		evening set	15959 Apr 04 04:00	11° \mathcal{B} 26'24	
opposition	15952 Oct 03 08:16	27° Υ 52'53	0°24'34				
min. Earth dist.	15952 Oct 03 12:59	27° Υ 52'33	29.31094 AU	conjunction	15959 Apr 20 04:19	12° \mathcal{B} 01'34	0°20'59
direct	15952 Dec 21 20:26	26° Υ 28'48		minimum elong	15959 Apr 20 04:19	12° \mathcal{B} 01'34	0°20'31
evening set	15953 Mar 21 06:10	28° Υ 22'49		max. Earth dist.	15959 Apr 19 18:43	12° \mathcal{B} 00'42	31.35062 AU
				morning rise	15959 May 06 03:14	12° \mathcal{B} 36'39	
conjunction	15953 Apr 06 07:34	28° Υ 58'07	0°22'56	retrograde	15959 Aug 02 03:03	14° \mathcal{B} 29'23	
minimum elong	15953 Apr 06 07:34	28° Υ 58'07	0°22'37	opposition	15959 Oct 19 06:53	13° \mathcal{B} 06'40	0°22'08
max. Earth dist.	15953 Apr 06 02:24	28° Υ 57'39	31.31577 AU	min. Earth dist.	15959 Oct 19 15:34	13° \mathcal{B} 06'04	29.35246 AU
morning rise	15953 Apr 22 07:38	29° Υ 33'19		direct	15960 Jan 07 01:26	11° \mathcal{B} 42'26	
	15953 May 05 00:45	0° \mathcal{B}		evening set	15960 Apr 05 15:07	13° \mathcal{B} 36'23	
retrograde	15953 Jul 19 14:38	1° \mathcal{B} 26'32					
opposition	15953 Oct 05 18:18	0° \mathcal{B} 03'46	0°24'19	conjunction	15960 Apr 21 15:23	14° \mathcal{B} 11'33	0°20'34
min. Earth dist.	15953 Oct 05 23:49	0° \mathcal{B} 03'23	29.32041 AU	minimum elong	15960 Apr 21 15:23	14° \mathcal{B} 11'33	0°20'04
	15953 Oct 08 00:31	30° $\mathcal{R}\Upsilon$		max. Earth dist.	15960 Apr 21 06:18	14° \mathcal{B} 10'43	31.35416 AU
direct	15953 Dec 24 08:00	28° Υ 39'41		morning rise	15960 May 07 14:02	14° \mathcal{B} 46'36	
	15954 Mar 07 11:27	0° \mathcal{B}			15960 May 13 20:54	15° \mathcal{B}	
evening set	15954 Mar 23 18:06	0° \mathcal{B} 33'44		retrograde	15960 Aug 03 12:31	16° \mathcal{B} 39'16	
				opposition	15960 Oct 20 16:52	15° \mathcal{B} 16'33	0°21'40
conjunction	15954 Apr 08 19:12	1° \mathcal{B} 09'00	0°22'41	min. Earth dist.	15960 Oct 21 01:12	15° \mathcal{B} 15'59	29.35611 AU
minimum elong	15954 Apr 08 19:12	1° \mathcal{B} 09'00	0°22'21		15960 Oct 30 17:45	15° $\mathcal{R}\mathcal{B}$	
max. Earth dist.	15954 Apr 08 12:13	1° \mathcal{B} 08'22	31.32467 AU	direct	15961 Jan 08 14:01	13° \mathcal{B} 52'18	
morning rise	15954 Apr 24 19:14	1° \mathcal{B} 44'12			15961 Mar 16 06:35	15° \mathcal{B}	
retrograde	15954 Jul 22 01:35	3° \mathcal{B} 37'20		evening set	15961 Apr 08 02:31	15° \mathcal{B} 46'15	
opposition	15954 Oct 08 04:27	2° \mathcal{B} 14'36	0°24'02				
min. Earth dist.	15954 Oct 08 10:06	2° \mathcal{B} 14'13	29.32871 AU	conjunction	15961 Apr 24 02:27	16° \mathcal{B} 21'23	0°20'06
direct	15954 Dec 26 18:02	0° \mathcal{B} 50'32		minimum elong	15961 Apr 24 02:27	16° \mathcal{B} 21'23	0°19'35
evening set	15955 Mar 26 05:42	2° \mathcal{B} 44'34		max. Earth dist.	15961 Apr 23 16:16	16° \mathcal{B} 20'28	31.35815 AU
				morning rise	15961 May 10 00:58	16° \mathcal{B} 56'26	
conjunction	15955 Apr 11 06:46	3° \mathcal{B} 19'49	0°22'24	retrograde	15961 Aug 05 23:18	18° \mathcal{B} 49'02	
minimum elong	15955 Apr 11 06:46	3° \mathcal{B} 19'49	0°22'02	opposition	15961 Oct 23 02:48	17° \mathcal{B} 26'20	0°21'10

min. Earth dist.	15961 Oct 23 11:24	17°8'25.45	29.36063 AU	conjunction	15968 May 09 07:21	1°11'31.58	0°16'09
direct	15962 Jan 11 00:15	16°8'02.05		minimum elong	15968 May 09 07:21	1°11'31.58	0°15'30
evening set	15962 Apr 10 13:42	17°8'56.03		behind sun begin	15968 May 09 05:46	1°11'31.50	
				behind sun end	15968 May 09 08:56	1°11'32.07	
conjunction	15962 Apr 26 13:36	18°8'31.11	0°19'37	max. Earth dist.	15968 May 08 19:19	1°11'30.52	31.39382 AU
minimum elong	15962 Apr 26 13:36	18°8'31.11	0°19'06	morning rise	15968 May 25 04:08	2°11'06.55	
max. Earth dist.	15962 Apr 26 04:28	18°8'30.21	31.36311 AU	retrograde	15968 Aug 20 22:00	3°11'59.26	
morning rise	15962 May 12 11:43	19°8'06.12		opposition	15968 Nov 07 01:56	2°11'37.07	0°16'50
retrograde	15962 Aug 08 08:29	20°8'58.46		min. Earth dist.	15968 Nov 07 13:00	2°11'36.22	29.39478 AU
opposition	15962 Oct 25 12:55	19°8'36.08	0°20'38	direct	15969 Jan 26 01:44	1°11'13.04	
min. Earth dist.	15962 Oct 25 21:45	19°8'35.31	29.36601 AU	evening set	15969 Apr 25 20:03	3°11'07.15	
direct	15963 Jan 13 11:49	18°8'11.54					
evening set	15963 Apr 13 00:50	20°8'05.53		conjunction	15969 May 11 18:25	3°11'42.18	0°15'29
				minimum elong	15969 May 11 18:25	3°11'42.18	0°14'49
conjunction	15963 Apr 29 00:22	20°8'41.00	0°19'07	behind sun begin	15969 May 11 15:55	3°11'42.05	
minimum elong	15963 Apr 29 00:22	20°8'41.01	0°18'33	behind sun end	15969 May 11 20:56	3°11'42.32	
max. Earth dist.	15963 Apr 28 14:09	20°8'40.05	31.36901 AU	max. Earth dist.	15969 May 11 06:34	3°11'41.13	31.39509 AU
morning rise	15963 May 14 22:25	21°8'16.01		morning rise	15969 May 27 14:51	4°11'17.14	
retrograde	15963 Aug 10 19:22	23°8'08.34		retrograde	15969 Aug 23 07:30	6°11'09.42	
opposition	15963 Oct 27 22:56	21°8'46.00	0°20'04	opposition	15969 Nov 09 12:07	4°11'47.24	0°16'06
min. Earth dist.	15963 Oct 28 07:16	21°8'45.25	29.37225 AU	min. Earth dist.	15969 Nov 09 23:16	4°11'46.39	29.39524 AU
direct	15964 Jan 15 21:36	20°8'21.49		direct	15970 Jan 28 14:06	3°11'23.20	
evening set	15964 Apr 14 11:57	22°8'15.51		evening set	15970 Apr 28 07:17	5°11'17.31	
conjunction	15964 Apr 30 11:25	22°8'50.58	0°18'34	conjunction	15970 May 14 05:16	5°11'52.33	0°14'48
minimum elong	15964 Apr 30 11:25	22°8'50.58	0°18'00	minimum elong	15970 May 14 05:16	5°11'52.33	0°14'08
max. Earth dist.	15964 Apr 30 01:57	22°8'50.06	31.37537 AU	behind sun begin	15970 May 14 02:07	5°11'52.17	
morning rise	15964 May 16 09:05	23°8'25.57		behind sun end	15970 May 14 08:24	5°11'52.50	
retrograde	15964 Aug 12 03:17	25°8'18.30		max. Earth dist.	15970 May 13 16:00	5°11'51.20	31.39497 AU
opposition	15964 Oct 29 08:59	23°8'56.01	0°19'29	morning rise	15970 May 30 01:34	6°11'27.27	
min. Earth dist.	15964 Oct 29 18:26	23°8'55.22	29.37861 AU	retrograde	15970 Aug 25 19:04	8°11'19.54	
direct	15965 Jan 17 07:42	22°8'31.53		opposition	15970 Nov 11 22:29	6°11'57.35	0°15'21
evening set	15965 Apr 16 23:14	24°8'25.57		min. Earth dist.	15970 Nov 12 10:02	6°11'56.47	29.39463 AU
				direct	15971 Jan 31 01:17	5°11'33.29	
conjunction	15965 May 02 22:24	25°8'01.04	0°18'00	evening set	15971 Apr 30 18:05	7°11'27.39	
minimum elong	15965 May 02 22:24	25°8'01.04	0°17'24				
max. Earth dist.	15965 May 02 11:51	25°8'00.06	31.38162 AU	conjunction	15971 May 16 16:00	8°11'02.40	0°14'06
morning rise	15965 May 18 19:58	25°8'36.03		minimum elong	15971 May 16 16:00	8°11'02.40	0°13'24
retrograde	15965 Aug 14 14:11	27°8'28.35		behind sun begin	15971 May 16 12:20	8°11'02.21	
opposition	15965 Oct 31 19:04	26°8'06.10	0°18'51	behind sun end	15971 May 16 19:40	8°11'03.00	
min. Earth dist.	15965 Nov 01 03:58	26°8'05.33	29.38448 AU	max. Earth dist.	15971 May 16 03:38	8°11'01.32	31.39386 AU
direct	15966 Jan 19 17:31	24°8'42.05		morning rise	15971 Jun 01 11:55	8°11'37.33	
evening set	15966 Apr 19 10:28	26°8'36.12		retrograde	15971 Aug 28 04:26	10°11'29.57	
				opposition	15971 Nov 14 08:50	9°11'07.37	0°14'36
conjunction	15966 May 05 09:26	27°8'11.18	0°17'25	min. Earth dist.	15971 Nov 14 20:57	9°11'06.47	29.39313 AU
minimum elong	15966 May 05 09:26	27°8'11.18	0°16'48	direct	15972 Feb 02 14:12	7°11'43.28	
max. Earth dist.	15966 May 04 22:48	27°8'10.19	31.38691 AU	evening set	15972 May 02 05:04	9°11'37.37	
morning rise	15966 May 21 06:37	27°8'46.16					
retrograde	15966 Aug 16 23:36	29°8'38.49		conjunction	15972 May 18 02:36	10°11'12.37	0°13'22
opposition	15966 Nov 03 05:22	28°8'16.27	0°18'12	minimum elong	15972 May 18 02:36	10°11'12.37	0°12'41
min. Earth dist.	15966 Nov 03 15:46	28°8'15.44	29.38929 AU	behind sun begin	15972 May 17 22:30	10°11'12.15	
direct	15967 Jan 22 02:22	26°8'52.23		behind sun end	15972 May 18 06:42	10°11'12.59	
evening set	15967 Apr 21 21:42	28°8'46.32		max. Earth dist.	15972 May 17 13:04	10°11'11.23	31.39225 AU
				morning rise	15972 Jun 02 22:26	10°11'47.29	
conjunction	15967 May 07 20:26	29°8'21.37	0°16'48	retrograde	15972 Aug 29 14:41	12°11'39.50	
minimum elong	15967 May 07 20:27	29°8'21.37	0°16'09	opposition	15972 Nov 15 18:56	11°11'17.29	0°13'49
max. Earth dist.	15967 May 07 09:24	29°8'20.36	31.39113 AU	min. Earth dist.	15972 Nov 16 06:31	11°11'16.41	29.39152 AU
morning rise	15967 May 23 17:25	29°8'56.34		direct	15973 Feb 04 01:01	9°11'53.17	
	15967 May 25 07:34	0°11		evening set	15973 May 04 15:53	11°11'47.25	
retrograde	15967 Aug 19 10:34	1°11'49.06					
opposition	15967 Nov 05 15:33	0°11'26.47	0°17'32	conjunction	15973 May 20 13:18	12°11'22.25	0°12'38
min. Earth dist.	15967 Nov 06 01:29	0°11'26.06	29.39275 AU	minimum elong	15973 May 20 13:18	12°11'22.25	0°11'55
	15967 Nov 22 03:48	30°8'8		behind sun begin	15973 May 20 08:49	12°11'22.01	
direct	15968 Jan 24 15:09	29°8'02.44		behind sun end	15973 May 20 17:47	12°11'22.49	
	15968 Mar 25 16:09	0°11		max. Earth dist.	15973 May 20 00:36	12°11'21.15	31.39064 AU
evening set	15968 Apr 23 08:52	0°11'56.54		morning rise	15973 Jun 05 08:44	12°11'57.16	
				retrograde	15973 Aug 31 22:14	14°11'49.35	

opposition	15973 Nov 18 05:23	13°II27'12	0°13'00	behind sun begin	15979 Jun 02 22:21	25°II20'53	
min. Earth dist.	15973 Nov 18 17:44	13°II26'21	29.39017 AU	behind sun end	15979 Jun 03 10:21	25°II21'57	
direct	15974 Feb 06 11:53	12°II02'59		max. Earth dist.	15979 Jun 02 14:36	25°II20'09	31.38935 AU
evening set	15974 May 07 02:41	13°II57'07		morning rise	15979 Jun 18 22:24	25°II56'13	
				retrograde	15979 Sep 14 13:20	27°II48'40	
conjunction	15974 May 22 23:44	14°II32'06	0°11'53	opposition	15979 Dec 01 20:24	26°II26'28	0°07'50
minimum elong	15974 May 22 23:44	14°II32'06	0°11'09	min. Earth dist.	15979 Dec 02 08:34	26°II25'38	29.38842 AU
behind sun begin	15974 May 22 18:55	14°II31'40		direct	15980 Feb 20 03:21	25°II02'23	
behind sun end	15974 May 23 04:33	14°II32'31		evening set	15980 May 19 19:25	26°II56'44	
max. Earth dist.	15974 May 22 10:33	14°II30'53	31.38970 AU				
morning rise	15974 Jun 07 19:00	15°II06'56		conjunction	15980 Jun 04 15:05	27°II31'40	0°07'01
retrograde	15974 Sep 03 08:35	16°II59'14		minimum elong	15980 Jun 04 15:05	27°II31'40	0°06'15
opposition	15974 Nov 20 15:41	15°II36'51	0°12'11	behind sun begin	15980 Jun 04 08:56	27°II31'07	
min. Earth dist.	15974 Nov 21 02:52	15°II36'05	29.38962 AU	behind sun end	15980 Jun 04 21:14	27°II32'12	
direct	15975 Feb 08 22:15	14°II12'38		max. Earth dist.	15980 Jun 04 02:07	27°II30'28	31.38684 AU
evening set	15975 May 09 13:26	16°II06'47		morning rise	15980 Jun 20 08:43	28°II06'27	
				retrograde	15980 Sep 15 23:20	29°II58'56	
conjunction	15975 May 25 10:17	16°II41'45	0°11'06	opposition	15980 Dec 03 07:05	28°II36'45	0°06'55
minimum elong	15975 May 25 10:17	16°II41'45	0°10'21	min. Earth dist.	15980 Dec 03 20:02	28°II35'52	29.38508 AU
behind sun begin	15975 May 25 05:09	16°II41'17		direct	15981 Feb 21 15:58	27°II12'41	
behind sun end	15975 May 25 15:24	16°II42'12		evening set	15981 May 22 06:24	29°II07'04	
max. Earth dist.	15975 May 24 21:29	16°II40'34	31.38952 AU	max. Earth dist.	15981 Jun 06 11:20	29°II40'40	31.38276 AU
morning rise	15975 Jun 10 05:13	17°II16'34					
retrograde	15975 Sep 05 17:35	19°II08'53		conjunction	15981 Jun 07 01:41	29°II41'59	0°06'10
opposition	15975 Nov 23 02:08	17°II46'32	0°11'21	minimum elong	15981 Jun 07 01:40	29°II41'59	0°05'23
min. Earth dist.	15975 Nov 23 14:14	17°II45'42	29.38987 AU	behind sun begin	15981 Jun 06 19:24	29°II41'26	
direct	15976 Feb 11 07:10	16°II22'20		behind sun end	15981 Jun 07 07:56	29°II42'32	
evening set	15976 May 11 00:07	18°II16'30			15981 Jun 15 04:02	0°00	
				morning rise	15981 Jun 22 19:13	0°0016'46	
conjunction	15976 May 26 20:46	18°II51'28	0°10'19	retrograde	15981 Sep 18 10:33	2°0009'17	
minimum elong	15976 May 26 20:47	18°II51'28	0°09'34	opposition	15981 Dec 05 17:51	0°0047'06	0°06'00
behind sun begin	15976 May 26 15:24	18°II50'59		min. Earth dist.	15981 Dec 06 06:20	0°0046'14	29.38023 AU
behind sun end	15976 May 27 02:09	18°II51'56			15982 Jan 05 04:08	30°R00	
max. Earth dist.	15976 May 26 08:15	18°II50'19	31.39009 AU	direct	15982 Feb 24 03:07	29°II23'01	
morning rise	15976 Jun 11 15:31	19°II26'17			15982 Apr 13 11:11	0°00	
retrograde	15976 Sep 07 03:52	21°II18'37		evening set	15982 May 24 17:06	1°0017'25	
opposition	15976 Nov 24 12:31	19°II56'18	0°10'29				
min. Earth dist.	15976 Nov 24 23:47	19°II55'32	29.39039 AU	conjunction	15982 Jun 09 12:13	1°0052'20	0°05'18
direct	15977 Feb 12 19:06	18°II32'09		minimum elong	15982 Jun 09 12:13	1°0052'20	0°04'32
evening set	15977 May 13 11:00	20°II26'21		behind sun begin	15982 Jun 09 05:52	1°0051'46	
				behind sun end	15982 Jun 09 18:35	1°0052'54	
conjunction	15977 May 29 07:19	21°II01'18	0°09'30	max. Earth dist.	15982 Jun 08 22:25	1°0051'04	31.37705 AU
minimum elong	15977 May 29 07:19	21°II01'18	0°08'44	morning rise	15982 Jun 25 05:22	2°0027'06	
behind sun begin	15977 May 29 01:42	21°II00'48		retrograde	15982 Sep 20 18:47	4°0019'39	
behind sun end	15977 May 29 12:56	21°II01'48		opposition	15982 Dec 08 04:47	2°0057'27	0°05'04
max. Earth dist.	15977 May 28 18:09	21°II00'06	31.39052 AU	min. Earth dist.	15982 Dec 08 18:22	2°0056'31	29.37381 AU
morning rise	15977 Jun 14 01:50	21°II36'07		direct	15983 Feb 26 14:23	1°0033'22	
retrograde	15977 Sep 09 15:07	23°II28'29		evening set	15983 May 27 03:53	3°0027'46	
opposition	15977 Nov 26 23:01	22°II06'13	0°09'37				
min. Earth dist.	15977 Nov 27 11:04	22°II05'24	29.39071 AU	conjunction	15983 Jun 11 22:40	4°0002'40	0°04'26
direct	15978 Feb 15 04:35	20°II42'05		minimum elong	15983 Jun 11 22:41	4°0002'40	0°03'39
evening set	15978 May 15 21:48	22°II36'21		behind sun begin	15983 Jun 11 16:15	4°0002'06	
				behind sun end	15983 Jun 12 05:06	4°0003'14	
conjunction	15978 May 31 17:58	23°II11'17	0°08'41	max. Earth dist.	15983 Jun 11 08:12	4°0001'20	31.37011 AU
minimum elong	15978 May 31 17:58	23°II11'17	0°07'56	morning rise	15983 Jun 27 15:43	4°0037'26	
behind sun begin	15978 May 31 12:09	23°II10'47		retrograde	15983 Sep 23 05:24	6°0030'00	
behind sun end	15978 May 31 23:47	23°II11'48		opposition	15983 Dec 10 15:27	5°0007'46	0°04'09
max. Earth dist.	15978 May 31 05:27	23°II10'09	31.39049 AU	min. Earth dist.	15983 Dec 11 04:12	5°0006'53	29.36630 AU
morning rise	15978 Jun 16 12:07	23°II46'05		direct	15984 Feb 29 01:15	3°0043'38	
retrograde	15978 Sep 12 01:08	25°II38'30		evening set	15984 May 28 14:31	5°0038'02	
opposition	15978 Nov 29 09:41	24°II16'17	0°08'44				
min. Earth dist.	15978 Nov 29 21:37	24°II15'28	29.39013 AU	conjunction	15984 Jun 13 09:08	6°0012'56	0°03'33
direct	15979 Feb 17 16:28	22°II52'11		minimum elong	15984 Jun 13 09:08	6°0012'56	0°02'47
evening set	15979 May 18 08:36	24°II46'29		behind sun begin	15984 Jun 13 02:40	6°0012'22	
				behind sun end	15984 Jun 13 15:36	6°0013'31	
conjunction	15979 Jun 03 04:22	25°II21'25	0°07'51	max. Earth dist.	15984 Jun 12 18:44	6°0011'37	31.36216 AU
minimum elong	15979 Jun 03 04:21	25°II21'25	0°07'05	morning rise	15984 Jun 29 01:55	6°0047'42	

retrograde	15984 Sep 24 14:18	8°  40'17		conjunction	15990 Jun 26 22:29	19°  14'22	-0°01'52
opposition	15984 Dec 12 02:22	7°  18'00	0°03'13	minimum elong	15990 Jun 26 22:30	19°  14'22	0°02'37
min. Earth dist.	15984 Dec 12 16:08	7°  17'04	29.35816 AU	behind sun begin	15990 Jun 26 16:03	19°  13'48	
direct	15985 Mar 02 10:50	5°  53'51		behind sun end	15990 Jun 27 04:58	19°  14'57	
evening set	15985 May 31 01:06	7°  48'14		max. Earth dist.	15990 Jun 26 09:31	19°  13'10	31.32209 AU
				morning rise	15990 Jul 12 14:03	19°  49'07	
conjunction	15985 Jun 15 19:28	8°  23'07	0°02'40	retrograde	15990 Oct 08 07:20	21°  42'02	
minimum elong	15985 Jun 15 19:28	8°  23'07	0°01'53	opposition	15990 Dec 25 20:13	20°  19'41	-0°02'27
behind sun begin	15985 Jun 15 13:00	8°  22'33		min. Earth dist.	15990 Dec 26 07:28	20°  18'55	29.31925 AU
behind sun end	15985 Jun 16 01:57	8°  23'42		direct	15991 Mar 16 05:55	18°  55'33	
max. Earth dist.	15985 Jun 15 05:34	8°  21'51	31.35397 AU	evening set	15991 Jun 13 15:59	20°  50'08	
morning rise	15985 Jul 01 12:00	8°  57'53					
retrograde	15985 Sep 26 23:49	10°  50'29		conjunction	15991 Jun 29 08:54	21°  25'00	-0°02'46
opposition	15985 Dec 14 13:09	9°  28'10	0°02'16	minimum elong	15991 Jun 29 08:54	21°  25'00	0°03'31
min. Earth dist.	15985 Dec 15 01:52	9°  27'18	29.35001 AU	behind sun begin	15991 Jun 29 02:29	21°  24'26	
direct	15986 Mar 04 23:04	8°  03'58		behind sun end	15991 Jun 29 15:19	21°  25'34	
evening set	15986 Jun 02 11:43	9°  58'22		max. Earth dist.	15991 Jun 28 20:40	21°  23'52	31.31607 AU
				morning rise	15991 Jul 15 00:06	21°  59'44	
conjunction	15986 Jun 18 05:44	10°  33'15	0°01'46	retrograde	15991 Oct 10 16:51	23°  52'44	
minimum elong	15986 Jun 18 05:43	10°  33'15	0°01'00	opposition	15991 Dec 28 07:28	22°  30'23	-0°03'23
behind sun begin	15986 Jun 17 23:15	10°  32'41		min. Earth dist.	15991 Dec 28 19:40	22°  29'33	29.31290 AU
behind sun end	15986 Jun 18 12:11	10°  33'50		direct	15992 Mar 17 17:37	21°  30'17	
max. Earth dist.	15986 Jun 17 15:29	10°  31'56	31.34609 AU	evening set	15992 Jun 15 02:38	23°  30'53	
morning rise	15986 Jul 03 22:05	11°  08'00					
retrograde	15986 Sep 29 10:50	13°  00'39		conjunction	15992 Jun 30 19:15	23°  35'44	-0°03'38
opposition	15986 Dec 17 00:08	11°  38'18	0°01'20	minimum elong	15992 Jun 30 19:16	23°  35'44	0°04'23
min. Earth dist.	15986 Dec 17 12:59	11°  37'25	29.34267 AU	behind sun begin	15992 Jun 30 12:55	23°  35'10	
direct	15987 Mar 07 07:58	10°  14'05		behind sun end	15992 Jul 01 01:37	23°  36'18	
evening set	15987 Jun 04 21:59	12°  08'30		max. Earth dist.	15992 Jun 30 06:36	23°  34'34	31.30929 AU
				morning rise	15992 Jul 16 10:22	24°  10'29	
conjunction	15987 Jun 20 15:54	12°  43'22	0°00'51	retrograde	15992 Oct 12 04:31	26°  03'33	
minimum elong	15987 Jun 20 15:54	12°  43'22	0°00'05	opposition	15992 Dec 29 18:45	24°  41'11	-0°04'19
behind sun begin	15987 Jun 20 09:52	12°  42'51		min. Earth dist.	15992 Dec 30 05:58	24°  40'25	29.30548 AU
behind sun end	15987 Jun 20 21:56	12°  43'54		direct	15993 Mar 20 05:31	23°  17'05	
max. Earth dist.	15987 Jun 20 02:57	12°  42'11	31.33919 AU	evening set	15993 Jun 17 13:18	25°  11'43	
morning rise	15987 Jul 06 07:56	13°  01'07					
retrograde	15987 Oct 01 20:34	15°  01'05		conjunction	15993 Jul 03 05:41	25°  46'34	-0°04'31
opposition	15987 Dec 19 11:04	13°  48'27	0°00'23	minimum elong	15993 Jul 03 05:40	25°  46'34	0°05'15
min. Earth dist.	15987 Dec 19 23:18	13°  47'37	29.33612 AU	behind sun begin	15993 Jul 02 23:25	25°  46'01	
direct	15988 Mar 08 19:35	12°  24'15		behind sun end	15993 Jul 03 11:56	25°  47'08	
evening set	15988 Jun 06 08:33	14°  18'42		max. Earth dist.	15993 Jul 02 16:59	25°  45'24	31.30116 AU
desc. node	15988 Jun 08 08:42	14°  23'05		morning rise	15993 Jul 18 20:31	26°  21'19	
				retrograde	15993 Oct 14 13:51	28°  14'27	
conjunction	15988 Jun 22 02:07	14°  53'34	-0°00'04	opposition	15994 Jan 01 06:16	26°  52'04	-0°05'15
minimum elong	15988 Jun 22 02:05	14°  53'34	0°00'49	min. Earth dist.	15994 Jan 01 18:32	26°  51'14	29.29677 AU
behind sun begin	15988 Jun 21 19:37	14°  53'00		direct	15994 Mar 22 15:40	25°  52'58	
behind sun end	15988 Jun 22 08:33	14°  54'09		evening set	15994 Jun 19 23:56	27°  52'36	
max. Earth dist.	15988 Jun 21 12:24	14°  52'19	31.33312 AU				
morning rise	15988 Jul 07 18:04	15°  28'19		conjunction	15994 Jul 05 16:08	27°  57'27	-0°05'22
retrograde	15988 Oct 03 09:12	17°  21'05		minimum elong	15994 Jul 05 16:08	27°  57'27	0°06'05
opposition	15988 Dec 20 21:56	15°  58'43	-0°00'33	behind sun begin	15994 Jul 05 10:00	27°  56'54	
min. Earth dist.	15988 Dec 21 09:48	15°  57'54	29.33042 AU	behind sun end	15994 Jul 05 22:17	27°  58'00	
direct	15989 Mar 11 06:31	14°  34'32		max. Earth dist.	15994 Jul 05 03:50	27°  56'19	31.29183 AU
evening set	15989 Jun 08 18:59	16°  29'02		morning rise	15994 Jul 21 06:46	28°  32'11	
					15994 Sep 07 20:17	0°  00'00	
conjunction	15989 Jun 24 12:26	17°  03'54	-0°00'58	retrograde	15994 Oct 16 23:34	0°  02'53	
minimum elong	15989 Jun 24 12:26	17°  03'54	0°01'45		15994 Nov 26 07:54	30°  00'00	
behind sun begin	15989 Jun 24 05:58	17°  03'20		opposition	15995 Jan 03 17:43	29°  02'58	-0°06'11
behind sun end	15989 Jun 24 18:55	17°  04'28		min. Earth dist.	15995 Jan 04 05:09	29°  02'11	29.28671 AU
max. Earth dist.	15989 Jun 24 00:09	17°  02'46	31.32758 AU	direct	15995 Mar 25 03:43	27°  38'51	
morning rise	15989 Jul 10 04:02	17°  38'38		evening set	15995 Jun 22 10:31	29°  33'28	
retrograde	15989 Oct 05 19:41	19°  31'29			15995 Jul 04 09:24	0°  00'00	
opposition	15989 Dec 23 09:05	18°  09'07	-0°01'30				
min. Earth dist.	15989 Dec 23 21:16	18°  08'17	29.32490 AU	conjunction	15995 Jul 08 02:26	0°  08'20	-0°06'14
direct	15990 Mar 13 19:00	16°  44'58		minimum elong	15995 Jul 08 02:25	0°  08'20	0°06'57
evening set	15990 Jun 11 05:28	18°  39'31		behind sun begin	15995 Jul 07 20:25	0°  07'47	
				behind sun end	15995 Jul 08 08:25	0°  08'52	

max. Earth dist.	15995 Jul 07 13:23	0°07'07	31.28114 AU	direct	16001 Apr 06 23:38	10°04'46	
morning rise	15995 Jul 23 16:59	0°04'30		evening set	16001 Jul 05 01:14	12°03'82	
retrograde	15995 Oct 19 10:38	2°03'20					
opposition	15996 Jan 06 05:15	1°01'35	-0°07'05	conjunction	16001 Jul 20 15:58	13°01'20	-0°11'08
min. Earth dist.	15996 Jan 06 17:09	1°01'30	29.27551 AU	minimum elong	16001 Jul 20 15:58	13°01'20	0°11'46
	15996 Mar 01 02:23	30°08'00		behind sun begin	16001 Jul 20 11:24	13°01'25	
direct	15996 Mar 26 13:02	29°08'49		behind sun end	16001 Jul 20 20:31	13°01'34	
	15996 Apr 20 17:16	0°00		max. Earth dist.	16001 Jul 20 05:57	13°01'25	31.21546 AU
evening set	15996 Jun 23 21:02	1°04'41		morning rise	16001 Aug 05 05:34	13°04'80	
					16001 Sep 11 09:20	15°00	
conjunction	15996 Jul 09 12:53	2°01'19	-0°07'04	retrograde	16001 Nov 01 06:00	15°04'15	
minimum elong	15996 Jul 09 12:53	2°01'10	0°07'45		16001 Dec 24 01:45	15°08'00	
behind sun begin	15996 Jul 09 07:03	2°01'18		opposition	16002 Jan 19 02:50	14°01'09	-0°12'18
behind sun end	15996 Jul 09 18:43	2°01'19		min. Earth dist.	16002 Jan 19 11:20	14°01'18	29.21122 AU
max. Earth dist.	15996 Jul 09 00:52	2°01'18	31.26947 AU	direct	16002 Apr 09 11:43	12°05'50	
morning rise	15996 Jul 25 03:09	2°05'35		evening set	16002 Jul 07 11:43	14°04'46	
retrograde	15996 Oct 20 20:25	4°04'14			16002 Jul 12 02:54	15°00	
opposition	15997 Jan 07 16:40	3°02'44	-0°07'59				
min. Earth dist.	15997 Jan 08 04:15	3°02'35	29.26340 AU	conjunction	16002 Jul 23 02:16	15°02'43	-0°11'54
direct	15997 Mar 29 01:18	2°00'29		minimum elong	16002 Jul 23 02:16	15°02'43	0°12'30
evening set	15997 Jun 26 07:39	3°05'50		behind sun begin	16002 Jul 22 22:03	15°02'41	
				behind sun end	16002 Jul 23 06:28	15°02'50	
conjunction	15997 Jul 11 23:06	4°02'56	-0°07'54	max. Earth dist.	16002 Jul 22 16:39	15°02'44	31.20699 AU
minimum elong	15997 Jul 11 23:06	4°02'56	0°08'36	morning rise	16002 Aug 07 15:44	15°05'24	
behind sun begin	15997 Jul 11 17:28	4°02'26		retrograde	16002 Nov 03 15:59	17°05'19	
behind sun end	15997 Jul 12 04:44	4°03'07		opposition	16003 Jan 21 14:45	16°03'03	-0°13'08
max. Earth dist.	15997 Jul 11 10:21	4°02'46	31.25729 AU	min. Earth dist.	16003 Jan 21 23:52	16°02'58	29.20295 AU
morning rise	15997 Jul 27 13:22	5°00'41		direct	16003 Apr 11 21:43	15°00'63	
retrograde	15997 Oct 23 08:54	6°05'80		evening set	16003 Jul 09 22:09	17°00'11	
opposition	15998 Jan 10 04:14	5°03'52	-0°08'53				
min. Earth dist.	15998 Jan 10 15:17	5°03'44	29.25134 AU	conjunction	16003 Jul 25 12:37	17°03'61	-0°12'40
direct	15998 Mar 31 12:15	4°01'12		minimum elong	16003 Jul 25 12:37	17°03'61	0°13'15
evening set	15998 Jun 28 17:53	6°00'55		behind sun begin	16003 Jul 25 08:49	17°03'54	
				behind sun end	16003 Jul 25 16:25	17°03'63	
conjunction	15998 Jul 14 09:18	6°04'40	-0°08'44	max. Earth dist.	16003 Jul 25 03:54	17°03'52	31.19873 AU
minimum elong	15998 Jul 14 09:18	6°04'40	0°09'23	morning rise	16003 Aug 10 01:57	18°01'05	
behind sun begin	15998 Jul 14 03:53	6°04'01		retrograde	16003 Nov 06 02:08	20°00'45	
behind sun end	15998 Jul 14 14:43	6°04'09		opposition	16004 Jan 24 02:37	18°04'21	-0°13'56
max. Earth dist.	15998 Jul 13 22:11	6°03'39	31.24536 AU	min. Earth dist.	16004 Jan 24 10:43	18°04'44	29.19444 AU
morning rise	15998 Jul 29 23:14	7°01'52		direct	16004 Apr 13 09:32	17°01'18	
retrograde	15998 Oct 25 19:16	9°00'85		evening set	16004 Jul 11 08:51	19°01'30	
opposition	15999 Jan 12 15:55	7°04'61	-0°09'45				
min. Earth dist.	15999 Jan 13 02:58	7°04'52	29.23978 AU	conjunction	16004 Jul 26 23:00	19°04'57	-0°13'24
direct	15999 Apr 03 00:39	6°02'15		minimum elong	16004 Jul 26 23:00	19°04'57	0°13'57
evening set	15999 Jul 01 04:23	8°01'63		behind sun begin	16004 Jul 26 19:40	19°04'73	
				behind sun end	16004 Jul 27 02:21	19°04'81	
conjunction	15999 Jul 16 19:27	8°05'12	-0°09'33	max. Earth dist.	16004 Jul 26 13:42	19°04'70	31.18993 AU
minimum elong	15999 Jul 16 19:27	8°05'12	0°10'12	morning rise	16004 Aug 11 12:19	20°02'24	
behind sun begin	15999 Jul 16 14:17	8°05'08		retrograde	16004 Nov 07 13:51	22°01'65	
behind sun end	15999 Jul 17 00:37	8°05'15		opposition	16005 Jan 25 14:37	20°05'41	-0°14'43
max. Earth dist.	15999 Jul 16 08:02	8°05'02	31.23436 AU	min. Earth dist.	16005 Jan 25 22:59	20°05'39	29.18538 AU
morning rise	15999 Aug 01 09:24	9°02'61		direct	16005 Apr 15 18:12	19°03'01	
retrograde	15999 Oct 28 07:20	11°01'43		evening set	16005 Jul 13 19:29	21°02'50	
opposition	16000 Jan 15 03:21	9°05'70	-0°10'37				
min. Earth dist.	16000 Jan 15 13:00	9°05'62	29.22935 AU	conjunction	16005 Jul 29 09:37	21°05'58	-0°14'07
direct	16000 Apr 04 11:39	8°03'24		minimum elong	16005 Jul 29 09:37	21°05'58	0°14'40
evening set	16000 Jul 02 14:48	10°02'27		behind sun begin	16005 Jul 29 06:51	21°05'43	
				behind sun end	16005 Jul 29 12:23	22°00'01	
conjunction	16000 Jul 18 05:48	11°02'01	-0°10'21	max. Earth dist.	16005 Jul 29 01:28	21°05'12	31.18040 AU
minimum elong	16000 Jul 18 05:47	11°02'01	0°10'58	morning rise	16005 Aug 13 22:40	22°03'47	
behind sun begin	16000 Jul 18 00:54	11°01'51		retrograde	16005 Nov 10 00:29	24°02'04	
behind sun end	16000 Jul 18 10:40	11°02'44		opposition	16006 Jan 28 02:51	23°00'62	-0°15'28
max. Earth dist.	16000 Jul 17 19:29	11°01'01	31.22440 AU	min. Earth dist.	16006 Jan 28 10:52	23°00'54	29.17526 AU
morning rise	16000 Aug 02 19:28	11°03'70		direct	16006 Apr 18 06:30	21°04'21	
retrograde	16000 Oct 29 17:39	13°03'04		evening set	16006 Jul 16 06:11	23°03'71	
opposition	16001 Jan 16 15:08	12°00'58	-0°11'28				
min. Earth dist.	16001 Jan 17 01:10	12°00'17	29.21990 AU	conjunction	16006 Jul 31 20:00	24°01'20	-0°14'49

minimum elong	16006 Jul 31 20:00	24°012'08	0°15'20	minimum elong	16012 Aug 13 11:29	7°02'25"23	0°18'53
behind sun begin	16006 Jul 31 17:56	24°011'57		max. Earth dist.	16012 Aug 13 05:54	7°02'24"52	31.09048 AU
behind sun end	16006 Jul 31 22:05	24°012'19		morning rise	16012 Aug 29 00:09	8°02'00"16	
max. Earth dist.	16006 Jul 31 10:57	24°011'18	31.16974 AU	retrograde	16012 Nov 25 10:13	9°02'55"11	
morning rise	16006 Aug 16 09:08	24°046'58		opposition	16013 Feb 12 17:04	8°02'31"58	-0°20'05
retrograde	16006 Nov 12 13:35	26°041'22		min. Earth dist.	16013 Feb 12 21:55	8°02'31"38	29.08465 AU
opposition	16007 Jan 30 15:06	25°018'36	-0°16'12	direct	16013 May 03 19:13	7°02'07"50	
min. Earth dist.	16007 Jan 30 22:47	25°018'05	29.16402 AU	evening set	16013 Jul 31 09:01	9°02'02"42	
direct	16007 Apr 20 17:08	23°054'36					
evening set	16007 Jul 18 16:54	25°049'31		conjunction	16013 Aug 15 22:01	9°02'37"37	-0°19'03
				minimum elong	16013 Aug 15 22:01	9°02'37"37	0°19'24
conjunction	16007 Aug 03 06:45	26°024'25	-0°15'30	max. Earth dist.	16013 Aug 15 16:15	9°02'37"05	31.07903 AU
minimum elong	16007 Aug 03 06:44	26°024'25	0°16'00	morning rise	16013 Aug 31 10:46	10°02'12"30	
behind sun begin	16007 Aug 03 05:54	26°024'20		retrograde	16013 Nov 27 22:21	12°02'07"33	
behind sun end	16007 Aug 03 07:35	26°024'29		opposition	16014 Feb 15 05:37	10°02'44"17	-0°20'38
max. Earth dist.	16007 Aug 02 22:50	26°023'41	31.15777 AU	min. Earth dist.	16014 Feb 15 10:15	10°02'43"58	29.07377 AU
morning rise	16007 Aug 18 19:38	26°059'15		direct	16014 May 06 04:57	9°02'20"11	
retrograde	16007 Nov 15 00:22	28°053'45		evening set	16014 Aug 02 19:30	11°02'15"03	
opposition	16008 Feb 02 03:19	27°030'55	-0°16'55				
min. Earth dist.	16008 Feb 02 11:29	27°030'22	29.15136 AU	conjunction	16014 Aug 18 08:36	11°02'49"59	-0°19'33
direct	16008 Apr 22 05:06	26°006'54		minimum elong	16014 Aug 18 08:36	11°02'49"59	0°19'51
evening set	16008 Jul 20 03:46	28°001'49		max. Earth dist.	16014 Aug 18 04:31	11°02'49"36	31.06852 AU
				morning rise	16014 Sep 02 21:13	12°02'24"54	
conjunction	16008 Aug 04 17:21	28°036'43	-0°16'09	retrograde	16014 Nov 30 08:52	14°02'20"04	
minimum elong	16008 Aug 04 17:22	28°036'43	0°16'37	opposition	16015 Feb 17 18:10	12°02'56"48	-0°21'09
max. Earth dist.	16008 Aug 04 08:46	28°035'55	31.14463 AU	min. Earth dist.	16015 Feb 17 22:03	12°02'56"32	29.06346 AU
morning rise	16008 Aug 20 06:20	29°011'33		direct	16015 May 08 17:22	11°02'32"43	
	16008 Sep 12 17:41	0°02'		evening set	16015 Aug 05 06:23	13°02'27"37	
retrograde	16008 Nov 16 13:14	1°02'06"08					
	16009 Jan 24 08:39	30°00'00		conjunction	16015 Aug 20 19:14	14°02'02"33	-0°20'01
opposition	16009 Feb 03 15:36	29°043'14	-0°17'36	minimum elong	16015 Aug 20 19:15	14°02'02"33	0°20'19
min. Earth dist.	16009 Feb 03 22:42	29°042'45	29.13771 AU	max. Earth dist.	16015 Aug 20 14:36	14°02'02"08	31.05847 AU
direct	16009 Apr 24 16:47	28°019'10		morning rise	16015 Sep 05 08:01	14°02'37"30	
	16009 Jul 16 02:49	0°02'		retrograde	16015 Dec 02 21:49	16°02'32"49	
evening set	16009 Jul 22 14:22	0°02'14"04		opposition	16016 Feb 20 06:38	15°02'09"31	-0°21'38
				min. Earth dist.	16016 Feb 20 09:56	15°02'09"17	29.05354 AU
conjunction	16009 Aug 07 03:54	0°02'48"58	-0°16'47	direct	16016 May 10 03:17	13°02'45"28	
minimum elong	16009 Aug 07 03:54	0°02'48"58	0°17'14	evening set	16016 Aug 06 17:13	15°02'40"25	
max. Earth dist.	16009 Aug 06 20:13	0°02'48"15	31.13056 AU				
morning rise	16009 Aug 22 16:42	1°02'23"49		conjunction	16016 Aug 22 06:09	16°02'15"23	-0°20'28
retrograde	16009 Nov 19 00:37	3°02'18"29		minimum elong	16016 Aug 22 06:09	16°02'15"23	0°20'43
opposition	16010 Feb 06 04:04	1°02'55"28	-0°18'16	max. Earth dist.	16016 Aug 22 02:59	16°02'15"05	31.04845 AU
min. Earth dist.	16010 Feb 06 11:41	1°02'54"57	29.12352 AU	morning rise	16016 Sep 06 18:45	16°02'50"20	
direct	16010 Apr 27 06:06	0°02'31"22		retrograde	16016 Dec 04 09:07	18°02'45"48	
evening set	16010 Jul 25 01:02	2°02'26"15		opposition	16017 Feb 21 19:26	17°02'22"14	-0°22'05
				min. Earth dist.	16017 Feb 21 22:56	17°02'22"14	29.04337 AU
conjunction	16010 Aug 09 14:25	3°02'01"09	-0°17'23	direct	16017 May 12 14:38	15°02'58"29	
minimum elong	16010 Aug 09 14:25	3°02'01"09	0°17'48	evening set	16017 Aug 09 04:08	17°02'53"28	
max. Earth dist.	16010 Aug 09 07:06	3°02'00"28	31.11651 AU				
morning rise	16010 Aug 25 03:14	3°02'36"00		conjunction	16017 Aug 24 16:52	18°02'28"26	-0°20'52
retrograde	16010 Nov 21 13:22	5°02'30"44		minimum elong	16017 Aug 24 16:52	18°02'28"26	0°21'07
opposition	16011 Feb 08 16:17	4°02'07"38	-0°18'54	max. Earth dist.	16017 Aug 24 13:20	18°02'28"06	31.03813 AU
min. Earth dist.	16011 Feb 08 22:19	4°02'07"13	29.10968 AU	morning rise	16017 Sep 09 05:36	19°02'03"24	
direct	16011 Apr 29 19:18	2°02'43"30		retrograde	16017 Dec 06 23:01	20°02'59"01	
evening set	16011 Jul 27 11:39	4°02'38"22		opposition	16018 Feb 24 08:15	19°02'35"41	-0°22'31
				min. Earth dist.	16018 Feb 24 10:34	19°02'35"31	29.03273 AU
conjunction	16011 Aug 12 00:55	5°02'13"16	-0°17'58	direct	16018 May 15 02:03	18°02'11"43	
minimum elong	16011 Aug 12 00:55	5°02'13"16	0°18'22	evening set	16018 Aug 11 15:09	20°02'06"44	
max. Earth dist.	16011 Aug 11 18:03	5°02'12"38	31.10296 AU				
morning rise	16011 Aug 27 13:42	5°02'48"08		conjunction	16018 Aug 27 03:55	20°02'41"43	-0°21'15
retrograde	16011 Nov 23 23:38	7°02'42"57		minimum elong	16018 Aug 27 03:55	20°02'41"43	0°21'27
opposition	16012 Feb 11 04:45	6°02'19"47	-0°19'30	max. Earth dist.	16018 Aug 27 01:06	20°02'41"27	31.02697 AU
min. Earth dist.	16012 Feb 11 11:06	6°02'19"21	29.09667 AU	morning rise	16018 Sep 11 16:35	21°02'16"42	
direct	16012 May 01 06:21	4°02'55"38		retrograde	16018 Dec 09 11:39	23°02'12"27	
evening set	16012 Jul 28 22:16	6°02'50"29		opposition	16019 Feb 26 21:07	21°02'49"05	-0°22'54
				min. Earth dist.	16019 Feb 27 00:11	21°02'48"52	29.02114 AU
conjunction	16012 Aug 13 11:30	7°02'25"23	-0°18'31	direct	16019 May 17 14:49	20°02'25"09	

evening set	16019 Aug 14 02:14	22° 10 20'11		max. Earth dist.	16025 Sep 11 10:03	6° 16 16'43	30.93363 AU
				morning rise	16025 Sep 26 22:11	6° 16 51'46	
conjunction	16019 Aug 29 14:58	22° 10 55'10	-0°21'36	retrograde	16025 Dec 24 22:35	8° 16 48'12	
minimum elong	16019 Aug 29 14:58	22° 10 55'10	0°21'47	opposition	16026 Mar 14 15:41	7° 16 24'20	-0°24'38
max. Earth dist.	16019 Aug 29 12:08	22° 10 54'55	31.01487 AU	min. Earth dist.	16026 Mar 14 14:54	7° 16 24'23	28.92832 AU
morning rise	16019 Sep 14 03:43	23° 10 30'11		direct	16026 Jun 02 03:30	6° 16 00'18	
retrograde	16019 Dec 12 01:30	25° 10 26'03		evening set	16026 Aug 29 07:23	7° 16 55'15	
opposition	16020 Feb 29 09:57	24° 10 02'38	-0°23'15				
min. Earth dist.	16020 Feb 29 11:46	24° 10 02'30	29.00835 AU	conjunction	16026 Sep 13 20:08	8° 16 30'19	-0°23'07
direct	16020 May 19 04:09	22° 10 38'42		minimum elong	16026 Sep 13 20:08	8° 16 30'19	0°23'04
evening set	16020 Aug 15 13:22	24° 10 33'45		max. Earth dist.	16026 Sep 13 21:05	8° 16 30'25	30.92327 AU
				morning rise	16026 Sep 29 09:29	9° 16 05'29	
conjunction	16020 Aug 31 02:02	25° 10 08'45	-0°21'55	retrograde	16026 Dec 27 12:12	11° 16 02'02	
minimum elong	16020 Aug 31 02:02	25° 10 08'45	0°22'03	opposition	16027 Mar 17 04:30	9° 16 38'07	-0°24'44
max. Earth dist.	16020 Aug 30 23:10	25° 10 08'29	31.00143 AU	min. Earth dist.	16027 Mar 17 02:16	9° 16 38'16	28.91856 AU
morning rise	16020 Sep 15 14:50	25° 10 43'47		direct	16027 Jun 04 14:49	8° 16 14'06	
retrograde	16020 Dec 13 12:52	27° 10 39'45		evening set	16027 Aug 31 18:28	10° 16 09'04	
opposition	16021 Mar 02 22:59	26° 10 16'16	-0°23'34				
min. Earth dist.	16021 Mar 03 01:33	26° 10 16'05	28.99444 AU	conjunction	16027 Sep 16 07:20	10° 16 44'10	-0°23'11
direct	16021 May 21 15:51	24° 10 52'19		minimum elong	16027 Sep 16 07:20	10° 16 44'10	0°23'08
evening set	16021 Aug 18 00:23	26° 10 47'20		max. Earth dist.	16027 Sep 16 09:24	10° 16 44'21	30.91394 AU
				morning rise	16027 Oct 01 20:44	11° 16 19'20	
conjunction	16021 Sep 02 13:09	27° 10 22'22	-0°22'12	retrograde	16027 Dec 30 00:46	13° 16 16'01	
minimum elong	16021 Sep 02 13:09	27° 10 22'22	0°22'19	opposition	16028 Mar 18 17:38	11° 16 52'04	-0°24'48
max. Earth dist.	16021 Sep 02 11:16	27° 10 22'11	30.98720 AU	min. Earth dist.	16028 Mar 18 15:42	11° 16 52'12	28.90967 AU
morning rise	16021 Sep 18 01:56	27° 10 57'25		direct	16028 Jun 06 02:51	10° 16 28'04	
retrograde	16021 Dec 16 00:41	29° 10 53'28		evening set	16028 Sep 02 05:37	12° 16 23'03	
opposition	16022 Mar 05 11:52	28° 10 29'54	-0°23'51				
min. Earth dist.	16022 Mar 05 13:14	28° 10 29'48	28.97989 AU	conjunction	16028 Sep 17 18:30	12° 16 58'09	-0°23'14
direct	16022 May 24 05:49	27° 10 05'55		minimum elong	16028 Sep 17 18:30	12° 16 58'09	0°23'08
evening set	16022 Aug 20 11:22	29° 10 00'54		max. Earth dist.	16028 Sep 17 21:03	12° 16 58'24	30.90546 AU
				morning rise	16028 Oct 03 08:01	13° 16 33'21	
conjunction	16022 Sep 04 24:00	29° 10 35'57	-0°22'27	retrograde	16028 Dec 31 14:35	15° 16 30'09	
minimum elong	16022 Sep 05 00:00	29° 10 35'57	0°22'31	opposition	16029 Mar 21 06:40	14° 16 06'10	-0°24'50
max. Earth dist.	16022 Sep 04 21:48	29° 10 35'44	30.97260 AU	min. Earth dist.	16029 Mar 21 03:08	14° 16 06'25	28.90137 AU
	16022 Sep 15 14:43	0° 16		direct	16029 Jun 08 15:11	12° 16 42'13	
morning rise	16022 Sep 20 13:02	0° 16 11'01		evening set	16029 Sep 04 16:56	14° 16 37'12	
retrograde	16022 Dec 18 13:16	2° 16 07'10					
opposition	16023 Mar 08 00:51	0° 16 43'29	-0°24'06	conjunction	16029 Sep 20 05:49	15° 16 12'20	-0°23'15
min. Earth dist.	16023 Mar 08 02:12	0° 16 43'24	28.96551 AU	minimum elong	16029 Sep 20 05:49	15° 16 12'20	0°23'08
	16023 Apr 04 17:40	30° 16 08'10		max. Earth dist.	16029 Sep 20 08:39	15° 16 12'36	30.89726 AU
direct	16023 May 26 16:53	29° 16 19'28		morning rise	16029 Oct 05 19:30	15° 16 47'34	
	16023 Jul 15 13:17	0° 16		retrograde	16030 Jan 03 03:35	17° 16 44'28	
evening set	16023 Aug 22 22:19	1° 16 14'27		opposition	16030 Mar 23 19:55	16° 16 20'28	-0°24'49
				min. Earth dist.	16030 Mar 23 17:01	16° 16 20'40	28.89330 AU
conjunction	16023 Sep 07 11:07	1° 16 49'29	-0°22'39	direct	16030 Jun 11 02:54	14° 16 56'32	
minimum elong	16023 Sep 07 11:07	1° 16 49'29	0°22'43	evening set	16030 Sep 07 04:12	16° 16 51'31	
max. Earth dist.	16023 Sep 07 10:33	1° 16 49'26	30.95848 AU				
morning rise	16023 Sep 23 00:03	2° 16 24'35		conjunction	16030 Sep 22 17:17	17° 16 26'41	-0°23'14
retrograde	16023 Dec 20 23:13	4° 16 20'49		minimum elong	16030 Sep 22 17:17	17° 16 26'41	0°23'04
opposition	16024 Mar 09 13:38	2° 16 57'04	-0°24'18	max. Earth dist.	16030 Sep 22 21:08	17° 16 27'02	30.88910 AU
min. Earth dist.	16024 Mar 09 14:04	2° 16 57'02	28.95178 AU	morning rise	16030 Oct 08 07:02	18° 16 01'55	
direct	16024 May 28 06:05	1° 16 33'02		retrograde	16031 Jan 05 17:18	19° 16 58'55	
evening set	16024 Aug 24 09:26	3° 16 27'59		opposition	16031 Mar 26 09:05	18° 16 34'54	-0°24'46
				min. Earth dist.	16031 Mar 26 05:04	18° 16 35'10	28.88482 AU
conjunction	16024 Sep 08 22:04	4° 16 03'02	-0°22'51	direct	16031 Jun 13 17:13	17° 16 11'00	
minimum elong	16024 Sep 08 22:04	4° 16 03'02	0°22'51	evening set	16031 Sep 09 15:49	19° 16 05'59	
max. Earth dist.	16024 Sep 08 21:11	4° 16 02'57	30.94539 AU				
morning rise	16024 Sep 24 11:14	4° 16 38'09		conjunction	16031 Sep 25 04:49	19° 16 41'10	-0°23'10
retrograde	16024 Dec 22 11:30	6° 16 34'29		minimum elong	16031 Sep 25 04:49	19° 16 41'10	0°22'59
opposition	16025 Mar 12 02:38	5° 16 10'39	-0°24'29	max. Earth dist.	16031 Sep 25 07:59	19° 16 41'27	30.88026 AU
min. Earth dist.	16025 Mar 12 02:07	5° 16 10'42	28.93942 AU	morning rise	16031 Oct 10 18:49	20° 16 16'26	
direct	16025 May 30 16:18	3° 16 46'37		retrograde	16032 Jan 08 06:45	22° 16 13'32	
evening set	16025 Aug 26 20:17	5° 16 41'33		opposition	16032 Mar 27 22:19	20° 16 49'27	-0°24'41
				min. Earth dist.	16032 Mar 27 18:41	20° 16 49'42	28.87566 AU
conjunction	16025 Sep 11 09:05	6° 16 16'38	-0°23'00	direct	16032 Jun 15 04:58	19° 16 25'33	
minimum elong	16025 Sep 11 09:05	6° 16 16'38	0°23'00	evening set	16032 Sep 11 03:20	21° 16 20'33	

conjunction	16032 Sep 26 16:35	21° <u>♂</u> 55'44	-0°23'04	retrograde	16039 Jan 23 22:19	7° <u>♂</u> 55'58	
minimum elong	16032 Sep 26 16:35	21° <u>♂</u> 55'44	0°22'51	opposition	16039 Apr 13 18:48	6° <u>♂</u> 31'29	-0°23'05
max. Earth dist.	16032 Sep 26 20:57	21° <u>♂</u> 56'08	30.87062 AU	min. Earth dist.	16039 Apr 13 11:46	6° <u>♂</u> 31'58	28.81105 AU
morning rise	16032 Oct 12 06:35	22° <u>♂</u> 31'02		direct	16039 Jul 01 17:26	5° <u>♂</u> 07'31	
retrograde	16033 Jan 09 17:57	24° <u>♂</u> 28'12		evening set	16039 Sep 27 11:51	7° <u>♂</u> 02'23	
opposition	16033 Mar 30 11:40	23° <u>♂</u> 04'04	-0°24'34				
min. Earth dist.	16033 Mar 30 07:26	23° <u>♂</u> 04'22	28.86549 AU	conjunction	16039 Oct 13 02:03	7° <u>♂</u> 37'41	-0°21'27
direct	16033 Jun 17 18:38	21° <u>♂</u> 40'10		minimum elong	16039 Oct 13 02:03	7° <u>♂</u> 37'41	0°21'03
evening set	16033 Sep 13 14:52	23° <u>♂</u> 35'07		max. Earth dist.	16039 Oct 13 10:16	7° <u>♂</u> 38'27	30.80844 AU
				morning rise	16039 Oct 28 17:27	8° <u>♂</u> 13'08	
conjunction	16033 Sep 29 04:05	24° <u>♂</u> 10'19	-0°22'56	retrograde	16040 Jan 26 12:48	10° <u>♂</u> 10'49	
minimum elong	16033 Sep 29 04:05	24° <u>♂</u> 10'19	0°22'43	opposition	16040 Apr 15 07:51	8° <u>♂</u> 46'20	-0°22'42
max. Earth dist.	16033 Sep 29 07:39	24° <u>♂</u> 10'39	30.86015 AU	min. Earth dist.	16040 Apr 14 23:23	8° <u>♂</u> 46'55	28.80625 AU
morning rise	16033 Oct 14 18:27	24° <u>♂</u> 45'38		direct	16040 Jul 03 07:32	7° <u>♂</u> 22'24	
retrograde	16034 Jan 12 06:57	26° <u>♂</u> 42'53		evening set	16040 Sep 28 23:36	9° <u>♂</u> 17'17	
opposition	16034 Apr 02 00:58	25° <u>♂</u> 18'40	-0°24'24				
min. Earth dist.	16034 Apr 01 20:22	25° <u>♂</u> 18'59	28.85477 AU	conjunction	16040 Oct 14 13:50	9° <u>♂</u> 52'37	-0°21'06
direct	16034 Jun 20 06:04	23° <u>♂</u> 54'44		minimum elong	16040 Oct 14 13:50	9° <u>♂</u> 52'37	0°20'39
evening set	16034 Sep 16 02:20	25° <u>♂</u> 49'39		max. Earth dist.	16040 Oct 14 21:48	9° <u>♂</u> 53'22	30.80423 AU
				morning rise	16040 Oct 30 05:34	10° <u>♂</u> 28'06	
conjunction	16034 Oct 01 15:50	26° <u>♂</u> 24'52	-0°22'47	retrograde	16041 Jan 28 02:46	12° <u>♂</u> 25'52	
minimum elong	16034 Oct 01 15:50	26° <u>♂</u> 24'52	0°22'30	opposition	16041 Apr 17 21:11	11° <u>♂</u> 01'23	-0°22'17
max. Earth dist.	16034 Oct 01 20:49	26° <u>♂</u> 25'20	30.84924 AU	min. Earth dist.	16041 Apr 17 12:50	11° <u>♂</u> 01'58	28.80261 AU
morning rise	16034 Oct 17 06:14	27° <u>♂</u> 00'12		direct	16041 Jul 05 19:04	9° <u>♂</u> 37'30	
retrograde	16035 Jan 14 18:09	28° <u>♂</u> 57'30		evening set	16041 Oct 01 11:10	11° <u>♂</u> 32'24	
opposition	16035 Apr 04 14:05	27° <u>♂</u> 33'13	-0°24'13				
min. Earth dist.	16035 Apr 04 09:34	27° <u>♂</u> 33'32	28.84388 AU	conjunction	16041 Oct 17 01:45	12° <u>♂</u> 07'45	-0°20'42
direct	16035 Jun 22 18:19	26° <u>♂</u> 09'15		minimum elong	16041 Oct 17 01:45	12° <u>♂</u> 07'45	0°20'15
evening set	16035 Sep 18 13:55	28° <u>♂</u> 04'08		max. Earth dist.	16041 Oct 17 11:15	12° <u>♂</u> 08'39	30.80096 AU
				morning rise	16041 Nov 01 17:34	12° <u>♂</u> 43'16	
conjunction	16035 Oct 04 03:26	28° <u>♂</u> 39'22	-0°22'35	retrograde	16042 Jan 30 15:10	14° <u>♂</u> 41'07	
minimum elong	16035 Oct 04 03:26	28° <u>♂</u> 39'22	0°22'18	opposition	16042 Apr 20 10:27	13° <u>♂</u> 16'39	-0°21'51
max. Earth dist.	16035 Oct 04 08:12	28° <u>♂</u> 39'48	30.83867 AU	min. Earth dist.	16042 Apr 20 01:20	13° <u>♂</u> 17'17	28.79950 AU
morning rise	16035 Oct 19 18:09	29° <u>♂</u> 14'44		direct	16042 Jul 08 08:33	11° <u>♂</u> 52'49	
	16035 Nov 10 07:14	0° <u>♂</u>		evening set	16042 Oct 03 23:10	13° <u>♂</u> 47'44	
retrograde	16036 Jan 17 07:20	1° <u>♂</u> 12'05					
	16036 Mar 29 16:48	30° <u>♂</u> 12'05		conjunction	16042 Oct 19 13:46	14° <u>♂</u> 23'06	-0°20'16
opposition	16036 Apr 06 03:13	29° <u>♂</u> 47'43	-0°23'59	minimum elong	16042 Oct 19 13:46	14° <u>♂</u> 23'06	0°19'46
min. Earth dist.	16036 Apr 05 21:25	29° <u>♂</u> 48'07	28.83371 AU	max. Earth dist.	16042 Oct 19 22:30	14° <u>♂</u> 23'55	30.79801 AU
direct	16036 Jun 24 06:05	28° <u>♂</u> 23'43		morning rise	16042 Nov 04 05:59	14° <u>♂</u> 58'38	
	16036 Sep 11 12:42	0° <u>♂</u>			16042 Nov 04 20:43	15° <u>♂</u>	
evening set	16036 Sep 20 01:18	0° <u>♂</u> 18'35		retrograde	16043 Feb 02 05:42	16° <u>♂</u> 56'34	
				opposition	16043 Apr 22 23:37	15° <u>♂</u> 32'07	-0°21'22
conjunction	16036 Oct 05 14:59	0° <u>♂</u> 53'50	-0°22'21	min. Earth dist.	16043 Apr 22 14:19	15° <u>♂</u> 32'45	28.79659 AU
minimum elong	16036 Oct 05 14:59	0° <u>♂</u> 53'50	0°22'01		16043 May 12 19:35	15° <u>♂</u> 11'00	
max. Earth dist.	16036 Oct 05 20:55	0° <u>♂</u> 54'23	30.82890 AU	direct	16043 Jul 10 20:27	14° <u>♂</u> 08'19	
morning rise	16036 Oct 21 05:46	1° <u>♂</u> 29'13			16043 Sep 05 01:50	15° <u>♂</u>	
retrograde	16037 Jan 18 19:13	3° <u>♂</u> 26'39		evening set	16043 Oct 06 11:09	16° <u>♂</u> 03'14	
opposition	16037 Apr 08 16:30	2° <u>♂</u> 02'14	-0°23'43				
min. Earth dist.	16037 Apr 08 10:52	2° <u>♂</u> 02'37	28.82465 AU	conjunction	16043 Oct 22 02:04	16° <u>♂</u> 38'38	-0°19'48
direct	16037 Jun 26 17:50	0° <u>♂</u> 38'14		minimum elong	16043 Oct 22 02:04	16° <u>♂</u> 38'38	0°19'18
evening set	16037 Sep 22 12:47	2° <u>♂</u> 33'05		max. Earth dist.	16043 Oct 22 12:00	16° <u>♂</u> 39'34	30.79482 AU
				morning rise	16043 Nov 06 18:21	17° <u>♂</u> 14'12	
conjunction	16037 Oct 08 02:37	3° <u>♂</u> 08'20	-0°22'05	retrograde	16044 Feb 04 17:50	19° <u>♂</u> 12'12	
minimum elong	16037 Oct 08 02:37	3° <u>♂</u> 08'20	0°21'45	opposition	16044 Apr 24 13:00	17° <u>♂</u> 47'44	-0°20'51
max. Earth dist.	16037 Oct 08 09:07	3° <u>♂</u> 08'57	30.82064 AU	min. Earth dist.	16044 Apr 24 03:58	17° <u>♂</u> 48'22	28.79307 AU
morning rise	16037 Oct 23 17:39	3° <u>♂</u> 43'44		direct	16044 Jul 12 09:21	16° <u>♂</u> 23'58	
retrograde	16038 Jan 21 08:59	5° <u>♂</u> 41'15		evening set	16044 Oct 07 23:13	18° <u>♂</u> 18'53	
opposition	16038 Apr 11 05:33	4° <u>♂</u> 16'48	-0°23'25				
min. Earth dist.	16038 Apr 10 22:10	4° <u>♂</u> 17'18	28.81712 AU	conjunction	16044 Oct 23 14:12	18° <u>♂</u> 54'17	-0°19'18
direct	16038 Jun 29 05:36	2° <u>♂</u> 52'48		minimum elong	16044 Oct 23 14:12	18° <u>♂</u> 54'17	0°18'46
evening set	16038 Sep 25 00:19	4° <u>♂</u> 47'39		max. Earth dist.	16044 Oct 23 23:26	18° <u>♂</u> 55'09	30.79098 AU
				morning rise	16044 Nov 08 06:50	19° <u>♂</u> 29'52	
conjunction	16038 Oct 10 14:16	5° <u>♂</u> 22'56	-0°21'47	retrograde	16045 Feb 06 06:54	21° <u>♂</u> 27'55	
minimum elong	16038 Oct 10 14:16	5° <u>♂</u> 22'56	0°21'24	opposition	16045 Apr 27 02:23	20° <u>♂</u> 03'26	-0°20'18
max. Earth dist.	16038 Oct 10 21:13	5° <u>♂</u> 23'35	30.81379 AU	min. Earth dist.	16045 Apr 26 16:36	20° <u>♂</u> 04'07	28.78879 AU
morning rise	16038 Oct 26 05:33	5° <u>♂</u> 58'22		direct	16045 Jul 14 21:23	18° <u>♂</u> 39'40	

evening set	16045 Oct 10 11:21	20° $\overline{\text{M}}$.34'33		min. Earth dist.	16051 May 10 21:48	3° $\overline{\text{A}}$.36'35	28.76145 AU
				direct	16051 Jul 29 00:36	2° $\overline{\text{A}}$.11'49	
conjunction	16045 Oct 26 02:37	21° $\overline{\text{M}}$.09'58 -0°18'46		evening set	16051 Oct 24 11:51	4° $\overline{\text{A}}$.06'29	
minimum elong	16045 Oct 26 02:37	21° $\overline{\text{M}}$.09'58 0°18'15					
max. Earth dist.	16045 Oct 26 12:25	21° $\overline{\text{M}}$.10'54 30.78614 AU		conjunction	16051 Nov 09 04:23	4° $\overline{\text{A}}$.41'59 -0°15'04	
morning rise	16045 Nov 10 19:25	21° $\overline{\text{M}}$.45'34		minimum elong	16051 Nov 09 04:23	4° $\overline{\text{A}}$.41'59 0°14'26	
retrograde	16046 Feb 08 18:25	23° $\overline{\text{M}}$.43'39		behind sun begin	16051 Nov 09 01:27	4° $\overline{\text{A}}$.41'43	
opposition	16046 Apr 29 15:44	22° $\overline{\text{M}}$.19'07 -0°19'43		behind sun end	16051 Nov 09 07:19	4° $\overline{\text{A}}$.42'15	
min. Earth dist.	16046 Apr 29 06:45	22° $\overline{\text{M}}$.19'45 28.78355 AU		max. Earth dist.	16051 Nov 09 15:40	4° $\overline{\text{A}}$.43'03 30.76077 AU	
direct	16046 Jul 17 09:01	20° $\overline{\text{M}}$.55'19		morning rise	16051 Nov 24 22:52	5° $\overline{\text{A}}$.17'41	
evening set	16046 Oct 12 23:25	22° $\overline{\text{M}}$.50'09		retrograde	16052 Feb 23 03:42	7° $\overline{\text{A}}$.15'47	
				opposition	16052 May 12 22:15	5° $\overline{\text{A}}$.50'58 -0°15'40	
conjunction	16046 Oct 28 14:56	23° $\overline{\text{M}}$.25'35 -0°18'13		min. Earth dist.	16052 May 12 10:26	5° $\overline{\text{A}}$.51'47 28.76063 AU	
minimum elong	16046 Oct 28 14:56	23° $\overline{\text{M}}$.25'35 0°17'39		direct	16052 Jul 30 12:53	4° $\overline{\text{A}}$.27'00	
max. Earth dist.	16046 Oct 29 00:38	23° $\overline{\text{M}}$.26'30 30.78069 AU		evening set	16052 Oct 25 23:49	6° $\overline{\text{A}}$.21'40	
morning rise	16046 Nov 13 08:04	24° $\overline{\text{M}}$.01'12					
retrograde	16047 Feb 11 08:08	25° $\overline{\text{M}}$.59'18		conjunction	16052 Nov 10 16:45	6° $\overline{\text{A}}$.57'11 -0°14'22	
opposition	16047 May 02 04:54	24° $\overline{\text{M}}$.34'42 -0°19'06		minimum elong	16052 Nov 10 16:45	6° $\overline{\text{A}}$.57'11 0°13'42	
min. Earth dist.	16047 May 01 18:43	24° $\overline{\text{M}}$.35'24 28.77783 AU		behind sun begin	16052 Nov 10 13:15	6° $\overline{\text{A}}$.56'52	
direct	16047 Jul 19 21:04	23° $\overline{\text{M}}$.10'50		behind sun end	16052 Nov 10 20:15	6° $\overline{\text{A}}$.57'30	
evening set	16047 Oct 15 11:31	25° $\overline{\text{M}}$.05'38		max. Earth dist.	16052 Nov 11 05:36	6° $\overline{\text{A}}$.58'24 30.76055 AU	
				morning rise	16052 Nov 26 11:21	7° $\overline{\text{A}}$.32'54	
conjunction	16047 Oct 31 03:11	25° $\overline{\text{M}}$.41'05 -0°17'38		retrograde	16053 Feb 24 15:40	9° $\overline{\text{A}}$.31'02	
minimum elong	16047 Oct 31 03:11	25° $\overline{\text{M}}$.41'05 0°17'03		opposition	16053 May 15 11:19	8° $\overline{\text{A}}$.06'13 -0°14'54	
max. Earth dist.	16047 Oct 31 12:58	25° $\overline{\text{M}}$.42'00 30.77486 AU		min. Earth dist.	16053 May 14 23:22	8° $\overline{\text{A}}$.07'03 28.76098 AU	
morning rise	16047 Nov 15 20:34	26° $\overline{\text{M}}$.16'43		direct	16053 Aug 02 01:58	6° $\overline{\text{A}}$.42'18	
retrograde	16048 Feb 13 20:29	28° $\overline{\text{M}}$.14'48		evening set	16053 Oct 28 12:06	8° $\overline{\text{A}}$.36'57	
opposition	16048 May 03 18:09	26° $\overline{\text{M}}$.50'08 -0°18'28					
min. Earth dist.	16048 May 03 08:42	26° $\overline{\text{M}}$.50'47 28.77222 AU		conjunction	16053 Nov 13 05:11	9° $\overline{\text{A}}$.12'30 -0°13'39	
direct	16048 Jul 21 09:27	25° $\overline{\text{M}}$.26'14		minimum elong	16053 Nov 13 05:11	9° $\overline{\text{A}}$.12'30 0°12'59	
evening set	16048 Oct 16 23:32	27° $\overline{\text{M}}$.20'58		behind sun begin	16053 Nov 13 01:14	9° $\overline{\text{A}}$.12'08	
				behind sun end	16053 Nov 13 09:07	9° $\overline{\text{A}}$.12'51	
conjunction	16048 Nov 01 15:31	27° $\overline{\text{M}}$.56'26 -0°17'02		max. Earth dist.	16053 Nov 13 17:34	9° $\overline{\text{A}}$.13'40 30.76155 AU	
minimum elong	16048 Nov 01 15:31	27° $\overline{\text{M}}$.56'26 0°16'25		morning rise	16053 Nov 29 00:12	9° $\overline{\text{A}}$.48'14	
max. Earth dist.	16048 Nov 02 02:19	27° $\overline{\text{M}}$.57'27 30.76963 AU		retrograde	16054 Feb 27 05:34	11° $\overline{\text{A}}$.46'24	
morning rise	16048 Nov 17 09:04	28° $\overline{\text{M}}$.32'04		min. Earth dist.	16054 May 17 11:27	10° $\overline{\text{A}}$.22'30 28.76243 AU	
	16049 Jan 03 09:58	0° $\overline{\text{A}}$		opposition	16054 May 18 00:11	10° $\overline{\text{A}}$.21'37 -0°14'06	
retrograde	16049 Feb 15 10:07	0° $\overline{\text{A}}$.30'10		direct	16054 Aug 04 13:40	8° $\overline{\text{A}}$.57'43	
	16049 Mar 31 16:53	30° $\overline{\text{R}}$. $\overline{\text{M}}$.		evening set	16054 Oct 31 00:24	10° $\overline{\text{A}}$.52'23	
opposition	16049 May 06 07:13	29° $\overline{\text{M}}$.05'25 -0°17'48					
min. Earth dist.	16049 May 05 20:26	29° $\overline{\text{M}}$.06'10 28.76739 AU		conjunction	16054 Nov 15 17:48	11° $\overline{\text{A}}$.27'57 -0°12'54	
direct	16049 Jul 23 23:06	27° $\overline{\text{M}}$.41'29		minimum elong	16054 Nov 15 17:48	11° $\overline{\text{A}}$.27'57 0°12'12	
evening set	16049 Oct 19 11:35	29° $\overline{\text{M}}$.36'11		behind sun begin	16054 Nov 15 13:26	11° $\overline{\text{A}}$.27'33	
	16049 Oct 30 00:59	0° $\overline{\text{A}}$		behind sun end	16054 Nov 15 22:10	11° $\overline{\text{A}}$.28'21	
conjunction	16049 Nov 04 03:40	0° $\overline{\text{A}}$.11'40 -0°16'24		max. Earth dist.	16054 Nov 16 07:02	11° $\overline{\text{A}}$.29'12 30.76321 AU	
minimum elong	16049 Nov 04 03:40	0° $\overline{\text{A}}$.11'40 0°15'47		morning rise	16054 Dec 01 13:00	12° $\overline{\text{A}}$.03'43	
behind sun begin	16049 Nov 04 02:27	0° $\overline{\text{A}}$.11'33		retrograde	16055 Mar 01 17:45	14° $\overline{\text{A}}$.01'55	
behind sun end	16049 Nov 04 04:53	0° $\overline{\text{A}}$.11'46		opposition	16055 May 20 13:14	12° $\overline{\text{A}}$.37'10 -0°13'17	
max. Earth dist.	16049 Nov 04 14:10	0° $\overline{\text{A}}$.12'39 30.76532 AU		min. Earth dist.	16055 May 20 01:14	12° $\overline{\text{A}}$.38'00 28.76426 AU	
morning rise	16049 Nov 19 21:38	0° $\overline{\text{A}}$.47'19		direct	16055 Aug 07 01:09	11° $\overline{\text{A}}$.13'19	
retrograde	16050 Feb 17 23:42	2° $\overline{\text{A}}$.45'25		evening set	16055 Nov 02 12:47	13° $\overline{\text{A}}$.08'00	
opposition	16050 May 08 20:23	1° $\overline{\text{A}}$.20'38 -0°17'07					
min. Earth dist.	16050 May 08 09:52	1° $\overline{\text{A}}$.21'21 28.76379 AU		conjunction	16055 Nov 18 06:24	13° $\overline{\text{A}}$.43'35 -0°12'08	
	16050 Jul 12 10:31	30° $\overline{\text{R}}$. $\overline{\text{M}}$.		minimum elong	16055 Nov 18 06:24	13° $\overline{\text{A}}$.43'35 0°11'25	
direct	16050 Jul 26 10:35	29° $\overline{\text{M}}$.56'39		behind sun begin	16055 Nov 18 01:41	13° $\overline{\text{A}}$.43'09	
	16050 Aug 09 10:30	0° $\overline{\text{A}}$		behind sun end	16055 Nov 18 11:06	13° $\overline{\text{A}}$.44'00	
evening set	16050 Oct 21 23:39	1° $\overline{\text{A}}$.51'21		max. Earth dist.	16055 Nov 18 19:25	13° $\overline{\text{A}}$.44'48 30.76512 AU	
				morning rise	16055 Dec 04 01:53	14° $\overline{\text{A}}$.19'21	
conjunction	16050 Nov 06 16:07	2° $\overline{\text{A}}$.26'50 -0°15'45		retrograde	16056 Mar 03 07:51	16° $\overline{\text{A}}$.17'35	
minimum elong	16050 Nov 06 16:07	2° $\overline{\text{A}}$.26'50 0°15'06		opposition	16056 May 22 02:11	14° $\overline{\text{A}}$.52'53 -0°12'27	
behind sun begin	16050 Nov 06 13:51	2° $\overline{\text{A}}$.26'37		min. Earth dist.	16056 May 21 13:10	14° $\overline{\text{A}}$.53'47 28.76602 AU	
behind sun end	16050 Nov 06 18:23	2° $\overline{\text{A}}$.27'02		direct	16056 Aug 08 12:53	13° $\overline{\text{A}}$.29'03	
max. Earth dist.	16050 Nov 07 04:03	2° $\overline{\text{A}}$.27'57 30.76235 AU		evening set	16056 Nov 04 01:22	15° $\overline{\text{A}}$.23'45	
morning rise	16050 Nov 22 10:10	3° $\overline{\text{A}}$.02'30					
retrograde	16051 Feb 20 12:43	5° $\overline{\text{A}}$.00'36		conjunction	16056 Nov 19 19:11	15° $\overline{\text{A}}$.59'21 -0°11'21	
opposition	16051 May 11 09:13	3° $\overline{\text{A}}$.35'47 -0°16'24		minimum elong	16056 Nov 19 19:11	15° $\overline{\text{A}}$.59'21 0°10'37	
				behind sun begin	16056 Nov 19 14:09	15° $\overline{\text{A}}$.58'54	

behind sun end	16056 Nov 20 00:13	15° \mathbb{A} 59'49		evening set	16062 Nov 18 04:30	28° \mathbb{A} 57'29	
max. Earth dist.	16056 Nov 20 08:00	16° \mathbb{A} 00'33	30.76654 AU				
morning rise	16056 Dec 05 14:57	16° \mathbb{A} 35'09		conjunction	16062 Dec 03 23:57	29° \mathbb{A} 33'08	-0°06'21
retrograde	16057 Mar 05 20:07	18° \mathbb{A} 33'25		minimum elong	16062 Dec 03 23:57	29° \mathbb{A} 33'08	0°05'36
opposition	16057 May 24 15:19	17° \mathbb{A} 08'42	-0°11'36	behind sun begin	16062 Dec 03 17:42	29° \mathbb{A} 32'34	
min. Earth dist.	16057 May 24 03:26	17° \mathbb{A} 09'32	28.76716 AU	behind sun end	16062 Dec 04 06:12	29° \mathbb{A} 33'42	
direct	16057 Aug 11 00:34	15° \mathbb{A} 44'53		max. Earth dist.	16062 Dec 04 12:46	29° \mathbb{A} 34'21	30.76740 AU
evening set	16057 Nov 06 13:52	17° \mathbb{A} 39'36			16062 Dec 15 20:29	0° \mathbb{B}	
				morning rise	16062 Dec 19 21:24	0° \mathbb{B} 09'00	
conjunction	16057 Nov 22 08:05	18° \mathbb{A} 15'12	-0°10'33	retrograde	16063 Mar 20 05:32	2° \mathbb{B} 07'02	
minimum elong	16057 Nov 22 08:05	18° \mathbb{A} 15'12	0°09'49	opposition	16063 Jun 07 19:41	0° \mathbb{B} 42'10	-0°06'12
behind sun begin	16057 Nov 22 02:47	18° \mathbb{A} 14'43		min. Earth dist.	16063 Jun 07 06:41	0° \mathbb{B} 43'04	28.76870 AU
behind sun end	16057 Nov 22 13:23	18° \mathbb{A} 15'41			16063 Jul 04 03:22	30° \mathbb{R} \mathbb{A}	
max. Earth dist.	16057 Nov 22 21:12	18° \mathbb{A} 16'26	30.76728 AU	direct	16063 Aug 25 05:38	29° \mathbb{A} 18'09	
morning rise	16057 Dec 08 04:04	18° \mathbb{A} 51'01			16063 Oct 14 10:50	0° \mathbb{B}	
retrograde	16058 Mar 08 09:41	20° \mathbb{A} 49'16		evening set	16063 Nov 20 16:51	1° \mathbb{B} 12'40	
opposition	16058 May 27 04:15	19° \mathbb{A} 24'34	-0°10'44				
min. Earth dist.	16058 May 26 15:35	19° \mathbb{A} 25'27	28.76733 AU	conjunction	16063 Dec 06 12:36	1° \mathbb{B} 48'21	-0°05'29
direct	16058 Aug 13 13:29	18° \mathbb{A} 00'43		minimum elong	16063 Dec 06 12:36	1° \mathbb{B} 48'21	0°04'44
evening set	16058 Nov 09 02:35	19° \mathbb{A} 55'25		behind sun begin	16063 Dec 06 06:15	1° \mathbb{B} 47'46	
				behind sun end	16063 Dec 06 18:58	1° \mathbb{B} 48'55	
conjunction	16058 Nov 24 20:55	20° \mathbb{A} 31'02	-0°09'44	max. Earth dist.	16063 Dec 07 02:28	1° \mathbb{B} 49'39	30.77010 AU
minimum elong	16058 Nov 24 20:55	20° \mathbb{A} 31'02	0°08'59	morning rise	16063 Dec 22 10:11	2° \mathbb{B} 24'13	
behind sun begin	16058 Nov 24 15:22	20° \mathbb{A} 30'32		retrograde	16064 Mar 21 17:49	4° \mathbb{B} 22'12	
behind sun end	16058 Nov 25 02:29	20° \mathbb{A} 31'33		opposition	16064 Jun 09 08:16	2° \mathbb{B} 57'20	-0°05'16
max. Earth dist.	16058 Nov 25 09:06	20° \mathbb{A} 32'11	30.76703 AU	min. Earth dist.	16064 Jun 08 19:44	2° \mathbb{B} 58'12	28.77218 AU
morning rise	16058 Dec 10 17:17	21° \mathbb{A} 06'52		direct	16064 Aug 26 18:11	1° \mathbb{B} 33'18	
retrograde	16059 Mar 10 23:08	23° \mathbb{A} 05'06		evening set	16064 Nov 22 05:20	3° \mathbb{B} 27'48	
opposition	16059 May 29 17:06	21° \mathbb{A} 40'22	-0°09'51				
min. Earth dist.	16059 May 29 05:23	21° \mathbb{A} 41'11	28.76683 AU	conjunction	16064 Dec 08 01:22	4° \mathbb{B} 03'29	-0°04'37
direct	16059 Aug 16 00:30	20° \mathbb{A} 16'29		minimum elong	16064 Dec 08 01:20	4° \mathbb{B} 03'29	0°03'51
evening set	16059 Nov 11 15:04	22° \mathbb{A} 11'09		behind sun begin	16064 Dec 07 18:54	4° \mathbb{B} 02'54	
				behind sun end	16064 Dec 08 07:47	4° \mathbb{B} 04'04	
conjunction	16059 Nov 27 09:50	22° \mathbb{A} 46'47	-0°08'54	max. Earth dist.	16064 Dec 08 15:05	4° \mathbb{B} 04'46	30.77449 AU
minimum elong	16059 Nov 27 09:50	22° \mathbb{A} 46'47	0°08'10	morning rise	16064 Dec 23 23:14	4° \mathbb{B} 39'21	
behind sun begin	16059 Nov 27 04:04	22° \mathbb{A} 46'16		retrograde	16065 Mar 24 07:06	6° \mathbb{B} 37'18	
behind sun end	16059 Nov 27 15:36	22° \mathbb{A} 47'18		opposition	16065 Jun 11 20:38	5° \mathbb{B} 12'27	-0°04'19
max. Earth dist.	16059 Nov 27 22:58	22° \mathbb{A} 48'01	30.76639 AU	min. Earth dist.	16065 Jun 11 06:51	5° \mathbb{B} 13'25	28.77733 AU
morning rise	16059 Dec 13 06:19	23° \mathbb{A} 22'37		direct	16065 Aug 29 06:26	3° \mathbb{B} 48'25	
retrograde	16060 Mar 12 12:33	25° \mathbb{A} 20'48		evening set	16065 Nov 24 17:50	5° \mathbb{B} 42'54	
opposition	16060 May 31 05:54	23° \mathbb{A} 56'02	-0°08'57				
min. Earth dist.	16060 May 30 17:36	23° \mathbb{A} 56'53	28.76610 AU	conjunction	16065 Dec 10 14:06	6° \mathbb{B} 18'36	-0°03'43
direct	16060 Aug 17 15:01	22° \mathbb{A} 32'07		minimum elong	16065 Dec 10 14:06	6° \mathbb{B} 18'36	0°02'58
evening set	16060 Nov 13 03:31	24° \mathbb{A} 26'44		behind sun begin	16065 Dec 10 07:36	6° \mathbb{B} 18'00	
				behind sun end	16065 Dec 10 20:36	6° \mathbb{B} 19'11	
conjunction	16060 Nov 28 22:23	25° \mathbb{A} 02'23	-0°08'04	max. Earth dist.	16065 Dec 11 04:03	6° \mathbb{B} 19'54	30.78029 AU
minimum elong	16060 Nov 28 22:23	25° \mathbb{A} 02'23	0°07'19	morning rise	16065 Dec 26 12:17	6° \mathbb{B} 54'29	
behind sun begin	16060 Nov 28 16:26	25° \mathbb{A} 01'50		retrograde	16066 Mar 26 18:15	8° \mathbb{B} 52'23	
behind sun end	16060 Nov 29 04:21	25° \mathbb{A} 02'55		opposition	16066 Jun 14 09:07	7° \mathbb{B} 27'34	-0°03'22
max. Earth dist.	16060 Nov 29 10:35	25° \mathbb{A} 03'31	30.76586 AU	min. Earth dist.	16066 Jun 13 20:11	7° \mathbb{B} 28'28	28.78381 AU
morning rise	16060 Dec 14 19:20	25° \mathbb{A} 38'13		direct	16066 Aug 31 17:22	6° \mathbb{B} 03'34	
retrograde	16061 Mar 15 03:36	27° \mathbb{A} 36'22		evening set	16066 Nov 27 06:23	7° \mathbb{B} 58'02	
opposition	16061 Jun 02 18:40	26° \mathbb{A} 11'33	-0°08'03				
min. Earth dist.	16061 Jun 02 06:23	26° \mathbb{A} 12'24	28.76594 AU	conjunction	16066 Dec 13 03:01	8° \mathbb{B} 33'44	-0°02'49
direct	16061 Aug 20 03:49	24° \mathbb{A} 47'35		minimum elong	16066 Dec 13 02:59	8° \mathbb{B} 33'44	0°02'03
evening set	16061 Nov 15 15:57	26° \mathbb{A} 42'10		behind sun begin	16066 Dec 12 20:29	8° \mathbb{B} 33'09	
				behind sun end	16066 Dec 13 09:30	8° \mathbb{B} 34'19	
conjunction	16061 Dec 01 11:15	27° \mathbb{A} 17'50	-0°07'13	max. Earth dist.	16066 Dec 13 17:26	8° \mathbb{B} 35'06	30.78738 AU
minimum elong	16061 Dec 01 11:15	27° \mathbb{A} 17'50	0°06'28	morning rise	16066 Dec 29 01:20	9° \mathbb{B} 09'37	
behind sun begin	16061 Dec 01 05:08	27° \mathbb{A} 17'16		retrograde	16067 Mar 29 07:20	11° \mathbb{B} 07'30	
behind sun end	16061 Dec 01 17:22	27° \mathbb{A} 18'23		opposition	16067 Jun 16 21:20	9° \mathbb{B} 42'43	-0°02'25
max. Earth dist.	16061 Dec 02 00:44	27° \mathbb{A} 19'06	30.76604 AU	min. Earth dist.	16067 Jun 16 07:29	9° \mathbb{B} 43'42	28.79125 AU
morning rise	16061 Dec 17 08:18	27° \mathbb{A} 53'41		direct	16067 Sep 03 05:09	8° \mathbb{B} 18'44	
retrograde	16062 Mar 17 15:08	29° \mathbb{A} 51'46		evening set	16067 Nov 29 19:10	10° \mathbb{B} 13'14	
opposition	16062 Jun 05 07:10	28° \mathbb{A} 26'55	-0°07'08				
min. Earth dist.	16062 Jun 04 18:55	28° \mathbb{A} 27'46	28.76662 AU	conjunction	16067 Dec 15 15:52	10° \mathbb{B} 48'56	-0°01'54
direct	16062 Aug 22 16:57	27° \mathbb{A} 02'55		minimum elong	16067 Dec 15 15:53	10° \mathbb{B} 48'56	0°01'08

behind sun begin	16067 Dec 15 09:22	10°348'21		min. Earth dist.	16073 Jun 29 11:42	23°314'21	28.83107 AU
behind sun end	16067 Dec 15 22:23	10°349'31		direct	16073 Sep 16 07:29	21°349'30	
max. Earth dist.	16067 Dec 16 05:39	10°350'13	30.79512 AU	evening set	16073 Dec 12 23:54	23°343'53	
morning rise	16067 Dec 31 14:33	11°324'50					
retrograde	16068 Mar 30 20:16	13°322'41		conjunction	16073 Dec 28 22:14	24°319'37	0°03'37
opposition	16068 Jun 18 09:49	11°357'57	-0°01'27	minimum elong	16073 Dec 28 22:15	24°319'37	0°04'20
min. Earth dist.	16068 Jun 17 20:55	11°358'51	28.79922 AU	behind sun begin	16073 Dec 28 15:50	24°319'03	
direct	16068 Sep 04 15:27	10°333'59		behind sun end	16073 Dec 29 04:40	24°320'12	
evening set	16068 Dec 01 07:45	12°328'29		max. Earth dist.	16073 Dec 29 10:38	24°320'46	30.83402 AU
				morning rise	16074 Jan 13 22:16	24°355'31	
conjunction	16068 Dec 17 04:54	13°304'11	-0°00'58	retrograde	16074 Apr 14 03:51	26°352'56	
minimum elong	16068 Dec 17 04:53	13°304'11	0°00'13	opposition	16074 Jul 02 10:56	25°328'16	0°04'19
behind sun begin	16068 Dec 16 22:27	13°303'37		min. Earth dist.	16074 Jul 01 22:45	25°329'07	28.83720 AU
behind sun end	16068 Dec 17 11:20	13°304'46		direct	16074 Sep 18 20:13	24°304'11	
max. Earth dist.	16068 Dec 17 19:26	13°305'33	30.80303 AU	evening set	16074 Dec 15 12:39	25°358'33	
morning rise	16069 Jan 02 03:40	13°340'06					
retrograde	16069 Apr 02 09:04	15°337'54		conjunction	16074 Dec 31 11:11	26°334'17	0°04'29
opposition	16069 Jun 20 22:09	14°313'13	-0°00'29	minimum elong	16074 Dec 31 11:10	26°334'17	0°05'12
min. Earth dist.	16069 Jun 20 09:00	14°314'08	28.80686 AU	behind sun begin	16074 Dec 31 04:51	26°333'43	
direct	16069 Sep 07 05:02	12°349'16		behind sun end	16074 Dec 31 17:30	26°334'51	
evening set	16069 Dec 03 20:47	14°343'46		max. Earth dist.	16074 Dec 31 23:33	26°335'26	30.84044 AU
				morning rise	16075 Jan 16 11:21	27°310'11	
conjunction	16069 Dec 19 18:00	15°319'29	-0°00'01	retrograde	16075 Apr 16 14:52	29°307'30	
minimum elong	16069 Dec 19 18:00	15°319'29	0°00'43	opposition	16075 Jul 04 22:52	27°342'51	0°05'15
behind sun begin	16069 Dec 19 11:30	15°318'54		min. Earth dist.	16075 Jul 04 11:41	27°343'38	28.84419 AU
behind sun end	16069 Dec 20 00:30	15°320'04		direct	16075 Sep 21 07:23	26°318'45	
max. Earth dist.	16069 Dec 20 07:00	15°320'42	30.81034 AU	evening set	16075 Dec 18 01:17	28°313'05	
morning rise	16070 Jan 04 17:10	15°355'23					
asc. node	16070 Jan 07 11:28	16°301'27		conjunction	16076 Jan 03 00:07	28°348'50	0°05'22
retrograde	16070 Apr 04 23:26	17°353'08		minimum elong	16076 Jan 03 00:07	28°348'50	0°06'04
opposition	16070 Jun 23 10:25	16°328'29	0°00'29	behind sun begin	16076 Jan 02 17:54	28°348'16	
min. Earth dist.	16070 Jun 22 21:51	16°329'21	28.81383 AU	behind sun end	16076 Jan 03 06:19	28°349'23	
direct	16070 Sep 09 16:38	15°304'30		max. Earth dist.	16076 Jan 03 12:49	28°350'01	30.84809 AU
evening set	16070 Dec 06 09:37	16°359'00		morning rise	16076 Jan 19 00:26	29°324'43	
					16076 Feb 04 17:03	0°≈	
conjunction	16070 Dec 22 07:16	17°334'43	0°00'54	retrograde	16076 Apr 18 03:51	1°≈21'58	
minimum elong	16070 Dec 22 07:16	17°334'43	0°01'39		16076 Jul 04 20:45	30°R3	
behind sun begin	16070 Dec 22 00:44	17°334'08		opposition	16076 Jul 06 10:38	29°357'21	0°06'11
behind sun end	16070 Dec 22 13:47	17°335'18		min. Earth dist.	16076 Jul 05 22:26	29°358'12	28.85245 AU
max. Earth dist.	16070 Dec 22 20:54	17°336'00	30.81682 AU	direct	16076 Sep 22 19:03	28°333'14	
morning rise	16071 Jan 07 06:29	18°310'37			16076 Dec 06 15:40	0°≈	
retrograde	16071 Apr 07 11:35	20°308'18		evening set	16076 Dec 19 13:56	0°≈27'33	
opposition	16071 Jun 25 22:44	18°343'39	0°01'27				
min. Earth dist.	16071 Jun 25 10:37	18°344'30	28.81984 AU	conjunction	16077 Jan 04 12:53	1°≈03'18	0°06'13
direct	16071 Sep 12 05:37	17°319'40		minimum elong	16077 Jan 04 12:53	1°≈03'18	0°06'54
evening set	16071 Dec 08 22:24	19°314'07		behind sun begin	16077 Jan 04 06:49	1°≈02'45	
				behind sun end	16077 Jan 04 18:57	1°≈03'50	
conjunction	16071 Dec 24 20:09	19°349'50	0°01'49	max. Earth dist.	16077 Jan 05 01:04	1°≈04'26	30.85701 AU
minimum elong	16071 Dec 24 20:10	19°349'50	0°02'33	morning rise	16077 Jan 20 13:30	1°≈39'11	
behind sun begin	16071 Dec 24 13:39	19°349'15		retrograde	16077 Apr 20 15:19	3°≈36'22	
behind sun end	16071 Dec 25 02:41	19°350'26		opposition	16077 Jul 08 22:31	2°≈11'47	0°07'06
max. Earth dist.	16071 Dec 25 08:34	19°351'00	30.82264 AU	min. Earth dist.	16077 Jul 08 11:08	2°≈12'35	28.86214 AU
morning rise	16072 Jan 09 19:46	20°325'45		direct	16077 Sep 25 05:10	0°≈47'41	
retrograde	16072 Apr 09 02:22	22°323'20		evening set	16077 Dec 22 02:35	2°≈42'00	
opposition	16072 Jun 27 10:57	20°358'41	0°02'25				
min. Earth dist.	16072 Jun 26 22:39	20°359'32	28.82548 AU	conjunction	16078 Jan 07 01:56	3°≈17'44	0°07'05
direct	16072 Sep 13 18:35	19°334'39		minimum elong	16078 Jan 07 01:56	3°≈17'44	0°07'44
evening set	16072 Dec 10 11:10	21°329'05		behind sun begin	16078 Jan 06 20:02	3°≈17'12	
				behind sun end	16078 Jan 07 07:49	3°≈18'16	
conjunction	16072 Dec 26 09:17	22°304'49	0°02'43	max. Earth dist.	16078 Jan 07 14:58	3°≈18'57	30.86740 AU
minimum elong	16072 Dec 26 09:16	22°304'49	0°03'27	morning rise	16078 Jan 23 02:35	3°≈53'38	
behind sun begin	16072 Dec 26 02:47	22°304'14		retrograde	16078 Apr 23 02:52	5°≈50'44	
behind sun end	16072 Dec 26 15:45	22°305'24		opposition	16078 Jul 11 10:04	4°≈26'12	0°08'01
max. Earth dist.	16072 Dec 26 22:16	22°306'02	30.82814 AU	min. Earth dist.	16078 Jul 10 22:10	4°≈27'02	28.87313 AU
morning rise	16073 Jan 11 08:59	22°340'43		direct	16078 Sep 27 17:47	3°≈02'08	
retrograde	16073 Apr 11 14:34	24°338'13		evening set	16078 Dec 24 15:24	4°≈56'28	
opposition	16073 Jun 29 23:02	23°313'33	0°03'22				

conjunction	16079 Jan 09 14:47	5°32'12	0°07'55	max. Earth dist.	16084 Jan 21 18:11	16°46'00	30.93832 AU
minimum elong	16079 Jan 09 14:47	5°32'12	0°08'34	morning rise	16084 Feb 06 09:43	17°20'55	
behind sun begin	16079 Jan 09 09:06	5°31'41		retrograde	16084 May 06 09:01	19°17'33	
behind sun end	16079 Jan 09 20:28	5°32'43		opposition	16084 Jul 24 07:59	17°53'20	0°13'10
max. Earth dist.	16079 Jan 10 02:41	5°33'18	30.87906 AU	min. Earth dist.	16084 Jul 23 23:16	17°53'57	28.94322 AU
morning rise	16079 Jan 25 15:47	6°08'05		direct	16084 Oct 10 17:58	16°29'20	
retrograde	16079 Apr 25 16:20	8°05'08		evening set	16085 Jan 06 20:31	18°23'37	
opposition	16079 Jul 13 21:49	6°40'41	0°08'55				
min. Earth dist.	16079 Jul 13 10:13	6°41'30	28.88536 AU	conjunction	16085 Jan 22 21:12	18°59'21	0°12'41
direct	16079 Sep 30 03:54	5°16'38		minimum elong	16085 Jan 22 21:12	18°59'21	0°13'13
evening set	16079 Dec 27 03:57	7°10'59		behind sun begin	16085 Jan 22 17:27	18°59'01	
				behind sun end	16085 Jan 23 00:57	18°59'41	
conjunction	16080 Jan 12 03:43	7°46'44	0°08'45	max. Earth dist.	16085 Jan 23 06:53	19°00'14	30.94782 AU
minimum elong	16080 Jan 12 03:42	7°46'44	0°09'24	morning rise	16085 Feb 07 22:54	19°35'11	
behind sun begin	16080 Jan 11 22:15	7°46'14		retrograde	16085 May 08 22:03	21°31'41	
behind sun end	16080 Jan 12 09:10	7°47'13		opposition	16085 Jul 26 19:20	20°07'28	0°13'57
max. Earth dist.	16080 Jan 12 16:35	7°47'55	30.89163 AU	min. Earth dist.	16085 Jul 26 10:09	20°08'07	28.95233 AU
morning rise	16080 Jan 28 04:41	8°22'36		direct	16085 Oct 13 06:57	18°43'25	
retrograde	16080 Apr 27 04:22	10°19'36		evening set	16086 Jan 09 09:27	20°37'40	
opposition	16080 Jul 15 09:33	8°55'14	0°09'48				
min. Earth dist.	16080 Jul 14 22:19	8°56'01	28.89809 AU	conjunction	16086 Jan 25 10:11	21°13'23	0°13'24
direct	16080 Oct 01 15:47	7°31'14		minimum elong	16086 Jan 25 10:11	21°13'23	0°13'56
evening set	16080 Dec 28 16:54	9°25'36		behind sun begin	16086 Jan 25 06:56	21°13'05	
				behind sun end	16086 Jan 25 13:26	21°13'40	
conjunction	16081 Jan 13 16:42	10°01'20	0°09'34	max. Earth dist.	16086 Jan 25 18:51	21°14'10	30.95673 AU
minimum elong	16081 Jan 13 16:43	10°01'20	0°10'12	morning rise	16086 Feb 10 12:04	21°49'12	
behind sun begin	16081 Jan 13 11:31	10°00'52		retrograde	16086 May 11 08:20	23°45'34	
behind sun end	16081 Jan 13 21:54	10°01'48		opposition	16086 Jul 29 06:36	22°21'21	0°14'43
max. Earth dist.	16081 Jan 14 04:13	10°02'24	30.90448 AU	min. Earth dist.	16086 Jul 28 22:43	22°21'54	28.96128 AU
morning rise	16081 Jan 29 18:00	10°37'12		direct	16086 Oct 15 17:36	20°57'15	
retrograde	16081 Apr 29 19:20	12°34'09		evening set	16087 Jan 11 22:08	22°51'27	
opposition	16081 Jul 17 21:07	11°09'50	0°10'40				
min. Earth dist.	16081 Jul 17 09:57	11°10'37	28.91084 AU	conjunction	16087 Jan 27 23:10	23°27'09	0°14'07
direct	16081 Oct 04 04:27	9°45'51		minimum elong	16087 Jan 27 23:10	23°27'09	0°14'37
evening set	16081 Dec 31 05:51	11°40'14		behind sun begin	16087 Jan 27 20:31	23°26'55	
				behind sun end	16087 Jan 28 01:49	23°27'23	
conjunction	16082 Jan 16 05:58	12°15'59	0°10'23	max. Earth dist.	16087 Jan 28 08:21	23°28'00	30.96575 AU
minimum elong	16082 Jan 16 05:57	12°15'59	0°10'59	morning rise	16087 Feb 13 01:01	24°02'57	
behind sun begin	16082 Jan 16 01:04	12°15'33		retrograde	16087 May 13 18:56	25°59'11	
behind sun end	16082 Jan 16 10:51	12°16'25		opposition	16087 Jul 31 17:48	24°34'59	0°15'27
max. Earth dist.	16082 Jan 16 17:44	12°17'04	30.91678 AU	min. Earth dist.	16087 Jul 31 09:37	24°35'33	28.97041 AU
morning rise	16082 Feb 01 07:15	12°51'51		direct	16087 Oct 18 06:04	23°10'50	
retrograde	16082 May 02 07:22	14°48'43		evening set	16088 Jan 14 10:46	25°04'59	
opposition	16082 Jul 20 08:51	13°24'27	0°11'31				
min. Earth dist.	16082 Jul 19 23:01	13°25'08	28.92267 AU	conjunction	16088 Jan 30 11:47	25°40'41	0°14'48
direct	16082 Oct 06 17:15	12°00'29		minimum elong	16088 Jan 30 11:47	25°40'41	0°15'17
evening set	16083 Jan 02 18:48	13°54'51		behind sun begin	16088 Jan 30 09:57	25°40'31	
				behind sun end	16088 Jan 30 13:37	25°40'51	
conjunction	16083 Jan 18 19:01	14°30'35	0°11'10	max. Earth dist.	16088 Jan 30 19:41	25°41'24	30.97520 AU
minimum elong	16083 Jan 18 19:02	14°30'35	0°11'45	morning rise	16088 Feb 15 13:53	26°16'28	
behind sun begin	16083 Jan 18 14:28	14°30'11		retrograde	16088 May 15 07:00	28°12'35	
behind sun end	16083 Jan 18 23:35	14°31'00		opposition	16088 Aug 02 05:00	26°48'23	0°16'11
max. Earth dist.	16083 Jan 19 05:35	14°31'34	30.92813 AU	min. Earth dist.	16088 Aug 01 21:14	26°48'55	28.98032 AU
	16083 Jan 31 22:11	15°		direct	16088 Oct 19 15:57	25°24'11	
morning rise	16083 Feb 03 20:31	15°06'27		evening set	16089 Jan 15 23:21	27°18'20	
retrograde	16083 May 04 21:02	17°03'12					
opposition	16083 Jul 22 20:23	15°38'59	0°12'21	conjunction	16089 Feb 01 00:41	27°54'00	0°15'27
min. Earth dist.	16083 Jul 22 10:09	15°39'42	28.93344 AU	minimum elong	16089 Feb 01 00:41	27°54'00	0°15'55
	16083 Aug 15 23:06	15°		max. Earth dist.	16089 Feb 01 09:27	27°54'49	30.98551 AU
direct	16083 Oct 09 06:01	14°14'59		morning rise	16089 Feb 17 02:42	28°29'47	
	16083 Nov 30 18:31	15°			16089 Apr 08 02:06	0°	
evening set	16084 Jan 05 07:44	16°09'20		retrograde	16089 May 17 17:29	0°25'46	
					16089 Jun 27 05:04	30°	
conjunction	16084 Jan 21 08:09	16°45'04	0°11'56	opposition	16089 Aug 04 15:59	29°01'35	0°16'52
minimum elong	16084 Jan 21 08:08	16°45'04	0°12'30	min. Earth dist.	16089 Aug 04 08:31	29°02'07	28.99112 AU
behind sun begin	16084 Jan 21 03:57	16°44'42		direct	16089 Oct 22 03:54	27°37'23	
behind sun end	16084 Jan 21 12:19	16°45'27		evening set	16090 Jan 18 12:05	29°31'31	

	16090 Jan 31 08:31	0° H		morning rise	16096 Mar 04 20:10	14° H 01'55	
				retrograde	16096 Jun 02 05:59	15° H 57'18	
conjunction	16090 Feb 03 13:24	0° H 07'11 0°16'06		opposition	16096 Aug 19 20:37	14° H 33'36	0°20'57
minimum elong	16090 Feb 03 13:24	0° H 07'11 0°16'32		min. Earth dist.	16096 Aug 19 15:58	14° H 33'55	29.08136 AU
max. Earth dist.	16090 Feb 03 20:54	0° H 07'52 30.99695 AU		direct	16096 Nov 06 13:59	13° H 09'33	
morning rise	16090 Feb 19 15:39	0° H 42'56		evening set	16097 Feb 03 04:38	15° H 03'43	
retrograde	16090 May 20 06:45	2° H 38'49					
opposition	16090 Aug 07 03:00	1° H 14'41 0°17'32		conjunction	16097 Feb 19 06:36	15° H 39'20	0°19'49
min. Earth dist.	16090 Aug 06 19:14	1° H 15'14 29.00319 AU		minimum elong	16097 Feb 19 06:36	15° H 39'20	0°20'04
	16090 Sep 30 17:08	30° R \approx		max. Earth dist.	16097 Feb 19 10:18	15° H 39'40	31.08654 AU
direct	16090 Oct 24 15:32	29° \approx 50'29		morning rise	16097 Mar 07 09:02	16° H 15'00	
	16090 Nov 17 09:55	0° H		retrograde	16097 Jun 04 17:41	18° H 10'16	
evening set	16091 Jan 21 00:34	1° H 44'37		opposition	16097 Aug 22 07:19	16° H 46'35	0°21'24
				min. Earth dist.	16097 Aug 22 03:32	16° H 46'51	29.09162 AU
conjunction	16091 Feb 06 02:06	2° H 20'16 0°16'42		direct	16097 Nov 08 23:21	15° H 22'30	
minimum elong	16091 Feb 06 02:06	2° H 20'16 0°17'07		evening set	16098 Feb 05 17:09	17° H 16'39	
max. Earth dist.	16091 Feb 06 10:21	2° H 21'02 31.00952 AU					
morning rise	16091 Feb 22 04:14	2° H 56'01		conjunction	16098 Feb 21 19:21	17° H 52'15	0°20'14
retrograde	16091 May 22 17:42	4° H 51'49		minimum elong	16098 Feb 21 19:22	17° H 52'15	0°20'29
opposition	16091 Aug 09 14:05	3° H 27'45 0°18'11		max. Earth dist.	16098 Feb 21 23:27	17° H 52'37	31.09638 AU
min. Earth dist.	16091 Aug 09 07:14	3° H 28'14 29.01629 AU		morning rise	16098 Mar 09 21:36	18° H 27'54	
direct	16091 Oct 27 03:16	2° H 03'35		retrograde	16098 Jun 07 02:58	20° H 23'02	
evening set	16092 Jan 23 13:10	3° H 57'43		opposition	16098 Aug 24 18:01	18° H 59'22	0°21'50
				min. Earth dist.	16098 Aug 24 14:54	18° H 59'35	29.10111 AU
conjunction	16092 Feb 08 14:46	4° H 33'22 0°17'18		direct	16098 Nov 11 11:24	17° H 35'15	
minimum elong	16092 Feb 08 14:46	4° H 33'22 0°17'42		evening set	16099 Feb 08 05:35	19° H 29'22	
max. Earth dist.	16092 Feb 08 22:11	4° H 34'03 31.02322 AU					
morning rise	16092 Feb 24 17:04	5° H 09'06		conjunction	16099 Feb 24 07:40	20° H 04'57	0°20'38
retrograde	16092 May 24 07:21	7° H 04'50		minimum elong	16099 Feb 24 07:40	20° H 04'57	0°20'50
opposition	16092 Aug 11 00:56	5° H 40'51 0°18'48		max. Earth dist.	16099 Feb 24 10:13	20° H 05'11	31.10579 AU
min. Earth dist.	16092 Aug 10 17:28	5° H 41'22 29.03029 AU		morning rise	16099 Mar 12 10:03	20° H 40'34	
direct	16092 Oct 28 15:15	4° H 16'43		retrograde	16099 Jun 09 14:39	22° H 35'35	
evening set	16093 Jan 25 01:48	6° H 10'53		opposition	16099 Aug 27 04:36	21° H 11'55	0°22'14
				min. Earth dist.	16099 Aug 27 01:27	21° H 12'08	29.11051 AU
conjunction	16093 Feb 10 03:32	6° H 46'32 0°17'52		direct	16099 Nov 13 22:40	19° H 47'45	
minimum elong	16093 Feb 10 03:31	6° H 46'32 0°18'13		evening set	16100 Feb 10 17:56	21° H 41'50	
max. Earth dist.	16093 Feb 10 10:43	6° H 47'12 31.03730 AU					
morning rise	16093 Feb 26 05:50	7° H 22'15		conjunction	16100 Feb 26 20:10	22° H 17'24	0°20'59
retrograde	16093 May 26 19:36	9° H 17'55		minimum elong	16100 Feb 26 20:10	22° H 17'24	0°21'10
opposition	16093 Aug 13 11:57	7° H 54'01 0°19'23		max. Earth dist.	16100 Feb 26 23:15	22° H 17'41	31.11519 AU
min. Earth dist.	16093 Aug 13 06:00	7° H 54'26 29.04436 AU		morning rise	16100 Mar 14 22:22	22° H 53'00	
direct	16093 Oct 31 02:46	6° H 29'56		retrograde	16100 Jun 12 00:24	24° H 47'53	
evening set	16094 Jan 27 14:32	8° H 24'07		opposition	16100 Aug 29 15:06	23° H 24'14	0°22'36
				min. Earth dist.	16100 Aug 29 13:07	23° H 24'22	29.12012 AU
conjunction	16094 Feb 12 16:23	8° H 59'46 0°18'24		direct	16100 Nov 16 09:36	22° H 00'02	
minimum elong	16094 Feb 12 16:23	8° H 59'46 0°18'44		evening set	16101 Feb 13 06:15	23° H 54'05	
max. Earth dist.	16094 Feb 12 23:02	9° H 00'23 31.05117 AU					
morning rise	16094 Feb 28 18:40	9° H 35'28		conjunction	16101 Mar 01 08:29	24° H 29'38	0°21'19
retrograde	16094 May 29 08:42	11° H 31'03		minimum elong	16101 Mar 01 08:29	24° H 29'38	0°21'27
opposition	16094 Aug 15 22:44	10° H 07'14 0°19'56		max. Earth dist.	16101 Mar 01 10:36	24° H 29'49	31.12516 AU
min. Earth dist.	16094 Aug 15 16:29	10° H 07'40 29.05778 AU		morning rise	16101 Mar 17 10:46	25° H 05'12	
direct	16094 Nov 02 15:26	8° H 43'11		retrograde	16101 Jun 14 12:54	26° H 59'57	
evening set	16095 Jan 30 03:21	10° H 37'23		opposition	16101 Sep 01 01:29	25° H 36'18	0°22'56
				min. Earth dist.	16101 Aug 31 22:47	25° H 36'30	29.13045 AU
conjunction	16095 Feb 15 05:10	11° H 13'02 0°18'54		direct	16101 Nov 18 21:49	24° H 12'04	
minimum elong	16095 Feb 15 05:10	11° H 13'02 0°19'12					
max. Earth dist.	16095 Feb 15 10:35	11° H 13'31 31.06405 AU					
morning rise	16095 Mar 03 07:31	11° H 48'43					
retrograde	16095 May 31 19:18	13° H 44'13					
opposition	16095 Aug 18 09:46	12° H 20'27 0°20'27					
min. Earth dist.	16095 Aug 18 04:59	12° H 20'48 29.07021 AU					
direct	16095 Nov 05 01:46	10° H 56'25					
evening set	16096 Feb 01 15:51	12° H 50'37					
conjunction	16096 Feb 17 17:54	13° H 26'14 0°19'23					
minimum elong	16096 Feb 17 17:54	13° H 26'14 0°19'40					
max. Earth dist.	16096 Feb 17 23:25	13° H 26'45 31.07589 AU					