

opposition	10100 Jan 11 00:59	26°☾06'59	-0°58'22	direct	10106 Apr 13 19:50	8°♂12'06	
min. Earth dist.	10100 Jan 10 12:12	26°☾07'51	28.88605 AU	evening set	10106 Jul 09 20:27	10°♂06'10	
direct	10100 Mar 30 21:08	24°☾43'32					
evening set	10100 Jun 25 23:43	26°☾37'45		conjunction	10106 Jul 25 10:07	10°♂41'23	-0°56'43
				minimum elong	10106 Jul 25 10:07	10°♂41'23	0°57'05
conjunction	10100 Jul 11 11:40	27°☾12'51	-0°54'51	max. Earth dist.	10106 Jul 26 00:40	10°♂42'46	30.83183 AU
minimum elong	10100 Jul 11 11:40	27°☾12'51	0°55'15	morning rise	10106 Aug 10 02:16	11°♂16'50	
max. Earth dist.	10100 Jul 11 23:59	27°☾14'01	30.88221 AU	retrograde	10106 Nov 08 16:11	13°♂15'09	
morning rise	10100 Jul 27 01:46	27°☾48'09		opposition	10107 Jan 27 20:57	11°♂50'19	-1°00'41
retrograde	10100 Oct 25 08:12	29°☾46'11		min. Earth dist.	10107 Jan 27 05:45	11°♂51'22	28.82916 AU
opposition	10101 Jan 13 14:16	28°☾21'47	-0°58'58	direct	10107 Apr 16 08:02	10°♂26'40	
min. Earth dist.	10101 Jan 13 02:21	28°☾22'36	28.87894 AU	evening set	10107 Jul 12 07:56	12°♂20'43	
direct	10101 Apr 02 07:30	26°☾58'21					
evening set	10101 Jun 28 11:11	28°☾52'34		conjunction	10107 Jul 27 21:59	12°♂55'58	-0°56'44
				minimum elong	10107 Jul 27 21:59	12°♂55'58	0°57'05
conjunction	10101 Jul 13 23:30	29°☾27'41	-0°55'22	max. Earth dist.	10107 Jul 28 13:38	12°♂57'27	30.82594 AU
minimum elong	10101 Jul 13 23:30	29°☾27'41	0°55'46	morning rise	10107 Aug 12 14:27	13°♂31'26	
max. Earth dist.	10101 Jul 14 12:31	29°☾28'55	30.87462 AU		10107 Sep 29 04:59	15°♂	
	10101 Jul 28 05:20	0°♂		retrograde	10107 Nov 11 04:19	15°♂29'47	
morning rise	10101 Jul 29 13:48	0°♂03'01			10107 Dec 25 08:01	15°♂	
retrograde	10101 Oct 27 20:47	2°♂01'07		opposition	10108 Jan 30 09:56	14°♂04'55	-1°00'40
opposition	10102 Jan 16 03:32	0°♂36'41	-0°59'28	min. Earth dist.	10108 Jan 29 19:04	14°♂05'57	28.82400 AU
min. Earth dist.	10102 Jan 15 14:27	0°♂37'35	28.87075 AU	direct	10108 Apr 17 20:01	12°♂41'16	
	10102 Feb 08 02:01	30°♂		evening set	10108 Jul 13 19:29	14°♂35'18	
direct	10102 Apr 04 20:17	29°☾13'13			10108 Jul 24 18:45	15°♂	
	10102 May 28 00:59	0°♂					
evening set	10102 Jun 30 22:38	1°♂07'25		conjunction	10108 Jul 29 09:51	15°♂10'34	-0°56'40
				minimum elong	10108 Jul 29 09:52	15°♂10'34	0°57'00
conjunction	10102 Jul 16 11:05	1°♂42'33	-0°55'49	max. Earth dist.	10108 Jul 30 01:59	15°♂12'06	30.82155 AU
minimum elong	10102 Jul 16 11:05	1°♂42'33	0°56'12	morning rise	10108 Aug 14 02:41	15°♂46'04	
max. Earth dist.	10102 Jul 16 23:28	1°♂43'44	30.86596 AU	retrograde	10108 Nov 12 18:31	17°♂44'27	
morning rise	10102 Aug 01 01:53	2°♂17'55		opposition	10109 Jan 31 22:44	16°♂19'34	-1°00'32
retrograde	10102 Oct 30 09:49	4°♂16'05		min. Earth dist.	10109 Jan 31 06:23	16°♂20'42	28.82022 AU
opposition	10103 Jan 18 16:52	2°♂51'34	-0°59'54		10109 Apr 04 19:57	15°♂	
min. Earth dist.	10103 Jan 18 04:17	2°♂52'26	28.86176 AU	direct	10109 Apr 20 09:04	14°♂55'55	
direct	10103 Apr 07 07:02	1°♂28'04			10109 May 05 16:18	15°♂	
evening set	10103 Jul 03 10:03	3°♂22'14		evening set	10109 Jul 16 07:10	16°♂49'57	
conjunction	10103 Jul 18 22:58	3°♂57'23	-0°56'10	conjunction	10109 Jul 31 21:48	17°♂25'14	-0°56'30
minimum elong	10103 Jul 18 22:58	3°♂57'23	0°56'33	minimum elong	10109 Jul 31 21:48	17°♂25'14	0°56'50
max. Earth dist.	10103 Jul 19 12:44	3°♂58'42	30.85673 AU	max. Earth dist.	10109 Aug 01 14:12	17°♂26'48	30.81835 AU
morning rise	10103 Aug 03 13:57	4°♂32'46		morning rise	10109 Aug 16 15:03	18°♂00'46	
retrograde	10103 Nov 01 22:05	6°♂30'58		retrograde	10109 Nov 15 07:57	19°♂59'13	
opposition	10104 Jan 21 05:51	5°♂06'22	-1°00'14	opposition	10110 Feb 03 11:46	18°♂34'19	-1°00'19
min. Earth dist.	10104 Jan 20 16:37	5°♂07'17	28.85241 AU	min. Earth dist.	10110 Feb 02 20:00	18°♂35'24	28.81765 AU
direct	10104 Apr 08 19:19	3°♂42'50		direct	10110 Apr 22 20:14	17°♂10'41	
evening set	10104 Jul 04 21:36	5°♂36'57		evening set	10110 Jul 18 18:45	19°♂04'42	
conjunction	10104 Jul 20 10:39	6°♂12'08	-0°56'26	conjunction	10110 Aug 03 09:53	19°♂40'01	-0°56'16
minimum elong	10104 Jul 20 10:39	6°♂12'08	0°56'49	minimum elong	10110 Aug 03 09:53	19°♂40'01	0°56'34
max. Earth dist.	10104 Jul 20 23:49	6°♂13'23	30.84755 AU	max. Earth dist.	10110 Aug 04 03:17	19°♂41'41	30.81628 AU
morning rise	10104 Aug 05 02:09	6°♂47'32		morning rise	10110 Aug 19 03:26	20°♂15'35	
retrograde	10104 Nov 03 12:14	8°♂45'47		retrograde	10110 Nov 17 20:23	22°♂14'04	
opposition	10105 Jan 22 18:58	7°♂21'05	-1°00'29	min. Earth dist.	10111 Feb 05 07:37	20°♂50'22	28.81580 AU
min. Earth dist.	10105 Jan 22 05:20	7°♂22'02	28.84359 AU	opposition	10111 Feb 06 00:37	20°♂49'11	-1°00'01
direct	10105 Apr 11 06:02	5°♂57'30		direct	10111 Apr 25 08:53	19°♂25'35	
evening set	10105 Jul 07 08:54	7°♂51'35		evening set	10111 Jul 21 06:46	21°♂19'37	
conjunction	10105 Jul 22 22:21	8°♂26'47	-0°56'37	conjunction	10111 Aug 05 22:05	21°♂54'57	-0°55'56
minimum elong	10105 Jul 22 22:21	8°♂26'47	0°57'00	minimum elong	10111 Aug 05 22:05	21°♂54'57	0°56'14
max. Earth dist.	10105 Jul 23 13:06	8°♂28'11	30.83905 AU	max. Earth dist.	10111 Aug 06 14:50	21°♂56'32	30.81460 AU
morning rise	10105 Aug 07 14:02	9°♂02'13		morning rise	10111 Aug 21 16:09	22°♂30'33	
retrograde	10105 Nov 06 01:16	11°♂00'29		retrograde	10111 Nov 20 09:19	24°♂29'05	
opposition	10106 Jan 25 08:04	9°♂35'44	-1°00'38	opposition	10112 Feb 08 13:28	23°♂04'11	-0°59'36
min. Earth dist.	10106 Jan 24 18:05	9°♂36'42	28.83564 AU	min. Earth dist.	10112 Feb 07 21:09	23°♂05'19	28.81424 AU

direct	10112 Apr 26 19:00	21°04'36"		minimum elong	10118 Aug 21 13:41	7°04'42"	0°51'28"
evening set	10112 Jul 22 18:45	23°03'39"		max. Earth dist.	10118 Aug 22 07:18	7°04'42"	30.79350 AU
				morning rise	10118 Sep 06 10:28	8°04'16"	27'
conjunction	10112 Aug 07 10:34	24°01'00"	-0°55'31"	retrograde	10118 Dec 06 08:10	10°04'15"	01'
minimum elong	10112 Aug 07 10:35	24°01'00"	0°55'48"	opposition	10119 Feb 24 06:38	8°04'49"	-0°54'19"
max. Earth dist.	10112 Aug 08 04:28	24°01'14"	30.81289 AU	min. Earth dist.	10119 Feb 23 14:13	8°04'51"	28.79314 AU
morning rise	10112 Aug 23 04:50	24°04'53"		direct	10119 May 13 08:11	7°04'26"	10'
retrograde	10112 Nov 21 21:53	26°04'41"		evening set	10119 Aug 08 07:51	9°04'20"	07'
min. Earth dist.	10113 Feb 09 09:38	25°02'02"	28.81223 AU				
opposition	10113 Feb 10 02:22	25°01'9"	-0°59'07"	conjunction	10119 Aug 24 02:23	9°04'55"	-0°50'17"
direct	10113 Apr 29 06:55	23°05'54"		minimum elong	10119 Aug 24 02:23	9°04'55"	0°50'29"
evening set	10113 Jul 25 06:52	25°04'48"		max. Earth dist.	10119 Aug 24 20:45	9°04'57"	30.79231 AU
				morning rise	10119 Sep 08 23:28	10°04'31"	25'
conjunction	10113 Aug 09 22:53	26°02'51"	-0°55'00"	retrograde	10119 Dec 08 20:33	12°04'29"	57'
minimum elong	10113 Aug 09 22:53	26°02'51"	0°55'17"	opposition	10120 Feb 26 18:52	11°04'04"	-0°53'13"
max. Earth dist.	10113 Aug 10 15:41	26°02'47"	30.81057 AU	min. Earth dist.	10120 Feb 26 01:14	11°04'06"	28.79261 AU
morning rise	10113 Aug 25 17:42	27°00'05"		direct	10120 May 14 21:00	9°04'41"	06'
retrograde	10113 Nov 24 12:09	28°05'27"		evening set	10120 Aug 09 20:11	11°04'35"	03'
opposition	10114 Feb 12 15:24	27°03'32"	-0°58'32"				
min. Earth dist.	10114 Feb 11 22:51	27°03'54"	28.80955 AU	conjunction	10120 Aug 25 14:58	12°04'10"	-0°49'14"
direct	10114 May 01 17:42	26°01'05"		minimum elong	10120 Aug 25 14:58	12°04'10"	0°49'23"
evening set	10114 Jul 27 19:00	28°05'00"		max. Earth dist.	10120 Aug 26 08:46	12°04'12"	30.79252 AU
				morning rise	10120 Sep 10 12:34	12°04'46"	24'
conjunction	10114 Aug 12 11:33	28°04'02"	-0°54'25"	retrograde	10120 Dec 10 09:32	14°04'44"	56'
minimum elong	10114 Aug 12 11:34	28°04'02"	0°54'41"	opposition	10121 Feb 28 07:23	13°04'19"	-0°52'02"
max. Earth dist.	10114 Aug 13 05:15	28°04'20"	30.80739 AU	min. Earth dist.	10121 Feb 27 14:13	13°04'21"	28.79364 AU
morning rise	10114 Aug 28 06:38	29°01'05"		direct	10121 May 17 07:20	11°04'56"	06'
	10114 Sep 18 04:33	0°04'		evening set	10121 Aug 12 08:17	13°04'50"	03'
retrograde	10114 Nov 27 00:51	1°04'14"					
	10115 Feb 09 00:31	30°08'02"		conjunction	10121 Aug 28 03:38	14°04'25"	-0°48'05"
min. Earth dist.	10115 Feb 14 11:57	29°05'05"	28.80594 AU	minimum elong	10121 Aug 28 03:39	14°04'25"	0°48'15"
opposition	10115 Feb 15 04:10	29°04'45"	-0°57'51"	max. Earth dist.	10121 Aug 28 22:48	14°04'27"	30.79429 AU
direct	10115 May 04 06:43	28°02'08"		morning rise	10121 Sep 13 01:29	15°04'01"	27'
	10115 Jul 21 00:12	0°04'		retrograde	10121 Dec 12 22:02	16°04'59"	59'
evening set	10115 Jul 30 07:14	0°04'20"	10'	opposition	10122 Mar 02 19:46	15°04'34"	-0°50'47"
				min. Earth dist.	10122 Mar 02 01:55	15°04'36"	28.79599 AU
conjunction	10115 Aug 15 00:06	0°04'55"	-0°53'45"	direct	10122 May 19 19:00	14°04'11"	11'
minimum elong	10115 Aug 15 00:06	0°04'55"	0°54'01"	evening set	10122 Aug 14 20:47	16°04'05"	09'
max. Earth dist.	10115 Aug 15 16:51	0°04'57"	30.80361 AU				
morning rise	10115 Aug 30 19:43	1°04'31"	17'	conjunction	10122 Aug 30 16:24	16°04'40"	-0°46'53"
retrograde	10115 Nov 29 15:32	3°04'29"	54'	minimum elong	10122 Aug 30 16:24	16°04'40"	0°47'01"
opposition	10116 Feb 17 16:53	2°04'04"	-0°57'06"	max. Earth dist.	10122 Aug 31 10:40	16°04'42"	30.79732 AU
min. Earth dist.	10116 Feb 17 00:06	2°04'06"	28.80197 AU	morning rise	10122 Sep 15 14:50	17°04'16"	36'
direct	10116 May 05 18:40	0°04'41"	14'	retrograde	10122 Dec 15 11:15	19°04'15"	07'
evening set	10116 Jul 31 19:21	2°04'35"	15'	opposition	10123 Mar 05 08:03	17°04'50"	-0°49'26"
				min. Earth dist.	10123 Mar 04 14:24	17°04'51"	28.79957 AU
conjunction	10116 Aug 16 12:37	3°04'10"	-0°53'00"	direct	10123 May 22 05:24	16°04'26"	23'
minimum elong	10116 Aug 16 12:38	3°04'10"	0°53'14"	evening set	10123 Aug 17 09:16	18°04'20"	23'
max. Earth dist.	10116 Aug 17 06:03	3°04'12"	30.79953 AU				
morning rise	10116 Sep 01 08:32	3°04'46"	25'	conjunction	10123 Sep 02 05:26	18°04'55"	-0°45'35"
retrograde	10116 Dec 01 03:57	5°04'45"	00'	minimum elong	10123 Sep 02 05:26	18°04'55"	0°45'43"
opposition	10117 Feb 19 05:34	4°04'19"	-0°56'15"	max. Earth dist.	10123 Sep 03 00:44	18°04'57"	30.80120 AU
min. Earth dist.	10117 Feb 18 13:29	4°04'21"	28.79807 AU	morning rise	10123 Sep 18 04:05	19°04'31"	52'
direct	10117 May 08 06:54	2°04'56"	17'	retrograde	10123 Dec 17 23:04	21°04'30"	24'
evening set	10117 Aug 03 07:29	4°04'50"	15'	opposition	10124 Mar 06 20:23	20°04'05"	-0°48'01"
				min. Earth dist.	10124 Mar 06 03:03	20°04'06"	28.80361 AU
conjunction	10117 Aug 19 01:09	5°04'25"	-0°52'11"	direct	10124 May 23 17:11	18°04'41"	44'
minimum elong	10117 Aug 19 01:10	5°04'25"	0°52'24"	evening set	10124 Aug 18 21:54	20°04'35"	45'
max. Earth dist.	10117 Aug 19 18:40	5°04'27"	30.79607 AU				
morning rise	10117 Sep 03 21:29	6°04'01"	28'	conjunction	10124 Sep 03 18:19	21°04'11"	-0°44'14"
retrograde	10117 Dec 03 18:54	8°04'00"	02'	minimum elong	10124 Sep 03 18:19	21°04'11"	0°44'19"
opposition	10118 Feb 21 18:03	6°04'34"	-0°55'20"	max. Earth dist.	10124 Sep 04 12:33	21°04'13"	30.80538 AU
min. Earth dist.	10118 Feb 21 00:50	6°04'36"	28.79504 AU	morning rise	10124 Sep 19 17:27	21°04'47"	16'
direct	10118 May 10 20:24	5°04'11"	14'	retrograde	10124 Dec 19 13:42	23°04'45"	48'
evening set	10118 Aug 05 19:39	7°04'05"	12'	opposition	10125 Mar 09 08:41	22°04'20"	-0°46'32"
				min. Earth dist.	10125 Mar 08 15:05	22°04'22"	28.80769 AU
conjunction	10118 Aug 21 13:40	7°04'40"	-0°51'16"	direct	10125 May 26 03:52	20°04'57"	10'

evening set	10125 Aug 21 10:41	22° <u>0</u> 51'13		conjunction	10131 Sep 20 14:57	6° <u>0</u> 57'57	-0°32'59
				minimum elong	10131 Sep 20 14:57	6° <u>0</u> 57'57	0°32'59
conjunction	10125 Sep 06 07:33	23° <u>0</u> 26'52	-0°42'48	max. Earth dist.	10131 Sep 21 06:52	6° <u>0</u> 59'27	30.82100 AU
minimum elong	10125 Sep 06 07:33	23° <u>0</u> 26'52	0°42'54	morning rise	10131 Oct 06 16:38	7° <u>0</u> 33'57	
max. Earth dist.	10125 Sep 07 02:03	23° <u>0</u> 28'37	30.80912 AU	retrograde	10132 Jan 05 09:30	9° <u>0</u> 31'56	
morning rise	10125 Sep 22 06:58	24° <u>0</u> 02'47		opposition	10132 Mar 24 21:12	8° <u>0</u> 06'52	-0°34'16
retrograde	10125 Dec 22 02:19	26° <u>0</u> 01'17		min. Earth dist.	10132 Mar 24 06:03	8° <u>0</u> 07'56	28.82295 AU
opposition	10126 Mar 11 21:04	24° <u>0</u> 36'20	-0°44'58	direct	10132 Jun 10 18:33	6° <u>0</u> 42'58	
min. Earth dist.	10126 Mar 11 04:38	24° <u>0</u> 37'29	28.81107 AU	evening set	10132 Sep 06 04:25	8° <u>0</u> 36'52	
direct	10126 May 28 15:52	23° <u>0</u> 12'40					
evening set	10126 Aug 23 23:31	25° <u>0</u> 06'43		conjunction	10132 Sep 22 04:06	9° <u>0</u> 12'38	-0°31'10
				minimum elong	10132 Sep 22 04:06	9° <u>0</u> 12'38	0°31'07
conjunction	10126 Sep 08 20:49	25° <u>0</u> 42'23	-0°41'19	max. Earth dist.	10132 Sep 22 21:05	9° <u>0</u> 14'13	30.82468 AU
minimum elong	10126 Sep 08 20:49	25° <u>0</u> 42'23	0°41'22	morning rise	10132 Oct 08 05:54	9° <u>0</u> 48'38	
max. Earth dist.	10126 Sep 09 14:34	25° <u>0</u> 44'03	30.81213 AU	retrograde	10133 Jan 06 20:22	11° <u>0</u> 46'33	
morning rise	10126 Sep 24 20:39	26° <u>0</u> 18'19		opposition	10133 Mar 27 08:58	10° <u>0</u> 21'30	-0°32'18
retrograde	10126 Dec 24 17:27	28° <u>0</u> 16'45		min. Earth dist.	10133 Mar 26 17:58	10° <u>0</u> 22'33	28.82724 AU
opposition	10127 Mar 14 09:18	26° <u>0</u> 51'47	-0°43'20	direct	10133 Jun 13 06:17	8° <u>0</u> 57'35	
min. Earth dist.	10127 Mar 13 16:24	26° <u>0</u> 52'59	28.81351 AU	evening set	10133 Sep 08 17:21	10° <u>0</u> 51'29	
direct	10127 May 31 05:42	25° <u>0</u> 28'06					
evening set	10127 Aug 26 12:28	27° <u>0</u> 22'08		conjunction	10133 Sep 24 17:17	11° <u>0</u> 27'16	-0°29'18
				minimum elong	10133 Sep 24 17:17	11° <u>0</u> 27'16	0°29'15
conjunction	10127 Sep 11 10:06	27° <u>0</u> 57'50	-0°39'45	max. Earth dist.	10133 Sep 25 09:11	11° <u>0</u> 28'45	30.82977 AU
minimum elong	10127 Sep 11 10:07	27° <u>0</u> 57'50	0°39'49	morning rise	10133 Oct 10 19:33	12° <u>0</u> 03'16	
max. Earth dist.	10127 Sep 12 03:17	27° <u>0</u> 59'27	30.81403 AU	retrograde	10134 Jan 09 10:14	14° <u>0</u> 01'08	
morning rise	10127 Sep 27 10:19	28° <u>0</u> 33'46		opposition	10134 Mar 29 20:35	12° <u>0</u> 36'07	-0°30'16
	10127 Nov 12 14:13	0° <u>0</u>		min. Earth dist.	10134 Mar 29 05:11	12° <u>0</u> 37'12	28.83304 AU
retrograde	10127 Dec 27 06:04	0° <u>0</u> 32'08		direct	10134 Jun 15 16:30	11° <u>0</u> 12'11	
	10128 Feb 10 22:22	30° <u>0</u> 07		evening set	10134 Sep 11 06:14	13° <u>0</u> 06'07	
opposition	10128 Mar 15 21:30	29° <u>0</u> 07'09	-0°41'38				
min. Earth dist.	10128 Mar 15 06:03	29° <u>0</u> 08'14	28.81507 AU	conjunction	10134 Sep 27 06:37	13° <u>0</u> 41'55	-0°27'23
direct	10128 Jun 01 17:48	27° <u>0</u> 43'25		minimum elong	10134 Sep 27 06:37	13° <u>0</u> 41'55	0°27'18
evening set	10128 Aug 28 01:16	29° <u>0</u> 37'25		max. Earth dist.	10134 Sep 27 23:04	13° <u>0</u> 43'27	30.83614 AU
	10128 Sep 07 04:11	0° <u>0</u>		morning rise	10134 Oct 13 09:06	14° <u>0</u> 17'57	
				retrograde	10135 Jan 11 21:43	16° <u>0</u> 15'44	
conjunction	10128 Sep 12 23:25	0° <u>0</u> 13'07	-0°38'09	opposition	10135 Apr 01 08:17	14° <u>0</u> 50'47	-0°28'12
minimum elong	10128 Sep 12 23:25	0° <u>0</u> 13'07	0°38'10	min. Earth dist.	10135 Mar 31 17:48	14° <u>0</u> 51'48	28.83995 AU
max. Earth dist.	10128 Sep 13 16:40	0° <u>0</u> 14'45	30.81546 AU	direct	10135 Jun 18 04:00	13° <u>0</u> 26'52	
morning rise	10128 Sep 28 23:55	0° <u>0</u> 49'05		evening set	10135 Sep 13 19:15	15° <u>0</u> 20'51	
retrograde	10128 Dec 28 19:36	2° <u>0</u> 47'20					
opposition	10129 Mar 18 09:33	1° <u>0</u> 22'20	-0°39'53	conjunction	10135 Sep 29 19:56	15° <u>0</u> 56'39	-0°25'25
min. Earth dist.	10129 Mar 17 17:23	1° <u>0</u> 23'28	28.81629 AU	minimum elong	10135 Sep 29 19:57	15° <u>0</u> 56'39	0°25'20
	10129 May 26 02:21	30° <u>0</u> 07		max. Earth dist.	10135 Sep 30 11:46	15° <u>0</u> 58'08	30.84364 AU
direct	10129 Jun 04 07:19	29° <u>0</u> 58'33		morning rise	10135 Oct 15 22:45	16° <u>0</u> 32'41	
	10129 Jun 13 09:21	0° <u>0</u>		retrograde	10136 Jan 14 12:03	18° <u>0</u> 30'26	
evening set	10129 Aug 30 14:03	1° <u>0</u> 52'31		opposition	10136 Apr 02 19:47	17° <u>0</u> 05'33	-0°26'05
				min. Earth dist.	10136 Apr 02 04:44	17° <u>0</u> 06'36	28.84775 AU
conjunction	10129 Sep 15 12:27	2° <u>0</u> 28'14	-0°36'28	direct	10136 Jun 19 16:42	15° <u>0</u> 41'39	
minimum elong	10129 Sep 15 12:27	2° <u>0</u> 28'14	0°36'30	evening set	10136 Sep 15 08:23	17° <u>0</u> 35'41	
max. Earth dist.	10129 Sep 16 04:44	2° <u>0</u> 29'46	30.81671 AU				
morning rise	10129 Oct 01 13:27	3° <u>0</u> 04'12		conjunction	10136 Oct 01 09:21	18° <u>0</u> 11'31	-0°23'26
retrograde	10129 Dec 31 09:07	5° <u>0</u> 02'23		minimum elong	10136 Oct 01 09:21	18° <u>0</u> 11'31	0°23'19
opposition	10130 Mar 20 21:38	3° <u>0</u> 37'20	-0°38'04	max. Earth dist.	10136 Oct 02 00:53	18° <u>0</u> 12'58	30.85162 AU
min. Earth dist.	10130 Mar 20 06:29	3° <u>0</u> 38'24	28.81776 AU	morning rise	10136 Oct 17 12:25	18° <u>0</u> 47'33	
direct	10130 Jun 06 18:57	2° <u>0</u> 13'30		retrograde	10137 Jan 16 00:33	20° <u>0</u> 45'15	
evening set	10130 Sep 02 02:50	4° <u>0</u> 07'26		opposition	10137 Apr 05 07:29	19° <u>0</u> 20'27	-0°23'56
				min. Earth dist.	10137 Apr 04 17:56	19° <u>0</u> 21'24	28.85584 AU
conjunction	10130 Sep 18 01:48	4° <u>0</u> 43'10	-0°34'45	direct	10137 Jun 22 03:51	17° <u>0</u> 56'35	
minimum elong	10130 Sep 18 01:48	4° <u>0</u> 43'10	0°34'45	evening set	10137 Sep 17 21:26	19° <u>0</u> 50'39	
max. Earth dist.	10130 Sep 18 18:55	4° <u>0</u> 44'47	30.81846 AU				
morning rise	10130 Oct 04 02:59	5° <u>0</u> 19'09		conjunction	10137 Oct 03 22:51	20° <u>0</u> 26'30	-0°21'24
retrograde	10131 Jan 02 21:07	7° <u>0</u> 17'13		minimum elong	10137 Oct 03 22:51	20° <u>0</u> 26'30	0°21'17
opposition	10131 Mar 23 09:22	5° <u>0</u> 52'10	-0°36'12	max. Earth dist.	10137 Oct 04 14:09	20° <u>0</u> 27'56	30.85965 AU
min. Earth dist.	10131 Mar 22 17:52	5° <u>0</u> 53'15	28.81980 AU	morning rise	10137 Oct 20 02:08	21° <u>0</u> 02'33	
direct	10131 Jun 09 07:49	4° <u>0</u> 28'17		retrograde	10138 Jan 18 14:49	23° <u>0</u> 00'11	
evening set	10131 Sep 04 15:47	6° <u>0</u> 22'12		opposition	10138 Apr 07 19:02	21° <u>0</u> 35'26	-0°21'44
				min. Earth dist.	10138 Apr 07 05:09	21° <u>0</u> 36'25	28.86348 AU

direct	10138 Jun 24 17:07	20° <u>♏</u> 11'35		morning rise	10143 Nov 03 12:35	4° <u>♏</u> 31'15	
evening set	10138 Sep 20 10:53	22° <u>♏</u> 05'41		retrograde	10144 Feb 01 14:50	6° <u>♏</u> 28'10	
conjunction	10138 Oct 06 12:29	22° <u>♏</u> 41'33	-0°19'20	opposition	10144 Apr 20 15:01	5° <u>♏</u> 03'30	-0°08'05
minimum elong	10138 Oct 06 12:29	22° <u>♏</u> 41'33	0°19'11	min. Earth dist.	10144 Apr 20 05:19	5° <u>♏</u> 04'11	28.89654 AU
max. Earth dist.	10138 Oct 07 02:15	22° <u>♏</u> 42'50	30.86681 AU	direct	10144 Jul 07 16:08	3° <u>♏</u> 39'23	
morning rise	10138 Oct 22 16:07	23° <u>♏</u> 17'37		evening set	10144 Oct 03 18:03	5° <u>♏</u> 33'26	
retrograde	10139 Jan 21 05:01	25° <u>♏</u> 15'10		conjunction	10144 Oct 19 21:22	6° <u>♏</u> 09'20	-0°06'34
opposition	10139 Apr 10 06:34	23° <u>♏</u> 50'28	-0°19'31	minimum elong	10144 Oct 19 21:23	6° <u>♏</u> 09'20	0°06'19
min. Earth dist.	10139 Apr 09 18:12	23° <u>♏</u> 51'20	28.87022 AU	behind sun begin	10144 Oct 19 15:11	6° <u>♏</u> 08'46	
direct	10139 Jun 27 05:01	22° <u>♏</u> 26'36		behind sun end	10144 Oct 20 03:35	6° <u>♏</u> 09'53	
evening set	10139 Sep 23 00:09	24° <u>♏</u> 20'43		max. Earth dist.	10144 Oct 20 08:03	6° <u>♏</u> 10'19	30.89981 AU
conjunction	10139 Oct 09 02:13	24° <u>♏</u> 56'36	-0°17'15	morning rise	10144 Nov 05 02:08	6° <u>♏</u> 45'23	
minimum elong	10139 Oct 09 02:13	24° <u>♏</u> 56'36	0°17'06	retrograde	10145 Feb 03 03:26	8° <u>♏</u> 42'10	
max. Earth dist.	10139 Oct 09 16:07	24° <u>♏</u> 57'53	30.87305 AU	opposition	10145 Apr 23 01:58	7° <u>♏</u> 17'31	-0°05'46
morning rise	10139 Oct 25 05:56	25° <u>♏</u> 32'40		min. Earth dist.	10145 Apr 22 15:38	7° <u>♏</u> 18'15	28.90348 AU
retrograde	10140 Jan 23 17:11	27° <u>♏</u> 30'06		direct	10145 Jul 10 04:03	5° <u>♏</u> 53'21	
opposition	10140 Apr 11 18:03	26° <u>♏</u> 05'25	-0°17'16	evening set	10145 Oct 06 07:06	7° <u>♏</u> 47'24	
min. Earth dist.	10140 Apr 11 05:47	26° <u>♏</u> 06'17	28.87587 AU	conjunction	10145 Oct 22 10:41	8° <u>♏</u> 23'18	-0°04'24
direct	10140 Jun 28 18:28	24° <u>♏</u> 41'32		minimum elong	10145 Oct 22 10:41	8° <u>♏</u> 23'18	0°04'09
evening set	10140 Sep 24 13:23	26° <u>♏</u> 35'38		behind sun begin	10145 Oct 22 04:12	8° <u>♏</u> 22'43	
conjunction	10140 Oct 10 15:34	27° <u>♏</u> 11'31	-0°15'08	behind sun end	10145 Oct 22 17:09	8° <u>♏</u> 23'53	
minimum elong	10140 Oct 10 15:35	27° <u>♏</u> 11'31	0°14'58	max. Earth dist.	10145 Oct 22 21:13	8° <u>♏</u> 24'16	30.90732 AU
behind sun begin	10140 Oct 10 13:20	27° <u>♏</u> 11'19		morning rise	10145 Nov 07 15:34	8° <u>♏</u> 59'20	
behind sun end	10140 Oct 10 17:49	27° <u>♏</u> 11'43		retrograde	10146 Feb 05 14:33	10° <u>♏</u> 56'01	
max. Earth dist.	10140 Oct 11 03:46	27° <u>♏</u> 12'39	30.87837 AU	opposition	10146 Apr 25 13:03	9° <u>♏</u> 31'23	-0°03'26
morning rise	10140 Oct 26 19:40	27° <u>♏</u> 47'36		min. Earth dist.	10146 Apr 25 04:01	9° <u>♏</u> 32'01	28.91172 AU
retrograde	10141 Jan 25 05:36	29° <u>♏</u> 44'55		direct	10146 Jul 12 14:26	8° <u>♏</u> 07'11	
opposition	10141 Apr 14 05:32	28° <u>♏</u> 20'15	-0°15'00	evening set	10146 Oct 08 20:13	10° <u>♏</u> 01'15	
min. Earth dist.	10141 Apr 13 18:07	28° <u>♏</u> 21'03	28.88094 AU	conjunction	10146 Oct 25 00:05	10° <u>♏</u> 37'09	-0°02'12
direct	10141 Jul 01 05:38	26° <u>♏</u> 56'18		minimum elong	10146 Oct 25 00:05	10° <u>♏</u> 37'09	0°01'56
evening set	10141 Sep 27 02:33	28° <u>♏</u> 50'24		behind sun begin	10146 Oct 24 17:31	10° <u>♏</u> 36'34	
conjunction	10141 Oct 13 05:12	29° <u>♏</u> 26'17	-0°13'01	behind sun end	10146 Oct 25 06:40	10° <u>♏</u> 37'44	
minimum elong	10141 Oct 13 05:12	29° <u>♏</u> 26'17	0°12'50	max. Earth dist.	10146 Oct 25 10:32	10° <u>♏</u> 38'06	30.91634 AU
behind sun begin	10141 Oct 13 01:13	29° <u>♏</u> 25'56		morning rise	10146 Nov 10 05:03	11° <u>♏</u> 13'11	
behind sun end	10141 Oct 13 09:11	29° <u>♏</u> 26'39		retrograde	10147 Feb 08 03:30	13° <u>♏</u> 09'44	
max. Earth dist.	10141 Oct 13 17:55	29° <u>♏</u> 27'28	30.88323 AU	opposition	10147 Apr 27 23:48	11° <u>♏</u> 45'09	-0°01'05
morning rise	10141 Oct 28 07:35	0° <u>♏</u>		min. Earth dist.	10147 Apr 27 14:05	11° <u>♏</u> 45'50	28.92135 AU
retrograde	10141 Oct 29 09:21	0° <u>♏</u> 02'21		direct	10147 Jul 15 03:46	10° <u>♏</u> 20'57	
opposition	10142 Jan 27 16:33	1° <u>♏</u> 59'33		evening set	10147 Oct 11 09:26	12° <u>♏</u> 15'03	
min. Earth dist.	10142 Apr 16 16:44	0° <u>♏</u> 34'52	-0°12'43	asc. node	10147 Oct 18 20:59	12° <u>♏</u> 31'32	
direct	10142 May 07 23:24	30° <u>♏</u>		conjunction	10147 Oct 27 13:23	12° <u>♏</u> 50'57	0°00'04
evening set	10142 Jul 03 17:45	29° <u>♏</u> 10'53		minimum elong	10147 Oct 27 13:23	12° <u>♏</u> 50'57	0°00'20
conjunction	10142 Aug 27 16:34	0° <u>♏</u>		behind sun begin	10147 Oct 27 06:50	12° <u>♏</u> 50'22	
minimum elong	10142 Sep 29 15:49	1° <u>♏</u> 04'57		behind sun end	10147 Oct 27 19:56	12° <u>♏</u> 51'32	
behind sun begin	10142 Oct 15 18:38	1° <u>♏</u> 40'51	-0°10'53	max. Earth dist.	10147 Oct 27 22:49	12° <u>♏</u> 51'48	30.92662 AU
behind sun end	10142 Oct 15 18:38	1° <u>♏</u> 40'51	0°10'40	morning rise	10147 Nov 12 18:32	13° <u>♏</u> 26'58	
max. Earth dist.	10142 Oct 15 13:37	1° <u>♏</u> 40'24		retrograde	10148 Jan 03 21:59	15° <u>♏</u>	
morning rise	10142 Oct 15 23:40	1° <u>♏</u> 41'18		opposition	10148 Feb 10 16:34	15° <u>♏</u> 23'25	
retrograde	10142 Oct 16 05:46	1° <u>♏</u> 41'53	30.88816 AU	min. Earth dist.	10148 Mar 19 23:59	15° <u>♏</u>	
opposition	10142 Oct 31 23:09	2° <u>♏</u> 16'55		direct	10148 Apr 29 10:48	13° <u>♏</u> 58'55	0°01'15
min. Earth dist.	10143 Jan 30 05:29	4° <u>♏</u> 13'58		evening set	10148 Apr 29 02:12	13° <u>♏</u> 59'31	28.93226 AU
direct	10143 Apr 19 03:54	2° <u>♏</u> 49'18	-0°10'24	retrograde	10148 Jul 16 15:14	12° <u>♏</u> 34'43	
evening set	10143 Apr 18 17:09	2° <u>♏</u> 50'03	28.89082 AU	conjunction	10148 Oct 12 22:24	14° <u>♏</u> 28'51	
minimum elong	10143 Jul 06 04:25	1° <u>♏</u> 25'14		behind sun begin	10148 Oct 26 23:44	15° <u>♏</u>	
behind sun end	10143 Oct 02 04:56	3° <u>♏</u> 19'18		behind sun end	10148 Oct 29 02:42	15° <u>♏</u> 04'45	0°02'18
max. Earth dist.	10143 Oct 18 08:04	3° <u>♏</u> 55'11	-0°08'43	minimum elong	10148 Oct 29 02:40	15° <u>♏</u> 04'45	0°02'36
behind sun begin	10143 Oct 18 08:04	3° <u>♏</u> 55'11	0°08'30	behind sun begin	10148 Oct 28 20:07	15° <u>♏</u> 04'10	
behind sun end	10143 Oct 18 02:20	3° <u>♏</u> 54'41		behind sun end	10148 Oct 29 09:14	15° <u>♏</u> 05'20	
max. Earth dist.	10143 Oct 18 13:47	3° <u>♏</u> 55'42		max. Earth dist.	10148 Oct 29 12:35	15° <u>♏</u> 05'39	30.93799 AU
retrograde	10143 Oct 18 19:33	3° <u>♏</u> 56'15	30.89346 AU	morning rise	10148 Nov 14 07:47	15° <u>♏</u> 40'46	
opposition				retrograde	10149 Feb 12 04:37	17° <u>♏</u> 37'07	
				opposition	10149 May 01 21:39	16° <u>♏</u> 12'42	0°03'35

min. Earth dist.	10149 May 01 13:02	16° 11 13'18	28.94380 AU	minimum elong	10154 Nov 12 11:30	28° 11 27'32	0°15'34
	10149 Jun 22 19:43	15° 08 11		behind sun begin	10154 Nov 12 10:20	28° 11 27'25	
direct	10149 Jul 19 04:19	14° 11 48'32		behind sun end	10154 Nov 12 12:40	28° 11 27'38	
	10149 Aug 14 04:26	15° 11 11		max. Earth dist.	10154 Nov 12 15:49	28° 11 27'55	30.99736 AU
evening set	10149 Oct 15 11:47	16° 11 42'42		morning rise	10154 Nov 28 16:49	29° 11 03'29	
					10154 Dec 26 20:20	0° 11 27	
conjunction	10149 Oct 31 16:03	17° 11 18'36	0°04'30	retrograde	10155 Feb 26 02:09	0° 11 59'06	
minimum elong	10149 Oct 31 16:03	17° 11 18'36	0°04'48		10155 Apr 30 13:49	30° 08 11	
behind sun begin	10149 Oct 31 09:38	17° 11 18'02		opposition	10155 May 15 14:14	29° 11 35'02	0°17'21
behind sun end	10149 Oct 31 22:28	17° 11 19'11		min. Earth dist.	10155 May 15 10:57	29° 11 35'16	29.00143 AU
max. Earth dist.	10149 Nov 01 00:16	17° 11 19'21	30.94964 AU	direct	10155 Aug 01 23:39	28° 11 10'44	
morning rise	10149 Nov 16 21:24	17° 11 54'37			10155 Oct 27 11:33	0° 11 27	
retrograde	10150 Feb 14 17:49	19° 11 50'52		evening set	10155 Oct 29 19:42	0° 11 05'03	
opposition	10150 May 04 08:26	18° 11 26'33	0°05'56				
min. Earth dist.	10150 May 04 00:50	18° 11 27'05	28.95543 AU	conjunction	10155 Nov 15 00:48	0° 11 40'56	0°17'16
direct	10150 Jul 21 15:08	17° 11 02'23		minimum elong	10155 Nov 15 00:47	0° 11 40'55	0°17'39
evening set	10150 Oct 18 01:09	18° 11 56'36		max. Earth dist.	10155 Nov 15 04:40	0° 11 41'16	31.00552 AU
				morning rise	10155 Dec 01 06:05	1° 11 16'51	
conjunction	10150 Nov 03 05:45	19° 11 32'31	0°06'40	retrograde	10156 Feb 28 14:06	3° 11 12'21	
minimum elong	10150 Nov 03 05:44	19° 11 32'31	0°06'59	opposition	10156 May 17 00:43	1° 11 48'19	0°19'34
behind sun begin	10150 Nov 02 23:39	19° 11 31'58		min. Earth dist.	10156 May 16 21:00	1° 11 48'35	29.00969 AU
behind sun end	10150 Nov 03 11:49	19° 11 33'03		direct	10156 Aug 03 13:08	0° 11 23'58	
max. Earth dist.	10150 Nov 03 14:11	19° 11 33'17	30.96091 AU	evening set	10156 Oct 31 08:45	2° 11 18'18	
morning rise	10150 Nov 19 10:57	20° 11 08'31					
retrograde	10151 Feb 17 05:26	22° 11 04'40		conjunction	10156 Nov 16 13:47	2° 11 54'10	0°19'20
opposition	10151 May 06 19:21	20° 11 40'25	0°08'15	minimum elong	10156 Nov 16 13:47	2° 11 54'10	0°19'43
min. Earth dist.	10151 May 06 12:42	20° 11 40'53	28.96625 AU	max. Earth dist.	10156 Nov 16 16:36	2° 11 54'25	31.01400 AU
direct	10151 Jul 24 03:32	19° 11 16'15		morning rise	10156 Dec 02 19:07	3° 11 30'04	
evening set	10151 Oct 20 14:34	21° 11 10'30		retrograde	10157 Mar 02 02:03	5° 11 25'26	
				opposition	10157 May 19 11:17	4° 11 01'26	0°21'45
conjunction	10151 Nov 05 19:07	21° 11 46'25	0°08'49	min. Earth dist.	10157 May 19 08:46	4° 11 01'37	29.01864 AU
minimum elong	10151 Nov 05 19:07	21° 11 46'25	0°09'09	direct	10157 Aug 06 00:38	2° 11 37'03	
behind sun begin	10151 Nov 05 13:34	21° 11 45'55		evening set	10157 Nov 02 21:47	4° 11 31'24	
behind sun end	10151 Nov 06 00:40	21° 11 46'54					
max. Earth dist.	10151 Nov 06 01:34	21° 11 46'59	30.97128 AU	conjunction	10157 Nov 19 03:01	5° 11 07'15	0°21'21
morning rise	10151 Nov 22 00:30	22° 11 22'24		minimum elong	10157 Nov 19 03:01	5° 11 07'15	0°21'44
retrograde	10152 Feb 19 18:05	24° 11 18'26		max. Earth dist.	10157 Nov 19 06:08	5° 11 07'32	31.02339 AU
opposition	10152 May 08 06:10	22° 11 54'15	0°10'33	morning rise	10157 Dec 05 08:10	5° 11 43'08	
min. Earth dist.	10152 May 07 23:48	22° 11 54'42	28.97615 AU	retrograde	10158 Mar 04 13:15	7° 11 38'22	
direct	10152 Jul 25 14:32	21° 11 30'04		opposition	10158 May 21 21:35	6° 11 14'25	0°23'54
evening set	10152 Oct 22 03:54	23° 11 24'20		min. Earth dist.	10158 May 21 18:58	6° 11 14'36	29.02848 AU
				direct	10158 Aug 08 13:35	4° 11 50'00	
conjunction	10152 Nov 07 08:41	24° 11 00'15	0°10'58	evening set	10158 Nov 05 10:58	6° 11 44'24	
minimum elong	10152 Nov 07 08:41	24° 11 00'15	0°11'19				
behind sun begin	10152 Nov 07 03:55	23° 11 59'49		conjunction	10158 Nov 21 16:04	7° 11 20'14	0°23'21
behind sun end	10152 Nov 07 13:26	24° 11 00'40		minimum elong	10158 Nov 21 16:04	7° 11 20'14	0°23'45
max. Earth dist.	10152 Nov 07 15:01	24° 11 00'49	30.98064 AU	max. Earth dist.	10158 Nov 21 17:42	7° 11 20'23	31.03383 AU
morning rise	10152 Nov 23 13:57	24° 11 36'14		morning rise	10158 Dec 07 21:16	7° 11 56'06	
retrograde	10153 Feb 21 03:40	26° 11 32'08		retrograde	10159 Mar 07 02:13	9° 11 51'12	
opposition	10153 May 10 16:59	25° 11 07'59	0°12'51	opposition	10159 May 24 08:03	8° 11 27'19	0°26'01
min. Earth dist.	10153 May 10 12:09	25° 11 08'20	28.98507 AU	min. Earth dist.	10159 May 24 05:58	8° 11 27'28	29.03964 AU
direct	10153 Jul 28 02:00	23° 11 43'47		direct	10159 Aug 11 00:41	7° 11 02'54	
evening set	10153 Oct 24 17:12	25° 11 38'04		evening set	10159 Nov 07 23:50	8° 11 57'19	
conjunction	10153 Nov 09 22:04	26° 11 13'57	0°13'05	conjunction	10159 Nov 24 05:05	9° 11 33'10	0°25'18
minimum elong	10153 Nov 09 22:04	26° 11 13'58	0°13'27	minimum elong	10159 Nov 24 05:05	9° 11 33'10	0°25'43
behind sun begin	10153 Nov 09 18:29	26° 11 13'38		max. Earth dist.	10159 Nov 24 07:29	9° 11 33'23	31.04555 AU
behind sun end	10153 Nov 10 01:39	26° 11 14'17		morning rise	10159 Dec 10 10:00	10° 11 09'00	
max. Earth dist.	10153 Nov 10 02:57	26° 11 14'24	30.98931 AU	retrograde	10160 Mar 08 13:44	12° 11 04'00	
morning rise	10153 Nov 26 03:29	26° 11 49'56		opposition	10160 May 25 18:30	10° 11 40'12	0°28'05
retrograde	10154 Feb 23 15:56	28° 11 45'41		min. Earth dist.	10160 May 25 16:58	10° 11 40'18	29.05188 AU
opposition	10154 May 13 03:37	27° 11 21'36	0°15'07	direct	10160 Aug 12 13:35	9° 11 15'48	
min. Earth dist.	10154 May 12 22:38	27° 11 21'57	28.99340 AU	evening set	10160 Nov 09 12:56	11° 11 10'16	
direct	10154 Jul 30 13:39	25° 11 57'20					
evening set	10154 Oct 27 06:32	27° 11 51'38		conjunction	10160 Nov 25 18:02	11° 11 46'05	0°27'13
				minimum elong	10160 Nov 25 18:02	11° 11 46'05	0°27'39
conjunction	10154 Nov 12 11:30	28° 11 27'32	0°15'12	max. Earth dist.	10160 Nov 25 18:53	11° 11 46'10	31.05838 AU

morning rise	10160 Dec 11 23:02	12° $\mathring{\text{A}}$ 21'55		conjunction	10167 Dec 12 13:06	27° $\mathring{\text{A}}$ 15'56	0°39'21
retrograde	10161 Mar 11 01:53	14° $\mathring{\text{A}}$ 16'49		minimum elong	10167 Dec 12 13:05	27° $\mathring{\text{A}}$ 15'56	0°39'48
opposition	10161 May 28 04:47	12° $\mathring{\text{A}}$ 53'07	0°30'07	max. Earth dist.	10167 Dec 12 07:42	27° $\mathring{\text{A}}$ 15'27	31.13391 AU
min. Earth dist.	10161 May 28 03:15	12° $\mathring{\text{A}}$ 53'13	29.06510 AU	morning rise	10167 Dec 28 16:52	27° $\mathring{\text{A}}$ 51'35	
direct	10161 Aug 15 00:35	11° $\mathring{\text{A}}$ 28'44		retrograde	10168 Mar 26 06:16	29° $\mathring{\text{A}}$ 45'38	
evening set	10161 Nov 12 01:58	13° $\mathring{\text{A}}$ 23'15		opposition	10168 Jun 12 05:25	28° $\mathring{\text{A}}$ 22'20	0°42'53
				min. Earth dist.	10168 Jun 12 09:44	28° $\mathring{\text{A}}$ 22'02	29.13792 AU
conjunction	10161 Nov 28 07:11	13° $\mathring{\text{A}}$ 59'04	0°29'06	direct	10168 Aug 30 08:50	26° $\mathring{\text{A}}$ 57'48	
minimum elong	10161 Nov 28 07:11	13° $\mathring{\text{A}}$ 59'04	0°29'32	evening set	10168 Nov 27 21:16	28° $\mathring{\text{A}}$ 52'27	
max. Earth dist.	10161 Nov 28 08:14	13° $\mathring{\text{A}}$ 59'10	31.07168 AU				
morning rise	10161 Dec 14 11:55	14° $\mathring{\text{A}}$ 34'53		conjunction	10168 Dec 14 01:54	29° $\mathring{\text{A}}$ 28'08	0°40'51
retrograde	10162 Mar 13 11:37	16° $\mathring{\text{A}}$ 29'40		minimum elong	10168 Dec 14 01:54	29° $\mathring{\text{A}}$ 28'08	0°41'19
opposition	10162 May 30 15:15	15° $\mathring{\text{A}}$ 06'05	0°32'06	max. Earth dist.	10168 Dec 13 21:01	29° $\mathring{\text{A}}$ 27'41	31.14155 AU
min. Earth dist.	10162 May 30 15:13	15° $\mathring{\text{A}}$ 06'05	29.07834 AU		10168 Dec 28 11:56	0° $\mathring{\text{B}}$	
direct	10162 Aug 17 11:41	13° $\mathring{\text{A}}$ 41'44		morning rise	10168 Dec 30 05:18	0° $\mathring{\text{B}}$ 03'44	
evening set	10162 Nov 14 15:12	15° $\mathring{\text{A}}$ 36'18		retrograde	10169 Mar 28 16:48	1° $\mathring{\text{B}}$ 57'39	
				opposition	10169 Jun 14 15:33	0° $\mathring{\text{B}}$ 34'23	0°44'28
conjunction	10162 Nov 30 20:16	16° $\mathring{\text{A}}$ 12'06	0°30'56	min. Earth dist.	10169 Jun 14 20:44	0° $\mathring{\text{B}}$ 34'01	29.14556 AU
minimum elong	10162 Nov 30 20:16	16° $\mathring{\text{A}}$ 12'06	0°31'22		10169 Jul 05 17:14	30° $\mathring{\text{R}}$ $\mathring{\text{A}}$	
max. Earth dist.	10162 Nov 30 19:47	16° $\mathring{\text{A}}$ 12'03	31.08473 AU	direct	10169 Sep 01 22:08	29° $\mathring{\text{A}}$ 09'47	
morning rise	10162 Dec 17 00:56	16° $\mathring{\text{A}}$ 47'53			10169 Oct 28 09:54	0° $\mathring{\text{B}}$	
retrograde	10163 Mar 16 00:04	18° $\mathring{\text{A}}$ 42'34		evening set	10169 Nov 30 10:08	1° $\mathring{\text{B}}$ 04'27	
opposition	10163 Jun 02 01:34	17° $\mathring{\text{A}}$ 19'05	0°34'02				
min. Earth dist.	10163 Jun 02 01:26	17° $\mathring{\text{A}}$ 19'05	29.09101 AU	conjunction	10169 Dec 16 14:29	1° $\mathring{\text{B}}$ 40'07	0°42'18
direct	10163 Aug 19 22:41	15° $\mathring{\text{A}}$ 54'44		minimum elong	10169 Dec 16 14:29	1° $\mathring{\text{B}}$ 40'07	0°42'46
evening set	10163 Nov 17 04:23	17° $\mathring{\text{A}}$ 49'20		max. Earth dist.	10169 Dec 16 07:57	1° $\mathring{\text{B}}$ 39'30	31.14938 AU
				morning rise	10170 Jan 01 17:49	2° $\mathring{\text{B}}$ 15'41	
conjunction	10163 Dec 03 09:24	18° $\mathring{\text{A}}$ 25'08	0°32'44	retrograde	10170 Mar 31 04:27	4° $\mathring{\text{B}}$ 09'28	
minimum elong	10163 Dec 03 09:24	18° $\mathring{\text{A}}$ 25'08	0°33'10	opposition	10170 Jun 17 01:41	2° $\mathring{\text{B}}$ 46'14	0°45'58
max. Earth dist.	10163 Dec 03 08:16	18° $\mathring{\text{A}}$ 25'01	31.09680 AU	min. Earth dist.	10170 Jun 17 06:42	2° $\mathring{\text{B}}$ 45'53	29.15370 AU
morning rise	10163 Dec 19 13:49	19° $\mathring{\text{A}}$ 00'54		direct	10170 Sep 04 09:46	1° $\mathring{\text{B}}$ 21'36	
retrograde	10164 Mar 17 09:44	20° $\mathring{\text{A}}$ 55'28		evening set	10170 Dec 02 22:46	3° $\mathring{\text{B}}$ 16'17	
opposition	10164 Jun 03 12:06	19° $\mathring{\text{A}}$ 32'03	0°35'55				
min. Earth dist.	10164 Jun 03 13:50	19° $\mathring{\text{A}}$ 31'56	29.10259 AU	conjunction	10170 Dec 19 03:04	3° $\mathring{\text{B}}$ 51'55	0°43'42
direct	10164 Aug 21 08:17	18° $\mathring{\text{A}}$ 07'41		minimum elong	10170 Dec 19 03:03	3° $\mathring{\text{B}}$ 51'55	0°44'09
evening set	10164 Nov 18 17:22	20° $\mathring{\text{A}}$ 02'18		max. Earth dist.	10170 Dec 18 20:59	3° $\mathring{\text{B}}$ 51'22	31.15776 AU
				morning rise	10171 Jan 04 05:58	4° $\mathring{\text{B}}$ 27'28	
conjunction	10164 Dec 04 22:22	20° $\mathring{\text{A}}$ 38'05	0°34'28	retrograde	10171 Apr 02 13:48	6° $\mathring{\text{B}}$ 21'08	
minimum elong	10164 Dec 04 22:22	20° $\mathring{\text{A}}$ 38'05	0°34'54	opposition	10171 Jun 19 11:54	4° $\mathring{\text{B}}$ 57'57	0°47'25
max. Earth dist.	10164 Dec 04 20:23	20° $\mathring{\text{A}}$ 37'54	31.10779 AU	min. Earth dist.	10171 Jun 19 18:02	4° $\mathring{\text{B}}$ 57'31	29.16257 AU
morning rise	10164 Dec 21 02:39	21° $\mathring{\text{A}}$ 13'49		direct	10171 Sep 06 21:14	3° $\mathring{\text{B}}$ 33'18	
retrograde	10165 Mar 19 20:29	23° $\mathring{\text{A}}$ 08'16		evening set	10171 Dec 05 11:25	5° $\mathring{\text{B}}$ 28'00	
opposition	10165 Jun 05 22:28	21° $\mathring{\text{A}}$ 44'54	0°37'45				
min. Earth dist.	10165 Jun 06 00:09	21° $\mathring{\text{A}}$ 44'47	29.11285 AU	conjunction	10171 Dec 21 15:27	6° $\mathring{\text{B}}$ 03'38	0°45'01
direct	10165 Aug 23 21:36	20° $\mathring{\text{A}}$ 20'31		minimum elong	10171 Dec 21 15:27	6° $\mathring{\text{B}}$ 03'37	0°45'29
evening set	10165 Nov 21 06:35	22° $\mathring{\text{A}}$ 15'09		max. Earth dist.	10171 Dec 21 08:19	6° $\mathring{\text{B}}$ 02'58	31.16724 AU
				morning rise	10172 Jan 06 18:13	6° $\mathring{\text{B}}$ 39'09	
conjunction	10165 Dec 07 11:26	22° $\mathring{\text{A}}$ 50'54	0°36'09	retrograde	10172 Apr 04 01:44	8° $\mathring{\text{B}}$ 32'43	
minimum elong	10165 Dec 07 11:25	22° $\mathring{\text{A}}$ 50'54	0°36'35	opposition	10172 Jun 20 21:59	7° $\mathring{\text{B}}$ 09'36	0°48'48
max. Earth dist.	10165 Dec 07 07:54	22° $\mathring{\text{A}}$ 50'34	31.11740 AU	min. Earth dist.	10172 Jun 21 03:26	7° $\mathring{\text{B}}$ 09'13	29.17258 AU
morning rise	10165 Dec 23 15:35	23° $\mathring{\text{A}}$ 26'36		direct	10172 Sep 08 08:14	5° $\mathring{\text{B}}$ 44'57	
retrograde	10166 Mar 22 07:21	25° $\mathring{\text{A}}$ 20'56		evening set	10172 Dec 06 23:53	7° $\mathring{\text{B}}$ 39'42	
opposition	10166 Jun 08 08:48	23° $\mathring{\text{A}}$ 57'36	0°39'31				
min. Earth dist.	10166 Jun 08 12:04	23° $\mathring{\text{A}}$ 57'22	29.12199 AU	conjunction	10172 Dec 23 03:48	8° $\mathring{\text{B}}$ 15'19	0°46'16
direct	10166 Aug 26 08:16	22° $\mathring{\text{A}}$ 33'09		minimum elong	10172 Dec 23 03:48	8° $\mathring{\text{B}}$ 15'19	0°46'44
evening set	10166 Nov 23 19:36	24° $\mathring{\text{A}}$ 27'48		max. Earth dist.	10172 Dec 22 20:39	8° $\mathring{\text{B}}$ 14'39	31.17770 AU
				morning rise	10173 Jan 08 06:15	8° $\mathring{\text{B}}$ 50'49	
conjunction	10166 Dec 10 00:28	25° $\mathring{\text{A}}$ 03'32	0°37'47	retrograde	10173 Apr 06 10:57	10° $\mathring{\text{B}}$ 44'18	
minimum elong	10166 Dec 10 00:28	25° $\mathring{\text{A}}$ 03'32	0°38'14	opposition	10173 Jun 23 08:14	9° $\mathring{\text{B}}$ 21'17	0°50'06
max. Earth dist.	10166 Dec 09 20:48	25° $\mathring{\text{A}}$ 03'12	31.12604 AU	min. Earth dist.	10173 Jun 23 15:06	9° $\mathring{\text{B}}$ 20'48	29.18348 AU
morning rise	10166 Dec 26 04:19	25° $\mathring{\text{A}}$ 39'12		direct	10173 Sep 10 17:33	7° $\mathring{\text{B}}$ 56'40	
retrograde	10167 Mar 24 18:07	27° $\mathring{\text{A}}$ 33'23		evening set	10173 Dec 09 12:29	9° $\mathring{\text{B}}$ 51'28	
opposition	10167 Jun 10 19:07	26° $\mathring{\text{A}}$ 10'05	0°41'14				
min. Earth dist.	10167 Jun 10 22:40	26° $\mathring{\text{A}}$ 09'50	29.13014 AU	conjunction	10173 Dec 25 16:15	10° $\mathring{\text{B}}$ 27'03	0°47'28
direct	10167 Aug 28 21:12	24° $\mathring{\text{A}}$ 45'35		minimum elong	10173 Dec 25 16:15	10° $\mathring{\text{B}}$ 27'03	0°47'55
evening set	10167 Nov 26 08:31	26° $\mathring{\text{A}}$ 40'14		max. Earth dist.	10173 Dec 25 08:41	10° $\mathring{\text{B}}$ 26'21	31.18891 AU
				morning rise	10174 Jan 10 18:27	11° $\mathring{\text{B}}$ 02'32	

retrograde	10174 Apr 08 21:13	12° 3 55'57		minimum elong	10181 Jan 10 05:46	25° 3 49'31	0°54'10
opposition	10174 Jun 25 18:14	11° 3 33'02	0°51'20	max. Earth dist.	10181 Jan 09 16:40	25° 3 48'18	31.24556 AU
min. Earth dist.	10174 Jun 26 00:48	11° 3 32'35	29.19468 AU	morning rise	10181 Jan 26 05:51	26° 3 24'46	
direct	10174 Sep 13 05:49	10° 3 08'27		retrograde	10181 Apr 24 02:18	28° 3 17'36	
evening set	10174 Dec 12 01:11	12° 3 03'20		opposition	10181 Jul 10 17:48	26° 3 54'59	0°57'45
				min. Earth dist.	10181 Jul 11 04:53	26° 3 54'13	29.24830 AU
conjunction	10174 Dec 28 04:38	12° 3 38'54	0°48'35	direct	10181 Sep 28 16:22	25° 3 30'18	
minimum elong	10174 Dec 28 04:38	12° 3 38'54	0°49'02	evening set	10181 Dec 27 15:52	27° 3 25'18	
max. Earth dist.	10174 Dec 27 19:57	12° 3 38'06	31.19998 AU				
morning rise	10175 Jan 13 06:34	13° 3 14'21		conjunction	10182 Jan 12 17:40	28° 3 00'42	0°54'20
retrograde	10175 Apr 11 07:59	15° 3 07'43		minimum elong	10182 Jan 12 17:40	28° 3 00'42	0°54'45
opposition	10175 Jun 28 04:32	13° 3 44'54	0°52'29	max. Earth dist.	10182 Jan 12 04:26	27° 3 59'29	31.25038 AU
min. Earth dist.	10175 Jun 28 12:24	13° 3 44'21	29.20564 AU	morning rise	10182 Jan 28 17:19	28° 3 35'56	
direct	10175 Sep 15 15:13	12° 3 20'20			10182 Mar 15 20:14	0° ≈	
evening set	10175 Dec 14 13:35	14° 3 15'16		retrograde	10182 Apr 26 10:28	0° ≈ 28'39	
					10182 Jun 07 21:35	30° R 3	
conjunction	10175 Dec 30 16:56	14° 3 50'49	0°49'38	opposition	10182 Jul 13 03:58	29° 3 06'03	0°58'21
minimum elong	10175 Dec 30 16:56	14° 3 50'49	0°50'05	min. Earth dist.	10182 Jul 13 16:25	29° 3 05'11	29.25330 AU
max. Earth dist.	10175 Dec 30 08:17	14° 3 50'01	31.21050 AU	direct	10182 Oct 01 02:45	27° 3 41'18	
morning rise	10176 Jan 15 18:28	15° 3 26'15		evening set	10182 Dec 30 03:53	29° 3 36'18	
retrograde	10176 Apr 12 18:30	17° 3 19'33			10183 Jan 09 23:28	0° ≈	
opposition	10176 Jun 29 14:48	15° 3 56'48	0°53'34				
min. Earth dist.	10176 Jun 29 22:59	15° 3 56'14	29.21557 AU	conjunction	10183 Jan 15 05:24	0° ≈ 11'40	0°54'51
direct	10176 Sep 17 03:10	14° 3 32'16		minimum elong	10183 Jan 15 05:24	0° ≈ 11'40	0°55'15
evening set	10176 Dec 16 02:16	16° 3 27'14		max. Earth dist.	10183 Jan 14 16:04	0° ≈ 10'26	31.25565 AU
				morning rise	10183 Jan 31 04:44	0° ≈ 46'51	
conjunction	10177 Jan 01 05:14	17° 3 02'46	0°50'36	retrograde	10183 Apr 28 19:35	2° ≈ 39'29	
minimum elong	10177 Jan 01 05:14	17° 3 02'46	0°51'03	opposition	10183 Jul 15 14:07	1° ≈ 16'54	0°58'52
max. Earth dist.	10176 Dec 31 18:43	17° 3 01'47	31.21983 AU	min. Earth dist.	10183 Jul 16 01:51	1° ≈ 16'05	29.25888 AU
morning rise	10177 Jan 17 06:36	17° 3 38'10			10183 Sep 11 09:43	30° R 3	
retrograde	10177 Apr 15 06:47	19° 3 31'24		direct	10183 Oct 03 14:55	29° 3 52'07	
opposition	10177 Jul 02 00:58	18° 3 08'42	0°54'34		10183 Oct 25 13:08	0° ≈	
min. Earth dist.	10177 Jul 02 10:01	18° 3 08'04	29.22436 AU	evening set	10184 Jan 01 15:42	1° ≈ 47'06	
direct	10177 Sep 19 14:36	16° 3 44'09					
evening set	10177 Dec 18 14:46	18° 3 39'10		conjunction	10184 Jan 17 16:52	2° ≈ 22'27	0°55'17
				minimum elong	10184 Jan 17 16:52	2° ≈ 22'27	0°55'42
conjunction	10178 Jan 03 17:41	19° 3 14'40	0°51'30	max. Earth dist.	10184 Jan 17 02:56	2° ≈ 21'09	31.26166 AU
minimum elong	10178 Jan 03 17:41	19° 3 14'40	0°51'57	morning rise	10184 Feb 02 15:53	2° ≈ 57'36	
max. Earth dist.	10178 Jan 03 07:25	19° 3 13'43	31.22788 AU	retrograde	10184 Apr 30 05:21	4° ≈ 50'10	
morning rise	10178 Jan 19 18:35	19° 3 50'01		opposition	10184 Jul 17 00:21	3° ≈ 27'36	0°59'17
retrograde	10178 Apr 17 17:18	21° 3 43'10		min. Earth dist.	10184 Jul 17 12:44	3° ≈ 26'44	29.26555 AU
opposition	10178 Jul 04 11:18	20° 3 20'31	0°55'29	direct	10184 Oct 04 23:53	2° ≈ 02'48	
min. Earth dist.	10178 Jul 04 21:27	20° 3 19'49	29.23171 AU	evening set	10185 Jan 03 03:31	3° ≈ 57'48	
direct	10178 Sep 22 04:03	18° 3 55'57					
evening set	10178 Dec 21 03:16	20° 3 50'59		conjunction	10185 Jan 19 04:31	4° ≈ 33'07	0°55'39
				minimum elong	10185 Jan 19 04:31	4° ≈ 33'07	0°56'03
conjunction	10179 Jan 06 05:45	21° 3 26'27	0°52'19	max. Earth dist.	10185 Jan 18 15:12	4° ≈ 31'53	31.26889 AU
minimum elong	10179 Jan 06 05:45	21° 3 26'27	0°52'46	morning rise	10185 Feb 04 03:07	5° ≈ 08'15	
max. Earth dist.	10179 Jan 05 17:39	21° 3 25'20	31.23465 AU	retrograde	10185 May 02 14:45	7° ≈ 00'45	
morning rise	10179 Jan 22 06:28	22° 3 01'47		opposition	10185 Jul 19 10:25	5° ≈ 38'14	0°59'37
retrograde	10179 Apr 20 04:46	23° 3 54'50		min. Earth dist.	10185 Jul 19 22:40	5° ≈ 37'23	29.27318 AU
opposition	10179 Jul 06 21:28	22° 3 32'13	0°56'19	direct	10185 Oct 07 11:36	4° ≈ 13'28	
min. Earth dist.	10179 Jul 07 07:36	22° 3 31'30	29.23797 AU	evening set	10186 Jan 05 15:30	6° ≈ 08'29	
direct	10179 Sep 24 15:41	21° 3 07'36					
evening set	10179 Dec 23 15:32	23° 3 02'38		conjunction	10186 Jan 21 16:03	6° ≈ 43'47	0°55'56
				minimum elong	10186 Jan 21 16:03	6° ≈ 43'47	0°56'19
conjunction	10180 Jan 08 17:54	23° 3 38'05	0°53'04	max. Earth dist.	10186 Jan 21 01:30	6° ≈ 42'26	31.27698 AU
minimum elong	10180 Jan 08 17:54	23° 3 38'05	0°53'31	morning rise	10186 Feb 06 14:25	7° ≈ 18'53	
max. Earth dist.	10180 Jan 08 06:01	23° 3 36'59	31.24038 AU	retrograde	10186 May 05 02:12	9° ≈ 11'21	
morning rise	10180 Jan 24 18:09	24° 3 13'23		opposition	10186 Jul 21 20:38	7° ≈ 48'54	0°59'53
retrograde	10180 Apr 21 14:31	26° 3 06'20		min. Earth dist.	10186 Jul 22 09:06	7° ≈ 48'02	29.28161 AU
opposition	10180 Jul 08 07:44	24° 3 43'43	0°57'05	direct	10186 Oct 09 22:02	6° ≈ 24'09	
min. Earth dist.	10180 Jul 08 19:17	24° 3 42'54	29.24335 AU	evening set	10187 Jan 08 03:11	8° ≈ 19'13	
direct	10180 Sep 26 04:00	23° 3 19'04					
evening set	10180 Dec 25 03:43	25° 3 14'05		conjunction	10187 Jan 24 03:34	8° ≈ 54'30	0°56'07
				minimum elong	10187 Jan 24 03:34	8° ≈ 54'30	0°56'30
conjunction	10181 Jan 10 05:46	25° 3 49'31	0°53'44	max. Earth dist.	10187 Jan 23 13:54	8° ≈ 53'14	31.28546 AU

morning rise	10187 Feb 09 01:24	9° \approx 29'34	direct	10193 Oct 25 05:29	21° \approx 39'58	
retrograde	10187 May 07 12:06	11° \approx 22'01	evening set	10194 Jan 23 12:59	23° \approx 35'10	
opposition	10187 Jul 24 06:58	9° \approx 59'38 1°00'03				
min. Earth dist.	10187 Jul 24 20:14	9° \approx 58'43 29.28998 AU	conjunction	10194 Feb 08 11:06	24° \approx 10'17 0°55'14	
direct	10187 Oct 12 10:11	8° \approx 34'56	minimum elong	10194 Feb 08 11:07	24° \approx 10'17 0°55'33	
evening set	10188 Jan 10 15:04	10° \approx 30'03	max. Earth dist.	10194 Feb 07 18:05	24° \approx 08'42 31.31974 AU	
			morning rise	10194 Feb 24 06:30	24° \approx 45'11	
conjunction	10188 Jan 26 14:58	11° \approx 05'17 0°56'14	retrograde	10194 May 22 10:56	26° \approx 37'23	
minimum elong	10188 Jan 26 14:58	11° \approx 05'17 0°56'37	opposition	10194 Aug 08 07:53	25° \approx 15'13 0°58'48	
max. Earth dist.	10188 Jan 25 23:52	11° \approx 03'54 31.29368 AU	min. Earth dist.	10194 Aug 08 23:51	25° \approx 14'07 29.32086 AU	
morning rise	10188 Feb 11 12:38	11° \approx 40'21	direct	10194 Oct 27 17:34	23° \approx 50'33	
retrograde	10188 May 09 00:01	13° \approx 32'46	evening set	10195 Jan 26 00:17	25° \approx 45'43	
opposition	10188 Jul 25 17:10	12° \approx 10'27 1°00'07				
min. Earth dist.	10188 Jul 26 06:11	12° \approx 09'33 29.29793 AU	conjunction	10195 Feb 10 21:53	26° \approx 20'48 0°54'48	
direct	10188 Oct 13 21:08	10° \approx 45'47	minimum elong	10195 Feb 10 21:54	26° \approx 20'48 0°55'05	
evening set	10189 Jan 12 02:48	12° \approx 40'56	max. Earth dist.	10195 Feb 10 03:49	26° \approx 19'08 31.32126 AU	
max. Earth dist.	10189 Jan 27 11:45	13° \approx 14'48 31.30104 AU	morning rise	10195 Feb 26 17:03	26° \approx 55'41	
			retrograde	10195 May 24 21:40	28° \approx 47'51	
conjunction	10189 Jan 28 02:32	13° \approx 16'10 0°56'16	opposition	10195 Aug 10 18:24	27° \approx 25'41 0°58'17	
minimum elong	10189 Jan 28 02:33	13° \approx 16'10 0°56'38	min. Earth dist.	10195 Aug 11 10:14	27° \approx 24'35 29.32262 AU	
morning rise	10189 Feb 12 23:42	13° \approx 51'11	direct	10195 Oct 30 03:59	26° \approx 00'59	
	10189 Mar 20 16:33	15° \approx	evening set	10196 Jan 28 11:23	27° \approx 56'09	
retrograde	10189 May 11 10:13	15° \approx 43'35				
	10189 Jul 03 21:05	15° \approx	conjunction	10196 Feb 13 08:50	28° \approx 31'13 0°54'17	
opposition	10189 Jul 28 03:40	14° \approx 21'19 1°00'07	minimum elong	10196 Feb 13 08:50	28° \approx 31'13 0°54'34	
min. Earth dist.	10189 Jul 28 18:06	14° \approx 20'19 29.30470 AU	max. Earth dist.	10196 Feb 12 15:59	28° \approx 29'39 31.32323 AU	
direct	10189 Oct 16 09:17	12° \approx 56'41	morning rise	10196 Feb 29 03:29	29° \approx 06'04	
evening set	10190 Jan 14 14:41	14° \approx 51'52		10196 Mar 27 00:44	0° \approx	
	10190 Jan 18 08:30	15° \approx	retrograde	10196 May 26 06:51	0° \approx 58'13	
				10196 Jul 28 11:55	30° \approx	
conjunction	10190 Jan 30 13:59	15° \approx 27'04 0°56'14	opposition	10196 Aug 12 04:52	29° \approx 36'03 0°57'41	
minimum elong	10190 Jan 30 13:59	15° \approx 27'04 0°56'34	min. Earth dist.	10196 Aug 12 21:09	29° \approx 34'55 29.32496 AU	
max. Earth dist.	10190 Jan 29 21:57	15° \approx 25'35 31.30722 AU	direct	10196 Oct 31 15:33	28° \approx 11'22	
morning rise	10190 Feb 15 10:52	16° \approx 02'04		10197 Jan 26 21:45	0° \approx	
retrograde	10190 May 13 22:10	17° \approx 54'25	evening set	10197 Jan 29 22:36	0° \approx 06'32	
opposition	10190 Jul 30 13:59	16° \approx 32'13 1°00'01				
min. Earth dist.	10190 Jul 31 03:59	16° \approx 31'15 29.31018 AU	conjunction	10197 Feb 14 19:34	0° \approx 41'34 0°53'41	
direct	10190 Oct 18 21:44	15° \approx 07'35	minimum elong	10197 Feb 14 19:34	0° \approx 41'34 0°53'56	
evening set	10191 Jan 17 02:26	17° \approx 02'47	max. Earth dist.	10197 Feb 14 01:48	0° \approx 39'55 31.32609 AU	
max. Earth dist.	10191 Feb 01 09:06	17° \approx 36'28 31.31196 AU	morning rise	10197 Mar 02 14:03	1° \approx 16'24	
			retrograde	10197 May 28 18:26	3° \approx 08'33	
conjunction	10191 Feb 02 01:26	17° \approx 37'58 0°56'06	opposition	10197 Aug 14 15:23	1° \approx 46'23 0°57'01	
minimum elong	10191 Feb 02 01:27	17° \approx 37'58 0°56'26	min. Earth dist.	10197 Aug 15 06:42	1° \approx 45'20 29.32827 AU	
morning rise	10191 Feb 17 21:53	18° \approx 12'57	direct	10197 Nov 03 02:10	0° \approx 21'44	
retrograde	10191 May 16 07:04	20° \approx 05'16	evening set	10198 Feb 01 09:40	2° \approx 16'55	
opposition	10191 Aug 02 00:35	18° \approx 43'05 0°59'50				
min. Earth dist.	10191 Aug 02 16:02	18° \approx 42'01 29.31436 AU	conjunction	10198 Feb 17 06:24	2° \approx 51'56 0°53'01	
direct	10191 Oct 21 08:12	17° \approx 18'28	minimum elong	10198 Feb 17 06:24	2° \approx 51'56 0°53'16	
evening set	10192 Jan 19 13:56	19° \approx 13'40	max. Earth dist.	10198 Feb 16 13:34	2° \approx 50'22 31.32975 AU	
			morning rise	10198 Mar 05 00:22	3° \approx 26'44	
conjunction	10192 Feb 04 12:39	19° \approx 48'50 0°55'53	retrograde	10198 May 31 04:49	5° \approx 18'54	
minimum elong	10192 Feb 04 12:39	19° \approx 48'50 0°56'13	opposition	10198 Aug 17 02:03	3° \approx 56'47 0°56'15	
max. Earth dist.	10192 Feb 03 20:04	19° \approx 47'18 31.31557 AU	min. Earth dist.	10198 Aug 17 18:14	3° \approx 55'40 29.33225 AU	
morning rise	10192 Feb 20 08:47	20° \approx 23'47	direct	10198 Nov 05 14:39	2° \approx 32'10	
retrograde	10192 May 17 16:19	22° \approx 16'04	evening set	10199 Feb 03 20:47	4° \approx 27'22	
opposition	10192 Aug 03 11:00	20° \approx 53'54 0°59'35				
min. Earth dist.	10192 Aug 04 02:05	20° \approx 52'52 29.31728 AU	conjunction	10199 Feb 19 17:05	5° \approx 02'22 0°52'16	
direct	10192 Oct 22 20:31	19° \approx 29'17	minimum elong	10199 Feb 19 17:05	5° \approx 02'22 0°52'29	
evening set	10193 Jan 21 01:34	21° \approx 24'28	max. Earth dist.	10199 Feb 18 23:46	5° \approx 00'46 31.33406 AU	
			morning rise	10199 Mar 07 10:50	5° \approx 37'09	
conjunction	10193 Feb 05 23:54	21° \approx 59'37 0°55'36	retrograde	10199 Jun 02 17:00	7° \approx 29'20	
minimum elong	10193 Feb 05 23:54	21° \approx 59'37 0°55'55	opposition	10199 Aug 19 12:39	6° \approx 07'16 0°55'24	
max. Earth dist.	10193 Feb 05 06:20	21° \approx 57'59 31.31797 AU	min. Earth dist.	10199 Aug 20 03:51	6° \approx 06'13 29.33655 AU	
morning rise	10193 Feb 21 19:44	22° \approx 34'33	direct	10199 Nov 08 03:13	4° \approx 42'42	
retrograde	10193 May 20 02:05	24° \approx 26'47	evening set	10200 Feb 06 07:45	6° \approx 37'56	
opposition	10193 Aug 05 21:23	23° \approx 04'37 0°59'14	max. Earth dist.	10200 Feb 21 10:34	7° \approx 11'19 31.33820 AU	
min. Earth dist.	10193 Aug 06 13:22	23° \approx 03'31 29.31935 AU				

conjunction	10200 Feb 22 03:45	7° ✕ 12'55	0°51'26	evening set	10207 Feb 22 12:31	21° ✕ 52'06	
minimum elong	10200 Feb 22 03:45	7° ✕ 12'55	0°51'39				
morning rise	10200 Mar 09 21:07	7° ✕ 47'41		conjunction	10207 Mar 10 06:12	22° ✕ 26'57	0°43'40
retrograde	10200 Jun 05 02:17	9° ✕ 39'53		minimum elong	10207 Mar 10 06:12	22° ✕ 26'57	0°43'45
opposition	10200 Aug 21 23:29	8° ✕ 17'51	0°54'29	max. Earth dist.	10207 Mar 09 12:12	22° ✕ 25'17	31.33483 AU
min. Earth dist.	10200 Aug 22 15:52	8° ✕ 16'44	29.34048 AU	morning rise	10207 Mar 25 21:14	23° ✕ 01'35	
direct	10200 Nov 10 13:43	6° ✕ 53'20		retrograde	10207 Jun 21 00:03	24° ✕ 53'52	
evening set	10201 Feb 08 18:52	8° ✕ 48'35		opposition	10207 Sep 07 04:16	23° ✕ 31'44	0°45'56
				min. Earth dist.	10207 Sep 07 21:47	23° ✕ 30'32	29.33313 AU
conjunction	10201 Feb 24 14:33	9° ✕ 23'33	0°50'32	direct	10207 Nov 26 21:18	22° ✕ 07'13	
minimum elong	10201 Feb 24 14:33	9° ✕ 23'33	0°50'43	evening set	10208 Feb 24 23:04	24° ✕ 02'19	
max. Earth dist.	10201 Feb 23 21:26	9° ✕ 21'57	31.34174 AU				
morning rise	10201 Mar 12 07:34	9° ✕ 58'18		conjunction	10208 Mar 11 16:21	24° ✕ 37'08	0°42'18
retrograde	10201 Jun 07 12:03	11° ✕ 50'30		minimum elong	10208 Mar 11 16:22	24° ✕ 37'08	0°42'23
opposition	10201 Aug 24 10:10	10° ✕ 28'31	0°53'28	max. Earth dist.	10208 Mar 10 22:14	24° ✕ 35'27	31.33085 AU
min. Earth dist.	10201 Aug 25 02:05	10° ✕ 27'25	29.34338 AU	morning rise	10208 Mar 27 07:14	25° ✕ 11'46	
direct	10201 Nov 13 02:14	9° ✕ 04'02		retrograde	10208 Jun 22 11:37	27° ✕ 04'03	
evening set	10202 Feb 11 06:05	10° ✕ 59'17		opposition	10208 Sep 08 15:16	25° ✕ 41'54	0°44'26
max. Earth dist.	10202 Feb 26 07:19	11° ✕ 32'34	31.34401 AU	min. Earth dist.	10208 Sep 09 07:27	25° ✕ 40'47	29.32929 AU
				direct	10208 Nov 28 10:06	24° ✕ 17'22	
conjunction	10202 Feb 27 01:19	11° ✕ 34'14	0°49'33	evening set	10209 Feb 26 09:39	26° ✕ 12'27	
minimum elong	10202 Feb 27 01:19	11° ✕ 34'14	0°49'44	max. Earth dist.	10209 Mar 13 08:54	26° ✕ 45'37	31.32728 AU
morning rise	10202 Mar 14 18:02	12° ✕ 08'58					
retrograde	10202 Jun 09 22:35	14° ✕ 01'11		conjunction	10209 Mar 14 02:37	26° ✕ 47'16	0°40'53
opposition	10202 Aug 26 21:11	12° ✕ 39'13	0°52'24	minimum elong	10209 Mar 14 02:37	26° ✕ 47'16	0°40'56
min. Earth dist.	10202 Aug 27 13:47	12° ✕ 38'05	29.34508 AU	morning rise	10209 Mar 29 17:07	27° ✕ 21'53	
direct	10202 Nov 15 11:56	11° ✕ 14'46		retrograde	10209 Jun 24 21:02	29° ✕ 14'12	
evening set	10203 Feb 13 16:58	13° ✕ 10'00		opposition	10209 Sep 11 02:23	27° ✕ 52'02	0°42'53
				min. Earth dist.	10209 Sep 11 19:09	27° ✕ 50'53	29.32623 AU
conjunction	10203 Mar 01 11:59	13° ✕ 44'55	0°48'30	direct	10209 Nov 30 20:47	26° ✕ 27'32	
minimum elong	10203 Mar 01 11:59	13° ✕ 44'55	0°48'40	evening set	10210 Feb 28 20:10	28° ✕ 22'36	
max. Earth dist.	10203 Feb 28 18:36	13° ✕ 43'19	31.34493 AU				
morning rise	10203 Mar 17 04:15	14° ✕ 19'38		conjunction	10210 Mar 16 12:51	28° ✕ 57'24	0°39'24
retrograde	10203 Jun 12 07:12	16° ✕ 11'53		minimum elong	10210 Mar 16 12:51	28° ✕ 57'24	0°39'27
opposition	10203 Aug 29 08:12	14° ✕ 49'54	0°51'14	max. Earth dist.	10210 Mar 15 19:58	28° ✕ 55'50	31.32475 AU
min. Earth dist.	10203 Aug 30 00:54	14° ✕ 48'46	29.34515 AU	morning rise	10210 Apr 01 03:03	29° ✕ 32'01	
direct	10203 Nov 18 00:21	13° ✕ 25'28			10210 Apr 14 08:52	0° ∇	
evening set	10204 Feb 16 04:05	15° ✕ 20'41		retrograde	10210 Jun 27 06:55	1° ∇ 24'23	
				opposition	10210 Sep 13 13:33	0° ∇ 02'13	0°41'16
conjunction	10204 Mar 02 22:36	15° ✕ 55'35	0°47'24	min. Earth dist.	10210 Sep 14 05:08	0° ∇ 01'09	29.32400 AU
minimum elong	10204 Mar 02 22:36	15° ✕ 55'35	0°47'33		10210 Sep 14 22:01	30° ℞ ✕	
max. Earth dist.	10204 Mar 02 03:53	15° ✕ 53'51	31.34429 AU	direct	10210 Dec 03 09:30	28° ✕ 37'46	
morning rise	10204 Mar 18 14:42	16° ✕ 30'17			10211 Feb 15 14:11	0° ∇	
retrograde	10204 Jun 13 17:39	18° ✕ 22'32		evening set	10211 Mar 03 06:31	0° ∇ 32'51	
opposition	10204 Aug 30 19:04	17° ✕ 00'32	0°50'01				
min. Earth dist.	10204 Aug 31 11:50	16° ✕ 59'23	29.34382 AU	conjunction	10211 Mar 18 22:48	1° ∇ 07'39	0°37'51
direct	10204 Nov 19 10:19	15° ✕ 36'05		minimum elong	10211 Mar 18 22:48	1° ∇ 07'39	0°37'52
evening set	10205 Feb 17 14:58	17° ✕ 31'16		max. Earth dist.	10211 Mar 18 05:41	1° ∇ 06'03	31.32290 AU
				morning rise	10211 Apr 03 12:49	1° ∇ 42'15	
conjunction	10205 Mar 05 09:21	18° ✕ 06'10	0°46'13	retrograde	10211 Jun 29 17:46	3° ∇ 34'42	
minimum elong	10205 Mar 05 09:21	18° ✕ 06'10	0°46'21	opposition	10211 Sep 16 00:48	2° ∇ 12'33	0°39'35
max. Earth dist.	10205 Mar 04 15:30	18° ✕ 04'30	31.34219 AU	min. Earth dist.	10211 Sep 16 16:26	2° ∇ 11'29	29.32246 AU
morning rise	10205 Mar 21 00:59	18° ✕ 40'51		direct	10211 Dec 05 19:10	0° ∇ 48'10	
retrograde	10205 Jun 16 02:39	20° ✕ 33'06		evening set	10212 Mar 04 16:52	2° ∇ 43'15	
opposition	10205 Sep 02 06:10	19° ✕ 11'04	0°48'43				
min. Earth dist.	10205 Sep 02 23:43	19° ✕ 09'52	29.34099 AU	conjunction	10212 Mar 20 08:59	3° ∇ 18'03	0°36'15
direct	10205 Nov 21 21:46	17° ✕ 46'36		minimum elong	10212 Mar 20 08:59	3° ∇ 18'03	0°36'17
evening set	10206 Feb 20 01:52	19° ✕ 41'45		max. Earth dist.	10212 Mar 19 17:07	3° ∇ 16'34	31.32148 AU
				morning rise	10212 Apr 04 22:38	3° ∇ 52'39	
conjunction	10206 Mar 07 19:45	20° ✕ 16'37	0°44'58	retrograde	10212 Jul 01 02:32	5° ∇ 45'11	
minimum elong	10206 Mar 07 19:45	20° ✕ 16'37	0°45'06	opposition	10212 Sep 17 11:59	4° ∇ 23'03	0°37'51
max. Earth dist.	10206 Mar 07 00:54	20° ✕ 14'52	31.33888 AU	min. Earth dist.	10212 Sep 18 03:23	4° ∇ 22'00	29.32089 AU
morning rise	10206 Mar 23 11:14	20° ✕ 51'17		direct	10212 Dec 07 07:14	2° ∇ 58'44	
retrograde	10206 Jun 18 14:00	22° ✕ 43'33		evening set	10213 Mar 07 03:27	4° ∇ 53'50	
opposition	10206 Sep 04 17:08	21° ✕ 21'28	0°47'21				
min. Earth dist.	10206 Sep 05 09:51	21° ✕ 20'20	29.33724 AU	conjunction	10213 Mar 22 19:05	5° ∇ 28'37	0°34'36
direct	10206 Nov 24 08:55	19° ✕ 56'58		minimum elong	10213 Mar 22 19:05	5° ∇ 28'37	0°34'36

max. Earth dist.	10213 Mar 22 02:20	5° Υ 27'03	31.31979 AU	conjunction	10220 Apr 06 17:39	20° Υ 44'25	0°21'50
morning rise	10213 Apr 07 08:37	6° Υ 03'13		minimum elong	10220 Apr 06 17:39	20° Υ 44'25	0°21'43
retrograde	10213 Jul 03 13:18	7° Υ 55'50		max. Earth dist.	10220 Apr 06 02:23	20° Υ 42'59	31.27852 AU
opposition	10213 Sep 19 23:22	6° Υ 33'44	0°36'04	morning rise	10220 Apr 22 05:33	21° Υ 18'58	
min. Earth dist.	10213 Sep 20 14:22	6° Υ 32'42	29.31895 AU	retrograde	10220 Jul 18 16:53	23° Υ 12'02	
direct	10213 Dec 09 16:39	5° Υ 09'27		opposition	10220 Oct 05 08:50	21° Υ 49'36	0°22'15
evening set	10214 Mar 09 13:47	7° Υ 04'34		min. Earth dist.	10220 Oct 05 22:50	21° Υ 48'39	29.27451 AU
				direct	10220 Dec 25 02:57	20° Υ 25'21	
conjunction	10214 Mar 25 05:15	7° Υ 39'21	0°32'54	evening set	10221 Mar 24 14:06	22° Υ 20'14	
minimum elong	10214 Mar 25 05:16	7° Υ 39'21	0°32'53				
max. Earth dist.	10214 Mar 24 13:46	7° Υ 37'54	31.31736 AU	conjunction	10221 Apr 09 03:37	22° Υ 54'56	0°19'52
morning rise	10214 Apr 09 18:20	8° Υ 13'57		minimum elong	10221 Apr 09 03:37	22° Υ 54'56	0°19'43
retrograde	10214 Jul 05 22:38	10° Υ 06'39		max. Earth dist.	10221 Apr 08 13:56	22° Υ 53'40	31.27033 AU
opposition	10214 Sep 22 10:59	8° Υ 44'33	0°34'13	morning rise	10221 Apr 24 15:10	23° Υ 29'30	
min. Earth dist.	10214 Sep 23 02:31	8° Υ 43'30	29.31600 AU	retrograde	10221 Jul 21 01:15	25° Υ 22'36	
direct	10214 Dec 12 03:08	7° Υ 20'20		opposition	10221 Oct 07 20:39	24° Υ 00'08	0°20'08
evening set	10215 Mar 12 00:21	9° Υ 15'27		min. Earth dist.	10221 Oct 08 09:54	23° Υ 59'13	29.26667 AU
				direct	10221 Dec 27 15:36	22° Υ 35'52	
conjunction	10215 Mar 27 15:21	9° Υ 50'12	0°31'10	evening set	10222 Mar 27 00:12	24° Υ 30'43	
minimum elong	10215 Mar 27 15:22	9° Υ 50'12	0°31'07				
max. Earth dist.	10215 Mar 26 23:04	9° Υ 48'41	31.31394 AU	conjunction	10222 Apr 11 13:16	25° Υ 05'24	0°17'52
morning rise	10215 Apr 12 04:21	10° Υ 24'48		minimum elong	10222 Apr 11 13:16	25° Υ 05'24	0°17'43
retrograde	10215 Jul 08 10:30	12° Υ 17'35		max. Earth dist.	10222 Apr 10 23:16	25° Υ 04'06	31.26306 AU
opposition	10215 Sep 24 22:27	10° Υ 55'29	0°32'20	morning rise	10222 Apr 27 00:47	25° Υ 39'58	
min. Earth dist.	10215 Sep 25 13:02	10° Υ 54'29	29.31197 AU	retrograde	10222 Jul 23 11:46	27° Υ 33'09	
direct	10215 Dec 14 13:47	9° Υ 31'16		opposition	10222 Oct 10 08:28	26° Υ 10'38	0°17'59
evening set	10216 Mar 13 10:43	11° Υ 26'23		min. Earth dist.	10222 Oct 10 20:38	26° Υ 09'49	29.25999 AU
max. Earth dist.	10216 Mar 28 09:56	11° Υ 59'41	31.30915 AU	direct	10222 Dec 30 01:47	24° Υ 46'24	
				evening set	10223 Mar 29 10:11	26° Υ 41'14	
conjunction	10216 Mar 29 01:34	12° Υ 01'08	0°29'22				
minimum elong	10216 Mar 29 01:34	12° Υ 01'08	0°29'19	conjunction	10223 Apr 13 23:10	27° Υ 15'55	0°15'51
morning rise	10216 Apr 13 14:12	12° Υ 35'43		minimum elong	10223 Apr 13 23:10	27° Υ 15'55	0°15'40
retrograde	10216 Jul 09 21:16	14° Υ 28'35		behind sun begin	10223 Apr 13 21:33	27° Υ 15'46	
opposition	10216 Sep 26 10:10	13° Υ 06'27	0°30'23	behind sun end	10223 Apr 14 00:47	27° Υ 16'04	
min. Earth dist.	10216 Sep 27 01:41	13° Υ 05'23	29.30647 AU	max. Earth dist.	10223 Apr 13 10:57	27° Υ 14'47	31.25686 AU
direct	10216 Dec 16 01:59	11° Υ 42'15		morning rise	10223 Apr 29 10:22	27° Υ 50'29	
evening set	10217 Mar 15 21:13	13° Υ 37'20		retrograde	10223 Jul 25 21:09	29° Υ 43'46	
				opposition	10223 Oct 12 20:18	28° Υ 21'14	0°15'49
conjunction	10217 Mar 31 11:42	14° Υ 12'05	0°27'32	min. Earth dist.	10223 Oct 13 08:30	28° Υ 20'24	29.25420 AU
minimum elong	10217 Mar 31 11:42	14° Υ 12'05	0°27'27	direct	10224 Jan 01 12:27	26° Υ 57'02	
max. Earth dist.	10217 Mar 30 19:47	14° Υ 10'36	31.30301 AU	evening set	10224 Mar 30 20:16	28° Υ 51'51	
morning rise	10217 Apr 16 00:11	14° Υ 46'40					
retrograde	10217 Jul 12 09:07	16° Υ 39'35		conjunction	10224 Apr 15 08:55	29° Υ 26'32	0°13'48
opposition	10217 Sep 28 21:44	15° Υ 17'23	0°28'25	minimum elong	10224 Apr 15 08:55	29° Υ 26'32	0°13'37
min. Earth dist.	10217 Sep 29 12:08	15° Υ 16'24	29.29955 AU	behind sun begin	10224 Apr 15 05:20	29° Υ 26'13	
direct	10217 Dec 18 14:31	13° Υ 53'11		behind sun end	10224 Apr 15 12:30	29° Υ 26'51	
evening set	10218 Mar 18 07:38	15° Υ 48'15		max. Earth dist.	10224 Apr 14 20:31	29° Υ 25'23	31.25152 AU
				morning rise	10224 Apr 30 20:07	0° \mathcal{B} 01'07	
conjunction	10218 Apr 02 21:51	16° Υ 22'59	0°25'40		10224 Apr 30 08:00	0° \mathcal{B}	
minimum elong	10218 Apr 02 21:51	16° Υ 22'59	0°25'35	retrograde	10224 Jul 27 08:55	1° \mathcal{B} 54'30	
max. Earth dist.	10218 Apr 02 06:00	16° Υ 21'30	31.29548 AU	opposition	10224 Oct 14 08:09	0° \mathcal{B} 31'58	0°13'36
morning rise	10218 Apr 18 10:04	16° Υ 57'33		min. Earth dist.	10224 Oct 14 18:52	0° \mathcal{B} 31'14	29.24902 AU
retrograde	10218 Jul 14 19:20	18° Υ 50'32			10224 Nov 03 09:30	30° \mathcal{R} Υ	
opposition	10218 Oct 01 09:33	17° Υ 28'16	0°26'24	direct	10225 Jan 02 23:02	29° Υ 07'49	
min. Earth dist.	10218 Oct 02 00:42	17° Υ 27'14	29.29159 AU		10225 Mar 01 17:16	0° \mathcal{B}	
direct	10218 Dec 21 01:43	16° Υ 04'03		evening set	10225 Apr 02 06:20	1° \mathcal{B} 02'39	
evening set	10219 Mar 20 17:45	17° Υ 59'03					
				conjunction	10225 Apr 17 18:48	1° \mathcal{B} 37'20	0°11'44
conjunction	10219 Apr 05 07:46	18° Υ 33'46	0°23'46	minimum elong	10225 Apr 17 18:49	1° \mathcal{B} 37'20	0°11'31
minimum elong	10219 Apr 05 07:46	18° Υ 33'46	0°23'39	behind sun begin	10225 Apr 17 14:09	1° \mathcal{B} 36'55	
max. Earth dist.	10219 Apr 04 16:48	18° Υ 32'22	31.28719 AU	behind sun end	10225 Apr 17 23:29	1° \mathcal{B} 37'45	
morning rise	10219 Apr 20 19:46	19° Υ 08'20		max. Earth dist.	10225 Apr 17 07:30	1° \mathcal{B} 36'17	31.24635 AU
retrograde	10219 Jul 17 05:49	21° Υ 01'20		morning rise	10225 May 03 05:43	2° \mathcal{B} 11'54	
opposition	10219 Oct 03 21:13	19° Υ 39'00	0°24'21	retrograde	10225 Jul 29 19:45	4° \mathcal{B} 05'26	
min. Earth dist.	10219 Oct 04 11:20	19° Υ 38'02	29.28296 AU	opposition	10225 Oct 16 20:15	2° \mathcal{B} 42'53	0°11'23
direct	10219 Dec 23 15:47	18° Υ 14'46		min. Earth dist.	10225 Oct 17 07:28	2° \mathcal{B} 42'07	29.24386 AU
evening set	10220 Mar 22 04:00	20° Υ 09'42		direct	10226 Jan 05 09:56	1° \mathcal{B} 18'49	

evening set	10226 Apr 04 16:29	3°8'13"39		behind sun begin	10231 May 01 00:16	14°8'45"08	
				behind sun end	10231 May 01 13:06	14°8'46"17	
conjunction	10226 Apr 20 04:42	3°8'48"19	0°09'39	max. Earth dist.	10231 Apr 30 20:48	14°8'44"48	31.20012 AU
minimum elong	10226 Apr 20 04:42	3°8'48"19	0°09'26		10231 May 07 14:28	15°8'	
behind sun begin	10226 Apr 19 23:18	3°8'47"50		morning rise	10231 May 16 17:01	15°8'20"20	
behind sun end	10226 Apr 20 10:05	3°8'48"48		retrograde	10231 Aug 12 16:05	17°8'14"33	
max. Earth dist.	10226 Apr 19 17:40	3°8'47"18	31.24115 AU	opposition	10231 Oct 30 22:02	15°8'51"48	-0°02'14
morning rise	10226 May 05 15:31	4°8'22"54		min. Earth dist.	10231 Oct 31 06:25	15°8'51"14	29.19456 AU
retrograde	10226 Aug 01 08:03	6°8'16"33			10231 Dec 04 02:51	15°8'8"	
opposition	10226 Oct 19 08:21	4°8'54"00	0°09'08	direct	10232 Jan 19 09:26	14°8'27"54	
min. Earth dist.	10226 Oct 19 18:06	4°8'53"21	29.23835 AU		10232 Mar 03 23:21	15°8'	
direct	10227 Jan 07 21:29	3°8'29"59		evening set	10232 Apr 17 05:35	16°8'22"38	
evening set	10227 Apr 07 02:35	5°8'24"50					
				conjunction	10232 May 02 16:45	16°8'57"20	-0°03'13
conjunction	10227 Apr 22 14:33	5°8'59"31	0°07'33	minimum elong	10232 May 02 16:45	16°8'57"20	0°03'32
minimum elong	10227 Apr 22 14:34	5°8'59"31	0°07'18	behind sun begin	10232 May 02 10:22	16°8'56"46	
behind sun begin	10227 Apr 22 08:39	5°8'58"59		behind sun end	10232 May 02 23:07	16°8'57"55	
behind sun end	10227 Apr 22 20:28	6°8'00"03		max. Earth dist.	10232 May 02 08:25	16°8'56"34	31.18881 AU
max. Earth dist.	10227 Apr 22 03:46	5°8'58"31	31.23524 AU	morning rise	10232 May 18 02:52	17°8'31"59	
morning rise	10227 May 08 01:16	6°8'34"07		retrograde	10232 Aug 14 01:52	19°8'26"16	
retrograde	10227 Aug 03 19:32	8°8'27"54		opposition	10232 Nov 01 10:33	18°8'03"27	-0°04'31
opposition	10227 Oct 21 20:40	7°8'05"20	0°06'52	min. Earth dist.	10232 Nov 01 19:02	18°8'02"53	29.18314 AU
min. Earth dist.	10227 Oct 22 07:03	7°8'04"38	29.23207 AU	direct	10233 Jan 20 21:07	16°8'39"33	
direct	10228 Jan 10 08:14	5°8'41"22		evening set	10233 Apr 19 15:42	18°8'34"14	
evening set	10228 Apr 08 12:48	7°8'36"13					
				conjunction	10233 May 05 02:33	19°8'08"55	-0°05'20
conjunction	10228 Apr 24 00:39	8°8'10"54	0°05'27	minimum elong	10233 May 05 02:32	19°8'08"55	0°05'41
minimum elong	10228 Apr 24 00:39	8°8'10"54	0°05'12	behind sun begin	10233 May 04 20:23	19°8'08"22	
behind sun begin	10228 Apr 23 18:25	8°8'10"20		behind sun end	10233 May 05 08:42	19°8'09"28	
behind sun end	10228 Apr 24 06:52	8°8'11"27		max. Earth dist.	10233 May 04 18:15	19°8'08"09	31.17757 AU
max. Earth dist.	10228 Apr 23 14:43	8°8'09"59	31.22842 AU	morning rise	10233 May 20 12:42	19°8'43"34	
morning rise	10228 May 09 11:08	8°8'45"30		retrograde	10233 Aug 16 13:10	21°8'37"58	
retrograde	10228 Aug 05 07:11	10°8'39"24		opposition	10233 Nov 03 22:58	20°8'15"04	-0°06'47
opposition	10228 Oct 23 08:47	9°8'16"49	0°04'36	min. Earth dist.	10233 Nov 04 05:43	20°8'14"37	29.17220 AU
min. Earth dist.	10228 Oct 23 18:16	9°8'16"11	29.22453 AU	direct	10234 Jan 23 08:22	18°8'51"09	
direct	10229 Jan 11 21:57	7°8'52"54		evening set	10234 Apr 22 01:45	20°8'45"49	
evening set	10229 Apr 10 23:10	9°8'47"45					
				conjunction	10234 May 07 12:30	21°8'20"30	-0°07'27
conjunction	10229 Apr 26 10:41	10°8'22"26	0°03'19	minimum elong	10234 May 07 12:30	21°8'20"30	0°07'47
minimum elong	10229 Apr 26 10:40	10°8'22"26	0°03'03	behind sun begin	10234 May 07 06:42	21°8'19"58	
behind sun begin	10229 Apr 26 04:16	10°8'21"51		behind sun end	10234 May 07 18:18	21°8'21"01	
behind sun end	10229 Apr 26 17:04	10°8'23"00		max. Earth dist.	10234 May 07 05:29	21°8'19"51	31.16697 AU
max. Earth dist.	10229 Apr 26 00:08	10°8'21"27	31.22023 AU	morning rise	10234 May 22 22:30	21°8'55"09	
morning rise	10229 May 11 21:10	10°8'57"02		retrograde	10234 Aug 18 23:45	23°8'49"40	
retrograde	10229 Aug 07 19:40	12°8'51"03		opposition	10234 Nov 06 11:35	22°8'26"43	-0°09'03
opposition	10229 Oct 25 21:15	11°8'28"26	0°02'19	min. Earth dist.	10234 Nov 06 18:25	22°8'26"15	29.16217 AU
min. Earth dist.	10229 Oct 26 06:46	11°8'27"48	29.21574 AU	direct	10235 Jan 25 18:54	21°8'02"48	
direct	10230 Jan 14 09:19	10°8'04"33		evening set	10235 Apr 24 11:43	22°8'57"26	
evening set	10230 Apr 13 09:15	11°8'59"22					
				conjunction	10235 May 09 22:20	23°8'32"08	-0°09'33
conjunction	10230 Apr 28 20:43	12°8'34"03	0°01'09	minimum elong	10235 May 09 22:20	23°8'32"08	0°09'55
minimum elong	10230 Apr 28 20:44	12°8'34"03	0°00'53	behind sun begin	10235 May 09 17:06	23°8'31"39	
behind sun begin	10230 Apr 28 14:19	12°8'33"29		behind sun end	10235 May 10 03:35	23°8'32"36	
behind sun end	10230 Apr 29 03:08	12°8'34"38		max. Earth dist.	10235 May 09 16:06	23°8'31"34	31.15753 AU
max. Earth dist.	10230 Apr 28 11:31	12°8'33"12	31.21075 AU	morning rise	10235 May 25 08:21	24°8'06"48	
morning rise	10230 May 14 06:58	13°8'08"40		retrograde	10235 Aug 21 11:47	26°8'01"26	
	10230 Jul 28 07:30	15°8'		opposition	10235 Nov 09 00:02	24°8'38"26	-0°11'18
retrograde	10230 Aug 10 04:59	15°8'02"48		min. Earth dist.	10235 Nov 09 04:58	24°8'38"06	29.15313 AU
	10230 Aug 23 05:00	15°8'8"		direct	10236 Jan 28 05:41	23°8'14"33	
opposition	10230 Oct 28 09:44	13°8'40"08	0°00'03	evening set	10236 Apr 25 21:51	25°8'09"11	
min. Earth dist.	10230 Oct 28 18:51	13°8'39"30	29.20555 AU				
desc. node	10230 Nov 04 00:01	13°8'29"24		conjunction	10236 May 11 08:17	25°8'43"52	-0°11'38
direct	10231 Jan 16 22:22	12°8'16"14		minimum elong	10236 May 11 08:17	25°8'43"52	0°12'00
evening set	10231 Apr 15 19:32	14°8'11"01		behind sun begin	10236 May 11 03:49	25°8'43"28	
				behind sun end	10236 May 11 12:45	25°8'44"17	
conjunction	10231 May 01 06:42	14°8'45"43	-0°01'04	max. Earth dist.	10236 May 11 02:32	25°8'43"21	31.14888 AU
minimum elong	10231 May 01 06:41	14°8'45"43	0°01'22	morning rise	10236 May 26 18:17	26°8'18"33	

retrograde	10236 Aug 22 23:50	28° 8 13'19		max. Earth dist.	10242 May 24 18:56	8° II 57'30	31.09601 AU
opposition	10236 Nov 10 12:36	26° 8 50'17	-0°13'32	morning rise	10242 Jun 09 07:25	9° II 32'31	
min. Earth dist.	10236 Nov 10 17:43	26° 8 49'56	29.14491 AU	retrograde	10242 Sep 05 23:53	11° II 28'02	
direct	10237 Jan 29 16:33	25° 8 26'27		opposition	10242 Nov 24 17:42	10° II 04'46	-0°26'28
evening set	10237 Apr 28 07:56	27° 8 21'05		min. Earth dist.	10242 Nov 24 18:56	10° II 04'41	29.09011 AU
				direct	10243 Feb 12 17:54	8° II 41'06	
conjunction	10237 May 13 18:21	27° 8 55'47	-0°13'43	evening set	10243 May 11 21:53	10° II 35'38	
minimum elong	10237 May 13 18:21	27° 8 55'47	0°14'06				
behind sun begin	10237 May 13 15:05	27° 8 55'29		conjunction	10243 May 27 07:47	11° II 10'23	-0°25'42
behind sun end	10237 May 13 21:37	27° 8 56'04		minimum elong	10243 May 27 07:47	11° II 10'23	0°26'09
max. Earth dist.	10237 May 13 14:05	27° 8 55'23	31.14096 AU	max. Earth dist.	10243 May 27 06:01	11° II 10'14	31.08374 AU
morning rise	10237 May 29 04:14	28° 8 30'28		morning rise	10243 Jun 11 17:48	11° II 45'11	
	10237 Jul 17 06:35	0° II		retrograde	10243 Sep 08 10:31	13° II 40'49	
retrograde	10237 Aug 25 12:33	0° II 25'22		opposition	10243 Nov 27 06:47	12° II 17'28	-0°28'30
	10237 Oct 05 00:19	30° 8		min. Earth dist.	10243 Nov 27 08:34	12° II 17'21	29.07732 AU
opposition	10237 Nov 13 01:16	29° 8 02'19	-0°15'45	direct	10244 Feb 15 05:03	10° II 53'47	
min. Earth dist.	10237 Nov 13 05:00	29° 8 02'03	29.13706 AU	evening set	10244 May 13 08:16	12° II 48'16	
direct	10238 Feb 01 05:55	27° 8 38'32					
evening set	10238 Apr 30 18:05	29° 8 33'09		conjunction	10244 May 28 18:08	13° II 23'01	-0°27'35
	10238 May 12 17:07	0° II		minimum elong	10244 May 28 18:08	13° II 23'01	0°28'01
				max. Earth dist.	10244 May 28 16:54	13° II 22'54	31.07063 AU
conjunction	10238 May 16 04:15	0° II 07'51	-0°15'47	morning rise	10244 Jun 13 04:14	13° II 57'50	
minimum elong	10238 May 16 04:14	0° II 07'51	0°16'09	retrograde	10244 Sep 09 22:31	15° II 53'33	
behind sun begin	10238 May 16 03:46	0° II 07'49		opposition	10244 Nov 28 19:38	14° II 30'07	-0°30'30
behind sun end	10238 May 16 04:43	0° II 07'54		min. Earth dist.	10244 Nov 28 19:47	14° II 30'06	29.06392 AU
max. Earth dist.	10238 May 15 23:47	0° II 07'27	31.13320 AU	direct	10245 Feb 16 16:37	13° II 06'23	
morning rise	10238 May 31 14:14	0° II 42'34		evening set	10245 May 15 18:40	15° II 00'50	
retrograde	10238 Aug 28 01:41	2° II 37'36					
opposition	10238 Nov 15 14:05	1° II 14'31	-0°17'57	conjunction	10245 May 31 04:26	15° II 35'36	-0°29'26
min. Earth dist.	10238 Nov 15 17:33	1° II 14'17	29.12935 AU	minimum elong	10245 May 31 04:26	15° II 35'36	0°29'53
	10239 Jan 10 17:43	30° 8		max. Earth dist.	10245 May 31 03:33	15° II 35'31	31.05719 AU
direct	10239 Feb 03 16:54	29° 8 50'47		morning rise	10245 Jun 15 14:39	16° II 10'25	
	10239 Feb 27 07:42	0° II		retrograde	10245 Sep 12 10:42	18° II 06'15	
evening set	10239 May 03 04:16	1° II 45'24		opposition	10245 Dec 01 08:46	16° II 42'43	-0°32'26
				min. Earth dist.	10245 Dec 01 09:05	16° II 42'41	29.05078 AU
conjunction	10239 May 18 14:30	2° II 20'07	-0°17'49	direct	10246 Feb 19 03:45	15° II 18'58	
minimum elong	10239 May 18 14:29	2° II 20'07	0°18'14	evening set	10246 May 18 04:49	17° II 13'22	
max. Earth dist.	10239 May 18 11:37	2° II 19'51	31.12526 AU				
morning rise	10239 Jun 03 00:20	2° II 54'50		conjunction	10246 Jun 02 14:41	17° II 48'09	-0°31'14
retrograde	10239 Aug 30 12:15	4° II 50'00		minimum elong	10246 Jun 02 14:41	17° II 48'09	0°31'40
opposition	10239 Nov 18 02:47	3° II 26'54	-0°20'08	max. Earth dist.	10246 Jun 02 15:30	17° II 48'13	31.04439 AU
min. Earth dist.	10239 Nov 18 05:46	3° II 26'42	29.12108 AU	morning rise	10246 Jun 18 00:53	18° II 22'59	
direct	10240 Feb 06 05:48	2° II 03'12		retrograde	10246 Sep 14 23:21	20° II 18'55	
evening set	10240 May 04 14:43	3° II 57'49		opposition	10246 Dec 03 21:44	18° II 55'18	-0°34'21
				min. Earth dist.	10246 Dec 03 20:26	18° II 55'23	29.03839 AU
conjunction	10240 May 20 00:42	4° II 32'32	-0°19'50	direct	10247 Feb 21 16:48	17° II 31'33	
minimum elong	10240 May 20 00:42	4° II 32'32	0°20'14	evening set	10247 May 20 15:15	19° II 25'57	
max. Earth dist.	10240 May 19 21:10	4° II 32'13	31.11665 AU				
morning rise	10240 Jun 04 10:42	5° II 07'17		conjunction	10247 Jun 05 00:59	20° II 00'44	-0°32'59
retrograde	10240 Sep 01 01:08	7° II 02'34		minimum elong	10247 Jun 05 00:59	20° II 00'44	0°33'27
opposition	10240 Nov 19 15:41	5° II 39'25	-0°22'16	max. Earth dist.	10247 Jun 05 01:43	20° II 00'48	31.03253 AU
min. Earth dist.	10240 Nov 19 17:55	5° II 39'16	29.11203 AU	morning rise	10247 Jun 20 11:26	20° II 35'35	
direct	10241 Feb 07 17:44	4° II 15'45		retrograde	10247 Sep 17 12:38	22° II 31'39	
evening set	10241 May 07 01:01	6° II 10'21		opposition	10247 Dec 06 10:36	21° II 07'58	-0°36'12
				min. Earth dist.	10247 Dec 06 08:51	21° II 08'05	29.02723 AU
conjunction	10241 May 22 11:02	6° II 45'05	-0°21'50	direct	10248 Feb 24 03:21	19° II 44'13	
minimum elong	10241 May 22 11:01	6° II 45'05	0°22'15	evening set	10248 May 22 01:33	21° II 38'37	
max. Earth dist.	10241 May 22 08:53	6° II 44'54	31.10692 AU				
morning rise	10241 Jun 06 20:52	7° II 19'51		conjunction	10248 Jun 06 11:28	22° II 13'25	-0°34'42
retrograde	10241 Sep 03 12:00	9° II 15'16		minimum elong	10248 Jun 06 11:28	22° II 13'25	0°35'08
opposition	10241 Nov 22 04:47	7° II 52'04	-0°24'23	max. Earth dist.	10248 Jun 06 14:05	22° II 13'40	31.02190 AU
min. Earth dist.	10241 Nov 22 07:17	7° II 51'54	29.10167 AU	morning rise	10248 Jun 21 21:51	22° II 48'18	
direct	10242 Feb 10 06:15	6° II 28'25		retrograde	10248 Sep 19 00:08	24° II 44'29	
evening set	10242 May 09 11:33	8° II 22'59		opposition	10248 Dec 07 23:38	23° II 20'46	-0°38'00
				min. Earth dist.	10248 Dec 07 20:51	23° II 20'58	29.01710 AU
conjunction	10242 May 24 21:24	8° II 57'44	-0°23'47	direct	10249 Feb 25 16:19	21° II 57'04	
minimum elong	10242 May 24 21:24	8° II 57'44	0°24'12	evening set	10249 May 24 11:56	23° II 51'28	

conjunction	10249 Jun 08 21:42	24°II26'17 -0°36'21	retrograde	10255 Oct 05 15:17	10°☾19'44	
minimum elong	10249 Jun 08 21:42	24°II26'17 0°36'50	opposition	10255 Dec 24 19:54	8°☾55'46 -0°48'55	
max. Earth dist.	10249 Jun 09 00:11	24°II26'31 31.01236 AU	min. Earth dist.	10255 Dec 24 12:59	8°☾56'14 28.95270 AU	
morning rise	10249 Jun 24 08:22	25°II01'11	direct	10256 Mar 13 02:26	7°☾32'13	
retrograde	10249 Sep 21 14:11	26°II57'30	evening set	10256 Jun 08 14:54	9°☾26'34	
opposition	10249 Dec 10 12:44	25°II33'46 -0°39'45				
min. Earth dist.	10249 Dec 10 08:48	25°II34'02 29.00805 AU	conjunction	10256 Jun 24 01:13	10°☾01'29 -0°46'20	
direct	10250 Feb 28 04:26	24°II10'06	minimum elong	10256 Jun 24 01:13	10°☾01'29 0°46'48	
evening set	10250 May 26 22:20	26°II04'30	max. Earth dist.	10256 Jun 24 07:24	10°☾02'05 30.94669 AU	
			morning rise	10256 Jul 09 13:04	10°☾36'34	
conjunction	10250 Jun 11 08:17	26°II39'20 -0°37'57	retrograde	10256 Oct 07 04:46	12°☾33'44	
minimum elong	10250 Jun 11 08:16	26°II39'20 0°38'25	opposition	10256 Dec 26 09:14	11°☾09'40 -0°50'12	
max. Earth dist.	10250 Jun 11 12:31	26°II39'44 31.00360 AU	min. Earth dist.	10256 Dec 26 02:19	11°☾10'08 28.94102 AU	
morning rise	10250 Jun 26 18:56	27°II14'16	direct	10257 Mar 15 12:54	9°☾46'04	
retrograde	10250 Sep 24 01:58	29°II10'44	evening set	10257 Jun 11 01:33	11°☾40'21	
opposition	10250 Dec 13 01:50	27°II46'58 -0°41'26				
min. Earth dist.	10250 Dec 12 21:51	27°II47'15 28.99959 AU	conjunction	10257 Jun 26 12:10	12°☾15'18 -0°47'30	
direct	10251 Mar 02 16:46	26°II23'22	minimum elong	10257 Jun 26 12:10	12°☾15'18 0°47'59	
evening set	10251 May 29 08:52	28°II17'46	max. Earth dist.	10257 Jun 26 20:02	12°☾16'03 30.93489 AU	
			morning rise	10257 Jul 12 00:05	12°☾50'24	
conjunction	10251 Jun 13 18:48	28°II52'37 -0°39'30	retrograde	10257 Oct 09 16:58	14°☾47'38	
minimum elong	10251 Jun 13 18:48	28°II52'37 0°39'59	opposition	10257 Dec 28 22:28	13°☾23'27 -0°51'25	
max. Earth dist.	10251 Jun 13 23:07	28°II53'02 30.99540 AU	min. Earth dist.	10257 Dec 28 14:43	13°☾23'59 28.92930 AU	
morning rise	10251 Jun 29 05:44	29°II27'35	direct	10258 Mar 18 02:41	11°☾59'49	
	10251 Jul 14 08:52	0°☾	evening set	10258 Jun 13 12:27	13°☾54'04	
retrograde	10251 Sep 26 14:20	1°☾24'11				
opposition	10251 Dec 15 14:55	0°☾00'25 -0°43'04	conjunction	10258 Jun 28 23:04	14°☾29'01 -0°48'36	
min. Earth dist.	10251 Dec 15 09:28	0°☾00'47 28.99142 AU	minimum elong	10258 Jun 28 23:04	14°☾29'01 0°49'04	
	10251 Dec 15 20:54	30°RII	max. Earth dist.	10258 Jun 29 06:39	14°☾29'44 30.92352 AU	
direct	10252 Mar 04 04:23	28°II36'50	morning rise	10258 Jul 14 11:22	15°☾04'08	
	10252 May 16 05:20	0°☾	retrograde	10258 Oct 12 07:41	17°☾01'25	
evening set	10252 May 30 19:30	0°☾31'15	opposition	10258 Dec 31 11:31	15°☾37'09 -0°52'33	
			min. Earth dist.	10258 Dec 31 02:49	15°☾37'45 28.91847 AU	
conjunction	10252 Jun 15 05:29	1°☾06'07 -0°41'00	direct	10259 Mar 20 14:53	14°☾13'28	
minimum elong	10252 Jun 15 05:29	1°☾06'07 0°41'28	evening set	10259 Jun 15 23:14	16°☾07'41	
max. Earth dist.	10252 Jun 15 10:40	1°☾06'37 30.98703 AU				
morning rise	10252 Jun 30 16:30	1°☾41'07	conjunction	10259 Jul 01 10:09	16°☾42'40 -0°49'38	
retrograde	10252 Sep 28 01:32	3°☾37'52	minimum elong	10259 Jul 01 10:09	16°☾42'40 0°50'06	
opposition	10252 Dec 17 04:10	2°☾14'04 -0°44'37	max. Earth dist.	10259 Jul 01 19:25	16°☾43'32 30.91312 AU	
min. Earth dist.	10252 Dec 16 23:12	2°☾14'24 28.98295 AU	morning rise	10259 Jul 16 22:34	17°☾17'48	
direct	10253 Mar 06 15:27	0°☾50'32	retrograde	10259 Oct 14 19:13	19°☾15'10	
evening set	10253 Jun 02 06:15	2°☾44'56	opposition	10260 Jan 03 00:41	17°☾50'49 -0°53'37	
			min. Earth dist.	10260 Jan 02 15:45	17°☾51'26 28.90870 AU	
conjunction	10253 Jun 17 16:20	3°☾19'50 -0°42'26	direct	10260 Mar 22 03:26	16°☾27'08	
minimum elong	10253 Jun 17 16:20	3°☾19'50 0°42'55	evening set	10260 Jun 17 10:06	18°☾21'19	
max. Earth dist.	10253 Jun 17 22:02	3°☾20'22 30.97836 AU				
morning rise	10253 Jul 03 03:29	3°☾54'50	conjunction	10260 Jul 02 21:05	18°☾56'18 -0°50'35	
retrograde	10253 Sep 30 14:33	5°☾51'43	minimum elong	10260 Jul 02 21:05	18°☾56'18 0°51'02	
opposition	10253 Dec 19 17:25	4°☾27'53 -0°46'07	max. Earth dist.	10260 Jul 03 06:36	18°☾57'12 30.90409 AU	
min. Earth dist.	10253 Dec 19 10:56	4°☾28'20 28.97388 AU	morning rise	10260 Jul 18 09:49	19°☾31'28	
direct	10254 Mar 09 02:54	3°☾04'22	retrograde	10260 Oct 16 08:38	21°☾28'55	
evening set	10254 Jun 04 17:03	4°☾58'46	opposition	10261 Jan 04 13:44	20°☾04'31 -0°54'35	
			min. Earth dist.	10261 Jan 04 03:10	20°☾05'15 28.90039 AU	
conjunction	10254 Jun 20 03:09	5°☾33'40 -0°43'48	direct	10261 Mar 24 15:42	18°☾40'50	
minimum elong	10254 Jun 20 03:09	5°☾33'40 0°44'15	evening set	10261 Jun 19 21:00	20°☾35'00	
max. Earth dist.	10254 Jun 20 08:49	5°☾34'13 30.96876 AU				
morning rise	10254 Jul 05 14:34	6°☾08'43	conjunction	10261 Jul 05 08:11	21°☾10'01 -0°51'28	
retrograde	10254 Oct 03 02:48	8°☾05'43	minimum elong	10261 Jul 05 08:11	21°☾10'01 0°51'56	
opposition	10254 Dec 22 06:49	6°☾41'49 -0°47'33	max. Earth dist.	10261 Jul 05 18:48	21°☾11'01 30.89640 AU	
min. Earth dist.	10254 Dec 22 00:57	6°☾42'13 28.96385 AU	morning rise	10261 Jul 20 21:10	21°☾45'12	
direct	10255 Mar 11 14:01	5°☾18'18	retrograde	10261 Oct 18 20:46	23°☾42'45	
evening set	10255 Jun 07 03:55	7°☾12'41	opposition	10262 Jan 07 03:00	22°☾18'19 -0°55'29	
			min. Earth dist.	10262 Jan 06 16:34	22°☾19'02 28.89343 AU	
conjunction	10255 Jun 22 14:16	7°☾47'36 -0°45'06	direct	10262 Mar 27 03:24	20°☾54'40	
minimum elong	10255 Jun 22 14:16	7°☾47'36 0°45'35	evening set	10262 Jun 22 07:52	22°☾48'49	
max. Earth dist.	10255 Jun 22 21:01	7°☾48'14 30.95820 AU				
morning rise	10255 Jul 08 01:46	8°☾22'39	conjunction	10262 Jul 07 19:20	23°☾23'51 -0°52'16	

minimum elong	10262 Jul 07 19:20	23° \mathring{O} 23'51	0°52'42	morning rise	10268 Aug 05 07:54	7° \mathring{O} 26'29	
max. Earth dist.	10262 Jul 08 06:47	23° \mathring{O} 24'56	30.89011 AU	retrograde	10268 Nov 03 17:53	9° \mathring{O} 24'43	
morning rise	10262 Jul 23 08:35	23° \mathring{O} 59'04		opposition	10269 Jan 22 23:32	8° \mathring{O} 00'09	-0°59'21
retrograde	10262 Oct 21 10:02	25° \mathring{O} 56'43		min. Earth dist.	10269 Jan 22 10:28	8° \mathring{O} 01'03	28.85294 AU
opposition	10263 Jan 09 16:04	24° \mathring{O} 32'16	-0°56'18	direct	10269 Apr 11 12:52	6° \mathring{O} 36'38	
min. Earth dist.	10263 Jan 09 03:54	24° \mathring{O} 33'07	28.88760 AU	evening set	10269 Jul 07 15:33	8° \mathring{O} 30'50	
direct	10263 Mar 29 15:23	23° \mathring{O} 08'39					
evening set	10263 Jun 24 19:01	25° \mathring{O} 02'49		conjunction	10269 Jul 23 04:42	9° \mathring{O} 06'01	-0°55'35
				minimum elong	10269 Jul 23 04:42	9° \mathring{O} 06'01	0°56'00
conjunction	10263 Jul 10 06:35	25° \mathring{O} 37'52	-0°52'59	max. Earth dist.	10269 Jul 23 18:16	9° \mathring{O} 07'18	30.84870 AU
minimum elong	10263 Jul 10 06:35	25° \mathring{O} 37'52	0°53'26	morning rise	10269 Aug 07 20:10	9° \mathring{O} 41'26	
max. Earth dist.	10263 Jul 10 18:13	25° \mathring{O} 38'58	30.88465 AU	retrograde	10269 Nov 06 08:40	11° \mathring{O} 39'41	
morning rise	10263 Jul 25 20:12	26° \mathring{O} 13'07		opposition	10270 Jan 25 12:38	10° \mathring{O} 15'04	-0°59'33
retrograde	10263 Oct 23 22:08	28° \mathring{O} 10'53		min. Earth dist.	10270 Jan 24 22:34	10° \mathring{O} 16'02	28.84511 AU
opposition	10264 Jan 12 05:13	26° \mathring{O} 46'26	-0°57'02	direct	10270 Apr 14 01:58	8° \mathring{O} 51'31	
min. Earth dist.	10264 Jan 11 17:32	26° \mathring{O} 47'14	28.88254 AU	evening set	10270 Jul 10 03:02	10° \mathring{O} 45'40	
direct	10264 Mar 31 01:47	25° \mathring{O} 22'51					
evening set	10264 Jun 26 06:09	27° \mathring{O} 17'02		conjunction	10270 Jul 25 16:31	11° \mathring{O} 20'53	-0°55'44
				minimum elong	10270 Jul 25 16:31	11° \mathring{O} 20'53	0°56'06
conjunction	10264 Jul 11 18:05	27° \mathring{O} 52'07	-0°53'37	max. Earth dist.	10270 Jul 26 06:49	11° \mathring{O} 22'14	30.84084 AU
minimum elong	10264 Jul 11 18:05	27° \mathring{O} 52'07	0°54'03	morning rise	10270 Aug 10 08:20	11° \mathring{O} 56'19	
max. Earth dist.	10264 Jul 12 07:05	27° \mathring{O} 53'21	30.87985 AU	retrograde	10270 Nov 08 21:46	13° \mathring{O} 54'37	
morning rise	10264 Jul 27 07:50	28° \mathring{O} 27'23		opposition	10271 Jan 28 01:48	12° \mathring{O} 29'54	-0°59'40
	10264 Sep 16 01:43	0° \mathring{O}		min. Earth dist.	10271 Jan 27 12:15	12° \mathring{O} 30'50	28.83752 AU
retrograde	10264 Oct 25 10:53	0° \mathring{O} 25'16		direct	10271 Apr 16 14:49	11° \mathring{O} 06'20	
	10264 Dec 05 01:22	30° \mathring{R} \mathring{O}		evening set	10271 Jul 12 14:36	13° \mathring{O} 00'27	
opposition	10265 Jan 13 18:25	29° \mathring{O} 00'49	-0°57'40				
min. Earth dist.	10265 Jan 13 05:31	29° \mathring{O} 01'43	28.87777 AU	conjunction	10271 Jul 28 04:24	13° \mathring{O} 35'41	-0°55'48
direct	10265 Apr 02 13:29	27° \mathring{O} 37'17		minimum elong	10271 Jul 28 04:24	13° \mathring{O} 35'41	0°56'10
evening set	10265 Jun 28 17:27	29° \mathring{O} 31'30		max. Earth dist.	10271 Jul 28 19:14	13° \mathring{O} 37'05	30.83365 AU
	10265 Jul 11 08:06	0° \mathring{O}		morning rise	10271 Aug 12 20:32	14° \mathring{O} 11'08	
					10271 Sep 05 06:58	15° \mathring{O}	
conjunction	10265 Jul 14 05:26	0° \mathring{O} 06'36	-0°54'11	retrograde	10271 Nov 11 10:57	16° \mathring{O} 09'28	
minimum elong	10265 Jul 14 05:26	0° \mathring{O} 06'36	0°54'37		10272 Jan 21 08:29	15° \mathring{R} \mathring{O}	
max. Earth dist.	10265 Jul 14 17:55	0° \mathring{O} 07'47	30.87504 AU	opposition	10272 Jan 30 14:38	14° \mathring{O} 44'42	-0°59'41
morning rise	10265 Jul 29 19:39	0° \mathring{O} 41'54		min. Earth dist.	10272 Jan 29 23:33	14° \mathring{O} 45'44	28.83079 AU
retrograde	10265 Oct 28 01:05	2° \mathring{O} 39'54		direct	10272 Apr 18 03:45	13° \mathring{O} 21'05	
opposition	10266 Jan 16 07:47	1° \mathring{O} 15'27	-0°58'14		10272 Jul 07 03:35	15° \mathring{O}	
min. Earth dist.	10266 Jan 15 19:08	1° \mathring{O} 16'19	28.87290 AU	evening set	10272 Jul 14 02:15	15° \mathring{O} 15'11	
	10266 Mar 14 01:11	30° \mathring{R} \mathring{O}					
direct	10266 Apr 04 23:17	29° \mathring{O} 51'57		conjunction	10272 Jul 29 16:15	15° \mathring{O} 50'26	-0°55'46
	10266 Apr 26 17:35	0° \mathring{O}		minimum elong	10272 Jul 29 16:15	15° \mathring{O} 50'26	0°56'07
evening set	10266 Jul 01 04:51	1° \mathring{O} 46'10		max. Earth dist.	10272 Jul 30 07:13	15° \mathring{O} 51'51	30.82744 AU
				morning rise	10272 Aug 14 08:48	16° \mathring{O} 25'56	
conjunction	10266 Jul 16 17:16	2° \mathring{O} 21'18	-0°54'40	retrograde	10272 Nov 12 22:29	18° \mathring{O} 24'17	
minimum elong	10266 Jul 16 17:16	2° \mathring{O} 21'18	0°55'04	opposition	10273 Feb 01 03:44	16° \mathring{O} 59'28	-0°59'36
max. Earth dist.	10266 Jul 17 07:01	2° \mathring{O} 22'36	30.86979 AU	min. Earth dist.	10273 Jan 31 13:03	17° \mathring{O} 00'29	28.82532 AU
morning rise	10266 Aug 01 07:38	2° \mathring{O} 56'38		direct	10273 Apr 20 14:39	15° \mathring{O} 35'51	
retrograde	10266 Oct 30 14:13	4° \mathring{O} 54'44		evening set	10273 Jul 16 13:40	17° \mathring{O} 29'55	
opposition	10267 Jan 18 20:56	3° \mathring{O} 30'16	-0°58'41				
min. Earth dist.	10267 Jan 18 07:54	3° \mathring{O} 31'10	28.86720 AU	conjunction	10273 Aug 01 04:10	18° \mathring{O} 05'11	-0°55'39
direct	10267 Apr 07 12:28	2° \mathring{O} 06'47		minimum elong	10273 Aug 01 04:10	18° \mathring{O} 05'11	0°56'01
evening set	10267 Jul 03 16:31	4° \mathring{O} 01'01		max. Earth dist.	10273 Aug 01 20:31	18° \mathring{O} 06'45	30.82267 AU
				morning rise	10273 Aug 16 20:58	18° \mathring{O} 40'42	
conjunction	10267 Jul 19 05:03	4° \mathring{O} 36'09	-0°55'03	retrograde	10273 Nov 15 11:00	20° \mathring{O} 39'06	
minimum elong	10267 Jul 19 05:03	4° \mathring{O} 36'09	0°55'29	opposition	10274 Feb 03 16:38	19° \mathring{O} 14'15	-0°59'26
max. Earth dist.	10267 Jul 19 17:49	4° \mathring{O} 37'22	30.86365 AU	min. Earth dist.	10274 Feb 03 00:37	19° \mathring{O} 15'22	28.82114 AU
morning rise	10267 Aug 03 19:53	5° \mathring{O} 11'31		direct	10274 Apr 23 02:43	17° \mathring{O} 50'38	
retrograde	10267 Nov 02 05:50	7° \mathring{O} 09'42		evening set	10274 Jul 19 01:29	19° \mathring{O} 44'41	
opposition	10268 Jan 21 10:14	5° \mathring{O} 45'11	-0°59'04				
min. Earth dist.	10268 Jan 20 20:53	5° \mathring{O} 46'06	28.86058 AU	conjunction	10274 Aug 03 16:09	20° \mathring{O} 19'59	-0°55'28
direct	10268 Apr 09 00:22	4° \mathring{O} 21'42		minimum elong	10274 Aug 03 16:09	20° \mathring{O} 19'59	0°55'47
evening set	10268 Jul 05 03:58	6° \mathring{O} 15'55		max. Earth dist.	10274 Aug 04 08:04	20° \mathring{O} 21'29	30.81916 AU
				morning rise	10274 Aug 19 09:30	20° \mathring{O} 55'31	
conjunction	10268 Jul 20 16:53	6° \mathring{O} 51'05	-0°55'22	retrograde	10274 Nov 18 00:22	22° \mathring{O} 53'58	
minimum elong	10268 Jul 20 16:53	6° \mathring{O} 51'05	0°55'46	opposition	10275 Feb 06 05:28	21° \mathring{O} 29'06	-0°59'11
max. Earth dist.	10268 Jul 21 06:45	6° \mathring{O} 52'24	30.85644 AU	min. Earth dist.	10275 Feb 05 13:39	21° \mathring{O} 30'12	28.81834 AU

direct	10275 Apr 25 12:35	20°05'29		minimum elong	10281 Aug 19 07:08	6°06'10	0°51'58
evening set	10275 Jul 21 13:10	21°05'32		max. Earth dist.	10281 Aug 19 23:56	6°07'45	30.80553 AU
				morning rise	10281 Sep 04 03:09	6°04'53	
conjunction	10275 Aug 06 04:21	22°03'45	-0°55'11	retrograde	10281 Dec 03 23:40	8°04'29	
minimum elong	10275 Aug 06 04:21	22°03'45	0°55'31	opposition	10282 Feb 21 23:42	7°05'31	-0°54'52
max. Earth dist.	10275 Aug 06 21:45	22°03'30	30.81688 AU	min. Earth dist.	10282 Feb 21 07:50	7°06'37	28.80397 AU
morning rise	10275 Aug 21 21:54	23°01'02		direct	10282 May 11 01:56	5°05'53	
retrograde	10275 Nov 20 12:23	25°08'54		evening set	10282 Aug 06 02:06	7°04'53	
opposition	10276 Feb 08 18:20	23°04'40	-0°58'50				
min. Earth dist.	10276 Feb 08 01:51	23°04'51	28.81649 AU	conjunction	10282 Aug 21 19:55	8°02'22	-0°50'52
direct	10276 Apr 27 01:12	22°02'02		minimum elong	10282 Aug 21 19:55	8°02'22	0°51'05
evening set	10276 Jul 23 01:00	24°01'43		max. Earth dist.	10282 Aug 22 13:28	8°02'30	30.80165 AU
				morning rise	10282 Sep 06 16:13	8°05'06	
conjunction	10276 Aug 07 16:22	24°04'50	-0°54'49	retrograde	10282 Dec 06 12:51	10°05'54	
minimum elong	10276 Aug 07 16:22	24°04'50	0°55'07	opposition	10283 Feb 24 12:08	9°03'39	-0°53'55
max. Earth dist.	10276 Aug 08 09:05	24°05'25	30.81551 AU	min. Earth dist.	10283 Feb 23 19:27	9°03'49	28.80007 AU
morning rise	10276 Aug 23 10:27	25°02'52		direct	10283 May 13 14:53	8°06'58	
retrograde	10276 Nov 22 03:07	27°02'57		evening set	10283 Aug 08 14:29	10°00'57	
opposition	10277 Feb 10 07:17	25°05'05	-0°58'24				
min. Earth dist.	10277 Feb 09 14:26	26°00'15	28.81545 AU	conjunction	10283 Aug 24 08:30	10°03'27	-0°49'56
direct	10277 Apr 29 11:42	24°03'53		minimum elong	10283 Aug 24 08:30	10°03'27	0°50'09
evening set	10277 Jul 25 12:56	26°02'35		max. Earth dist.	10283 Aug 25 01:16	10°03'02	30.79797 AU
				morning rise	10283 Sep 09 05:22	11°02'13	
conjunction	10277 Aug 10 04:47	27°04'56	-0°54'22	retrograde	10283 Dec 09 01:21	13°01'04	
minimum elong	10277 Aug 10 04:47	27°04'56	0°54'40	min. Earth dist.	10284 Feb 26 08:38	11°04'48	28.79682 AU
max. Earth dist.	10277 Aug 10 22:41	27°06'38	30.81457 AU	opposition	10284 Feb 27 00:46	11°04'54	-0°52'52
morning rise	10277 Aug 25 23:07	27°04'03		direct	10284 May 15 01:29	10°02'58	
retrograde	10277 Nov 24 15:45	29°03'08		evening set	10284 Aug 10 02:32	12°01'55	
opposition	10278 Feb 12 20:11	28°01'46	-0°57'52				
min. Earth dist.	10278 Feb 12 03:43	28°01'52	28.81453 AU	conjunction	10284 Aug 25 21:06	12°05'26	-0°48'56
direct	10278 May 01 23:23	26°05'43		minimum elong	10284 Aug 25 21:07	12°05'26	0°49'06
evening set	10278 Jul 28 01:05	28°04'48		max. Earth dist.	10284 Aug 26 15:13	12°05'09	30.79514 AU
				morning rise	10284 Sep 10 18:11	13°02'13	
conjunction	10278 Aug 12 17:14	29°02'01	-0°53'49	retrograde	10284 Dec 10 12:39	15°02'54	
minimum elong	10278 Aug 12 17:14	29°02'01	0°54'06	opposition	10285 Feb 28 13:16	14°00'38	-0°51'46
max. Earth dist.	10278 Aug 13 10:30	29°02'49	30.81360 AU	min. Earth dist.	10285 Feb 27 20:30	14°01'49	28.79452 AU
morning rise	10278 Aug 28 12:04	29°05'50		direct	10285 May 17 14:07	12°03'54	
	10278 Aug 30 09:25	0°00'		evening set	10285 Aug 12 14:54	14°03'50	
retrograde	10278 Nov 27 07:25	1°05'42					
opposition	10279 Feb 15 09:03	0°02'34	-0°57'15	conjunction	10285 Aug 28 09:43	15°06'22	-0°47'51
min. Earth dist.	10279 Feb 14 16:00	0°03'45	28.81326 AU	minimum elong	10285 Aug 28 09:43	15°06'22	0°48'02
	10279 Mar 05 11:23	30°08'00		max. Earth dist.	10285 Aug 29 02:59	15°08'00	30.79357 AU
direct	10279 May 04 12:15	29°06'01		morning rise	10285 Sep 13 07:21	15°04'21	
	10279 Jun 30 20:29	0°00'		retrograde	10285 Dec 13 02:27	17°04'41	
evening set	10279 Jul 30 13:21	1°00'06		min. Earth dist.	10286 Mar 02 08:36	16°06'45	28.79372 AU
				opposition	10286 Mar 03 01:36	16°05'34	-0°50'34
conjunction	10279 Aug 15 05:52	1°03'51	-0°53'12	direct	10286 May 20 00:05	14°05'48	
minimum elong	10279 Aug 15 05:52	1°03'51	0°53'28	evening set	10286 Aug 15 03:10	16°04'54	
max. Earth dist.	10279 Aug 15 23:20	1°03'10	30.81177 AU				
morning rise	10279 Aug 31 01:00	2°01'11		conjunction	10286 Aug 30 22:32	17°02'18	-0°46'42
retrograde	10279 Nov 29 20:46	4°09'49		minimum elong	10286 Aug 30 22:32	17°02'18	0°46'51
opposition	10280 Feb 17 21:59	2°04'45	-0°56'32	max. Earth dist.	10286 Aug 31 16:59	17°02'03	30.79341 AU
min. Earth dist.	10280 Feb 17 05:59	2°04'02	28.81098 AU	morning rise	10286 Sep 15 20:25	17°05'08	
direct	10280 May 06 00:56	1°02'22		retrograde	10286 Dec 15 14:25	19°05'53	
evening set	10280 Aug 01 01:37	3°01'52		opposition	10287 Mar 05 13:58	18°03'30	-0°49'18
				min. Earth dist.	10287 Mar 04 21:06	18°03'41	28.79425 AU
conjunction	10280 Aug 16 18:34	3°05'52	-0°52'30	direct	10287 May 22 11:24	17°06'44	
minimum elong	10280 Aug 16 18:34	3°05'52	0°52'45	evening set	10287 Aug 17 15:31	19°00'41	
max. Earth dist.	10280 Aug 17 11:50	3°05'30	30.80912 AU				
morning rise	10280 Sep 01 14:05	4°02'34		conjunction	10287 Sep 02 11:11	19°03'16	-0°45'29
retrograde	10280 Dec 01 10:58	6°02'51		minimum elong	10287 Sep 02 11:11	19°03'16	0°45'37
opposition	10281 Feb 19 10:49	5°00'16	-0°55'45	max. Earth dist.	10287 Sep 03 05:09	19°03'58	30.79476 AU
min. Earth dist.	10281 Feb 18 17:52	5°01'26	28.80780 AU	morning rise	10287 Sep 18 09:32	20°01'20	
direct	10281 May 08 14:13	3°03'40		retrograde	10287 Dec 18 05:17	22°01'36	
evening set	10281 Aug 03 13:52	5°03'43		min. Earth dist.	10288 Mar 06 08:32	20°04'44	28.79630 AU
				opposition	10288 Mar 07 02:12	20°04'53	-0°47'57
conjunction	10281 Aug 19 07:07	6°06'10	-0°51'44	direct	10288 May 23 23:50	19°02'45	

evening set	10288 Aug 19 03:56	21° <u>11</u> 15'43		max. Earth dist.	10294 Sep 18 23:01	5° <u>24</u> 45	30.81690 AU
				morning rise	10294 Oct 04 07:55	5° <u>25</u> 9'13	
conjunction	10288 Sep 04 00:01	21° <u>11</u> 51'20	-0°44'11	retrograde	10295 Jan 03 02:37	7° <u>25</u> 57'24	
minimum elong	10288 Sep 04 00:01	21° <u>11</u> 51'20	0°44'18	opposition	10295 Mar 23 15:25	6° <u>25</u> 32'23	-0°36'34
max. Earth dist.	10288 Sep 04 18:37	21° <u>11</u> 53'05	30.79741 AU	min. Earth dist.	10295 Mar 22 23:59	6° <u>25</u> 33'28	28.81803 AU
morning rise	10288 Sep 19 22:42	22° <u>11</u> 27'12		direct	10295 Jun 09 12:07	5° <u>25</u> 08'34	
retrograde	10288 Dec 19 18:10	24° <u>11</u> 25'41		evening set	10295 Sep 04 21:15	7° <u>25</u> 02'32	
opposition	10289 Mar 09 14:35	23° <u>11</u> 00'36	-0°46'31				
min. Earth dist.	10289 Mar 08 21:43	23° <u>11</u> 01'47	28.79954 AU	conjunction	10295 Sep 20 20:09	7° <u>25</u> 38'16	-0°33'22
direct	10289 May 26 11:41	21° <u>11</u> 36'52		minimum elong	10295 Sep 20 20:09	7° <u>25</u> 38'16	0°33'20
evening set	10289 Aug 21 16:21	23° <u>11</u> 30'52		max. Earth dist.	10295 Sep 21 13:00	7° <u>25</u> 39'51	30.81868 AU
				morning rise	10295 Oct 06 21:17	8° <u>25</u> 14'15	
conjunction	10289 Sep 06 12:54	24° <u>11</u> 06'30	-0°42'50	retrograde	10296 Jan 05 13:12	10° <u>25</u> 12'20	
minimum elong	10289 Sep 06 12:54	24° <u>11</u> 06'30	0°42'55	opposition	10296 Mar 25 03:19	8° <u>25</u> 47'18	-0°34'43
max. Earth dist.	10289 Sep 07 07:28	24° <u>11</u> 08'15	30.80122 AU	min. Earth dist.	10296 Mar 24 12:24	8° <u>25</u> 48'21	28.81994 AU
morning rise	10289 Sep 22 11:59	24° <u>11</u> 42'23		direct	10296 Jun 11 00:15	7° <u>25</u> 23'27	
retrograde	10289 Dec 22 08:50	26° <u>11</u> 40'52		evening set	10296 Sep 06 10:06	9° <u>25</u> 17'22	
min. Earth dist.	10290 Mar 11 08:59	25° <u>11</u> 17'04	28.80357 AU				
opposition	10290 Mar 12 02:45	25° <u>11</u> 15'50	-0°45'01	conjunction	10296 Sep 22 09:17	9° <u>25</u> 53'07	-0°31'36
direct	10290 May 29 00:18	23° <u>11</u> 52'07		minimum elong	10296 Sep 22 09:17	9° <u>25</u> 53'07	0°31'33
evening set	10290 Aug 24 05:07	25° <u>11</u> 46'09		max. Earth dist.	10296 Sep 23 01:13	9° <u>25</u> 54'36	30.82103 AU
				morning rise	10296 Oct 08 10:53	10° <u>25</u> 29'06	
conjunction	10290 Sep 09 01:57	26° <u>11</u> 21'48	-0°41'24	retrograde	10297 Jan 07 02:20	12° <u>25</u> 27'06	
minimum elong	10290 Sep 09 01:57	26° <u>11</u> 21'48	0°41'27	opposition	10297 Mar 27 15:04	11° <u>25</u> 02'02	-0°32'48
max. Earth dist.	10290 Sep 09 19:59	26° <u>11</u> 23'30	30.80533 AU	min. Earth dist.	10297 Mar 26 23:42	11° <u>25</u> 03'07	28.82274 AU
morning rise	10290 Sep 25 01:27	26° <u>11</u> 57'43		direct	10297 Jun 13 12:00	9° <u>25</u> 38'07	
retrograde	10290 Dec 24 22:38	28° <u>11</u> 56'10		evening set	10297 Sep 08 22:52	11° <u>25</u> 32'01	
opposition	10291 Mar 14 14:56	27° <u>11</u> 31'10	-0°43'28				
min. Earth dist.	10291 Mar 13 22:29	27° <u>11</u> 32'19	28.80771 AU	conjunction	10297 Sep 24 22:29	12° <u>25</u> 07'47	-0°29'47
direct	10291 May 31 12:07	26° <u>11</u> 07'29		minimum elong	10297 Sep 24 22:29	12° <u>25</u> 07'47	0°29'43
evening set	10291 Aug 26 17:54	28° <u>11</u> 01'31		max. Earth dist.	10297 Sep 25 14:53	12° <u>25</u> 09'19	30.82425 AU
				morning rise	10297 Oct 11 00:21	12° <u>25</u> 43'47	
conjunction	10291 Sep 11 15:14	28° <u>11</u> 37'13	-0°39'54	retrograde	10298 Jan 09 13:50	14° <u>25</u> 41'41	
minimum elong	10291 Sep 11 15:14	28° <u>11</u> 37'13	0°39'57	opposition	10298 Mar 30 02:51	13° <u>25</u> 16'37	-0°30'50
max. Earth dist.	10291 Sep 12 09:35	28° <u>11</u> 38'56	30.80933 AU	min. Earth dist.	10298 Mar 29 12:28	13° <u>25</u> 17'38	28.82655 AU
morning rise	10291 Sep 27 14:58	29° <u>11</u> 13'08		direct	10298 Jun 15 23:18	11° <u>25</u> 52'39	
	10291 Oct 20 03:50	0° <u>25</u>		evening set	10298 Sep 11 11:44	13° <u>25</u> 46'33	
retrograde	10291 Dec 27 13:09	1° <u>25</u> 11'33					
	10292 Mar 08 02:58	30° <u>25</u>		conjunction	10298 Sep 27 11:43	14° <u>25</u> 22'20	-0°27'56
min. Earth dist.	10292 Mar 15 10:10	29° <u>25</u> 47'46	28.81133 AU	minimum elong	10298 Sep 27 11:43	14° <u>25</u> 22'20	0°27'51
opposition	10292 Mar 16 03:07	29° <u>25</u> 46'35	-0°41'50	max. Earth dist.	10298 Sep 28 03:47	14° <u>25</u> 23'50	30.82879 AU
direct	10292 Jun 02 01:44	28° <u>25</u> 22'54		morning rise	10298 Oct 13 13:53	14° <u>25</u> 58'20	
	10292 Aug 20 11:00	0° <u>25</u>		retrograde	10299 Jan 12 03:41	16° <u>25</u> 56'08	
evening set	10292 Aug 28 06:43	0° <u>25</u> 16'56		opposition	10299 Apr 01 14:19	15° <u>25</u> 31'05	-0°28'50
				min. Earth dist.	10299 Mar 31 23:01	15° <u>25</u> 32'10	28.83174 AU
conjunction	10292 Sep 13 04:18	0° <u>25</u> 52'38	-0°38'21	direct	10299 Jun 18 11:50	14° <u>25</u> 07'06	
minimum elong	10292 Sep 13 04:18	0° <u>25</u> 52'38	0°38'23	evening set	10299 Sep 14 00:38	16° <u>25</u> 01'01	
max. Earth dist.	10292 Sep 13 21:21	0° <u>25</u> 54'15	30.81255 AU				
morning rise	10292 Sep 29 04:32	1° <u>25</u> 28'35		conjunction	10299 Sep 30 00:54	16° <u>25</u> 36'48	-0°26'03
retrograde	10292 Dec 29 01:26	3° <u>25</u> 26'57		minimum elong	10299 Sep 30 00:54	16° <u>25</u> 36'48	0°25'57
opposition	10293 Mar 18 15:26	2° <u>25</u> 01'59	-0°40'08	max. Earth dist.	10299 Sep 30 16:39	16° <u>25</u> 38'16	30.83466 AU
min. Earth dist.	10293 Mar 17 23:35	2° <u>25</u> 03'06	28.81419 AU	morning rise	10299 Oct 16 03:23	17° <u>25</u> 12'49	
direct	10293 Jun 04 12:45	0° <u>25</u> 38'16		retrograde	10300 Jan 14 16:46	19° <u>25</u> 10'33	
evening set	10293 Aug 30 19:33	2° <u>25</u> 32'18		min. Earth dist.	10300 Apr 03 11:44	17° <u>25</u> 46'32	28.83842 AU
				opposition	10300 Apr 04 02:03	17° <u>25</u> 45'31	-0°26'47
conjunction	10293 Sep 15 17:43	3° <u>25</u> 08'01	-0°36'44	direct	10300 Jun 20 23:35	16° <u>25</u> 21'33	
minimum elong	10293 Sep 15 17:43	3° <u>25</u> 08'01	0°36'46	evening set	10300 Sep 16 13:19	18° <u>25</u> 15'28	
max. Earth dist.	10293 Sep 16 11:21	3° <u>25</u> 09'40	30.81501 AU				
morning rise	10293 Oct 01 18:10	3° <u>25</u> 43'58		conjunction	10300 Oct 02 14:04	18° <u>25</u> 51'16	-0°24'06
retrograde	10293 Dec 31 13:09	5° <u>25</u> 42'15		minimum elong	10300 Oct 02 14:04	18° <u>25</u> 51'16	0°24'00
min. Earth dist.	10294 Mar 20 11:38	4° <u>25</u> 18'23	28.81622 AU	max. Earth dist.	10300 Oct 03 06:20	18° <u>25</u> 52'47	30.84214 AU
opposition	10294 Mar 21 03:25	4° <u>25</u> 17'16	-0°38'23	morning rise	10300 Oct 18 16:46	19° <u>25</u> 27'17	
direct	10294 Jun 07 01:41	2° <u>25</u> 53'31		retrograde	10301 Jan 17 06:37	21° <u>25</u> 24'57	
evening set	10294 Sep 02 08:31	4° <u>25</u> 47'30		opposition	10301 Apr 06 13:35	19° <u>25</u> 59'59	-0°24'41
				min. Earth dist.	10301 Apr 05 22:31	20° <u>25</u> 01'03	28.84645 AU
conjunction	10294 Sep 18 06:56	5° <u>25</u> 23'14	-0°35'04	direct	10301 Jun 23 13:03	18° <u>25</u> 36'02	
minimum elong	10294 Sep 18 06:56	5° <u>25</u> 23'14	0°35'04	evening set	10301 Sep 19 02:24	20° <u>25</u> 29'58	

conjunction	10301 Oct 05 03:20	21° <u>♏</u> 05'48	-0°22'08	min. Earth dist.	10307 Apr 19 23:43	3° <u>♏</u> 29'16	28.89639 AU
minimum elong	10301 Oct 05 03:20	21° <u>♏</u> 05'48	0°22'00	direct	10307 Jul 07 08:21	2° <u>♏</u> 04'35	
max. Earth dist.	10301 Oct 05 18:36	21° <u>♏</u> 07'13	30.85077 AU	evening set	10307 Oct 03 09:44	3° <u>♏</u> 58'40	
morning rise	10301 Oct 21 06:27	21° <u>♏</u> 41'50					
retrograde	10302 Jan 19 19:23	23° <u>♏</u> 39'26		conjunction	10307 Oct 19 12:31	4° <u>♏</u> 34'33	-0°09'43
min. Earth dist.	10302 Apr 08 11:05	22° <u>♏</u> 15'32	28.85559 AU	minimum elong	10307 Oct 19 12:31	4° <u>♏</u> 34'33	0°09'28
opposition	10302 Apr 09 01:05	22° <u>♏</u> 14'32	-0°22'33	behind sun begin	10307 Oct 19 07:05	4° <u>♏</u> 34'04	
direct	10302 Jun 25 23:32	20° <u>♏</u> 50'37		behind sun end	10307 Oct 19 17:58	4° <u>♏</u> 35'02	
evening set	10302 Sep 21 15:26	22° <u>♏</u> 44'36		max. Earth dist.	10307 Oct 20 00:15	4° <u>♏</u> 35'38	30.89945 AU
				morning rise	10307 Nov 04 16:51	5° <u>♏</u> 10'36	
conjunction	10302 Oct 07 16:51	23° <u>♏</u> 20'27	-0°20'07	retrograde	10308 Feb 02 21:19	7° <u>♏</u> 07'40	
minimum elong	10302 Oct 07 16:51	23° <u>♏</u> 20'27	0°19'58	opposition	10308 Apr 21 21:32	5° <u>♏</u> 43'06	-0°09'10
max. Earth dist.	10302 Oct 08 08:46	23° <u>♏</u> 21'56	30.86019 AU	min. Earth dist.	10308 Apr 21 10:27	5° <u>♏</u> 43'53	28.90254 AU
morning rise	10302 Oct 23 20:03	23° <u>♏</u> 56'29		direct	10308 Jul 08 20:57	4° <u>♏</u> 19'06	
retrograde	10303 Jan 22 08:04	25° <u>♏</u> 54'01		evening set	10308 Oct 04 22:53	6° <u>♏</u> 13'12	
opposition	10303 Apr 11 12:34	24° <u>♏</u> 29'14	-0°20'23				
min. Earth dist.	10303 Apr 10 22:39	24° <u>♏</u> 30'13	28.86503 AU	conjunction	10308 Oct 21 01:54	6° <u>♏</u> 49'05	-0°07'35
direct	10303 Jun 28 12:13	23° <u>♏</u> 05'21		minimum elong	10308 Oct 21 01:53	6° <u>♏</u> 49'05	0°07'20
evening set	10303 Sep 24 04:37	24° <u>♏</u> 59'23		behind sun begin	10308 Oct 20 19:53	6° <u>♏</u> 48'33	
				behind sun end	10308 Oct 21 07:53	6° <u>♏</u> 49'37	
conjunction	10303 Oct 10 06:09	25° <u>♏</u> 35'14	-0°18'05	max. Earth dist.	10308 Oct 21 12:57	6° <u>♏</u> 50'06	30.90553 AU
minimum elong	10303 Oct 10 06:09	25° <u>♏</u> 35'14	0°17'54	morning rise	10308 Nov 06 06:25	7° <u>♏</u> 25'08	
max. Earth dist.	10303 Oct 10 20:23	25° <u>♏</u> 36'34	30.86961 AU	retrograde	10309 Feb 04 09:20	9° <u>♏</u> 22'04	
morning rise	10303 Oct 26 09:44	26° <u>♏</u> 11'17		opposition	10309 Apr 24 08:48	7° <u>♏</u> 57'29	-0°06'53
retrograde	10304 Jan 24 21:53	28° <u>♏</u> 08'46		min. Earth dist.	10309 Apr 23 23:10	7° <u>♏</u> 58'10	28.90876 AU
min. Earth dist.	10304 Apr 12 10:49	26° <u>♏</u> 44'59	28.87429 AU	direct	10309 Jul 11 09:12	6° <u>♏</u> 33'27	
opposition	10304 Apr 13 00:08	26° <u>♏</u> 44'03	-0°18'11	evening set	10309 Oct 07 12:03	8° <u>♏</u> 27'32	
direct	10304 Jun 29 22:26	25° <u>♏</u> 20'11					
evening set	10304 Sep 25 17:50	27° <u>♏</u> 14'15		conjunction	10309 Oct 23 15:24	9° <u>♏</u> 03'25	-0°05'27
				minimum elong	10309 Oct 23 15:25	9° <u>♏</u> 03'25	0°05'11
conjunction	10304 Oct 11 19:48	27° <u>♏</u> 50'07	-0°16'01	behind sun begin	10309 Oct 23 09:03	9° <u>♏</u> 02'51	
minimum elong	10304 Oct 11 19:49	27° <u>♏</u> 50'07	0°15'50	behind sun end	10309 Oct 23 21:46	9° <u>♏</u> 03'59	
behind sun begin	10304 Oct 11 19:28	27° <u>♏</u> 50'05		max. Earth dist.	10309 Oct 24 02:26	9° <u>♏</u> 04'26	30.91200 AU
behind sun end	10304 Oct 11 20:10	27° <u>♏</u> 50'09		morning rise	10309 Nov 08 20:02	9° <u>♏</u> 39'27	
max. Earth dist.	10304 Oct 12 10:20	27° <u>♏</u> 51'28	30.87841 AU	retrograde	10310 Feb 06 22:03	11° <u>♏</u> 36'16	
morning rise	10304 Oct 27 23:27	28° <u>♏</u> 26'10		opposition	10310 Apr 26 19:40	10° <u>♏</u> 11'42	-0°04'35
	10304 Dec 19 09:19	0° <u>♏</u>		min. Earth dist.	10310 Apr 26 09:37	10° <u>♏</u> 12'24	28.91545 AU
retrograde	10305 Jan 26 08:35	0° <u>♏</u> 23'35		direct	10310 Jul 13 22:55	8° <u>♏</u> 47'36	
	10305 Mar 05 23:24	30° <u>♏</u> ♏		evening set	10310 Oct 10 01:20	10° <u>♏</u> 41'41	
opposition	10305 Apr 15 11:36	28° <u>♏</u> 58'55	-0°15'57				
min. Earth dist.	10305 Apr 14 23:17	28° <u>♏</u> 59'47	28.88260 AU	conjunction	10310 Oct 26 04:47	11° <u>♏</u> 17'35	-0°03'19
direct	10305 Jul 02 10:21	27° <u>♏</u> 35'04		minimum elong	10310 Oct 26 04:46	11° <u>♏</u> 17'35	0°03'02
evening set	10305 Sep 28 07:11	29° <u>♏</u> 29'08		behind sun begin	10310 Oct 25 22:13	11° <u>♏</u> 16'59	
	10305 Oct 12 03:53	0° <u>♏</u>		behind sun end	10310 Oct 26 11:18	11° <u>♏</u> 18'10	
conjunction	10305 Oct 14 09:23	0° <u>♏</u> 05'01	-0°13'56	max. Earth dist.	10310 Oct 26 14:37	11° <u>♏</u> 18'29	30.91906 AU
minimum elong	10305 Oct 14 09:23	0° <u>♏</u> 05'01	0°13'43	morning rise	10310 Nov 11 09:37	11° <u>♏</u> 53'36	
behind sun begin	10305 Oct 14 05:58	0° <u>♏</u> 04'43		retrograde	10311 Feb 09 10:29	13° <u>♏</u> 50'16	
behind sun end	10305 Oct 14 12:47	0° <u>♏</u> 05'19		opposition	10311 Apr 29 06:44	12° <u>♏</u> 25'43	-0°02'17
max. Earth dist.	10305 Oct 14 22:11	0° <u>♏</u> 06'12	30.88632 AU	min. Earth dist.	10311 Apr 28 21:44	12° <u>♏</u> 26'21	28.92309 AU
morning rise	10305 Oct 30 13:23	0° <u>♏</u> 41'05		direct	10311 Jul 16 09:45	11° <u>♏</u> 01'36	
retrograde	10306 Jan 28 21:21	2° <u>♏</u> 38'23		evening set	10311 Oct 12 14:15	12° <u>♏</u> 55'40	
opposition	10306 Apr 17 23:02	1° <u>♏</u> 13'46	-0°13'42	conjunction	10311 Oct 28 18:02	13° <u>♏</u> 31'34	-0°01'07
min. Earth dist.	10306 Apr 17 10:50	1° <u>♏</u> 14'37	28.88995 AU	minimum elong	10311 Oct 28 18:03	13° <u>♏</u> 31'34	0°00'49
	10306 Jun 10 07:42	30° <u>♏</u> ♏		behind sun begin	10311 Oct 28 11:29	13° <u>♏</u> 30'59	
direct	10306 Jul 04 21:45	29° <u>♏</u> 49'52		behind sun end	10311 Oct 29 00:36	13° <u>♏</u> 32'09	
	10306 Jul 29 06:56	0° <u>♏</u>		max. Earth dist.	10311 Oct 29 04:37	13° <u>♏</u> 32'32	30.92722 AU
evening set	10306 Sep 30 20:30	1° <u>♏</u> 43'58		morning rise	10311 Nov 13 22:52	14° <u>♏</u> 07'35	
					10311 Dec 09 17:24	15° <u>♏</u>	
conjunction	10306 Oct 16 23:01	2° <u>♏</u> 19'51	-0°11'50	retrograde	10312 Feb 11 23:13	16° <u>♏</u> 04'07	
minimum elong	10306 Oct 16 23:01	2° <u>♏</u> 19'51	0°11'36		10312 Apr 18 13:18	15° <u>♏</u> ♏	
behind sun begin	10306 Oct 16 18:24	2° <u>♏</u> 19'26		asc. node	10312 Apr 27 22:25	14° <u>♏</u> 44'21	
behind sun end	10306 Oct 17 03:39	2° <u>♏</u> 20'16		opposition	10312 Apr 30 17:41	14° <u>♏</u> 39'36	0°00'01
max. Earth dist.	10306 Oct 17 11:42	2° <u>♏</u> 21'02	30.89312 AU	min. Earth dist.	10312 Apr 30 08:33	14° <u>♏</u> 40'15	28.93178 AU
morning rise	10306 Nov 02 03:07	2° <u>♏</u> 55'54		direct	10312 Jul 17 23:31	13° <u>♏</u> 15'27	
retrograde	10307 Jan 31 08:22	4° <u>♏</u> 53'06			10312 Oct 09 17:27	15° <u>♏</u>	
opposition	10307 Apr 20 10:22	3° <u>♏</u> 28'31	-0°11'27	evening set	10312 Oct 14 03:28	15° <u>♏</u> 09'32	

conjunction	10312 Oct 30 07:18	15° 11 45'26	0°01'07	opposition	10318 May 14 10:43	28° 11 02'17	0°13'41
minimum elong	10312 Oct 30 07:18	15° 11 45'26	0°01'25	min. Earth dist.	10318 May 14 05:52	28° 11 02'38	28.99690 AU
behind sun begin	10312 Oct 30 00:43	15° 11 44'51		direct	10318 Jul 31 18:50	26° 11 38'07	
behind sun end	10312 Oct 30 13:52	15° 11 46'01		evening set	10318 Oct 28 11:10	28° 11 32'24	
max. Earth dist.	10312 Oct 30 16:22	15° 11 46'15	30.93661 AU				
morning rise	10312 Nov 15 12:24	16° 11 21'27		conjunction	10318 Nov 13 16:01	29° 11 08'16	0°13'51
retrograde	10313 Feb 13 12:03	18° 11 17'52		minimum elong	10318 Nov 13 16:01	29° 11 08'16	0°14'14
opposition	10313 May 03 04:32	16° 11 53'23	0°02'19	behind sun begin	10318 Nov 13 13:04	29° 11 08'00	
min. Earth dist.	10313 May 02 19:44	16° 11 54'01	28.94187 AU	behind sun end	10318 Nov 13 18:59	29° 11 08'32	
direct	10313 Jul 20 10:31	15° 11 29'14		max. Earth dist.	10318 Nov 13 21:25	29° 11 08'45	31.00133 AU
evening set	10313 Oct 16 16:34	17° 11 23'20		morning rise	10318 Nov 29 21:14	29° 11 44'13	
					10318 Dec 07 05:55	0° 11	
conjunction	10313 Nov 01 20:45	17° 11 59'14	0°03'17	retrograde	10319 Feb 27 09:20	1° 11 39'58	
minimum elong	10313 Nov 01 20:46	17° 11 59'14	0°03'38	opposition	10319 May 16 21:26	0° 11 15'55	0°15'54
behind sun begin	10313 Nov 01 14:15	17° 11 58'39		min. Earth dist.	10319 May 16 16:30	0° 11 16'16	29.00553 AU
behind sun end	10313 Nov 02 03:17	17° 11 59'49			10319 May 26 09:08	30° 11 00	
max. Earth dist.	10313 Nov 02 06:28	18° 11 00'07	30.94723 AU	direct	10319 Aug 03 08:02	28° 11 51'43	
morning rise	10313 Nov 18 01:48	18° 11 35'14			10319 Oct 08 12:35	0° 11	
retrograde	10314 Feb 15 22:27	20° 11 31'32		evening set	10319 Oct 31 00:24	0° 11 46'00	
opposition	10314 May 05 15:26	19° 11 07'09	0°04'37				
min. Earth dist.	10314 May 05 07:21	19° 11 07'43	28.95291 AU	conjunction	10319 Nov 16 05:12	1° 11 21'52	0°15'55
direct	10314 Jul 22 22:32	17° 11 43'00		minimum elong	10319 Nov 16 05:12	1° 11 21'52	0°16'19
evening set	10314 Oct 19 05:50	19° 11 37'08		max. Earth dist.	10319 Nov 16 09:05	1° 11 22'13	31.00951 AU
				morning rise	10319 Dec 02 10:30	1° 11 57'48	
conjunction	10314 Nov 04 10:03	20° 11 13'01	0°05'26	retrograde	10320 Feb 29 21:24	3° 11 53'25	
minimum elong	10314 Nov 04 10:03	20° 11 13'01	0°05'46	opposition	10320 May 18 08:12	2° 11 29'24	0°18'06
behind sun begin	10314 Nov 04 03:46	20° 11 12'28		min. Earth dist.	10320 May 18 04:42	2° 11 29'38	29.01345 AU
behind sun end	10314 Nov 04 16:20	20° 11 13'35		direct	10320 Aug 04 19:01	1° 11 05'08	
max. Earth dist.	10314 Nov 04 18:18	20° 11 13'46	30.95873 AU	evening set	10320 Nov 01 13:33	2° 11 59'26	
morning rise	10314 Nov 20 15:17	20° 11 49'01					
retrograde	10315 Feb 18 11:02	22° 11 45'13		conjunction	10320 Nov 17 18:36	3° 11 35'18	0°17'56
opposition	10315 May 08 02:11	21° 11 20'55	0°06'54	minimum elong	10320 Nov 17 18:36	3° 11 35'18	0°18'21
min. Earth dist.	10315 May 07 18:04	21° 11 21'29	28.96464 AU	max. Earth dist.	10320 Nov 17 22:41	3° 11 35'40	31.01718 AU
direct	10315 Jul 25 09:15	19° 11 56'47		morning rise	10320 Dec 03 23:45	4° 11 11'12	
evening set	10315 Oct 21 19:05	21° 11 50'57		retrograde	10321 Mar 03 09:36	6° 11 06'40	
				opposition	10321 May 20 18:40	4° 11 42'41	0°20'15
conjunction	10315 Nov 06 23:31	22° 11 26'51	0°07'33	min. Earth dist.	10321 May 20 15:32	4° 11 42'54	29.02089 AU
minimum elong	10315 Nov 06 23:31	22° 11 26'51	0°07'55	direct	10321 Aug 07 09:00	3° 11 18'23	
behind sun begin	10315 Nov 06 17:38	22° 11 26'20		evening set	10321 Nov 04 02:49	5° 11 12'41	
behind sun end	10315 Nov 07 05:24	22° 11 27'23					
max. Earth dist.	10315 Nov 07 07:51	22° 11 27'37	30.97045 AU	conjunction	10321 Nov 20 07:47	5° 11 48'32	0°19'57
morning rise	10315 Nov 23 04:40	23° 11 02'51		minimum elong	10321 Nov 20 07:46	5° 11 48'32	0°20'23
retrograde	10316 Feb 20 21:57	24° 11 58'56		max. Earth dist.	10321 Nov 20 10:01	5° 11 48'44	31.02463 AU
opposition	10316 May 09 13:06	23° 11 34'44	0°09'11	morning rise	10321 Dec 06 13:03	6° 11 24'25	
min. Earth dist.	10316 May 09 06:35	23° 11 35'11	28.97626 AU	retrograde	10322 Mar 05 21:49	8° 11 19'45	
direct	10316 Jul 26 19:19	22° 11 10'36		opposition	10322 May 23 05:09	6° 11 55'47	0°22'23
evening set	10316 Oct 23 08:21	24° 11 04'49		min. Earth dist.	10322 May 23 02:35	6° 11 55'57	29.02849 AU
				direct	10322 Aug 09 20:31	5° 11 31'25	
conjunction	10316 Nov 08 12:55	24° 11 40'42	0°09'40	evening set	10322 Nov 06 15:47	7° 11 25'44	
minimum elong	10316 Nov 08 12:55	24° 11 40'42	0°10'02				
behind sun begin	10316 Nov 08 07:40	24° 11 40'14		conjunction	10322 Nov 22 20:54	8° 11 01'35	0°21'55
behind sun end	10316 Nov 08 18:10	24° 11 41'10		minimum elong	10322 Nov 22 20:54	8° 11 01'35	0°22'21
max. Earth dist.	10316 Nov 08 20:01	24° 11 41'21	30.98184 AU	max. Earth dist.	10322 Nov 22 23:40	8° 11 01'50	31.03233 AU
morning rise	10316 Nov 24 18:12	25° 11 16'41		morning rise	10322 Dec 09 01:55	8° 11 37'27	
retrograde	10317 Feb 22 10:04	27° 11 12'40		retrograde	10323 Mar 08 07:48	10° 11 32'38	
opposition	10317 May 11 23:54	25° 11 48'32	0°11'27	opposition	10323 May 25 15:35	9° 11 08'42	0°24'29
min. Earth dist.	10317 May 11 17:13	25° 11 49'00	28.98716 AU	min. Earth dist.	10323 May 25 13:48	9° 11 08'50	29.03648 AU
direct	10317 Jul 29 07:36	24° 11 24'24		direct	10323 Aug 12 08:55	7° 11 44'19	
evening set	10317 Oct 25 21:50	26° 11 18'39		evening set	10323 Nov 09 04:52	9° 11 38'38	
conjunction	10317 Nov 11 02:30	26° 11 54'32	0°11'46	conjunction	10323 Nov 25 09:52	10° 11 14'28	0°23'51
minimum elong	10317 Nov 11 02:29	26° 11 54'32	0°12'09	minimum elong	10323 Nov 25 09:52	10° 11 14'28	0°24'18
behind sun begin	10317 Nov 10 22:08	26° 11 54'08		max. Earth dist.	10323 Nov 25 11:10	10° 11 14'35	31.04083 AU
behind sun end	10317 Nov 11 06:51	26° 11 54'55		morning rise	10323 Dec 11 14:58	10° 11 50'19	
max. Earth dist.	10317 Nov 11 08:31	26° 11 55'04	30.99209 AU	retrograde	10324 Mar 09 19:58	12° 11 45'22	
morning rise	10317 Nov 27 07:46	27° 11 30'30		opposition	10324 May 27 01:53	11° 11 21'29	0°26'32
retrograde	10318 Feb 24 21:08	29° 11 26'22		min. Earth dist.	10324 May 26 23:50	11° 11 21'38	29.04557 AU

direct	10324 Aug 13 19:51	9°♊57'03		retrograde	10331 Mar 26 02:04	28°♊13'42	
evening set	10324 Nov 10 17:44	11°♊51'24		opposition	10331 Jun 12 02:13	26°♊50'22	0°39'37
				min. Earth dist.	10331 Jun 12 04:43	26°♊50'11	29.12652 AU
conjunction	10324 Nov 26 22:52	12°♊27'14	0°25'45	direct	10331 Aug 30 03:07	25°♊25'56	
minimum elong	10324 Nov 26 22:52	12°♊27'14	0°26'12	evening set	10331 Nov 27 12:43	27°♊20'35	
max. Earth dist.	10324 Nov 27 00:33	12°♊27'23	31.05040 AU				
morning rise	10324 Dec 13 03:46	13°♊03'04		conjunction	10331 Dec 13 17:29	27°♊56'18	0°37'51
retrograde	10325 Mar 12 06:03	14°♊57'59		minimum elong	10331 Dec 13 17:29	27°♊56'18	0°38'20
opposition	10325 May 29 12:20	13°♊34'10	0°28'33	max. Earth dist.	10331 Dec 13 14:16	27°♊56'00	31.13105 AU
min. Earth dist.	10325 May 29 11:31	13°♊34'13	29.05577 AU	morning rise	10331 Dec 29 21:13	28°♊31'58	
direct	10325 Aug 16 05:47	12°♊09'44			10332 Feb 16 17:25	0°♊	
evening set	10325 Nov 13 06:46	14°♊04'07		retrograde	10332 Mar 27 12:33	0°♊26'09	
					10332 May 07 00:01	30°♊	
conjunction	10325 Nov 29 11:51	14°♊39'55	0°27'37	opposition	10332 Jun 13 12:30	29°♊02'51	0°41'17
minimum elong	10325 Nov 29 11:51	14°♊39'55	0°28'05	min. Earth dist.	10332 Jun 13 16:12	29°♊02'36	29.13568 AU
max. Earth dist.	10325 Nov 29 12:38	14°♊39'59	31.06131 AU	direct	10332 Aug 31 15:42	27°♊38'24	
morning rise	10325 Dec 15 16:42	15°♊15'44		evening set	10332 Nov 29 01:41	29°♊33'02	
retrograde	10326 Mar 14 16:45	17°♊10'33			10332 Dec 11 08:01	0°♊	
opposition	10326 May 31 22:30	15°♊46'49	0°30'31				
min. Earth dist.	10326 May 31 21:05	15°♊46'55	29.06724 AU	conjunction	10332 Dec 15 06:14	0°♊08'44	0°39'22
direct	10326 Aug 18 17:35	14°♊22'23		minimum elong	10332 Dec 15 06:14	0°♊08'44	0°39'51
evening set	10326 Nov 15 19:45	16°♊16'48		max. Earth dist.	10332 Dec 15 01:05	0°♊08'16	31.13985 AU
				morning rise	10332 Dec 31 09:57	0°♊44'22	
conjunction	10326 Dec 02 00:48	16°♊52'36	0°29'27	retrograde	10333 Mar 30 01:03	2°♊38'24	
minimum elong	10326 Dec 02 00:48	16°♊52'36	0°29'54	opposition	10333 Jun 15 22:41	1°♊15'09	0°42'52
max. Earth dist.	10326 Dec 02 01:10	16°♊52'38	31.07328 AU	min. Earth dist.	10333 Jun 16 02:28	1°♊14'53	29.14409 AU
morning rise	10326 Dec 18 05:29	17°♊28'24			10333 Aug 10 02:58	30°♊	
retrograde	10327 Mar 17 02:56	19°♊23'07		direct	10333 Sep 03 03:55	29°♊50'38	
opposition	10327 Jun 03 08:55	17°♊59'29	0°32'26		10333 Sep 26 21:37	0°♊	
min. Earth dist.	10327 Jun 03 08:53	17°♊59'29	29.07970 AU	evening set	10333 Dec 01 14:31	1°♊45'17	
direct	10327 Aug 21 03:28	16°♊35'04					
evening set	10327 Nov 18 08:32	18°♊29'33		conjunction	10333 Dec 17 19:02	2°♊20'57	0°40'49
				minimum elong	10333 Dec 17 19:02	2°♊20'57	0°41'19
conjunction	10327 Dec 04 13:37	19°♊05'20	0°31'13	max. Earth dist.	10333 Dec 17 13:57	2°♊20'29	31.14787 AU
minimum elong	10327 Dec 04 13:37	19°♊05'20	0°31'42	morning rise	10334 Jan 02 22:23	2°♊56'34	
max. Earth dist.	10327 Dec 04 13:45	19°♊05'21	31.08606 AU	retrograde	10334 Apr 01 10:22	4°♊50'27	
morning rise	10327 Dec 20 18:09	19°♊41'07		opposition	10334 Jun 18 08:54	3°♊27'13	0°44'24
retrograde	10328 Mar 18 14:30	21°♊35'45		min. Earth dist.	10334 Jun 18 14:17	3°♊26'50	29.15198 AU
opposition	10328 Jun 04 19:11	20°♊12'13	0°34'19	direct	10334 Sep 05 15:03	2°♊02'39	
min. Earth dist.	10328 Jun 04 18:58	20°♊12'14	29.09245 AU	evening set	10334 Dec 04 03:16	3°♊57'17	
direct	10328 Aug 22 15:11	18°♊47'49					
evening set	10328 Nov 19 21:41	20°♊42'22		conjunction	10334 Dec 20 07:35	4°♊32'56	0°42'13
				minimum elong	10334 Dec 20 07:35	4°♊32'56	0°42'42
conjunction	10328 Dec 06 02:35	21°♊18'08	0°32'57	max. Earth dist.	10334 Dec 20 01:26	4°♊32'22	31.15578 AU
minimum elong	10328 Dec 06 02:34	21°♊18'08	0°33'25	morning rise	10335 Jan 05 10:48	5°♊08'31	
max. Earth dist.	10328 Dec 06 01:16	21°♊18'01	31.09865 AU	retrograde	10335 Apr 03 20:38	7°♊02'16	
morning rise	10328 Dec 22 07:02	21°♊53'53		opposition	10335 Jun 20 18:59	5°♊39'03	0°45'51
retrograde	10329 Mar 21 02:14	23°♊48'26		min. Earth dist.	10335 Jun 20 23:51	5°♊38'43	29.15992 AU
opposition	10329 Jun 07 05:29	22°♊24'58	0°36'08	direct	10335 Sep 08 03:04	4°♊14'26	
min. Earth dist.	10329 Jun 07 06:44	22°♊24'53	29.10488 AU	evening set	10335 Dec 06 15:45	6°♊09'04	
direct	10329 Aug 25 01:44	21°♊00'35					
evening set	10329 Nov 22 10:44	22°♊55'11		conjunction	10335 Dec 22 19:56	6°♊44'42	0°43'33
				minimum elong	10335 Dec 22 19:56	6°♊44'42	0°44'03
conjunction	10329 Dec 08 15:43	23°♊30'56	0°34'38	max. Earth dist.	10335 Dec 22 13:25	6°♊44'06	31.16382 AU
minimum elong	10329 Dec 08 15:43	23°♊30'56	0°35'07	morning rise	10336 Jan 07 22:53	7°♊20'15	
max. Earth dist.	10329 Dec 08 14:24	23°♊30'49	31.11059 AU	retrograde	10336 Apr 05 06:02	9°♊13'53	
morning rise	10329 Dec 24 19:52	24°♊06'39		opposition	10336 Jun 22 05:12	7°♊50'41	0°47'15
retrograde	10330 Mar 23 14:07	26°♊01'06		min. Earth dist.	10336 Jun 22 11:23	7°♊50'15	29.16835 AU
opposition	10330 Jun 09 15:51	24°♊37'43	0°37'55	direct	10336 Sep 09 12:56	6°♊26'02	
min. Earth dist.	10330 Jun 09 17:40	24°♊37'35	29.11622 AU	evening set	10336 Dec 08 04:17	8°♊20'40	
direct	10330 Aug 27 15:36	23°♊13'19					
evening set	10330 Nov 24 23:49	25°♊07'57		conjunction	10336 Dec 24 08:22	8°♊56'17	0°44'50
				minimum elong	10336 Dec 24 08:22	8°♊56'17	0°45'18
conjunction	10330 Dec 11 04:30	25°♊43'41	0°36'16	max. Earth dist.	10336 Dec 24 01:41	8°♊55'40	31.17265 AU
minimum elong	10330 Dec 11 04:30	25°♊43'41	0°36'44	morning rise	10337 Jan 09 11:03	9°♊31'48	
max. Earth dist.	10330 Dec 11 01:09	25°♊43'22	31.12136 AU	retrograde	10337 Apr 07 16:19	11°♊25'18	
morning rise	10330 Dec 27 08:36	26°♊19'22		opposition	10337 Jun 24 15:08	10°♊02'10	0°48'34

min. Earth dist.	10337 Jun 24 20:51	10°30'146	29.17757 AU	morning rise	10344 Jan 25 22:48	24°35'255	
direct	10337 Sep 12 00:28	8°33'730		retrograde	10344 Apr 22 21:27	26°34'57	
evening set	10337 Dec 10 16:54	10°33'210		opposition	10344 Jul 09 14:27	25°32'23	0°55'44
				min. Earth dist.	10344 Jul 10 00:01	25°32'243	29.25083 AU
conjunction	10337 Dec 26 20:41	11°30'745	0°46'02	direct	10344 Sep 27 09:27	23°35'58'52	
minimum elong	10337 Dec 26 20:41	11°30'745	0°46'32	evening set	10344 Dec 26 08:04	25°35'53'52	
max. Earth dist.	10337 Dec 26 12:59	11°30'702	31.18238 AU				
morning rise	10338 Jan 11 23:09	11°34'314		conjunction	10345 Jan 11 10:20	26°32'29'19	0°52'30
retrograde	10338 Apr 10 03:01	13°33'639		minimum elong	10345 Jan 11 10:20	26°32'29'19	0°52'56
opposition	10338 Jun 27 01:21	12°31'335	0°49'49	max. Earth dist.	10345 Jan 10 22:24	26°32'28'13	31.25396 AU
min. Earth dist.	10338 Jun 27 07:54	12°31'307	29.18798 AU	morning rise	10345 Jan 27 10:38	27°30'436	
direct	10338 Sep 14 10:40	10°34'855		retrograde	10345 Apr 25 07:00	28°35'733	
evening set	10338 Dec 13 05:11	12°34'338		opposition	10345 Jul 12 00:41	27°33'501	0°56'26
				min. Earth dist.	10345 Jul 12 11:54	27°33'414	29.25749 AU
conjunction	10338 Dec 29 08:55	13°31'911	0°47'10	direct	10345 Sep 29 19:10	26°31'028	
minimum elong	10338 Dec 29 08:55	13°31'911	0°47'39	evening set	10345 Dec 28 20:23	28°30'529	
max. Earth dist.	10338 Dec 29 01:53	13°31'833	31.19330 AU				
morning rise	10339 Jan 14 10:59	13°35'438		conjunction	10346 Jan 13 22:27	28°34'054	0°53'07
retrograde	10339 Apr 12 13:50	15°34'800		minimum elong	10346 Jan 13 22:27	28°34'054	0°53'34
opposition	10339 Jun 29 11:29	14°32'501	0°51'00	max. Earth dist.	10346 Jan 13 10:04	28°33'945	31.26008 AU
min. Earth dist.	10339 Jun 29 18:08	14°32'433	29.19927 AU	morning rise	10346 Jan 29 22:24	29°31'610	
direct	10339 Sep 16 23:25	13°30'023			10346 Feb 20 09:00	0°	
evening set	10339 Dec 15 17:43	14°35'509		retrograde	10346 Apr 27 16:44	1°09'00	
					10346 Jul 06 07:39	30°16'3	
conjunction	10339 Dec 31 21:05	15°33'042	0°48'14	opposition	10346 Jul 14 10:54	29°34'630	0°57'04
minimum elong	10339 Dec 31 21:05	15°33'042	0°48'44	min. Earth dist.	10346 Jul 14 21:57	29°34'544	29.26302 AU
max. Earth dist.	10339 Dec 31 12:34	15°32'955	31.20499 AU	direct	10346 Oct 02 06:39	28°32'155	
morning rise	10340 Jan 16 23:02	16°30'607			10346 Dec 23 09:16	0°	
retrograde	10340 Apr 14 01:43	17°35'925		evening set	10346 Dec 31 08:30	0°16'55	
opposition	10340 Jun 30 21:30	16°33'632	0°52'06				
min. Earth dist.	10340 Jul 01 04:30	16°33'603	29.21119 AU	conjunction	10347 Jan 16 10:11	0°52'19	0°53'40
direct	10340 Sep 18 09:55	15°31'156		minimum elong	10347 Jan 16 10:11	0°52'19	0°54'06
evening set	10340 Dec 17 06:09	17°30'647		max. Earth dist.	10347 Jan 15 20:37	0°51'03	31.26520 AU
				morning rise	10347 Feb 01 09:53	1°27'32	
conjunction	10341 Jan 02 09:29	17°34'219	0°49'14	retrograde	10347 Apr 30 02:18	3°20'18	
minimum elong	10341 Jan 02 09:29	17°34'219	0°49'43	opposition	10347 Jul 16 21:10	1°57'48	0°57'37
max. Earth dist.	10341 Jan 02 01:25	17°34'134	31.21680 AU	min. Earth dist.	10347 Jul 17 09:13	1°56'58	29.26797 AU
morning rise	10341 Jan 18 10:59	18°31'743		direct	10347 Oct 04 17:17	0°33'10	
retrograde	10341 Apr 16 12:29	20°31'057		evening set	10348 Jan 02 20:30	2°28'09	
opposition	10341 Jul 03 07:44	18°34'810	0°53'08				
min. Earth dist.	10341 Jul 03 15:53	18°34'736	29.22273 AU	conjunction	10348 Jan 18 22:03	3°03'31	0°54'08
direct	10341 Sep 20 22:06	17°32'337		minimum elong	10348 Jan 18 22:03	3°03'31	0°54'35
evening set	10341 Dec 19 18:46	19°31'832		max. Earth dist.	10348 Jan 18 09:01	3°02'19	31.26997 AU
				morning rise	10348 Feb 03 21:19	3°38'43	
conjunction	10342 Jan 04 21:42	19°35'402	0°50'10	retrograde	10348 May 01 11:40	5°31'23	
minimum elong	10342 Jan 04 21:42	19°35'402	0°50'39	opposition	10348 Jul 18 07:15	4°08'53	0°58'04
max. Earth dist.	10342 Jan 04 11:49	19°35'308	31.22797 AU	min. Earth dist.	10348 Jul 18 19:35	4°08'01	29.27265 AU
morning rise	10342 Jan 20 23:01	20°32'924		direct	10348 Oct 06 05:38	2°44'12	
retrograde	10342 Apr 19 01:22	22°32'235		evening set	10349 Jan 04 08:35	4°39'11	
opposition	10342 Jul 05 17:52	20°35'954	0°54'05				
min. Earth dist.	10342 Jul 06 02:01	20°35'920	29.23344 AU	conjunction	10349 Jan 20 09:43	5°14'31	0°54'32
direct	10342 Sep 23 10:12	19°33'522		minimum elong	10349 Jan 20 09:43	5°14'31	0°54'57
evening set	10342 Dec 22 07:15	21°33'020		max. Earth dist.	10349 Jan 19 19:16	5°13'11	31.27476 AU
				morning rise	10349 Feb 05 08:47	5°49'41	
conjunction	10343 Jan 07 10:02	22°30'549	0°51'01	retrograde	10349 May 03 22:47	7°42'16	
minimum elong	10343 Jan 07 10:02	22°30'549	0°51'29	opposition	10349 Jul 20 17:25	6°19'46	0°58'27
max. Earth dist.	10343 Jan 07 00:09	22°30'455	31.23798 AU	min. Earth dist.	10349 Jul 21 05:44	6°18'55	29.27776 AU
morning rise	10343 Jan 23 10:53	22°34'110		direct	10349 Oct 08 15:56	4°55'03	
retrograde	10343 Apr 21 11:08	24°34'17		evening set	10350 Jan 06 20:23	6°50'02	
opposition	10343 Jul 08 04:15	23°31'140	0°54'57				
min. Earth dist.	10343 Jul 08 14:04	23°31'059	29.24284 AU	conjunction	10350 Jan 22 21:20	7°25'21	0°54'50
direct	10343 Sep 25 21:19	21°34'709		minimum elong	10350 Jan 22 21:21	7°25'21	0°55'16
evening set	10343 Dec 24 19:37	23°34'208		max. Earth dist.	10350 Jan 22 07:48	7°24'06	31.28011 AU
				morning rise	10350 Feb 07 19:52	8°00'28	
conjunction	10344 Jan 09 22:07	24°31'736	0°51'48	retrograde	10350 May 06 08:39	9°52'59	
minimum elong	10344 Jan 09 22:07	24°31'736	0°52'16	opposition	10350 Jul 23 03:41	8°30'30	0°58'44
max. Earth dist.	10344 Jan 09 10:59	24°31'634	31.24673 AU	min. Earth dist.	10350 Jul 23 16:38	8°29'36	29.28353 AU

direct	10350 Oct 11 04:32	7°05'47		minimum elong	10357 Feb 07 05:14	22°40'40	0°55'08
evening set	10351 Jan 09 08:15	9°00'47		max. Earth dist.	10357 Feb 06 13:06	22°39'10	31.32329 AU
				morning rise	10357 Feb 23 01:20	23°15'36	
conjunction	10351 Jan 25 08:46	9°36'03	0°55'05	retrograde	10357 May 21 07:57	25°07'53	
minimum elong	10351 Jan 25 08:46	9°36'03	0°55'29	opposition	10357 Aug 07 04:06	23°45'44	0°58'24
max. Earth dist.	10351 Jan 24 18:05	9°34'42	31.28647 AU	min. Earth dist.	10357 Aug 07 19:32	23°44'40	29.32495 AU
morning rise	10351 Feb 10 07:08	10°11'09		direct	10357 Oct 26 11:25	22°21'08	
retrograde	10351 May 08 20:58	12°03'36		evening set	10358 Jan 24 18:06	24°16'17	
opposition	10351 Jul 25 13:49	10°41'09	0°58'57				
min. Earth dist.	10351 Jul 26 02:03	10°40'18	29.29037 AU	conjunction	10358 Feb 09 16:22	24°51'25	0°54'29
direct	10351 Oct 13 16:49	9°16'27		minimum elong	10358 Feb 09 16:22	24°51'25	0°54'49
evening set	10352 Jan 11 19:52	11°11'28		max. Earth dist.	10358 Feb 08 22:42	24°49'47	31.32551 AU
				morning rise	10358 Feb 25 12:15	25°26'20	
conjunction	10352 Jan 27 20:14	11°46'44	0°55'14	retrograde	10358 May 23 19:04	27°18'35	
minimum elong	10352 Jan 27 20:14	11°46'44	0°55'38	opposition	10358 Aug 09 14:35	25°56'26	0°58'01
max. Earth dist.	10352 Jan 27 06:10	11°45'26	31.29363 AU	min. Earth dist.	10358 Aug 10 06:04	25°55'22	29.32662 AU
morning rise	10352 Feb 12 18:08	12°21'48		direct	10358 Oct 28 21:28	24°31'49	
retrograde	10352 May 10 06:26	14°14'13		evening set	10359 Jan 27 05:29	26°26'58	
opposition	10352 Jul 27 00:08	12°51'49	0°59'04	max. Earth dist.	10359 Feb 11 10:36	27°00'30	31.32660 AU
min. Earth dist.	10352 Jul 27 13:38	12°50'53	29.29776 AU				
direct	10352 Oct 15 03:59	11°27'09		conjunction	10359 Feb 12 03:36	27°02'05	0°54'06
evening set	10353 Jan 13 07:41	13°22'12		minimum elong	10359 Feb 12 03:36	27°02'05	0°54'24
				morning rise	10359 Feb 27 22:58	27°36'58	
conjunction	10353 Jan 29 07:40	13°57'26	0°55'18	retrograde	10359 May 26 04:45	29°29'11	
minimum elong	10353 Jan 29 07:40	13°57'26	0°55'41	opposition	10359 Aug 12 01:05	28°07'02	0°57'33
max. Earth dist.	10353 Jan 28 16:54	13°56'04	31.30118 AU	min. Earth dist.	10359 Aug 12 17:31	28°05'54	29.32725 AU
morning rise	10353 Feb 14 05:18	14°32'29		direct	10359 Oct 31 10:00	26°42'24	
	10353 Feb 27 07:51	15°		evening set	10360 Jan 29 16:52	28°37'32	
retrograde	10353 May 12 17:10	16°24'51					
opposition	10353 Jul 29 10:17	15°02'33	0°59'06	conjunction	10360 Feb 14 14:32	29°12'37	0°53'37
min. Earth dist.	10353 Jul 29 23:10	15°01'39	29.30517 AU	minimum elong	10360 Feb 14 14:32	29°12'37	0°53'55
	10353 Jul 30 23:00	15°		max. Earth dist.	10360 Feb 13 20:18	29°10'56	31.32699 AU
direct	10353 Oct 17 15:59	13°37'54		morning rise	10360 Mar 01 09:45	29°47'29	
	10353 Dec 30 22:57	15°			10360 Mar 07 05:51	0°	
evening set	10354 Jan 15 19:27	15°32'59		retrograde	10360 May 27 16:48	1°39'40	
				opposition	10360 Aug 13 11:29	0°17'29	0°57'01
conjunction	10354 Jan 31 19:07	16°08'12	0°55'18	min. Earth dist.	10360 Aug 14 03:17	0°16'24	29.32739 AU
minimum elong	10354 Jan 31 19:07	16°08'12	0°55'41		10360 Aug 24 03:03	30°	
max. Earth dist.	10354 Jan 31 03:59	16°06'48	31.30829 AU	direct	10360 Nov 01 22:39	28°52'49	
morning rise	10354 Feb 16 16:21	16°43'13			10361 Jan 07 12:59	0°	
retrograde	10354 May 15 03:19	18°35'34		evening set	10361 Jan 31 04:05	0°47'58	
opposition	10354 Jul 31 20:45	17°13'19	0°59'03	max. Earth dist.	10361 Feb 15 07:55	1°21'24	31.32698 AU
min. Earth dist.	10354 Aug 01 10:56	17°12'20	29.31201 AU				
direct	10354 Oct 20 01:55	15°48'42		conjunction	10361 Feb 16 01:31	1°23'01	0°53'05
evening set	10355 Jan 18 07:01	17°43'49		minimum elong	10361 Feb 16 01:31	1°23'01	0°53'20
				morning rise	10361 Mar 03 20:14	1°57'52	
conjunction	10355 Feb 03 06:24	18°19'01	0°55'13	retrograde	10361 May 30 01:57	3°50'01	
minimum elong	10355 Feb 03 06:24	18°19'01	0°55'34	opposition	10361 Aug 15 22:00	2°27'49	0°56'24
max. Earth dist.	10355 Feb 02 15:08	18°17'36	31.31464 AU	min. Earth dist.	10361 Aug 16 14:54	2°26'39	29.32754 AU
morning rise	10355 Feb 19 03:15	18°54'01		direct	10361 Nov 04 10:06	1°03'08	
retrograde	10355 May 17 12:56	20°46'20		evening set	10362 Feb 02 15:16	2°58'16	
opposition	10355 Aug 03 07:11	19°24'08	0°58'55				
min. Earth dist.	10355 Aug 03 21:09	19°23'10	29.31768 AU	conjunction	10362 Feb 18 12:16	3°33'18	0°52'28
direct	10355 Oct 22 13:39	17°59'32		minimum elong	10362 Feb 18 12:17	3°33'18	0°52'43
evening set	10356 Jan 20 18:48	19°54'40		max. Earth dist.	10362 Feb 17 18:29	3°31'39	31.32745 AU
				morning rise	10362 Mar 06 06:44	4°08'07	
conjunction	10356 Feb 05 17:46	20°29'51	0°55'03	retrograde	10362 Jun 01 12:17	6°00'14	
minimum elong	10356 Feb 05 17:46	20°29'51	0°55'24	opposition	10362 Aug 18 08:31	4°38'03	0°55'41
max. Earth dist.	10356 Feb 05 01:14	20°28'19	31.31963 AU	min. Earth dist.	10362 Aug 19 00:12	4°36'58	29.32836 AU
morning rise	10356 Feb 21 14:21	21°04'49		direct	10362 Nov 06 22:37	3°13'22	
retrograde	10356 May 18 22:44	22°57'07		evening set	10363 Feb 05 02:11	5°08'30	
opposition	10356 Aug 04 17:34	21°34'57	0°58'42				
min. Earth dist.	10356 Aug 05 08:32	21°33'55	29.32210 AU	conjunction	10363 Feb 20 22:52	5°43'31	0°51'46
direct	10356 Oct 23 23:35	20°10'21		minimum elong	10363 Feb 20 22:53	5°43'31	0°52'00
evening set	10357 Jan 22 06:27	22°05'30		max. Earth dist.	10363 Feb 20 05:15	5°41'53	31.32872 AU
				morning rise	10363 Mar 08 16:57	6°18'18	
conjunction	10357 Feb 07 05:14	22°40'40	0°54'49	retrograde	10363 Jun 03 22:33	8°10'26	

opposition	10363 Aug 20 19:09	6° ✕ 48'15	0°54'55	minimum elong	10370 Mar 08 01:18	20° ✕ 56'44	0°45'01
min. Earth dist.	10363 Aug 21 11:29	6° ✕ 47'08	29.33023 AU	morning rise	10370 Mar 23 17:01	21° ✕ 31'25	
direct	10363 Nov 09 09:03	5° ✕ 23'36		retrograde	10370 Jun 18 20:36	23° ✕ 23'43	
evening set	10364 Feb 07 13:11	7° ✕ 18'44		opposition	10370 Sep 04 22:45	22° ✕ 01'40	0°47'18
				min. Earth dist.	10370 Sep 05 16:00	22° ✕ 00'30	29.34127 AU
conjunction	10364 Feb 23 09:36	7° ✕ 53'44	0°51'00	direct	10370 Nov 24 13:34	20° ✕ 37'14	
minimum elong	10364 Feb 23 09:36	7° ✕ 53'44	0°51'14	evening set	10371 Feb 22 17:41	22° ✕ 32'24	
max. Earth dist.	10364 Feb 22 16:32	7° ✕ 52'09	31.33112 AU				
morning rise	10364 Mar 10 03:20	8° ✕ 28'31		conjunction	10371 Mar 10 11:41	23° ✕ 07'16	0°43'39
retrograde	10364 Jun 05 07:35	10° ✕ 20'38		minimum elong	10371 Mar 10 11:42	23° ✕ 07'16	0°43'44
opposition	10364 Aug 22 05:34	8° ✕ 58'30	0°54'03	max. Earth dist.	10371 Mar 09 17:40	23° ✕ 05'35	31.33974 AU
min. Earth dist.	10364 Aug 22 21:10	8° ✕ 57'26	29.33291 AU	morning rise	10371 Mar 26 03:12	23° ✕ 41'56	
direct	10364 Nov 10 20:50	7° ✕ 33'53		retrograde	10371 Jun 21 07:33	25° ✕ 34'13	
evening set	10365 Feb 09 00:16	9° ✕ 29'02		opposition	10371 Sep 07 09:43	24° ✕ 12'10	0°45'56
				min. Earth dist.	10371 Sep 08 02:05	24° ✕ 11'02	29.33852 AU
conjunction	10365 Feb 24 20:15	10° ✕ 04'01	0°50'10	direct	10371 Nov 27 02:56	22° ✕ 47'42	
minimum elong	10365 Feb 24 20:15	10° ✕ 04'01	0°50'22	evening set	10372 Feb 25 04:29	24° ✕ 42'50	
max. Earth dist.	10365 Feb 24 02:30	10° ✕ 02'22	31.33414 AU				
morning rise	10365 Mar 12 13:43	10° ✕ 38'47		conjunction	10372 Mar 11 22:10	25° ✕ 17'41	0°42'20
retrograde	10365 Jun 07 17:08	12° ✕ 30'57		minimum elong	10372 Mar 11 22:10	25° ✕ 17'41	0°42'25
opposition	10365 Aug 24 16:16	11° ✕ 08'51	0°53'07	max. Earth dist.	10372 Mar 11 03:53	25° ✕ 15'59	31.33645 AU
min. Earth dist.	10365 Aug 25 08:13	11° ✕ 07'45	29.33615 AU	morning rise	10372 Mar 27 13:22	25° ✕ 52'20	
direct	10365 Nov 13 06:21	9° ✕ 44'17		retrograde	10372 Jun 22 18:11	27° ✕ 44'38	
evening set	10366 Feb 11 11:06	11° ✕ 39'27		opposition	10372 Sep 08 20:44	26° ✕ 22'32	0°44'30
				min. Earth dist.	10372 Sep 09 13:58	26° ✕ 21'21	29.33487 AU
conjunction	10366 Feb 27 06:51	12° ✕ 14'25	0°49'15	direct	10372 Nov 28 14:23	24° ✕ 58'03	
minimum elong	10366 Feb 27 06:52	12° ✕ 14'26	0°49'27	evening set	10373 Feb 26 15:09	26° ✕ 53'09	
max. Earth dist.	10366 Feb 26 14:12	12° ✕ 12'53	31.33735 AU				
morning rise	10366 Mar 14 23:51	12° ✕ 49'10		conjunction	10373 Mar 14 08:34	27° ✕ 27'59	0°40'58
retrograde	10366 Jun 10 01:52	14° ✕ 41'22		minimum elong	10373 Mar 14 08:34	27° ✕ 27'59	0°41'01
opposition	10366 Aug 27 03:03	13° ✕ 19'19	0°52'06	max. Earth dist.	10373 Mar 13 14:55	27° ✕ 26'20	31.33257 AU
min. Earth dist.	10366 Aug 27 19:08	13° ✕ 18'13	29.33914 AU	morning rise	10373 Mar 29 23:26	28° ✕ 02'37	
direct	10366 Nov 15 17:08	11° ✕ 54'48		retrograde	10373 Jun 25 03:05	29° ✕ 54'55	
evening set	10367 Feb 13 22:09	13° ✕ 49'59		opposition	10373 Sep 11 07:50	28° ✕ 32'46	0°43'00
				min. Earth dist.	10373 Sep 12 00:19	28° ✕ 31'38	29.33077 AU
conjunction	10367 Mar 01 17:24	14° ✕ 24'56	0°48'16	direct	10373 Dec 01 03:17	27° ✕ 08'16	
minimum elong	10367 Mar 01 17:24	14° ✕ 24'56	0°48'26	evening set	10374 Mar 01 01:40	29° ✕ 03'19	
max. Earth dist.	10367 Feb 28 23:36	14° ✕ 23'17	31.34012 AU				
morning rise	10367 Mar 17 10:14	14° ✕ 59'40		conjunction	10374 Mar 16 18:37	29° ✕ 38'08	0°39'32
retrograde	10367 Jun 12 13:18	16° ✕ 51'54		minimum elong	10374 Mar 16 18:37	29° ✕ 38'08	0°39'36
opposition	10367 Aug 29 13:45	15° ✕ 29'52	0°51'00	max. Earth dist.	10374 Mar 16 00:30	29° ✕ 36'27	31.32853 AU
min. Earth dist.	10367 Aug 30 05:34	15° ✕ 28'47	29.34158 AU		10374 Mar 26 14:01	0° ∇	
direct	10367 Nov 18 02:26	14° ✕ 05'23		morning rise	10374 Apr 01 09:17	0° ∇ 12'46	
evening set	10368 Feb 16 09:02	16° ✕ 00'35		retrograde	10374 Jun 27 12:43	2° ∇ 05'05	
max. Earth dist.	10368 Mar 02 11:08	16° ✕ 33'56	31.34197 AU	opposition	10374 Sep 13 19:00	0° ∇ 42'53	0°41'27
				min. Earth dist.	10374 Sep 14 11:24	0° ∇ 41'46	29.32706 AU
conjunction	10368 Mar 03 04:08	16° ✕ 35'31	0°47'12		10374 Oct 11 04:12	30° ℞ ✕	
minimum elong	10368 Mar 03 04:08	16° ✕ 35'31	0°47'22	direct	10374 Dec 03 13:25	29° ✕ 18'23	
morning rise	10368 Mar 18 20:29	17° ✕ 10'14			10375 Jan 24 01:59	0° ∇	
retrograde	10368 Jun 13 22:53	19° ✕ 02'29		evening set	10375 Mar 03 12:04	1° ∇ 13'25	
opposition	10368 Aug 31 00:44	17° ✕ 40'29	0°49'50				
min. Earth dist.	10368 Aug 31 17:28	17° ✕ 39'20	29.34280 AU	conjunction	10375 Mar 19 04:52	1° ∇ 48'13	0°38'03
direct	10368 Nov 19 14:34	16° ✕ 16'02		minimum elong	10375 Mar 19 04:52	1° ∇ 48'13	0°38'05
evening set	10369 Feb 17 20:04	18° ✕ 11'13		max. Earth dist.	10375 Mar 18 12:15	1° ∇ 46'40	31.32514 AU
				morning rise	10375 Apr 03 19:06	2° ∇ 22'50	
conjunction	10369 Mar 05 14:39	18° ✕ 46'08	0°46'05	retrograde	10375 Jun 29 21:09	4° ∇ 15'11	
minimum elong	10369 Mar 05 14:40	18° ✕ 46'08	0°46'12	opposition	10375 Sep 16 06:05	2° ∇ 52'59	0°39'50
max. Earth dist.	10369 Mar 04 20:31	18° ✕ 44'27	31.34259 AU	min. Earth dist.	10375 Sep 16 22:12	2° ∇ 51'53	29.32405 AU
morning rise	10369 Mar 21 06:49	19° ✕ 20'50		direct	10375 Dec 06 00:36	1° ∇ 28'30	
retrograde	10369 Jun 16 10:50	21° ✕ 13'06		evening set	10376 Mar 04 22:37	3° ∇ 23'31	
opposition	10369 Sep 02 11:35	19° ✕ 51'06	0°48'36				
min. Earth dist.	10369 Sep 03 03:38	19° ✕ 50'00	29.34272 AU	conjunction	10376 Mar 20 14:56	3° ∇ 58'18	0°36'31
direct	10369 Nov 22 02:29	18° ✕ 26'39		minimum elong	10376 Mar 20 14:57	3° ∇ 58'18	0°36'32
evening set	10370 Feb 20 06:57	20° ✕ 21'50		max. Earth dist.	10376 Mar 19 21:41	3° ∇ 56'42	31.32266 AU
max. Earth dist.	10370 Mar 07 07:35	20° ✕ 55'05	31.34177 AU	morning rise	10376 Apr 05 05:05	4° ∇ 32'55	
				retrograde	10376 Jul 01 08:28	6° ∇ 25'20	
conjunction	10370 Mar 08 01:18	20° ✕ 56'44	0°44'54	opposition	10376 Sep 17 17:15	5° ∇ 03'08	0°38'10

min. Earth dist.	10376 Sep 18 08:24	5°♈02'06	29.32202 AU	morning rise	10383 Apr 21 02:16	19°♈47'51	
direct	10376 Dec 07 10:06	3°♈38'42		retrograde	10383 Jul 17 12:20	21°♈40'52	
evening set	10377 Mar 07 08:57	5°♈33'43		opposition	10383 Oct 04 01:57	20°♈18'41	0°25'02
max. Earth dist.	10377 Mar 22 09:16	6°♈07'02	31.32094 AU	min. Earth dist.	10383 Oct 04 16:27	20°♈17'42	29.29863 AU
				direct	10383 Dec 23 19:23	18°♈54'34	
conjunction	10377 Mar 23 01:06	6°♈08'30	0°34'56	evening set	10384 Mar 22 10:01	20°♈49'37	
minimum elong	10377 Mar 23 01:06	6°♈08'30	0°34'55	max. Earth dist.	10384 Apr 06 09:28	21°♈22'59	31.29446 AU
morning rise	10377 Apr 07 14:47	6°♈43'06					
retrograde	10377 Jul 03 18:01	8°♈35'37		conjunction	10384 Apr 07 00:09	21°♈24'21	0°22'30
opposition	10377 Sep 20 04:36	7°♈13'26	0°36'26	minimum elong	10384 Apr 07 00:09	21°♈24'21	0°22'22
min. Earth dist.	10377 Sep 20 20:08	7°♈12'22	29.32050 AU	morning rise	10384 Apr 22 12:10	21°♈58'56	
direct	10377 Dec 09 21:29	5°♈49'04		retrograde	10384 Jul 18 21:06	23°♈52'00	
evening set	10378 Mar 09 19:25	7°♈44'06		opposition	10384 Oct 05 13:46	22°♈29'46	0°22'59
				min. Earth dist.	10384 Oct 06 04:19	22°♈28'46	29.29031 AU
conjunction	10378 Mar 25 11:08	8°♈18'52	0°33'17	direct	10384 Dec 25 07:42	21°♈05'38	
minimum elong	10378 Mar 25 11:08	8°♈18'52	0°33'16	evening set	10385 Mar 24 20:23	23°♈00'37	
max. Earth dist.	10378 Mar 24 18:51	8°♈17'21	31.31970 AU				
morning rise	10378 Apr 10 00:43	8°♈53'28		conjunction	10385 Apr 09 10:03	23°♈35'20	0°20'34
retrograde	10378 Jul 06 06:17	10°♈46'04		minimum elong	10385 Apr 09 10:03	23°♈35'20	0°20'24
opposition	10378 Sep 22 15:53	9°♈23'55	0°34'39	max. Earth dist.	10385 Apr 08 18:38	23°♈33'54	31.28573 AU
min. Earth dist.	10378 Sep 23 06:12	9°♈22'56	29.31924 AU	morning rise	10385 Apr 24 22:03	24°♈09'56	
direct	10378 Dec 12 08:25	7°♈59'36		retrograde	10385 Jul 21 08:18	26°♈03'03	
evening set	10379 Mar 12 05:43	9°♈54'40		opposition	10385 Oct 08 01:34	24°♈40'44	0°20'55
				min. Earth dist.	10385 Oct 08 15:14	24°♈39'48	29.28127 AU
conjunction	10379 Mar 27 21:14	10°♈29'26	0°31'36	direct	10385 Dec 27 18:26	23°♈16'34	
minimum elong	10379 Mar 27 21:14	10°♈29'26	0°31'32	evening set	10386 Mar 27 06:30	25°♈11'30	
max. Earth dist.	10379 Mar 27 05:44	10°♈28'00	31.31822 AU				
morning rise	10379 Apr 12 10:28	11°♈04'02		conjunction	10386 Apr 11 20:04	25°♈46'13	0°18'37
retrograde	10379 Jul 08 16:42	12°♈56'44		minimum elong	10386 Apr 11 20:04	25°♈46'13	0°18'27
opposition	10379 Sep 25 03:26	11°♈34'36	0°32'49	max. Earth dist.	10386 Apr 11 06:03	25°♈44'55	31.27647 AU
min. Earth dist.	10379 Sep 25 18:41	11°♈33'34	29.31750 AU	morning rise	10386 Apr 27 07:43	26°♈20'48	
direct	10379 Dec 14 18:45	10°♈10'22		retrograde	10386 Jul 23 16:51	28°♈13'58	
evening set	10380 Mar 13 16:14	12°♈05'27		opposition	10386 Oct 10 13:26	26°♈51'34	0°18'49
				min. Earth dist.	10386 Oct 11 03:22	26°♈50'37	29.27204 AU
conjunction	10380 Mar 29 07:24	12°♈40'12	0°29'51	direct	10386 Dec 30 05:55	25°♈27'24	
minimum elong	10380 Mar 29 07:24	12°♈40'12	0°29'47	evening set	10387 Mar 29 16:37	27°♈22'16	
max. Earth dist.	10380 Mar 28 15:57	12°♈38'46	31.31613 AU				
morning rise	10380 Apr 13 20:25	13°♈14'48		conjunction	10387 Apr 14 05:50	27°♈56'58	0°16'39
retrograde	10380 Jul 10 04:24	15°♈07'35		minimum elong	10387 Apr 14 05:50	27°♈56'58	0°16'27
opposition	10380 Sep 26 14:49	13°♈45'28	0°30'56	max. Earth dist.	10387 Apr 13 15:43	27°♈55'39	31.26752 AU
min. Earth dist.	10380 Sep 27 05:03	13°♈44'30	29.31481 AU	morning rise	10387 Apr 29 17:27	28°♈31'33	
direct	10380 Dec 16 08:01	12°♈21'17			10387 Jun 17 14:31	0°♈	
evening set	10381 Mar 16 02:48	14°♈16'23		retrograde	10387 Jul 26 04:17	0°♈24'47	
					10387 Sep 04 00:16	30°♈	
conjunction	10381 Mar 31 17:37	14°♈51'08	0°28'04	opposition	10387 Oct 13 01:13	29°♈02'19	0°16'41
minimum elong	10381 Mar 31 17:37	14°♈51'08	0°27'59	min. Earth dist.	10387 Oct 13 13:32	29°♈01'29	29.26338 AU
max. Earth dist.	10381 Mar 31 01:57	14°♈49'41	31.31281 AU	direct	10388 Jan 01 16:36	27°♈38'08	
morning rise	10381 Apr 16 06:24	15°♈25'43		evening set	10388 Mar 31 02:44	29°♈32'58	
retrograde	10381 Jul 12 16:34	17°♈18'36			10388 Apr 12 06:01	0°♈	
opposition	10381 Sep 29 02:36	15°♈56'28	0°29'00				
min. Earth dist.	10381 Sep 29 17:31	15°♈55'27	29.31092 AU	conjunction	10388 Apr 15 15:45	0°♈07'40	0°14'39
direct	10381 Dec 18 19:37	14°♈32'20		minimum elong	10388 Apr 15 15:45	0°♈07'40	0°14'27
evening set	10382 Mar 18 13:07	16°♈27'26		behind sun begin	10388 Apr 15 12:47	0°♈07'24	
				behind sun end	10388 Apr 15 18:44	0°♈07'56	
conjunction	10382 Apr 03 03:44	17°♈02'10	0°26'15	max. Earth dist.	10388 Apr 15 02:42	0°♈06'27	31.25918 AU
minimum elong	10382 Apr 03 03:44	17°♈02'10	0°26'09	morning rise	10388 May 01 03:05	0°♈42'15	
max. Earth dist.	10382 Apr 02 12:46	17°♈00'47	31.30822 AU	retrograde	10388 Jul 27 14:33	2°♈35'34	
morning rise	10382 Apr 18 16:13	17°♈36'46		opposition	10388 Oct 14 13:09	1°♈13'03	0°14'32
retrograde	10382 Jul 15 02:01	19°♈29'43		min. Earth dist.	10388 Oct 15 01:50	1°♈12'11	29.25555 AU
opposition	10382 Oct 01 14:20	18°♈07'34	0°27'02		10388 Dec 07 14:38	30°♈	
min. Earth dist.	10382 Oct 02 04:37	18°♈06'36	29.30548 AU	direct	10389 Jan 03 02:51	29°♈48'52	
direct	10382 Dec 21 08:40	16°♈43'27			10389 Jan 29 08:31	0°♈	
evening set	10383 Mar 20 23:41	18°♈38'32		evening set	10389 Apr 02 12:52	1°♈43'42	
conjunction	10383 Apr 05 13:54	19°♈13'16	0°24'23	conjunction	10389 Apr 18 01:38	2°♈18'23	0°12'38
minimum elong	10383 Apr 05 13:54	19°♈13'16	0°24'16	minimum elong	10389 Apr 18 01:38	2°♈18'23	0°12'24
max. Earth dist.	10383 Apr 04 22:03	19°♈11'47	31.30204 AU	behind sun begin	10389 Apr 17 21:22	2°♈18'00	

behind sun end	10389 Apr 18 05:54	2°8'18"45		min. Earth dist.	10394 Oct 28 22:56	14°8'19"19	29.21342 AU
max. Earth dist.	10389 Apr 17 13:20	2°8'17"14	31.25192 AU	direct	10395 Jan 17 02:02	12°8'56"00	
morning rise	10389 May 03 12:49	2°8'52"57		evening set	10395 Apr 16 01:46	14°8'50"48	
retrograde	10389 Jul 30 02:27	4°8'46"22			10395 Apr 20 05:22	15°8'	
opposition	10389 Oct 17 01:05	3°8'23"49	0°12'22				
min. Earth dist.	10389 Oct 17 12:04	3°8'23"04	29.24861 AU	conjunction	10395 May 01 13:19	15°8'25"30	0°00'08
direct	10390 Jan 05 16:01	1°8'59"41		minimum elong	10395 May 01 13:18	15°8'25"30	0°00'12
evening set	10390 Apr 04 22:52	3°8'54"29		behind sun begin	10395 May 01 06:57	15°8'24"56	
				behind sun end	10395 May 01 19:40	15°8'26"04	
conjunction	10390 Apr 20 11:21	4°8'29"11	0°10'36	max. Earth dist.	10395 May 01 04:04	15°8'24"39	31.20856 AU
minimum elong	10390 Apr 20 11:21	4°8'29"11	0°10'22	morning rise	10395 May 16 23:39	16°8'00"08	
behind sun begin	10390 Apr 20 06:15	4°8'28"43		desc. node	10395 May 27 21:38	16°8'23"35	
behind sun end	10390 Apr 20 16:27	4°8'29"38		retrograde	10395 Aug 12 20:00	17°8'54"15	
max. Earth dist.	10390 Apr 19 23:22	4°8'28"04	31.24531 AU	opposition	10395 Oct 31 02:29	16°8'31"34	-0°00'59
morning rise	10390 May 05 22:26	5°8'03"45		min. Earth dist.	10395 Oct 31 11:55	16°8'30"56	29.20353 AU
retrograde	10390 Aug 01 14:50	6°8'57"17		direct	10396 Jan 19 13:35	15°8'07"41	
opposition	10390 Oct 19 13:11	5°8'34"43	0°10'10	evening set	10396 Apr 17 12:06	17°8'02"27	
min. Earth dist.	10390 Oct 20 00:20	5°8'33"57	29.24229 AU				
direct	10391 Jan 08 03:01	4°8'10"37		conjunction	10396 May 02 23:20	17°8'37"09	-0°02'01
evening set	10391 Apr 07 08:55	6°8'05"26		minimum elong	10396 May 02 23:21	17°8'37"09	0°02'21
				behind sun begin	10396 May 02 16:56	17°8'36"34	
conjunction	10391 Apr 22 21:18	6°8'40"07	0°08'33	behind sun end	10396 May 03 05:46	17°8'37"44	
minimum elong	10391 Apr 22 21:18	6°8'40"07	0°08'17	max. Earth dist.	10396 May 02 13:44	17°8'36"16	31.19808 AU
behind sun begin	10391 Apr 22 15:36	6°8'39"36		morning rise	10396 May 18 09:42	18°8'11"47	
behind sun end	10391 Apr 23 03:00	6°8'40"38		retrograde	10396 Aug 14 07:51	20°8'06"01	
max. Earth dist.	10391 Apr 22 10:35	6°8'39"07	31.23912 AU	opposition	10396 Nov 01 14:50	18°8'43"17	-0°03'13
morning rise	10391 May 08 08:09	7°8'14"42		min. Earth dist.	10396 Nov 01 22:58	18°8'42"44	29.19237 AU
retrograde	10391 Aug 04 00:55	9°8'08"20		direct	10397 Jan 21 00:21	17°8'19"23	
opposition	10391 Oct 22 01:06	7°8'45"46	0°07'58	evening set	10397 Apr 19 22:20	19°8'14"08	
min. Earth dist.	10391 Oct 22 11:16	7°8'45"04	29.23597 AU				
direct	10392 Jan 10 15:45	6°8'21"43		conjunction	10397 May 05 09:28	19°8'48"50	-0°04'07
evening set	10392 Apr 08 19:12	8°8'16"32		minimum elong	10397 May 05 09:28	19°8'48"50	0°04'28
				behind sun begin	10397 May 05 03:09	19°8'48"16	
conjunction	10392 Apr 24 07:12	8°8'51"13	0°06'29	behind sun end	10397 May 05 15:46	19°8'49"24	
minimum elong	10392 Apr 24 07:12	8°8'51"13	0°06'13	max. Earth dist.	10397 May 05 00:32	19°8'48"00	31.18636 AU
behind sun begin	10392 Apr 24 01:06	8°8'50"40		morning rise	10397 May 20 19:40	20°8'23"29	
behind sun end	10392 Apr 24 13:18	8°8'51"46		retrograde	10397 Aug 16 18:41	22°8'17"48	
max. Earth dist.	10392 Apr 23 19:59	8°8'50"11	31.23269 AU	opposition	10397 Nov 04 03:27	20°8'54"59	-0°05'27
morning rise	10392 May 09 18:03	9°8'25"49		min. Earth dist.	10397 Nov 04 12:11	20°8'54"24	29.18030 AU
retrograde	10392 Aug 05 12:41	11°8'19"34		direct	10398 Jan 23 10:51	19°8'31"05	
opposition	10392 Oct 23 13:20	9°8'56"59	0°05'44	evening set	10398 Apr 22 08:21	21°8'25"47	
min. Earth dist.	10392 Oct 23 23:19	9°8'56"18	29.22937 AU				
direct	10393 Jan 12 02:42	8°8'32"59		conjunction	10398 May 07 19:21	22°8'00"28	-0°06'11
evening set	10393 Apr 11 05:15	10°8'27"48		minimum elong	10398 May 07 19:22	22°8'00"28	0°06'33
				behind sun begin	10398 May 07 13:20	21°8'59"56	
conjunction	10393 Apr 26 17:11	11°8'02"30	0°04'24	behind sun end	10398 May 08 01:24	22°8'01"01	
minimum elong	10393 Apr 26 17:11	11°8'02"30	0°04'06	max. Earth dist.	10398 May 07 11:13	21°8'59"44	31.17413 AU
behind sun begin	10393 Apr 26 10:51	11°8'01"56		morning rise	10398 May 23 05:32	22°8'35"08	
behind sun end	10393 Apr 26 23:32	11°8'03"04		retrograde	10398 Aug 19 06:48	24°8'29"33	
max. Earth dist.	10393 Apr 26 07:31	11°8'01"36	31.22568 AU	opposition	10398 Nov 06 15:50	23°8'06"39	-0°07'41
morning rise	10393 May 12 03:43	11°8'37"06		min. Earth dist.	10398 Nov 06 22:59	23°8'06"10	29.16792 AU
retrograde	10393 Aug 07 22:33	13°8'30"59		direct	10399 Jan 26 00:14	21°8'42"43	
opposition	10393 Oct 26 01:43	12°8'08"23	0°03'30	evening set	10399 Apr 24 18:30	23°8'37"23	
min. Earth dist.	10393 Oct 26 11:31	12°8'07"42	29.22187 AU				
direct	10394 Jan 14 15:19	10°8'44"26		conjunction	10399 May 10 05:17	24°8'12"05	-0°08'15
evening set	10394 Apr 13 15:35	12°8'39"15		minimum elong	10399 May 10 05:17	24°8'12"05	0°08'38
				behind sun begin	10399 May 09 23:40	24°8'11"35	
conjunction	10394 Apr 29 03:10	13°8'13"56	0°02'18	behind sun end	10399 May 10 10:53	24°8'12"35	
minimum elong	10394 Apr 29 03:09	13°8'13"56	0°02'00	max. Earth dist.	10399 May 09 21:21	24°8'11"21	31.16182 AU
behind sun begin	10394 Apr 28 20:44	13°8'13"21		morning rise	10399 May 25 15:27	24°8'46"45	
behind sun end	10394 Apr 29 09:35	13°8'14"31		retrograde	10399 Aug 21 19:32	26°8'41"16	
max. Earth dist.	10394 Apr 28 16:48	13°8'12"58	31.21775 AU	opposition	10399 Nov 09 04:14	25°8'18"17	-0°09'53
morning rise	10394 May 14 13:44	13°8'48"33		min. Earth dist.	10399 Nov 09 11:26	25°8'17"48	29.15602 AU
	10394 Jun 20 06:32	15°8'		direct	10400 Jan 28 11:09	23°8'54"20	
retrograde	10394 Aug 10 10:35	15°8'42"33		evening set	10400 Apr 26 04:33	25°8'48"59	
	10394 Oct 02 22:28	15°8'					
opposition	10394 Oct 28 13:59	14°8'19"55	0°01'16	conjunction	10400 May 11 15:18	26°8'23"41	-0°10'18

minimum elong	10400 May 11 15:18	26° 8 23'41	0°10'41	conjunction	10406 May 25 03:23	9° II 35'57	-0°22'18
behind sun begin	10400 May 11 10:19	26° 8 23'14		minimum elong	10406 May 25 03:23	9° II 35'57	0°22'45
behind sun end	10400 May 11 20:17	26° 8 24'08		max. Earth dist.	10406 May 25 01:11	9° II 35'45	31.09841 AU
max. Earth dist.	10400 May 11 08:59	26° 8 23'07	31.15035 AU	morning rise	10406 Jun 09 13:24	10° II 10'44	
morning rise	10400 May 27 01:18	26° 8 58'21		retrograde	10406 Sep 06 02:56	12° II 06'10	
retrograde	10400 Aug 23 05:53	28° 8 52'59		opposition	10406 Nov 24 21:09	10° II 42'56	-0°24'52
opposition	10400 Nov 10 16:45	27° 8 29'56	-0°12'05	min. Earth dist.	10406 Nov 24 23:23	10° II 42'47	29.09407 AU
min. Earth dist.	10400 Nov 10 22:27	27° 8 29'33	29.14502 AU	direct	10407 Feb 12 20:36	9° II 19'15	
direct	10401 Jan 29 23:57	26° 8 06'00		evening set	10407 May 12 03:46	11° II 13'50	
evening set	10401 Apr 28 14:35	28° 8 00'38					
conjunction	10401 May 14 01:02	28° 8 35'20	-0°12'21	conjunction	10407 May 27 13:47	11° II 48'36	-0°24'13
minimum elong	10401 May 14 01:02	28° 8 35'20	0°12'46	minimum elong	10407 May 27 13:47	11° II 48'36	0°24'41
behind sun begin	10401 May 13 20:56	28° 8 34'58		max. Earth dist.	10407 May 27 12:13	11° II 48'27	31.08934 AU
behind sun end	10401 May 14 05:07	28° 8 35'42		morning rise	10407 Jun 11 23:48	12° II 23'23	
max. Earth dist.	10401 May 13 18:40	28° 8 34'45	31.13997 AU	retrograde	10407 Sep 08 15:15	14° II 18'56	
morning rise	10401 May 29 11:08	29° 8 10'01		opposition	10407 Nov 27 09:57	12° II 55'41	-0°26'54
	10401 Jun 22 16:03	0° II		min. Earth dist.	10407 Nov 27 10:50	12° II 55'37	29.08439 AU
retrograde	10401 Aug 25 18:33	1° II 04'46		direct	10408 Feb 15 09:06	11° II 32'00	
	10401 Nov 01 21:53	30° 8		evening set	10408 May 13 14:20	13° II 26'35	
opposition	10401 Nov 13 05:21	29° 8 41'40	-0°14'17	conjunction	10408 May 29 00:12	14° II 01'21	-0°26'05
min. Earth dist.	10401 Nov 13 10:18	29° 8 41'20	29.13531 AU	minimum elong	10408 May 29 00:12	14° II 01'21	0°26'33
direct	10402 Feb 01 11:32	28° 8 17'46		max. Earth dist.	10408 May 28 22:24	14° II 01'11	31.07903 AU
	10402 Apr 25 08:20	0° II		morning rise	10408 Jun 13 10:20	14° II 36'09	
evening set	10402 May 01 00:33	0° II 12'23		retrograde	10408 Sep 10 04:18	16° II 31'50	
conjunction	10402 May 16 11:04	0° II 47'06	-0°14'23	opposition	10408 Nov 28 23:07	15° II 08'29	-0°28'53
minimum elong	10402 May 16 11:04	0° II 47'06	0°14'47	min. Earth dist.	10408 Nov 29 00:23	15° II 08'24	29.07356 AU
behind sun begin	10402 May 16 08:22	0° II 46'52		direct	10409 Feb 16 19:25	13° II 44'49	
behind sun end	10402 May 16 13:46	0° II 47'21		evening set	10409 May 16 00:38	15° II 39'21	
max. Earth dist.	10402 May 16 06:42	0° II 46'42	31.13077 AU	conjunction	10409 May 31 10:37	16° II 14'08	-0°27'55
morning rise	10402 May 31 20:59	1° II 21'48		minimum elong	10409 May 31 10:37	16° II 14'08	0°28'24
retrograde	10402 Aug 28 05:23	3° II 16'41		max. Earth dist.	10409 May 31 10:04	16° II 14'05	31.06763 AU
opposition	10402 Nov 15 17:53	1° II 53'33	-0°16'27	morning rise	10409 Jun 15 20:42	16° II 48'57	
min. Earth dist.	10402 Nov 15 22:13	1° II 53'15	29.12654 AU	retrograde	10409 Sep 12 15:52	18° II 44'43	
direct	10403 Feb 04 00:38	0° II 29'41		opposition	10409 Dec 01 12:11	17° II 21'19	-0°30'50
evening set	10403 May 03 10:43	2° II 24'19		min. Earth dist.	10409 Dec 01 12:22	17° II 21'18	29.06156 AU
conjunction	10403 May 18 20:59	2° II 59'02	-0°16'24	direct	10410 Feb 19 08:50	15° II 57'37	
minimum elong	10403 May 18 20:59	2° II 59'02	0°16'50	evening set	10410 May 18 11:10	17° II 52'07	
max. Earth dist.	10403 May 18 16:25	2° II 58'37	31.12247 AU	conjunction	10410 Jun 02 20:59	18° II 26'53	-0°29'43
morning rise	10403 Jun 03 07:05	3° II 33'45		minimum elong	10410 Jun 02 20:59	18° II 26'53	0°30'12
retrograde	10403 Aug 30 17:39	5° II 28'46		max. Earth dist.	10410 Jun 02 19:58	18° II 26'47	31.05529 AU
opposition	10403 Nov 18 06:29	4° II 05'37	-0°18'35	morning rise	10410 Jun 18 07:19	19° II 01'44	
min. Earth dist.	10403 Nov 18 09:33	4° II 05'24	29.11853 AU	retrograde	10410 Sep 15 05:32	20° II 57'35	
direct	10404 Feb 06 11:30	2° II 41'48		opposition	10410 Dec 04 01:07	19° II 34'04	-0°32'44
evening set	10404 May 04 20:47	4° II 36'25		min. Earth dist.	10410 Dec 04 01:02	19° II 34'05	29.04908 AU
conjunction	10404 May 20 07:04	5° II 11'09	-0°18'23	direct	10411 Feb 21 20:41	18° II 10'21	
minimum elong	10404 May 20 07:04	5° II 11'09	0°18'50	evening set	10411 May 20 21:30	20° II 04'48	
max. Earth dist.	10404 May 20 04:02	5° II 10'52	31.11452 AU	conjunction	10411 Jun 05 07:29	20° II 39'36	-0°31'28
morning rise	10404 Jun 04 17:00	5° II 45'53		minimum elong	10411 Jun 05 07:29	20° II 39'36	0°31'58
retrograde	10404 Sep 01 03:06	7° II 41'02		max. Earth dist.	10411 Jun 05 08:14	20° II 39'40	31.04269 AU
opposition	10404 Nov 19 19:20	6° II 17'52	-0°20'43	morning rise	10411 Jun 20 17:44	21° II 14'27	
min. Earth dist.	10404 Nov 19 22:30	6° II 17'39	29.11065 AU	retrograde	10411 Sep 17 16:54	23° II 10'23	
direct	10405 Feb 07 23:15	4° II 54'07		opposition	10411 Dec 06 14:10	21° II 46'47	-0°34'35
evening set	10405 May 07 07:05	6° II 48'43		min. Earth dist.	10411 Dec 06 13:31	21° II 46'50	29.03657 AU
conjunction	10405 May 22 17:11	7° II 23'28	-0°20'22	direct	10412 Feb 24 10:20	20° II 23'03	
minimum elong	10405 May 22 17:11	7° II 23'28	0°20'49	evening set	10412 May 22 07:55	22° II 17'28	
max. Earth dist.	10405 May 22 14:15	7° II 23'11	31.10672 AU	conjunction	10412 Jun 06 17:43	22° II 52'15	-0°33'11
morning rise	10405 Jun 07 03:13	7° II 58'13		minimum elong	10412 Jun 06 17:43	22° II 52'15	0°33'40
retrograde	10405 Sep 03 15:45	9° II 53'30		max. Earth dist.	10412 Jun 06 18:23	22° II 52'19	31.03053 AU
opposition	10405 Nov 22 08:08	8° II 30'19	-0°22'49	morning rise	10412 Jun 22 04:12	23° II 27'08	
min. Earth dist.	10405 Nov 22 09:44	8° II 30'13	29.10269 AU	retrograde	10412 Sep 19 05:39	25° II 23'11	
direct	10406 Feb 10 10:02	7° II 06'36		opposition	10412 Dec 08 03:12	23° II 59'30	-0°36'23
evening set	10406 May 09 17:20	9° II 01'12		min. Earth dist.	10412 Dec 08 01:09	23° II 59'38	29.02492 AU

direct	10413 Feb 25 21:48	22° Π 35'45		minimum elong	10419 Jun 22 20:03	8° \mathfrak{D} 24'55	0°44'09
evening set	10413 May 24 18:17	24° Π 30'09		max. Earth dist.	10419 Jun 23 01:41	8° \mathfrak{D} 25'27	30.96899 AU
				morning rise	10419 Jul 08 07:34	8° \mathfrak{D} 59'57	
conjunction	10413 Jun 09 04:12	25° Π 04'57 -0°34'50		retrograde	10419 Oct 05 22:01	10° \mathfrak{D} 56'58	
minimum elong	10413 Jun 09 04:12	25° Π 04'57 0°35'21		opposition	10419 Dec 24 23:10	9° \mathfrak{D} 33'07	-0°47'22
max. Earth dist.	10413 Jun 09 06:31	25° Π 05'10 31.01932 AU		min. Earth dist.	10419 Dec 24 16:43	9° \mathfrak{D} 33'33	28.96485 AU
morning rise	10413 Jun 24 14:40	25° Π 39'51		direct	10420 Mar 13 05:22	8° \mathfrak{D} 09'37	
retrograde	10413 Sep 21 16:01	27° Π 36'01		evening set	10420 Jun 08 20:42	10° \mathfrak{D} 04'04	
opposition	10413 Dec 10 16:18	26° Π 12'17 -0°38'08					
min. Earth dist.	10413 Dec 10 14:02	26° Π 12'26 29.01435 AU		conjunction	10420 Jun 24 07:06	10° \mathfrak{D} 39'00	-0°44'54
direct	10414 Feb 28 10:09	24° Π 48'33		minimum elong	10420 Jun 24 07:06	10° \mathfrak{D} 39'00	0°45'24
evening set	10414 May 27 04:40	26° Π 42'55		max. Earth dist.	10420 Jun 24 14:12	10° \mathfrak{D} 39'40	30.95992 AU
				morning rise	10420 Jul 09 18:37	11° \mathfrak{D} 14'03	
conjunction	10414 Jun 11 14:34	27° Π 17'45 -0°36'27		retrograde	10420 Oct 07 10:30	13° \mathfrak{D} 11'12	
minimum elong	10414 Jun 11 14:34	27° Π 17'45 0°36'57		opposition	10420 Dec 26 12:36	11° \mathfrak{D} 47'17	-0°48'40
max. Earth dist.	10414 Jun 11 17:18	27° Π 18'00 31.00942 AU		min. Earth dist.	10420 Dec 26 05:54	11° \mathfrak{D} 47'45	28.95518 AU
morning rise	10414 Jun 27 01:15	27° Π 52'40		direct	10421 Mar 15 18:47	10° \mathfrak{D} 23'48	
retrograde	10414 Sep 24 05:12	29° Π 48'58		evening set	10421 Jun 11 07:47	12° \mathfrak{D} 18'14	
opposition	10414 Dec 13 05:15	28° Π 25'12 -0°39'49					
min. Earth dist.	10414 Dec 13 01:09	28° Π 25'29 29.00497 AU		conjunction	10421 Jun 26 18:11	12° \mathfrak{D} 53'10	-0°46'05
direct	10415 Mar 02 21:29	27° Π 01'29		minimum elong	10421 Jun 26 18:11	12° \mathfrak{D} 53'10	0°46'35
evening set	10415 May 29 15:11	28° Π 55'52		max. Earth dist.	10421 Jun 27 00:38	12° \mathfrak{D} 53'47	30.94975 AU
				morning rise	10421 Jul 12 06:04	13° \mathfrak{D} 28'16	
conjunction	10415 Jun 14 01:07	29° Π 30'43 -0°38'00		retrograde	10421 Oct 10 00:28	15° \mathfrak{D} 25'29	
minimum elong	10415 Jun 14 01:07	29° Π 30'43 0°38'30		opposition	10421 Dec 29 01:55	14° \mathfrak{D} 01'31	-0°49'54
max. Earth dist.	10415 Jun 14 04:46	29° Π 31'04 31.00043 AU		min. Earth dist.	10421 Dec 28 18:29	14° \mathfrak{D} 02'01	28.94449 AU
	10415 Jun 26 23:04	0° \mathfrak{D}		direct	10422 Mar 18 06:26	12° \mathfrak{D} 38'00	
morning rise	10415 Jun 29 11:53	0° \mathfrak{D} 05'40		evening set	10422 Jun 13 18:41	14° \mathfrak{D} 32'24	
retrograde	10415 Sep 26 16:18	2° \mathfrak{D} 02'06					
opposition	10415 Dec 15 18:19	0° \mathfrak{D} 38'18 -0°41'27		conjunction	10422 Jun 29 05:22	15° \mathfrak{D} 07'21	-0°47'12
min. Earth dist.	10415 Dec 15 14:31	0° \mathfrak{D} 38'34 28.99648 AU		minimum elong	10422 Jun 29 05:22	15° \mathfrak{D} 07'21	0°47'42
	10416 Jan 09 00:02	30° \mathfrak{K} Π		max. Earth dist.	10422 Jun 29 12:53	15° \mathfrak{D} 08'04	30.93848 AU
direct	10416 Mar 04 08:04	29° Π 14'39		morning rise	10422 Jul 14 17:23	15° \mathfrak{D} 42'28	
	10416 Apr 26 02:25	0° \mathfrak{D}		retrograde	10422 Oct 12 12:18	17° \mathfrak{D} 39'46	
evening set	10416 May 31 01:41	1° \mathfrak{D} 09'03		opposition	10422 Dec 31 15:17	16° \mathfrak{D} 15'41	-0°51'03
				min. Earth dist.	10422 Dec 31 08:09	16° \mathfrak{D} 16'11	28.93281 AU
conjunction	10416 Jun 15 11:43	1° \mathfrak{D} 43'54 -0°39'30		direct	10423 Mar 20 20:23	14° \mathfrak{D} 52'09	
minimum elong	10416 Jun 15 11:43	1° \mathfrak{D} 43'54 0°40'00		evening set	10423 Jun 16 05:39	16° \mathfrak{D} 46'29	
max. Earth dist.	10416 Jun 15 16:29	1° \mathfrak{D} 44'21 30.99240 AU					
morning rise	10416 Jun 30 22:36	2° \mathfrak{D} 18'52		conjunction	10423 Jul 01 16:25	17° \mathfrak{D} 21'28	-0°48'14
retrograde	10416 Sep 28 04:51	4° \mathfrak{D} 15'27		minimum elong	10423 Jul 01 16:25	17° \mathfrak{D} 21'28	0°48'44
opposition	10416 Dec 17 07:25	2° \mathfrak{D} 51'39 -0°43'02		max. Earth dist.	10423 Jul 01 23:59	17° \mathfrak{D} 22'11	30.92668 AU
min. Earth dist.	10416 Dec 17 01:53	2° \mathfrak{D} 52'02 28.98867 AU		morning rise	10423 Jul 17 04:43	17° \mathfrak{D} 56'36	
direct	10417 Mar 06 19:51	1° \mathfrak{D} 28'03		retrograde	10423 Oct 15 02:16	19° \mathfrak{D} 53'57	
evening set	10417 Jun 02 12:15	3° \mathfrak{D} 22'27		opposition	10424 Jan 03 04:25	18° \mathfrak{D} 29'47	-0°52'08
				min. Earth dist.	10424 Jan 02 19:47	18° \mathfrak{D} 30'22	28.92099 AU
conjunction	10417 Jun 17 22:16	3° \mathfrak{D} 57'20 -0°40'57		direct	10424 Mar 22 09:13	17° \mathfrak{D} 06'11	
minimum elong	10417 Jun 17 22:16	3° \mathfrak{D} 57'20 0°41'27		evening set	10424 Jun 17 16:37	19° \mathfrak{D} 00'29	
max. Earth dist.	10417 Jun 18 03:09	3° \mathfrak{D} 57'47 30.98473 AU					
morning rise	10417 Jul 03 09:25	4° \mathfrak{D} 32'19		conjunction	10424 Jul 03 03:31	19° \mathfrak{D} 35'28	-0°49'13
retrograde	10417 Sep 30 18:13	6° \mathfrak{D} 29'04		minimum elong	10424 Jul 03 03:31	19° \mathfrak{D} 35'28	0°49'42
opposition	10417 Dec 19 20:44	5° \mathfrak{D} 05'15 -0°44'33		max. Earth dist.	10424 Jul 03 11:52	19° \mathfrak{D} 36'16	30.91496 AU
min. Earth dist.	10417 Dec 19 15:26	5° \mathfrak{D} 05'37 28.98115 AU		morning rise	10424 Jul 18 16:03	20° \mathfrak{D} 10'38	
direct	10418 Mar 09 05:04	3° \mathfrak{D} 41'41		retrograde	10424 Oct 16 12:44	22° \mathfrak{D} 08'03	
evening set	10418 Jun 04 22:56	5° \mathfrak{D} 36'07		opposition	10425 Jan 04 17:47	20° \mathfrak{D} 43'47	-0°53'08
				min. Earth dist.	10425 Jan 04 09:29	20° \mathfrak{D} 44'21	28.90971 AU
conjunction	10418 Jun 20 09:10	6° \mathfrak{D} 11'00 -0°42'20		direct	10425 Mar 24 20:49	19° \mathfrak{D} 20'09	
minimum elong	10418 Jun 20 09:10	6° \mathfrak{D} 11'00 0°42'50		evening set	10425 Jun 20 03:26	21° \mathfrak{D} 14'23	
max. Earth dist.	10418 Jun 20 15:27	6° \mathfrak{D} 11'36 30.97713 AU					
morning rise	10418 Jul 05 20:21	6° \mathfrak{D} 46'01		conjunction	10425 Jul 05 14:35	21° \mathfrak{D} 49'24	-0°50'07
retrograde	10418 Oct 03 06:49	8° \mathfrak{D} 42'54		minimum elong	10425 Jul 05 14:35	21° \mathfrak{D} 49'24	0°50'36
opposition	10418 Dec 22 09:47	7° \mathfrak{D} 19'05 -0°45'59		max. Earth dist.	10425 Jul 06 00:06	21° \mathfrak{D} 50'18	30.90419 AU
min. Earth dist.	10418 Dec 22 03:26	7° \mathfrak{D} 19'31 28.97331 AU		morning rise	10425 Jul 21 03:19	22° \mathfrak{D} 24'34	
direct	10419 Mar 11 17:53	5° \mathfrak{D} 55'33		retrograde	10425 Oct 19 00:43	24° \mathfrak{D} 22'04	
evening set	10419 Jun 07 09:53	7° \mathfrak{D} 50'00		opposition	10426 Jan 07 06:55	22° \mathfrak{D} 57'43	-0°54'04
				min. Earth dist.	10426 Jan 06 20:51	22° \mathfrak{D} 58'24	28.89947 AU
conjunction	10419 Jun 22 20:03	8° \mathfrak{D} 24'55 -0°43'39		direct	10426 Mar 27 09:12	21° \mathfrak{D} 34'03	

evening set	10426 Jun 22 14:30	23° Ω 28'16		max. Earth dist.	10432 Jul 21 11:40	7° Ω 30'10	30.85706 AU
				morning rise	10432 Aug 05 13:12	8° Ω 04'17	
conjunction	10426 Jul 08 01:43	24° Ω 03'17 -0°50'56		retrograde	10432 Nov 03 23:52	10° Ω 02'25	
minimum elong	10426 Jul 08 01:43	24° Ω 03'17 0°51'25		opposition	10433 Jan 23 03:09	8° Ω 37'53 -0°58'11	
max. Earth dist.	10426 Jul 08 11:21	24° Ω 04'12 30.89452 AU		min. Earth dist.	10433 Jan 22 13:23	8° Ω 38'50 28.85439 AU	
morning rise	10426 Jul 23 14:50	24° Ω 38'29		direct	10433 Apr 11 19:34	7° Ω 14'21	
retrograde	10426 Oct 21 13:20	26° Ω 36'04		evening set	10433 Jul 07 21:19	9° Ω 08'35	
opposition	10427 Jan 09 20:00	25° Ω 11'39 -0°54'54					
min. Earth dist.	10427 Jan 09 10:06	25° Ω 12'20 28.89055 AU		conjunction	10433 Jul 23 10:13	9° Ω 43'46 -0°54'31	
direct	10427 Mar 29 18:50	23° Ω 47'58		minimum elong	10433 Jul 23 10:13	9° Ω 43'46 0°54'55	
evening set	10427 Jun 25 01:28	25° Ω 42'10		max. Earth dist.	10433 Jul 23 23:44	9° Ω 45'03 30.85070 AU	
				morning rise	10433 Aug 08 01:21	10° Ω 19'10	
conjunction	10427 Jul 10 13:02	26° Ω 17'13 -0°51'41		retrograde	10433 Nov 06 11:39	12° Ω 17'23	
minimum elong	10427 Jul 10 13:02	26° Ω 17'13 0°52'10		opposition	10434 Jan 25 16:29	10° Ω 52'48 -0°58'25	
max. Earth dist.	10427 Jul 11 00:17	26° Ω 18'16 30.88625 AU		min. Earth dist.	10434 Jan 25 03:36	10° Ω 53'42 28.84761 AU	
morning rise	10427 Jul 26 02:16	26° Ω 52'26		direct	10434 Apr 14 07:25	9° Ω 29'16	
retrograde	10427 Oct 24 01:36	28° Ω 50'05		evening set	10434 Jul 10 08:57	11° Ω 23'29	
opposition	10428 Jan 12 09:08	27° Ω 25'38 -0°55'40					
min. Earth dist.	10428 Jan 11 21:46	27° Ω 26'25 28.88285 AU		conjunction	10434 Jul 25 22:14	11° Ω 58'41 -0°54'42	
direct	10428 Mar 31 07:47	26° Ω 01'58		minimum elong	10434 Jul 25 22:14	11° Ω 58'41 0°55'06	
evening set	10428 Jun 26 12:31	27° Ω 56'09		max. Earth dist.	10434 Jul 26 12:10	12° Ω 00'01 30.84355 AU	
				morning rise	10434 Aug 10 13:40	12° Ω 34'07	
conjunction	10428 Jul 12 00:07	28° Ω 31'13 -0°52'22		retrograde	10434 Nov 09 00:44	14° Ω 32'22	
minimum elong	10428 Jul 12 00:07	28° Ω 31'13 0°52'50		opposition	10435 Jan 28 05:28	13° Ω 07'45 -0°58'34	
max. Earth dist.	10428 Jul 12 11:06	28° Ω 32'15 30.87918 AU		min. Earth dist.	10435 Jan 27 15:29	13° Ω 08'43 28.83999 AU	
morning rise	10428 Jul 27 13:47	29° Ω 06'28		direct	10435 Apr 16 20:17	11° Ω 44'11	
	10428 Aug 22 11:36	0° Ω		evening set	10435 Jul 12 20:40	13° Ω 38'23	
retrograde	10428 Oct 25 16:00	1° Ω 04'13					
	10429 Jan 01 13:09	30° κ Ω		conjunction	10435 Jul 28 10:07	14° Ω 13'36 -0°54'48	
opposition	10429 Jan 13 22:25	29° Ω 39'44 -0°56'21		minimum elong	10435 Jul 28 10:07	14° Ω 13'36 0°55'11	
min. Earth dist.	10429 Jan 13 10:40	29° Ω 40'32 28.87641 AU		max. Earth dist.	10435 Jul 28 23:41	14° Ω 14'54 30.83567 AU	
direct	10429 Apr 02 18:09	28° Ω 16'05		morning rise	10435 Aug 13 02:00	14° Ω 49'03	
	10429 Jun 24 07:33	0° Ω			10435 Aug 18 01:20	15° Ω	
evening set	10429 Jun 28 23:36	0° Ω 10'17		retrograde	10435 Nov 11 13:32	16° Ω 47'22	
				opposition	10436 Jan 30 18:42	15° Ω 22'39 -0°58'38	
conjunction	10429 Jul 14 11:36	0° Ω 45'22 -0°52'57		min. Earth dist.	10436 Jan 30 05:22	15° Ω 23'35 28.83212 AU	
minimum elong	10429 Jul 14 11:36	0° Ω 45'22 0°53'25			10436 Feb 13 13:58	15° κ Ω	
max. Earth dist.	10429 Jul 15 00:22	0° Ω 46'34 30.87316 AU		direct	10436 Apr 18 06:31	13° Ω 59'04	
morning rise	10429 Jul 30 01:24	1° Ω 20'38			10436 Jun 18 12:05	15° Ω	
retrograde	10429 Oct 28 04:30	3° Ω 18'29		evening set	10436 Jul 14 08:03	15° Ω 53'13	
opposition	10430 Jan 16 11:32	1° Ω 53'59 -0°56'56					
min. Earth dist.	10430 Jan 15 23:18	1° Ω 54'50 28.87074 AU		conjunction	10436 Jul 29 21:58	16° Ω 28'27 -0°54'49	
direct	10430 Apr 05 06:26	0° Ω 30'22		minimum elong	10436 Jul 29 21:58	16° Ω 28'27 0°55'12	
evening set	10430 Jul 01 10:54	2° Ω 24'35		max. Earth dist.	10436 Jul 30 12:52	16° Ω 29'52 30.82791 AU	
				morning rise	10436 Aug 14 14:05	17° Ω 03'56	
conjunction	10430 Jul 16 23:01	2° Ω 59'41 -0°53'28		retrograde	10436 Nov 13 01:13	19° Ω 02'16	
minimum elong	10430 Jul 16 23:01	2° Ω 59'41 0°53'55		opposition	10437 Feb 01 07:45	17° Ω 37'30 -0°58'37	
max. Earth dist.	10430 Jul 17 11:22	3° Ω 00'51 30.86783 AU		min. Earth dist.	10437 Jan 31 17:14	17° Ω 38'30 28.82456 AU	
morning rise	10430 Aug 01 13:18	3° Ω 34'59		direct	10437 Apr 20 19:54	16° Ω 13'52	
retrograde	10430 Oct 30 19:34	5° Ω 32'57		evening set	10437 Jul 16 19:46	18° Ω 08'00	
min. Earth dist.	10431 Jan 18 11:42	4° Ω 09'19 28.86558 AU					
opposition	10431 Jan 19 00:42	4° Ω 08'26 -0°57'26		conjunction	10437 Aug 01 09:50	18° Ω 43'15 -0°54'46	
direct	10431 Apr 07 17:40	2° Ω 44'51		minimum elong	10437 Aug 01 09:50	18° Ω 43'15 0°55'08	
evening set	10431 Jul 03 22:13	4° Ω 39'04		max. Earth dist.	10437 Aug 02 00:12	18° Ω 44'37 30.82078 AU	
				morning rise	10437 Aug 17 02:29	19° Ω 18'45	
conjunction	10431 Jul 19 10:38	5° Ω 14'12 -0°53'54		retrograde	10437 Nov 15 14:37	21° Ω 17'07	
minimum elong	10431 Jul 19 10:38	5° Ω 14'12 0°54'20		opposition	10438 Feb 03 20:40	19° Ω 52'17 -0°58'31	
max. Earth dist.	10431 Jul 20 00:08	5° Ω 15'29 30.86255 AU		min. Earth dist.	10438 Feb 03 06:05	19° Ω 53'18 28.81807 AU	
morning rise	10431 Aug 04 01:04	5° Ω 49'32		direct	10438 Apr 23 05:49	18° Ω 28'37	
retrograde	10431 Nov 02 08:45	7° Ω 47'35		evening set	10438 Jul 19 07:20	20° Ω 22'44	
opposition	10432 Jan 21 13:56	6° Ω 23'04 -0°57'51					
min. Earth dist.	10432 Jan 21 01:18	6° Ω 23'56 28.86021 AU		conjunction	10438 Aug 03 21:53	20° Ω 58'00 -0°54'37	
direct	10432 Apr 09 06:59	4° Ω 59'31		minimum elong	10438 Aug 03 21:54	20° Ω 58'00 0°54'59	
evening set	10432 Jul 05 09:46	6° Ω 53'45		max. Earth dist.	10438 Aug 04 13:53	20° Ω 59'31 30.81483 AU	
				morning rise	10438 Aug 19 14:44	21° Ω 33'31	
conjunction	10432 Jul 20 22:24	7° Ω 28'55 -0°54'15		retrograde	10438 Nov 18 02:41	23° Ω 31'56	
minimum elong	10432 Jul 20 22:24	7° Ω 28'55 0°54'41		opposition	10439 Feb 06 09:34	22° Ω 07'03 -0°58'19	

min. Earth dist.	10439 Feb 05 18:24	22°08'06"	28.81276 AU	evening set	10445 Aug 03 18:40	6°07'43"	
direct	10439 Apr 25 17:37	20°04'32"					
evening set	10439 Jul 21 18:59	22°03'37"		conjunction	10445 Aug 19 11:42	6°04'43"	-0°51'17"
				minimum elong	10445 Aug 19 11:42	6°04'43"	0°51'32"
conjunction	10439 Aug 06 09:43	23°01'24"	-0°54'23"	max. Earth dist.	10445 Aug 20 05:55	6°04'44"	30.80561 AU
minimum elong	10439 Aug 06 09:44	23°01'24"	0°54'44"	morning rise	10445 Sep 04 07:12	7°01'18"	
max. Earth dist.	10439 Aug 07 01:21	23°01'14"	30.81031 AU	retrograde	10445 Dec 04 02:47	9°01'17"	
morning rise	10439 Aug 22 03:04	23°04'48"		min. Earth dist.	10446 Feb 21 10:22	7°05'34"	28.80557 AU
retrograde	10439 Nov 20 17:26	25°04'46"		opposition	10446 Feb 22 03:27	7°05'23"	-0°54'26"
opposition	10440 Feb 08 22:27	24°02'15"	-0°58'01"	direct	10446 May 11 07:17	6°01'29"	
min. Earth dist.	10440 Feb 08 06:28	24°02'25"	28.80904 AU	evening set	10446 Aug 06 07:08	8°01'23"	
direct	10440 Apr 27 04:56	22°05'58"					
evening set	10440 Jul 23 06:39	24°05'21"		conjunction	10446 Aug 22 00:24	8°01'58"	-0°50'29"
				minimum elong	10446 Aug 22 00:24	8°01'58"	0°50'43"
conjunction	10440 Aug 07 21:49	25°02'33"	-0°54'05"	max. Earth dist.	10446 Aug 22 17:18	9°01'00"	30.80452 AU
minimum elong	10440 Aug 07 21:49	25°02'33"	0°54'25"	morning rise	10446 Sep 06 20:27	9°01'34"	
max. Earth dist.	10440 Aug 08 14:48	25°02'10"	30.80727 AU	retrograde	10446 Dec 06 16:08	11°01'32"	
morning rise	10440 Aug 23 15:26	26°03'07"		opposition	10447 Feb 24 16:20	10°01'07"	-0°53'32"
retrograde	10440 Nov 22 06:48	28°01'37"		min. Earth dist.	10447 Feb 23 23:52	10°01'09"	28.80406 AU
opposition	10441 Feb 10 11:22	26°03'64"	-0°57'39"	direct	10447 May 13 17:39	8°01'44"	
min. Earth dist.	10441 Feb 09 19:27	26°03'74"	28.80675 AU	evening set	10447 Aug 08 19:20	10°01'38"	
direct	10441 Apr 29 17:58	25°01'30"					
evening set	10441 Jul 25 18:23	27°01'07"		conjunction	10447 Aug 24 13:07	11°01'13"	-0°49'37"
				minimum elong	10447 Aug 24 13:08	11°01'13"	0°49'49"
conjunction	10441 Aug 10 09:54	27°04'22"	-0°53'41"	max. Earth dist.	10447 Aug 25 07:02	11°01'15"	30.80259 AU
minimum elong	10441 Aug 10 09:54	27°04'22"	0°54'00"	morning rise	10447 Sep 09 09:23	11°01'49"	
max. Earth dist.	10441 Aug 11 02:50	27°04'44"	30.80576 AU	retrograde	10447 Dec 09 04:05	13°01'48"	
morning rise	10441 Aug 26 03:58	28°01'18"		opposition	10448 Feb 27 05:03	12°01'23"	-0°52'33"
	10441 Oct 24 01:12	0°01'12"		min. Earth dist.	10448 Feb 26 12:32	12°01'24"	28.80177 AU
retrograde	10441 Nov 24 21:33	0°01'16"		direct	10448 May 15 06:00	10°01'59"	
	10441 Dec 27 05:58	30°08'02"		evening set	10448 Aug 10 07:43	12°01'53"	
min. Earth dist.	10442 Feb 12 06:59	28°05'24"	28.80580 AU				
opposition	10442 Feb 13 00:10	28°05'13"	-0°57'11"	conjunction	10448 Aug 26 01:46	13°01'29"	-0°48'40"
direct	10442 May 02 06:01	27°02'27"		minimum elong	10448 Aug 26 01:46	13°01'29"	0°48'51"
evening set	10442 Jul 28 06:19	29°02'22"		max. Earth dist.	10448 Aug 26 18:42	13°01'30"	30.80029 AU
				morning rise	10448 Sep 10 22:36	14°01'04"	
conjunction	10442 Aug 12 22:09	29°05'27"	-0°53'13"	retrograde	10448 Dec 10 17:53	16°01'03"	
minimum elong	10442 Aug 12 22:09	29°05'27"	0°53'30"	opposition	10449 Feb 28 17:37	14°01'38"	-0°51'30"
max. Earth dist.	10442 Aug 13 15:36	29°05'59"	30.80522 AU	min. Earth dist.	10449 Feb 28 00:58	14°01'39"	28.79954 AU
	10442 Aug 14 01:21	0°01'12"		direct	10449 May 17 17:20	13°01'14"	
morning rise	10442 Aug 28 16:35	0°01'33"		evening set	10449 Aug 12 20:00	15°01'08"	
retrograde	10442 Nov 27 10:29	2°01'31"					
opposition	10443 Feb 15 12:58	1°01'06"	-0°56'37"	conjunction	10449 Aug 28 14:34	15°01'44"	-0°47'38"
min. Earth dist.	10443 Feb 14 20:34	1°01'07"	28.80569 AU	minimum elong	10449 Aug 28 14:34	15°01'44"	0°47'48"
	10443 Apr 02 15:55	30°08'02"		max. Earth dist.	10449 Aug 29 08:27	15°01'45"	30.79813 AU
direct	10443 May 04 17:56	29°04'43"		morning rise	10449 Sep 13 11:42	16°01'20"	
	10443 Jun 05 04:04	0°01'12"		retrograde	10449 Dec 13 06:09	18°01'18"	
evening set	10443 Jul 30 18:18	1°01'37"		opposition	10450 Mar 03 06:10	16°01'53"	-0°50'22"
				min. Earth dist.	10450 Mar 02 13:59	16°01'54"	28.79764 AU
conjunction	10443 Aug 15 10:33	2°01'12"	-0°52'39"	direct	10450 May 20 05:56	15°01'29"	
minimum elong	10443 Aug 15 10:33	2°01'12"	0°52'56"	evening set	10450 Aug 15 08:22	17°01'23"	
max. Earth dist.	10443 Aug 16 04:31	2°01'14"	30.80549 AU				
morning rise	10443 Aug 31 05:19	2°01'48"		conjunction	10450 Aug 31 03:16	17°01'59"	-0°46'33"
retrograde	10443 Nov 30 01:26	4°01'46"		minimum elong	10450 Aug 31 03:16	17°01'59"	0°46'41"
min. Earth dist.	10444 Feb 17 08:16	3°01'23"	28.80603 AU	max. Earth dist.	10450 Aug 31 20:40	18°01'00"	30.79672 AU
opposition	10444 Feb 18 01:46	3°01'21"	-0°55'59"	morning rise	10450 Sep 16 00:50	18°01'35"	
direct	10444 May 06 07:15	1°01'58"		retrograde	10450 Dec 15 20:24	20°01'33"	
evening set	10444 Aug 01 06:25	3°01'52"		opposition	10451 Mar 05 18:28	19°01'08"	-0°49'09"
				min. Earth dist.	10451 Mar 05 01:18	19°01'09"	28.79674 AU
conjunction	10444 Aug 16 22:54	4°01'27"	-0°52'01"	direct	10451 May 22 17:47	17°01'44"	
minimum elong	10444 Aug 16 22:55	4°01'27"	0°52'17"	evening set	10451 Aug 17 20:45	19°01'38"	
max. Earth dist.	10444 Aug 17 16:26	4°01'29"	30.80576 AU				
morning rise	10444 Sep 01 18:10	5°01'03"		conjunction	10451 Sep 02 16:01	20°01'14"	-0°45'23"
retrograde	10444 Dec 01 14:37	7°01'02"		minimum elong	10451 Sep 02 16:02	20°01'14"	0°45'30"
opposition	10445 Feb 19 14:47	5°01'37"	-0°55'15"	max. Earth dist.	10451 Sep 03 09:51	20°01'15"	30.79634 AU
min. Earth dist.	10445 Feb 18 22:17	5°01'38"	28.80620 AU	morning rise	10451 Sep 18 13:57	20°01'50"	
direct	10445 May 08 18:14	4°01'13"		retrograde	10451 Dec 18 09:27	22°01'48"	

opposition	10452 Mar 07 06:57	21° <u>♏</u> 23'25	-0°47'52	conjunction	10458 Sep 18 11:12	6° <u>♏</u> 00'48	-0°35'22
min. Earth dist.	10452 Mar 06 14:31	21° <u>♏</u> 24'34	28.79706 AU	minimum elong	10458 Sep 18 11:12	6° <u>♏</u> 00'48	0°35'21
direct	10452 May 24 05:59	19° <u>♏</u> 59'39		max. Earth dist.	10458 Sep 19 04:53	6° <u>♏</u> 02'28	30.82181 AU
evening set	10452 Aug 19 09:00	21° <u>♏</u> 53'36		morning rise	10458 Oct 04 11:37	6° <u>♏</u> 36'46	
				retrograde	10459 Jan 03 04:40	8° <u>♏</u> 35'05	
conjunction	10452 Sep 04 04:45	22° <u>♏</u> 29'11	-0°44'08	opposition	10459 Mar 23 20:35	7° <u>♏</u> 10'11	-0°36'54
minimum elong	10452 Sep 04 04:46	22° <u>♏</u> 29'11	0°44'15	min. Earth dist.	10459 Mar 23 05:06	7° <u>♏</u> 11'16	28.82365 AU
max. Earth dist.	10452 Sep 04 23:01	22° <u>♏</u> 30'55	30.79744 AU	direct	10459 Jun 09 16:03	5° <u>♏</u> 46'31	
morning rise	10452 Sep 20 03:03	23° <u>♏</u> 05'02		evening set	10459 Sep 05 02:05	7° <u>♏</u> 40'33	
retrograde	10452 Dec 20 00:31	25° <u>♏</u> 03'29					
opposition	10453 Mar 09 19:14	23° <u>♏</u> 38'22	-0°46'30	conjunction	10459 Sep 21 00:31	8° <u>♏</u> 16'17	-0°33'42
min. Earth dist.	10453 Mar 09 01:38	23° <u>♏</u> 39'36	28.79878 AU	minimum elong	10459 Sep 21 00:31	8° <u>♏</u> 16'17	0°33'40
direct	10453 May 26 19:31	22° <u>♏</u> 14'37		max. Earth dist.	10459 Sep 21 16:59	8° <u>♏</u> 17'50	30.82480 AU
evening set	10453 Aug 21 21:34	24° <u>♏</u> 08'34		morning rise	10459 Oct 07 01:23	8° <u>♏</u> 52'15	
				retrograde	10460 Jan 05 18:48	10° <u>♏</u> 50'29	
conjunction	10453 Sep 06 17:36	24° <u>♏</u> 44'11	-0°42'50	opposition	10460 Mar 25 08:39	9° <u>♏</u> 25'35	-0°35'06
minimum elong	10453 Sep 06 17:37	24° <u>♏</u> 44'11	0°42'55	min. Earth dist.	10460 Mar 24 16:49	9° <u>♏</u> 26'42	28.82619 AU
max. Earth dist.	10453 Sep 07 11:32	24° <u>♏</u> 45'52	30.79980 AU	direct	10460 Jun 11 03:22	8° <u>♏</u> 01'52	
morning rise	10453 Sep 22 16:23	25° <u>♏</u> 20'03		evening set	10460 Sep 06 14:57	9° <u>♏</u> 55'53	
retrograde	10453 Dec 22 13:18	27° <u>♏</u> 18'29					
opposition	10454 Mar 12 07:30	25° <u>♏</u> 53'24	-0°45'04	conjunction	10460 Sep 22 13:47	10° <u>♏</u> 31'37	-0°31'59
min. Earth dist.	10454 Mar 11 14:48	25° <u>♏</u> 54'34	28.80186 AU	minimum elong	10460 Sep 22 13:47	10° <u>♏</u> 31'37	0°31'57
direct	10454 May 29 06:33	24° <u>♏</u> 29'39		max. Earth dist.	10460 Sep 23 06:08	10° <u>♏</u> 33'09	30.82696 AU
evening set	10454 Aug 24 10:01	26° <u>♏</u> 23'37		morning rise	10460 Oct 08 14:59	11° <u>♏</u> 07'36	
				retrograde	10461 Jan 07 07:01	13° <u>♏</u> 05'45	
conjunction	10454 Sep 09 06:37	26° <u>♏</u> 59'15	-0°41'28	opposition	10461 Mar 27 20:44	11° <u>♏</u> 40'49	-0°33'14
minimum elong	10454 Sep 09 06:37	26° <u>♏</u> 59'15	0°41'33	min. Earth dist.	10461 Mar 27 06:13	11° <u>♏</u> 41'50	28.82813 AU
max. Earth dist.	10454 Sep 10 01:25	27° <u>♏</u> 01'02	30.80352 AU	direct	10461 Jun 13 16:15	10° <u>♏</u> 17'02	
morning rise	10454 Sep 25 05:38	27° <u>♏</u> 35'09		evening set	10461 Sep 09 03:53	12° <u>♏</u> 11'01	
retrograde	10454 Dec 25 02:03	29° <u>♏</u> 33'33					
opposition	10455 Mar 14 19:42	28° <u>♏</u> 08'31	-0°43'34	conjunction	10461 Sep 25 03:10	12° <u>♏</u> 46'46	-0°30'14
min. Earth dist.	10455 Mar 14 02:11	28° <u>♏</u> 09'45	28.80600 AU	minimum elong	10461 Sep 25 03:10	12° <u>♏</u> 46'46	0°30'09
direct	10455 May 31 19:22	26° <u>♏</u> 44'49		max. Earth dist.	10461 Sep 25 19:12	12° <u>♏</u> 48'17	30.82893 AU
evening set	10455 Aug 26 22:35	28° <u>♏</u> 38'48		morning rise	10461 Oct 11 04:40	13° <u>♏</u> 22'46	
				retrograde	10462 Jan 09 21:02	15° <u>♏</u> 20'47	
conjunction	10455 Sep 11 19:24	29° <u>♏</u> 14'28	-0°40'02	opposition	10462 Mar 30 08:24	13° <u>♏</u> 55'49	-0°31'20
minimum elong	10455 Sep 11 19:24	29° <u>♏</u> 14'28	0°40'05	min. Earth dist.	10462 Mar 29 17:15	13° <u>♏</u> 56'53	28.83010 AU
max. Earth dist.	10455 Sep 12 13:12	29° <u>♏</u> 16'08	30.80812 AU	direct	10462 Jun 16 06:02	12° <u>♏</u> 31'59	
morning rise	10455 Sep 27 18:56	29° <u>♏</u> 50'22		evening set	10462 Sep 11 16:52	14° <u>♏</u> 25'56	
	10455 Oct 02 04:34	0° <u>♏</u>					
retrograde	10455 Dec 27 15:56	1° <u>♏</u> 48'47		conjunction	10462 Sep 27 16:22	15° <u>♏</u> 01'43	-0°28'26
opposition	10456 Mar 16 08:02	0° <u>♏</u> 23'47	-0°42'00	minimum elong	10462 Sep 27 16:23	15° <u>♏</u> 01'43	0°28'21
min. Earth dist.	10456 Mar 15 15:06	0° <u>♏</u> 24'58	28.81093 AU	max. Earth dist.	10462 Sep 28 07:49	15° <u>♏</u> 03'09	30.83106 AU
	10456 Mar 30 16:14	30° <u>♏</u>		morning rise	10462 Oct 13 18:15	15° <u>♏</u> 37'42	
direct	10456 Jun 02 05:27	29° <u>♏</u> 00'07		retrograde	10463 Jan 12 09:21	17° <u>♏</u> 35'38	
	10456 Aug 01 22:48	0° <u>♏</u>		opposition	10463 Apr 01 20:15	16° <u>♏</u> 10'38	-0°29'23
evening set	10456 Aug 28 11:15	0° <u>♏</u> 54'08		min. Earth dist.	10463 Apr 01 06:17	16° <u>♏</u> 11'37	28.83264 AU
				direct	10463 Jun 18 17:32	14° <u>♏</u> 46'44	
conjunction	10456 Sep 13 08:37	1° <u>♏</u> 29'49	-0°38'32	evening set	10463 Sep 14 05:30	16° <u>♏</u> 40'39	
minimum elong	10456 Sep 13 08:37	1° <u>♏</u> 29'49	0°38'35				
max. Earth dist.	10456 Sep 14 03:22	1° <u>♏</u> 31'35	30.81315 AU	conjunction	10463 Sep 30 05:30	17° <u>♏</u> 16'26	-0°26'35
morning rise	10456 Sep 29 08:20	2° <u>♏</u> 05'45		minimum elong	10463 Sep 30 05:31	17° <u>♏</u> 16'26	0°26'28
retrograde	10456 Dec 29 03:57	4° <u>♏</u> 04'08		max. Earth dist.	10463 Sep 30 21:35	17° <u>♏</u> 17'56	30.83407 AU
opposition	10457 Mar 18 20:10	2° <u>♏</u> 39'12	-0°40'22	morning rise	10463 Oct 16 07:34	17° <u>♏</u> 52'26	
min. Earth dist.	10457 Mar 18 03:24	2° <u>♏</u> 40'22	28.81587 AU	retrograde	10464 Jan 14 22:28	19° <u>♏</u> 50'15	
direct	10457 Jun 04 17:24	1° <u>♏</u> 15'33		opposition	10464 Apr 03 07:53	18° <u>♏</u> 25'14	-0°27'24
evening set	10457 Aug 31 00:12	3° <u>♏</u> 09'35		min. Earth dist.	10464 Apr 02 17:13	18° <u>♏</u> 26'16	28.83611 AU
				direct	10464 Jun 20 07:10	17° <u>♏</u> 01'18	
conjunction	10457 Sep 15 21:49	3° <u>♏</u> 45'17	-0°36'59	evening set	10464 Sep 15 18:29	18° <u>♏</u> 55'12	
minimum elong	10457 Sep 15 21:49	3° <u>♏</u> 45'17	0°36'59				
max. Earth dist.	10457 Sep 16 15:07	3° <u>♏</u> 46'54	30.81794 AU	conjunction	10464 Oct 01 18:41	19° <u>♏</u> 31'00	-0°24'43
morning rise	10457 Oct 01 22:04	4° <u>♏</u> 21'14		minimum elong	10464 Oct 01 18:41	19° <u>♏</u> 31'00	0°24'36
retrograde	10457 Dec 31 17:07	6° <u>♏</u> 19'36		max. Earth dist.	10464 Oct 02 09:38	19° <u>♏</u> 32'23	30.83816 AU
opposition	10458 Mar 21 08:24	4° <u>♏</u> 54'41	-0°38'40	morning rise	10464 Oct 17 12:11	20° <u>♏</u> 07'00	
min. Earth dist.	10458 Mar 20 15:56	4° <u>♏</u> 55'51	28.82033 AU	retrograde	10465 Jan 16 12:05	22° <u>♏</u> 04'43	
direct	10458 Jun 07 04:20	3° <u>♏</u> 31'02		opposition	10465 Apr 05 19:27	20° <u>♏</u> 39'42	-0°25'22
evening set	10458 Sep 02 13:06	5° <u>♏</u> 25'05		min. Earth dist.	10465 Apr 05 05:24	20° <u>♏</u> 40'41	28.84096 AU

direct	10465 Jun 22 18:21	19° <u>♂</u> 15'43		direct	10471 Jul 06 15:41	2° <u>♂</u> 42'37	
evening set	10465 Sep 18 07:18	21° <u>♂</u> 09'37		evening set	10471 Oct 02 13:52	4° <u>♂</u> 36'41	
conjunction	10465 Oct 04 08:01	21° <u>♂</u> 45'26	-0°22'48	conjunction	10471 Oct 18 16:15	5° <u>♂</u> 12'33	-0°10'41
minimum elong	10465 Oct 04 08:01	21° <u>♂</u> 45'26	0°22'38	minimum elong	10471 Oct 18 16:15	5° <u>♂</u> 12'33	0°10'25
max. Earth dist.	10465 Oct 04 23:55	21° <u>♂</u> 46'55	30.84369 AU	behind sun begin	10471 Oct 18 11:08	5° <u>♂</u> 12'06	
morning rise	10465 Oct 20 10:38	22° <u>♂</u> 21'26		behind sun end	10471 Oct 18 21:22	5° <u>♂</u> 13'01	
retrograde	10466 Jan 18 23:08	24° <u>♂</u> 19'03		max. Earth dist.	10471 Oct 19 04:41	5° <u>♂</u> 13'42	30.89433 AU
opposition	10466 Apr 08 06:57	22° <u>♂</u> 54'04	-0°23'18	morning rise	10471 Nov 03 20:21	5° <u>♂</u> 48'36	
min. Earth dist.	10466 Apr 07 16:47	22° <u>♂</u> 55'04	28.84712 AU	retrograde	10472 Feb 02 02:23	7° <u>♂</u> 45'46	
direct	10466 Jun 25 06:54	21° <u>♂</u> 30'05		opposition	10472 Apr 21 03:33	6° <u>♂</u> 21'09	-0°10'14
evening set	10466 Sep 20 20:15	23° <u>♂</u> 23'59		min. Earth dist.	10472 Apr 20 16:43	6° <u>♂</u> 21'55	28.89814 AU
				direct	10472 Jul 08 02:50	4° <u>♂</u> 57'12	
conjunction	10466 Oct 06 21:07	23° <u>♂</u> 59'48	-0°20'51	evening set	10472 Oct 04 03:05	6° <u>♂</u> 51'17	
minimum elong	10466 Oct 06 21:07	23° <u>♂</u> 59'48	0°20'41				
max. Earth dist.	10466 Oct 07 11:50	24° <u>♂</u> 01'10	30.85063 AU	conjunction	10472 Oct 20 05:54	7° <u>♂</u> 27'10	-0°08'36
morning rise	10466 Oct 23 00:09	24° <u>♂</u> 35'49		minimum elong	10472 Oct 20 05:53	7° <u>♂</u> 27'10	0°08'21
retrograde	10467 Jan 21 11:49	26° <u>♂</u> 33'21		behind sun begin	10472 Oct 20 00:08	7° <u>♂</u> 26'39	
opposition	10467 Apr 10 18:26	25° <u>♂</u> 08'25	-0°21'11	behind sun end	10472 Oct 20 11:39	7° <u>♂</u> 27'41	
min. Earth dist.	10467 Apr 10 04:17	25° <u>♂</u> 09'25	28.85477 AU	max. Earth dist.	10472 Oct 20 18:13	7° <u>♂</u> 28'18	30.90155 AU
direct	10467 Jun 27 17:24	23° <u>♂</u> 44'26		morning rise	10472 Nov 05 10:06	8° <u>♂</u> 03'12	
evening set	10467 Sep 23 09:09	25° <u>♂</u> 38'22		retrograde	10473 Feb 03 15:50	10° <u>♂</u> 00'15	
				opposition	10473 Apr 23 14:39	8° <u>♂</u> 35'40	-0°08'00
conjunction	10467 Oct 09 10:28	26° <u>♂</u> 14'11	-0°18'52	min. Earth dist.	10473 Apr 23 03:43	8° <u>♂</u> 36'26	28.90491 AU
minimum elong	10467 Oct 09 10:28	26° <u>♂</u> 14'11	0°18'40	direct	10473 Jul 10 16:42	7° <u>♂</u> 11'41	
max. Earth dist.	10467 Oct 10 02:01	26° <u>♂</u> 15'38	30.85888 AU	evening set	10473 Oct 06 16:26	9° <u>♂</u> 05'46	
morning rise	10467 Oct 25 13:36	26° <u>♂</u> 50'13					
retrograde	10468 Jan 23 23:01	28° <u>♂</u> 47'41		conjunction	10473 Oct 22 19:20	9° <u>♂</u> 41'39	-0°06'31
opposition	10468 Apr 12 05:55	27° <u>♂</u> 22'49	-0°19'03	minimum elong	10473 Oct 22 19:21	9° <u>♂</u> 41'39	0°06'13
min. Earth dist.	10468 Apr 11 16:31	27° <u>♂</u> 23'46	28.86351 AU	behind sun begin	10473 Oct 22 13:08	9° <u>♂</u> 41'06	
direct	10468 Jun 29 04:17	25° <u>♂</u> 58'52		behind sun end	10473 Oct 23 01:33	9° <u>♂</u> 42'12	
evening set	10468 Sep 24 22:10	27° <u>♂</u> 52'49		max. Earth dist.	10473 Oct 23 05:59	9° <u>♂</u> 42'38	30.90811 AU
				morning rise	10473 Nov 07 23:52	10° <u>♂</u> 17'41	
conjunction	10468 Oct 10 23:45	28° <u>♂</u> 28'39	-0°16'51	retrograde	10474 Feb 06 05:28	12° <u>♂</u> 14'36	
minimum elong	10468 Oct 10 23:45	28° <u>♂</u> 28'39	0°16'39	opposition	10474 Apr 26 01:52	10° <u>♂</u> 50'02	-0°05'45
max. Earth dist.	10468 Oct 11 14:12	28° <u>♂</u> 30'00	30.86811 AU	min. Earth dist.	10474 Apr 25 16:02	10° <u>♂</u> 50'43	28.91141 AU
morning rise	10468 Oct 27 03:16	29° <u>♂</u> 04'42		direct	10474 Jul 13 04:36	9° <u>♂</u> 26'00	
	10468 Nov 23 08:55	0° <u>♂</u>		evening set	10474 Oct 09 05:26	11° <u>♂</u> 20'05	
retrograde	10469 Jan 25 12:41	1° <u>♂</u> 02'06					
	10469 Apr 01 02:47	30° <u>♂</u> 3'♂		conjunction	10474 Oct 25 08:44	11° <u>♂</u> 55'58	-0°04'25
opposition	10469 Apr 14 17:18	29° <u>♂</u> 37'19	-0°16'53	minimum elong	10474 Oct 25 08:44	11° <u>♂</u> 55'58	0°04'07
min. Earth dist.	10469 Apr 14 03:36	29° <u>♂</u> 38'16	28.87290 AU	behind sun begin	10474 Oct 25 02:16	11° <u>♂</u> 55'23	
direct	10469 Jul 01 14:59	28° <u>♂</u> 13'22		behind sun end	10474 Oct 25 15:13	11° <u>♂</u> 56'33	
	10469 Sep 24 01:55	0° <u>♂</u>		max. Earth dist.	10474 Oct 25 19:55	11° <u>♂</u> 57'00	30.91456 AU
evening set	10469 Sep 27 11:25	0° <u>♂</u> 07'23		morning rise	10474 Nov 10 13:13	12° <u>♂</u> 32'00	
				retrograde	10475 Feb 08 16:06	14° <u>♂</u> 28'47	
conjunction	10469 Oct 13 13:17	0° <u>♂</u> 43'14	-0°14'49	opposition	10475 Apr 28 12:54	13° <u>♂</u> 04'13	-0°03'29
minimum elong	10469 Oct 13 13:17	0° <u>♂</u> 43'14	0°14'35	min. Earth dist.	10475 Apr 28 03:18	13° <u>♂</u> 04'54	28.91790 AU
behind sun begin	10469 Oct 13 10:37	0° <u>♂</u> 42'59		direct	10475 Jul 15 17:39	11° <u>♂</u> 40'09	
behind sun end	10469 Oct 13 15:58	0° <u>♂</u> 43'28		evening set	10475 Oct 11 18:38	13° <u>♂</u> 34'13	
max. Earth dist.	10469 Oct 14 03:33	0° <u>♂</u> 44'33	30.87741 AU				
morning rise	10469 Oct 29 16:56	1° <u>♂</u> 19'16		conjunction	10475 Oct 27 21:58	14° <u>♂</u> 10'06	-0°02'18
retrograde	10470 Jan 28 00:15	3° <u>♂</u> 16'37		minimum elong	10475 Oct 27 21:59	14° <u>♂</u> 10'06	0°01'57
opposition	10470 Apr 17 04:42	1° <u>♂</u> 51'54	-0°14'41	behind sun begin	10475 Oct 27 15:25	14° <u>♂</u> 09'31	
min. Earth dist.	10470 Apr 16 16:32	1° <u>♂</u> 52'45	28.88207 AU	behind sun end	10475 Oct 28 04:34	14° <u>♂</u> 10'41	
direct	10470 Jul 04 02:45	0° <u>♂</u> 27'59		max. Earth dist.	10475 Oct 28 07:37	14° <u>♂</u> 10'59	30.92139 AU
evening set	10470 Sep 30 00:40	2° <u>♂</u> 22'01		morning rise	10475 Nov 13 02:47	14° <u>♂</u> 46'08	
					10475 Nov 19 13:14	15° <u>♂</u>	
conjunction	10470 Oct 16 02:51	2° <u>♂</u> 57'53	-0°12'46	retrograde	10476 Feb 11 04:41	16° <u>♂</u> 42'46	
minimum elong	10470 Oct 16 02:51	2° <u>♂</u> 57'53	0°12'32	opposition	10476 Apr 29 23:50	15° <u>♂</u> 18'14	-0°01'14
behind sun begin	10470 Oct 15 22:41	2° <u>♂</u> 57'31		min. Earth dist.	10476 Apr 29 14:32	15° <u>♂</u> 18'53	28.92514 AU
behind sun end	10470 Oct 16 07:01	2° <u>♂</u> 58'15			10476 May 10 20:53	15° <u>♂</u> 18'♂	
max. Earth dist.	10470 Oct 16 16:19	2° <u>♂</u> 59'08	30.88635 AU	direct	10476 Jul 17 04:39	13° <u>♂</u> 54'07	
morning rise	10470 Nov 01 06:42	3° <u>♂</u> 33'56			10476 Sep 19 17:45	15° <u>♂</u>	
retrograde	10471 Jan 30 14:00	5° <u>♂</u> 31'11		evening set	10476 Oct 13 07:39	15° <u>♂</u> 48'10	
opposition	10471 Apr 19 16:04	4° <u>♂</u> 06'32	-0°12'28				
min. Earth dist.	10471 Apr 19 03:34	4° <u>♂</u> 07'25	28.89056 AU	conjunction	10476 Oct 29 11:23	16° <u>♂</u> 24'04	-0°00'07

minimum elong	10476 Oct 29 11:23	16° \mathbb{M} .24'04	0°00'14	retrograde	10482 Feb 24 02:05	0° \mathbb{X} 04'24	
behind sun begin	10476 Oct 29 04:53	16° \mathbb{M} .23'29			10482 Mar 12 09:09	30° \mathbb{R} \mathbb{M} .	
behind sun end	10476 Oct 29 17:53	16° \mathbb{M} .24'39		opposition	10482 May 13 16:33	28° \mathbb{M} .40'15	0°12'14
max. Earth dist.	10476 Oct 29 21:40	16° \mathbb{M} .25'01	30.92897 AU	min. Earth dist.	10482 May 13 09:36	28° \mathbb{M} .40'44	28.99084 AU
morning rise	10476 Nov 14 16:09	17° \mathbb{M} .00'05		direct	10482 Jul 31 01:09	27° \mathbb{M} .16'06	
asc. node	10476 Nov 20 18:54	17° \mathbb{M} .13'15		evening set	10482 Oct 27 14:26	29° \mathbb{M} .10'19	
retrograde	10477 Feb 12 15:26	18° \mathbb{M} .56'35					
opposition	10477 May 02 10:47	17° \mathbb{M} .32'05	0°01'02	conjunction	10482 Nov 12 18:55	29° \mathbb{M} .46'11	0°12'28
min. Earth dist.	10477 May 02 02:19	17° \mathbb{M} .32'41	28.93320 AU	minimum elong	10482 Nov 12 18:56	29° \mathbb{M} .46'11	0°12'54
direct	10477 Jul 19 15:54	16° \mathbb{M} .07'56		behind sun begin	10482 Nov 12 14:59	29° \mathbb{M} .45'50	
evening set	10477 Oct 15 20:47	18° \mathbb{M} .01'59		behind sun end	10482 Nov 12 22:52	29° \mathbb{M} .46'32	
				max. Earth dist.	10482 Nov 13 01:16	29° \mathbb{M} .46'45	30.99703 AU
conjunction	10477 Nov 01 00:37	18° \mathbb{M} .37'52	0°02'03		10482 Nov 18 23:23	0° \mathbb{X}	
minimum elong	10477 Nov 01 00:36	18° \mathbb{M} .37'52	0°02'25	morning rise	10482 Nov 29 00:10	0° \mathbb{X} 22'08	
behind sun begin	10477 Oct 31 18:02	18° \mathbb{M} .37'17		retrograde	10483 Feb 26 15:08	2° \mathbb{X} 17'59	
behind sun end	10477 Nov 01 07:10	18° \mathbb{M} .38'27		opposition	10483 May 16 03:24	0° \mathbb{X} 53'54	0°14'26
max. Earth dist.	10477 Nov 01 09:41	18° \mathbb{M} .38'42	30.93767 AU	min. Earth dist.	10483 May 15 21:41	0° \mathbb{X} 54'18	29.00312 AU
morning rise	10477 Nov 17 05:35	19° \mathbb{M} .13'53			10483 Jun 19 19:43	30° \mathbb{R} \mathbb{M} .	
retrograde	10478 Feb 15 03:23	21° \mathbb{M} .10'15		direct	10483 Aug 02 12:46	29° \mathbb{M} .29'45	
opposition	10478 May 04 21:30	19° \mathbb{M} .45'47	0°03'17		10483 Sep 14 10:41	0° \mathbb{X}	
min. Earth dist.	10478 May 04 12:33	19° \mathbb{M} .46'25	28.94255 AU	evening set	10483 Oct 30 03:42	1° \mathbb{X} 24'00	
direct	10478 Jul 22 02:44	18° \mathbb{M} .21'36					
evening set	10478 Oct 18 09:50	20° \mathbb{M} .15'41		conjunction	10483 Nov 15 08:28	1° \mathbb{X} 59'52	0°14'31
				minimum elong	10483 Nov 15 08:28	1° \mathbb{X} 59'52	0°14'58
conjunction	10478 Nov 03 13:52	20° \mathbb{M} .51'33	0°04'10	behind sun begin	10483 Nov 15 06:16	1° \mathbb{X} 59'41	
minimum elong	10478 Nov 03 13:52	20° \mathbb{M} .51'33	0°04'32	behind sun end	10483 Nov 15 10:40	2° \mathbb{X} 00'04	
behind sun begin	10478 Nov 03 07:25	20° \mathbb{M} .50'59		max. Earth dist.	10483 Nov 15 14:51	2° \mathbb{X} 00'27	31.00877 AU
behind sun end	10478 Nov 03 20:19	20° \mathbb{M} .52'08		morning rise	10483 Dec 01 13:33	2° \mathbb{X} 35'48	
max. Earth dist.	10478 Nov 03 23:07	20° \mathbb{M} .52'24	30.94764 AU	retrograde	10484 Feb 29 02:27	4° \mathbb{X} 31'32	
morning rise	10478 Nov 19 18:50	21° \mathbb{M} .27'34		opposition	10484 May 17 14:05	3° \mathbb{X} 07'31	0°16'36
retrograde	10479 Feb 17 13:07	23° \mathbb{M} .23'49		min. Earth dist.	10484 May 17 09:03	3° \mathbb{X} 07'52	29.01424 AU
opposition	10479 May 07 08:26	21° \mathbb{M} .59'24	0°05'32	direct	10484 Aug 04 01:37	1° \mathbb{X} 43'21	
min. Earth dist.	10479 May 07 00:36	21° \mathbb{M} .59'58	28.95326 AU	evening set	10484 Oct 31 17:08	3° \mathbb{X} 37'37	
direct	10479 Jul 24 13:48	20° \mathbb{M} .35'13					
evening set	10479 Oct 20 22:45	22° \mathbb{M} .29'18		conjunction	10484 Nov 16 21:51	4° \mathbb{X} 13'29	0°16'32
				minimum elong	10484 Nov 16 21:51	4° \mathbb{X} 13'29	0°16'58
conjunction	10479 Nov 06 03:00	23° \mathbb{M} .05'11	0°06'15	max. Earth dist.	10484 Nov 17 02:05	4° \mathbb{X} 13'52	31.01938 AU
minimum elong	10479 Nov 06 02:59	23° \mathbb{M} .05'11	0°06'39	morning rise	10484 Dec 03 03:06	4° \mathbb{X} 49'24	
behind sun begin	10479 Nov 05 20:50	23° \mathbb{M} .04'38		retrograde	10485 Mar 02 15:41	6° \mathbb{X} 44'59	
behind sun end	10479 Nov 06 09:07	23° \mathbb{M} .05'44		opposition	10485 May 20 00:48	5° \mathbb{X} 21'01	0°18'45
max. Earth dist.	10479 Nov 06 11:45	23° \mathbb{M} .05'59	30.95912 AU	min. Earth dist.	10485 May 19 20:28	5° \mathbb{X} 21'19	29.02432 AU
morning rise	10479 Nov 22 08:05	23° \mathbb{M} .41'10		direct	10485 Aug 06 13:19	3° \mathbb{X} 56'49	
retrograde	10480 Feb 20 01:44	25° \mathbb{M} .37'20		evening set	10485 Nov 03 06:22	5° \mathbb{X} 51'06	
opposition	10480 May 08 19:08	24° \mathbb{M} .13'00	0°07'47				
min. Earth dist.	10480 May 08 10:41	24° \mathbb{M} .13'35	28.96524 AU	conjunction	10485 Nov 19 11:17	6° \mathbb{X} 26'57	0°18'31
direct	10480 Jul 26 01:20	22° \mathbb{M} .48'48		minimum elong	10485 Nov 19 11:17	6° \mathbb{X} 26'57	0°18'59
evening set	10480 Oct 22 11:58	24° \mathbb{M} .42'56		max. Earth dist.	10485 Nov 19 15:41	6° \mathbb{X} 27'21	31.02886 AU
				morning rise	10485 Dec 05 16:19	7° \mathbb{X} 02'51	
conjunction	10480 Nov 07 16:16	25° \mathbb{M} .18'49	0°08'21	retrograde	10486 Mar 05 02:12	8° \mathbb{X} 58'17	
minimum elong	10480 Nov 07 16:16	25° \mathbb{M} .18'49	0°08'44	opposition	10486 May 22 11:26	7° \mathbb{X} 34'22	0°20'52
behind sun begin	10480 Nov 07 10:36	25° \mathbb{M} .18'19		min. Earth dist.	10486 May 22 08:26	7° \mathbb{X} 34'35	29.03335 AU
behind sun end	10480 Nov 07 21:57	25° \mathbb{M} .19'19		direct	10486 Aug 09 01:18	6° \mathbb{X} 10'08	
max. Earth dist.	10480 Nov 08 00:22	25° \mathbb{M} .19'33	30.97153 AU	evening set	10486 Nov 05 19:37	8° \mathbb{X} 04'25	
morning rise	10480 Nov 23 21:28	25° \mathbb{M} .54'48					
retrograde	10481 Feb 21 13:15	27° \mathbb{M} .50'51		conjunction	10486 Nov 22 00:29	8° \mathbb{X} 40'15	0°20'29
opposition	10481 May 11 05:51	26° \mathbb{M} .26'36	0°10'01	minimum elong	10486 Nov 22 00:29	8° \mathbb{X} 40'15	0°20'57
min. Earth dist.	10481 May 10 22:58	26° \mathbb{M} .27'05	28.97802 AU	max. Earth dist.	10486 Nov 22 03:11	8° \mathbb{X} 40'30	31.03769 AU
direct	10481 Jul 28 11:33	25° \mathbb{M} .02'26		morning rise	10486 Dec 08 05:37	9° \mathbb{X} 16'08	
evening set	10481 Oct 25 01:10	26° \mathbb{M} .56'37		retrograde	10487 Mar 07 13:57	11° \mathbb{X} 11'26	
				opposition	10487 May 24 21:55	9° \mathbb{X} 47'32	0°22'56
conjunction	10481 Nov 10 05:44	27° \mathbb{M} .32'29	0°10'25	min. Earth dist.	10487 May 24 18:48	9° \mathbb{X} 47'45	29.04198 AU
minimum elong	10481 Nov 10 05:44	27° \mathbb{M} .32'29	0°10'50	direct	10487 Aug 11 12:45	8° \mathbb{X} 23'15	
behind sun begin	10481 Nov 10 00:46	27° \mathbb{M} .32'03		evening set	10487 Nov 08 08:37	10° \mathbb{X} 17'32	
behind sun end	10481 Nov 10 10:41	27° \mathbb{M} .32'55					
max. Earth dist.	10481 Nov 10 13:46	27° \mathbb{M} .33'13	30.98449 AU	conjunction	10487 Nov 24 13:37	10° \mathbb{X} 53'22	0°22'25
morning rise	10481 Nov 26 10:51	28° \mathbb{M} .08'27		minimum elong	10487 Nov 24 13:37	10° \mathbb{X} 53'22	0°22'53
	10482 Feb 07 22:07	0° \mathbb{X}		max. Earth dist.	10487 Nov 24 16:10	10° \mathbb{X} 53'36	31.04611 AU

morning rise	10487 Dec 10 18:37	11° \nearrow 29'14	conjunction	10494 Dec 10 08:12	26° \nearrow 22'14	0°34'47
retrograde	10488 Mar 08 23:14	13° \nearrow 24'23	minimum elong	10494 Dec 10 08:12	26° \nearrow 22'14	0°35'18
opposition	10488 May 26 08:29	12° \nearrow 00'31 0°24'59	max. Earth dist.	10494 Dec 10 07:10	26° \nearrow 22'09	31.12181 AU
min. Earth dist.	10488 May 26 06:54	12° \nearrow 00'38 29.05041 AU	morning rise	10494 Dec 26 12:15	26° \nearrow 57'56	
direct	10488 Aug 12 23:44	10° \nearrow 36'12	retrograde	10495 Mar 25 08:16	28° \nearrow 52'20	
evening set	10488 Nov 09 21:43	12° \nearrow 30'29	opposition	10495 Jun 11 08:42	27° \nearrow 29'00	0°38'02
			min. Earth dist.	10495 Jun 11 10:39	27° \nearrow 28'51	29.12793 AU
conjunction	10488 Nov 26 02:45	13° \nearrow 06'18 0°24'18	direct	10495 Aug 29 09:31	26° \nearrow 04'39	
minimum elong	10488 Nov 26 02:44	13° \nearrow 06'18 0°24'47	evening set	10495 Nov 26 16:18	27° \nearrow 59'15	
max. Earth dist.	10488 Nov 26 04:24	13° \nearrow 06'27 31.05470 AU				
morning rise	10488 Dec 12 07:43	13° \nearrow 42'08	conjunction	10495 Dec 12 20:59	28° \nearrow 34'58	0°36'21
retrograde	10489 Mar 11 10:56	15° \nearrow 37'09	minimum elong	10495 Dec 12 20:59	28° \nearrow 34'58	0°36'53
opposition	10489 May 28 18:42	14° \nearrow 13'20 0°26'59	max. Earth dist.	10495 Dec 12 18:09	28° \nearrow 34'43	31.13357 AU
min. Earth dist.	10489 May 28 16:42	14° \nearrow 13'28 29.05914 AU	morning rise	10495 Dec 29 01:02	29° \nearrow 10'39	
direct	10489 Aug 15 11:06	12° \nearrow 48'57		10496 Jan 22 08:41	0° \rightarrow	
evening set	10489 Nov 12 10:48	14° \nearrow 43'16	retrograde	10496 Mar 26 20:02	1° \rightarrow 04'57	
				10496 Jun 01 19:05	30° \nwarrow	
conjunction	10489 Nov 28 15:46	15° \nearrow 19'04 0°26'09	opposition	10496 Jun 12 19:01	29° \nearrow 41'41	0°39'41
minimum elong	10489 Nov 28 15:46	15° \nearrow 19'04 0°26'39	min. Earth dist.	10496 Jun 12 20:59	29° \nearrow 41'33	29.13912 AU
max. Earth dist.	10489 Nov 28 16:45	15° \nearrow 19'09 31.06366 AU	direct	10496 Aug 30 21:12	28° \nearrow 17'20	
morning rise	10489 Dec 14 20:38	15° \nearrow 54'53		10496 Nov 22 15:15	0° \rightarrow	
retrograde	10490 Mar 13 21:12	17° \nearrow 49'46	evening set	10496 Nov 28 05:20	0° \rightarrow 11'57	
opposition	10490 May 31 05:11	16° \nearrow 26'00 0°28'57				
min. Earth dist.	10490 May 31 04:33	16° \nearrow 26'03 29.06861 AU	conjunction	10496 Dec 14 10:00	0° \rightarrow 47'40	0°37'53
direct	10490 Aug 17 21:12	15° \nearrow 01'36	minimum elong	10496 Dec 14 10:00	0° \rightarrow 47'40	0°38'23
evening set	10490 Nov 14 23:33	16° \nearrow 55'56	max. Earth dist.	10496 Dec 14 06:42	0° \rightarrow 47'22	31.14400 AU
			morning rise	10496 Dec 30 13:43	1° \rightarrow 23'20	
conjunction	10490 Dec 01 04:36	17° \nearrow 31'43 0°27'58	retrograde	10497 Mar 29 05:24	3° \rightarrow 17'30	
minimum elong	10490 Dec 01 04:36	17° \nearrow 31'43 0°28'27	opposition	10497 Jun 15 05:21	1° \rightarrow 54'18	0°41'17
max. Earth dist.	10490 Dec 01 05:45	17° \nearrow 31'49 31.07362 AU	min. Earth dist.	10497 Jun 15 09:08	1° \rightarrow 54'02	29.14894 AU
morning rise	10490 Dec 17 09:17	18° \nearrow 07'30	direct	10497 Sep 02 07:58	0° \rightarrow 29'55	
retrograde	10491 Mar 16 08:45	20° \nearrow 02'17	evening set	10497 Nov 30 18:18	2° \rightarrow 24'33	
opposition	10491 Jun 02 15:30	18° \nearrow 38'34 0°30'52				
min. Earth dist.	10491 Jun 02 14:27	18° \nearrow 38'38 29.07904 AU	conjunction	10497 Dec 16 22:49	3° \rightarrow 00'15	0°39'20
direct	10491 Aug 20 10:32	17° \nearrow 14'09	minimum elong	10497 Dec 16 22:49	3° \rightarrow 00'15	0°39'52
evening set	10491 Nov 17 12:33	19° \nearrow 08'31	max. Earth dist.	10497 Dec 16 18:16	2° \rightarrow 59'50	31.15327 AU
			morning rise	10498 Jan 02 02:23	3° \rightarrow 35'53	
conjunction	10491 Dec 03 17:27	19° \nearrow 44'18 0°29'44	retrograde	10498 Mar 31 17:04	5° \rightarrow 29'55	
minimum elong	10491 Dec 03 17:27	19° \nearrow 44'18 0°30'15	opposition	10498 Jun 17 15:35	4° \rightarrow 06'45	0°42'49
max. Earth dist.	10491 Dec 03 17:19	19° \nearrow 44'17 31.08462 AU	min. Earth dist.	10498 Jun 17 19:10	4° \rightarrow 06'30	29.15756 AU
morning rise	10491 Dec 19 22:09	20° \nearrow 20'04	direct	10498 Sep 04 19:11	2° \rightarrow 42'20	
retrograde	10492 Mar 17 20:57	22° \nearrow 14'44	evening set	10498 Dec 03 07:04	4° \rightarrow 36'58	
opposition	10492 Jun 04 01:47	20° \nearrow 51'06 0°32'44				
min. Earth dist.	10492 Jun 04 01:34	20° \nearrow 51'07 29.09069 AU	conjunction	10498 Dec 19 11:25	5° \rightarrow 12'38	0°40'45
direct	10492 Aug 21 21:32	19° \nearrow 26'41	minimum elong	10498 Dec 19 11:25	5° \rightarrow 12'38	0°41'16
evening set	10492 Nov 19 01:25	21° \nearrow 21'07	max. Earth dist.	10498 Dec 19 05:56	5° \rightarrow 12'08	31.16131 AU
			morning rise	10499 Jan 04 14:46	5° \rightarrow 48'15	
conjunction	10492 Dec 05 06:28	21° \nearrow 56'53 0°31'28	retrograde	10499 Apr 03 01:59	7° \rightarrow 42'09	
minimum elong	10492 Dec 05 06:28	21° \nearrow 56'53 0°31'58	opposition	10499 Jun 20 01:56	6° \rightarrow 19'01	0°44'17
max. Earth dist.	10492 Dec 05 06:48	21° \nearrow 56'55 31.09673 AU	min. Earth dist.	10499 Jun 20 07:12	6° \rightarrow 18'39	29.16526 AU
morning rise	10492 Dec 21 10:53	22° \nearrow 32'38	direct	10499 Sep 07 05:35	4° \rightarrow 54'32	
retrograde	10493 Mar 20 08:00	24° \nearrow 27'12	evening set	10499 Dec 05 19:48	6° \rightarrow 49'10	
opposition	10493 Jun 06 12:05	23° \nearrow 03'40 0°34'33				
min. Earth dist.	10493 Jun 06 12:14	23° \nearrow 03'40 29.10305 AU	conjunction	10499 Dec 22 00:08	7° \rightarrow 24'49	0°42'05
direct	10493 Aug 24 09:42	21° \nearrow 39'17	minimum elong	10499 Dec 22 00:08	7° \rightarrow 24'49	0°42'37
evening set	10493 Nov 21 14:26	23° \nearrow 33'47	max. Earth dist.	10499 Dec 21 18:24	7° \rightarrow 24'17	31.16869 AU
			morning rise	10500 Jan 07 03:13	8° \rightarrow 00'23	
conjunction	10493 Dec 07 19:14	24° \nearrow 09'32 0°33'09	retrograde	10500 Apr 05 11:57	9° \rightarrow 54'09	
minimum elong	10493 Dec 07 19:14	24° \nearrow 09'32 0°33'40	opposition	10500 Jun 22 11:56	8° \rightarrow 31'01	0°45'41
max. Earth dist.	10493 Dec 07 17:51	24° \nearrow 09'24 31.10933 AU	min. Earth dist.	10500 Jun 22 17:14	8° \rightarrow 30'39	29.17229 AU
morning rise	10493 Dec 23 23:38	24° \nearrow 45'15	direct	10500 Sep 09 18:30	7° \rightarrow 06'29	
retrograde	10494 Mar 22 21:34	26° \nearrow 39'44	evening set	10500 Dec 08 08:37	9° \rightarrow 01'07	
opposition	10494 Jun 08 22:22	25° \nearrow 16'18 0°36'19				
min. Earth dist.	10494 Jun 08 22:56	25° \nearrow 16'16 29.11575 AU	conjunction	10500 Dec 24 12:40	9° \rightarrow 36'44	0°43'22
direct	10494 Aug 26 21:29	23° \nearrow 51'57	minimum elong	10500 Dec 24 12:40	9° \rightarrow 36'44	0°43'54
evening set	10494 Nov 24 03:20	25° \nearrow 46'30	max. Earth dist.	10500 Dec 24 05:25	9° \rightarrow 36'04	31.17556 AU
			morning rise	10501 Jan 09 15:37	10° \rightarrow 12'16	

retrograde	10501 Apr 07 22:57	12°305'54		minimum elong	10508 Jan 10 02:01	24°356'20	0°50'58
opposition	10501 Jun 24 22:07	10°342'47	0°47'01	max. Earth dist.	10508 Jan 09 15:57	24°355'24	31.24043 AU
min. Earth dist.	10501 Jun 25 04:20	10°342'21	29.17925 AU	morning rise	10508 Jan 26 02:58	25°331'40	
direct	10501 Sep 12 05:04	9°318'11		retrograde	10508 Apr 23 01:06	27°324'42	
evening set	10501 Dec 10 21:03	11°312'49		opposition	10508 Jul 09 20:41	26°302'02	0°54'21
				min. Earth dist.	10508 Jul 10 06:09	26°301'22	29.24566 AU
conjunction	10501 Dec 27 01:04	11°348'24	0°44'35	direct	10508 Sep 27 12:07	24°337'28	
minimum elong	10501 Dec 27 01:04	11°348'24	0°45'07	evening set	10508 Dec 26 11:42	26°332'21	
max. Earth dist.	10501 Dec 26 18:20	11°347'47	31.18255 AU				
morning rise	10502 Jan 12 03:37	12°323'54		conjunction	10509 Jan 11 14:15	27°307'49	0°51'12
retrograde	10502 Apr 10 08:55	14°317'25		minimum elong	10509 Jan 11 14:15	27°307'49	0°51'41
opposition	10502 Jun 27 08:12	12°354'18	0°48'17	max. Earth dist.	10509 Jan 11 03:55	27°306'51	31.24998 AU
min. Earth dist.	10502 Jun 27 14:44	12°353'51	29.18643 AU	morning rise	10509 Jan 27 14:49	27°343'07	
direct	10502 Sep 14 17:35	11°329'39		retrograde	10509 Apr 25 11:00	29°336'05	
evening set	10502 Dec 13 09:35	13°324'17		opposition	10509 Jul 12 06:53	28°313'30	0°55'05
				min. Earth dist.	10509 Jul 12 16:27	28°312'50	29.25454 AU
conjunction	10502 Dec 29 13:16	13°359'51	0°45'44	direct	10509 Sep 30 00:10	26°348'56	
minimum elong	10502 Dec 29 13:16	13°359'51	0°46'15	evening set	10509 Dec 29 00:00	28°343'52	
max. Earth dist.	10502 Dec 29 05:01	13°359'06	31.19014 AU				
morning rise	10503 Jan 14 15:43	14°335'19		conjunction	10510 Jan 14 02:09	29°319'18	0°51'52
retrograde	10503 Apr 12 21:20	16°328'43		minimum elong	10510 Jan 14 02:09	29°319'18	0°52'20
opposition	10503 Jun 29 18:12	15°305'38	0°49'29	max. Earth dist.	10510 Jan 13 14:15	29°318'12	31.25819 AU
min. Earth dist.	10503 Jun 30 00:45	15°305'10	29.19458 AU	morning rise	10510 Jan 30 02:29	29°354'34	
direct	10503 Sep 17 05:29	13°340'57			10510 Feb 01 14:55	0°	
evening set	10503 Dec 15 21:53	15°335'36		retrograde	10510 Apr 27 21:57	1°347'29	
				opposition	10510 Jul 14 17:09	0°324'56	0°55'45
conjunction	10504 Jan 01 01:33	16°311'09	0°46'50	min. Earth dist.	10510 Jul 15 03:39	0°324'13	29.26223 AU
minimum elong	10504 Jan 01 01:33	16°311'09	0°47'20		10510 Jul 29 21:20	30°3	
max. Earth dist.	10503 Dec 31 18:04	16°310'27	31.19873 AU	direct	10510 Oct 02 09:52	29°300'22	
morning rise	10504 Jan 17 03:35	16°346'34			10510 Dec 03 18:26	0°	
retrograde	10504 Apr 14 07:07	18°339'52		evening set	10510 Dec 31 12:09	0°355'20	
opposition	10504 Jul 01 04:21	17°316'50	0°50'36				
min. Earth dist.	10504 Jul 01 11:48	17°316'19	29.20370 AU	conjunction	10511 Jan 16 14:13	1°330'44	0°52'26
direct	10504 Sep 18 17:39	15°352'09		minimum elong	10511 Jan 16 14:13	1°330'44	0°52'55
evening set	10504 Dec 17 10:21	17°346'50		max. Earth dist.	10511 Jan 16 02:33	1°329'39	31.26523 AU
				morning rise	10511 Feb 01 14:06	2°305'59	
conjunction	10505 Jan 02 13:42	18°322'22	0°47'51	retrograde	10511 Apr 30 07:47	3°358'49	
minimum elong	10505 Jan 02 13:41	18°322'22	0°48'21	opposition	10511 Jul 17 03:19	2°336'19	0°56'19
max. Earth dist.	10505 Jan 02 04:59	18°321'33	31.20848 AU	min. Earth dist.	10511 Jul 17 14:30	2°335'32	29.26862 AU
morning rise	10505 Jan 18 15:35	18°357'46		direct	10511 Oct 04 21:57	1°311'44	
retrograde	10505 Apr 16 18:44	20°350'58		evening set	10512 Jan 03 00:23	3°306'42	
opposition	10505 Jul 03 14:17	19°328'01	0°51'39				
min. Earth dist.	10505 Jul 03 21:10	19°327'32	29.21393 AU	conjunction	10512 Jan 19 02:02	3°342'05	0°52'57
direct	10505 Sep 21 05:06	18°303'21		minimum elong	10512 Jan 19 02:03	3°342'05	0°53'24
evening set	10505 Dec 19 22:40	19°358'05		max. Earth dist.	10512 Jan 18 12:33	3°340'50	31.27114 AU
				morning rise	10512 Feb 04 01:47	4°317'18	
conjunction	10506 Jan 05 01:53	20°333'36	0°48'48	retrograde	10512 May 01 20:16	6°310'03	
minimum elong	10506 Jan 05 01:53	20°333'36	0°49'18	opposition	10512 Jul 18 13:27	4°347'33	0°56'49
max. Earth dist.	10506 Jan 04 17:25	20°332'49	31.21904 AU	min. Earth dist.	10512 Jul 19 00:52	4°346'46	29.27411 AU
morning rise	10506 Jan 21 03:21	21°308'59		direct	10512 Oct 06 10:18	3°322'57	
retrograde	10506 Apr 19 04:26	23°302'07		evening set	10513 Jan 04 12:23	5°317'55	
opposition	10506 Jul 06 00:29	21°339'16	0°52'38				
min. Earth dist.	10506 Jul 06 08:43	21°338'41	29.22477 AU	conjunction	10513 Jan 20 13:55	5°353'17	0°53'22
direct	10506 Sep 23 15:30	20°314'39		minimum elong	10513 Jan 20 13:55	5°353'17	0°53'50
evening set	10506 Dec 22 10:52	22°309'25		max. Earth dist.	10513 Jan 20 00:57	5°352'05	31.27616 AU
				morning rise	10513 Feb 05 13:09	6°328'27	
conjunction	10507 Jan 07 13:51	22°344'55	0°49'40	retrograde	10513 May 04 05:31	8°321'08	
minimum elong	10507 Jan 07 13:51	22°344'55	0°50'10	opposition	10513 Jul 20 23:38	6°358'39	0°57'14
max. Earth dist.	10507 Jan 07 04:36	22°344'04	31.23001 AU	min. Earth dist.	10513 Jul 21 12:16	6°357'46	29.27884 AU
morning rise	10507 Jan 23 15:07	23°320'16		direct	10513 Oct 08 22:43	5°334'00	
retrograde	10507 Apr 21 15:57	25°313'22		evening set	10514 Jan 07 00:24	7°328'59	
opposition	10507 Jul 08 10:32	23°350'36	0°53'32	max. Earth dist.	10514 Jan 22 11:18	8°302'59	31.28086 AU
min. Earth dist.	10507 Jul 08 18:23	23°350'03	29.23556 AU				
direct	10507 Sep 26 02:24	22°326'01		conjunction	10514 Jan 23 01:30	8°304'18	0°53'44
evening set	10507 Dec 24 23:18	24°320'51		minimum elong	10514 Jan 23 01:30	8°304'18	0°54'10
				morning rise	10514 Feb 08 00:33	8°339'27	
conjunction	10508 Jan 10 02:01	24°356'20	0°50'28	retrograde	10514 May 06 16:55	10°332'02	

opposition	10514 Jul 23 09:43	9°09'33	0°57'34	conjunction	10521 Feb 07 09:08	23°18'56	0°54'02
min. Earth dist.	10514 Jul 23 21:44	9°08'43	29.28356 AU	minimum elong	10521 Feb 07 09:08	23°18'56	0°54'23
direct	10514 Oct 11 10:43	7°44'52		max. Earth dist.	10521 Feb 06 17:02	23°17'27	31.32704 AU
evening set	10515 Jan 09 12:03	9°39'50		morning rise	10521 Feb 23 05:45	23°53'54	
				retrograde	10521 May 21 14:58	25°46'11	
conjunction	10515 Jan 25 12:59	10°15'08	0°54'00	opposition	10521 Aug 07 09:28	24°24'01	0°57'35
minimum elong	10515 Jan 25 12:59	10°15'08	0°54'26	min. Earth dist.	10521 Aug 07 23:26	24°23'03	29.33039 AU
max. Earth dist.	10515 Jan 24 23:09	10°13'52	31.28562 AU	direct	10521 Oct 26 15:13	22°59'27	
morning rise	10515 Feb 10 11:36	10°50'15		evening set	10522 Jan 24 21:46	24°54'33	
retrograde	10515 May 09 02:33	12°42'45					
opposition	10515 Jul 25 19:58	11°20'17	0°57'50	conjunction	10522 Feb 09 20:32	25°29'42	0°53'45
min. Earth dist.	10515 Jul 26 09:09	11°19'22	29.28863 AU	minimum elong	10522 Feb 09 20:32	25°29'42	0°54'05
direct	10515 Oct 13 22:16	9°55'35		max. Earth dist.	10522 Feb 09 04:58	25°28'16	31.33254 AU
evening set	10516 Jan 11 23:52	11°50'32		morning rise	10522 Feb 25 16:38	26°04'38	
max. Earth dist.	10516 Jan 27 10:10	12°24'30	31.29110 AU	retrograde	10522 May 24 00:29	27°56'54	
				opposition	10522 Aug 09 20:02	26°34'46	0°57'15
conjunction	10516 Jan 28 00:27	12°25'49	0°54'12	min. Earth dist.	10522 Aug 10 11:17	26°33'43	29.33520 AU
minimum elong	10516 Jan 28 00:27	12°25'49	0°54'37	direct	10522 Oct 29 02:49	25°10'13	
morning rise	10516 Feb 12 22:48	13°00'54		evening set	10523 Jan 27 09:19	27°05'20	
retrograde	10516 May 10 13:23	14°53'19					
opposition	10516 Jul 27 05:59	13°30'53	0°58'00	conjunction	10523 Feb 12 07:39	27°40'27	0°53'24
min. Earth dist.	10516 Jul 27 18:18	13°30'01	29.29450 AU	minimum elong	10523 Feb 12 07:39	27°40'27	0°53'43
direct	10516 Oct 15 10:14	12°06'10		max. Earth dist.	10523 Feb 11 14:46	27°38'53	31.33668 AU
evening set	10517 Jan 13 11:39	14°01'08		morning rise	10523 Feb 28 03:35	28°15'22	
					10523 May 05 07:51	0°	
conjunction	10517 Jan 29 11:54	14°36'23	0°54'20	retrograde	10523 May 26 12:18	0°07'36	
minimum elong	10517 Jan 29 11:54	14°36'23	0°54'44		10523 Jun 16 20:32	30°	
max. Earth dist.	10517 Jan 28 21:21	14°35'03	31.29743 AU	opposition	10523 Aug 12 06:29	28°45'29	0°56'51
	10517 Feb 09 03:55	15°		min. Earth dist.	10523 Aug 12 21:16	28°44'28	29.33854 AU
morning rise	10517 Feb 14 09:52	15°11'27		direct	10523 Oct 31 15:02	27°20'56	
retrograde	10517 May 12 21:48	17°03'49		evening set	10524 Jan 29 20:52	29°16'04	
opposition	10517 Jul 29 16:17	15°41'25	0°58'05				
min. Earth dist.	10517 Jul 30 05:32	15°40'30	29.30143 AU	conjunction	10524 Feb 14 18:58	29°51'09	0°52'59
	10517 Aug 24 17:04	15°		minimum elong	10524 Feb 14 18:58	29°51'09	0°53'16
direct	10517 Oct 17 20:01	14°16'44		max. Earth dist.	10524 Feb 14 02:02	29°49'36	31.33919 AU
	10517 Dec 09 10:01	15°			10524 Feb 18 18:26	0°	
evening set	10518 Jan 15 23:08	16°11'43		morning rise	10524 Mar 01 14:25	0°26'02	
				retrograde	10524 May 27 22:21	2°18'15	
conjunction	10518 Jan 31 23:10	16°46'56	0°54'22	opposition	10524 Aug 13 17:01	0°56'09	0°56'21
minimum elong	10518 Jan 31 23:10	16°46'56	0°54'46	min. Earth dist.	10524 Aug 14 09:17	0°55'01	29.34038 AU
max. Earth dist.	10518 Jan 31 09:08	16°45'39	31.30483 AU		10524 Sep 19 20:17	30°	
morning rise	10518 Feb 16 20:44	17°21'58		direct	10524 Nov 02 02:52	29°31'35	
retrograde	10518 May 15 06:50	19°14'19			10524 Dec 14 09:56	0°	
opposition	10518 Aug 01 02:31	17°51'59	0°58'05	evening set	10525 Jan 31 08:21	1°26'42	
min. Earth dist.	10518 Aug 01 15:20	17°51'05	29.30903 AU				
direct	10518 Oct 20 07:24	16°27'19		conjunction	10525 Feb 16 06:05	2°01'47	0°52'29
evening set	10519 Jan 18 10:51	18°22'19		minimum elong	10525 Feb 16 06:05	2°01'47	0°52'46
				max. Earth dist.	10525 Feb 15 12:33	2°00'09	31.34047 AU
conjunction	10519 Feb 03 10:27	18°57'32	0°54'20	morning rise	10525 Mar 04 01:15	2°36'38	
minimum elong	10519 Feb 03 10:27	18°57'32	0°54'43	retrograde	10525 May 30 09:07	4°28'49	
max. Earth dist.	10519 Feb 02 19:22	18°56'09	31.31263 AU	opposition	10525 Aug 16 03:32	3°06'42	0°55'46
morning rise	10519 Feb 19 07:47	19°32'33		min. Earth dist.	10525 Aug 16 19:10	3°05'38	29.34102 AU
retrograde	10519 May 17 17:37	21°24'52		direct	10525 Nov 04 15:34	1°42'08	
opposition	10519 Aug 03 12:41	20°02'36	0°58'01	evening set	10526 Feb 02 19:33	3°37'14	
min. Earth dist.	10519 Aug 04 02:04	20°01'40	29.31692 AU				
direct	10519 Oct 22 16:08	18°37'58		conjunction	10526 Feb 18 16:56	4°12'17	0°51'54
evening set	10520 Jan 20 22:27	20°33'01		minimum elong	10526 Feb 18 16:56	4°12'17	0°52'11
				max. Earth dist.	10526 Feb 17 22:58	4°10'37	31.34064 AU
conjunction	10520 Feb 05 21:54	21°08'12	0°54'13	morning rise	10526 Mar 06 11:46	4°47'08	
minimum elong	10520 Feb 05 21:54	21°08'12	0°54'35	retrograde	10526 Jun 01 17:45	6°39'16	
max. Earth dist.	10520 Feb 05 07:25	21°06'52	31.32028 AU	opposition	10526 Aug 18 14:10	5°17'09	0°55'07
morning rise	10520 Feb 21 18:45	21°43'12		min. Earth dist.	10526 Aug 19 06:49	5°16'00	29.34097 AU
retrograde	10520 May 19 03:00	23°35'30		direct	10526 Nov 07 01:53	3°52'34	
opposition	10520 Aug 04 23:04	22°13'17	0°57'50	evening set	10527 Feb 05 06:41	5°47'38	
min. Earth dist.	10520 Aug 05 13:02	22°12'19	29.32414 AU	max. Earth dist.	10527 Feb 20 10:25	6°21'03	31.34043 AU
direct	10520 Oct 24 04:03	20°48'42					
evening set	10521 Jan 22 10:12	22°43'46		conjunction	10527 Feb 21 03:49	6°22'40	0°51'16

minimum elong	10527 Feb 21 03:49	6° ✕ 22'40	0°51'31	conjunction	10534 Mar 08 06:05	21° ✕ 35'15	0°44'46
morning rise	10527 Mar 08 22:17	6° ✕ 57'29		minimum elong	10534 Mar 08 06:05	21° ✕ 35'15	0°44'53
retrograde	10527 Jun 04 02:13	8° ✕ 49'36		max. Earth dist.	10534 Mar 07 12:41	21° ✕ 33'39	31.34865 AU
opposition	10527 Aug 21 00:33	7° ✕ 27'28	0°54'24	morning rise	10534 Mar 23 22:16	22° ✕ 09'57	
min. Earth dist.	10527 Aug 21 16:50	7° ✕ 26'21	29.34064 AU	retrograde	10534 Jun 19 04:32	24° ✕ 02'15	
direct	10527 Nov 09 13:40	6° ✕ 02'51		opposition	10534 Sep 05 03:46	22° ✕ 40'15	0°47'12
evening set	10528 Feb 07 17:53	7° ✕ 57'55		min. Earth dist.	10534 Sep 05 19:39	22° ✕ 39'10	29.34882 AU
				direct	10534 Nov 24 20:23	21° ✕ 15'52	
conjunction	10528 Feb 23 14:33	8° ✕ 32'56	0°50'33	evening set	10535 Feb 22 22:21	23° ✕ 11'03	
minimum elong	10528 Feb 23 14:33	8° ✕ 32'56	0°50'47				
max. Earth dist.	10528 Feb 22 20:17	8° ✕ 31'15	31.34024 AU	conjunction	10535 Mar 10 16:41	23° ✕ 45'56	0°43'34
morning rise	10528 Mar 10 08:46	9° ✕ 07'44		minimum elong	10535 Mar 10 16:42	23° ✕ 45'56	0°43'41
retrograde	10528 Jun 05 12:39	10° ✕ 59'50		max. Earth dist.	10535 Mar 09 22:43	23° ✕ 44'16	31.34800 AU
opposition	10528 Aug 22 11:10	9° ✕ 37'42	0°53'36	morning rise	10535 Mar 26 08:34	24° ✕ 20'37	
min. Earth dist.	10528 Aug 23 03:27	9° ✕ 36'35	29.34082 AU	retrograde	10535 Jun 21 13:51	26° ✕ 12'56	
direct	10528 Nov 10 22:37	8° ✕ 13'05		opposition	10535 Sep 07 14:42	24° ✕ 50'56	0°45'53
evening set	10529 Feb 09 04:47	10° ✕ 08'09		min. Earth dist.	10535 Sep 08 07:37	24° ✕ 49'47	29.34756 AU
max. Earth dist.	10529 Feb 24 08:11	10° ✕ 41'33	31.34072 AU	direct	10535 Nov 27 06:46	23° ✕ 26'34	
				evening set	10536 Feb 25 09:14	25° ✕ 21'43	
conjunction	10529 Feb 25 01:15	10° ✕ 43'08	0°49'46	max. Earth dist.	10536 Mar 11 09:51	25° ✕ 54'59	31.34602 AU
minimum elong	10529 Feb 25 01:15	10° ✕ 43'08	0°49'59				
morning rise	10529 Mar 12 18:58	11° ✕ 17'55		conjunction	10536 Mar 12 03:21	25° ✕ 56'36	0°42'19
retrograde	10529 Jun 07 21:16	13° ✕ 10'02		minimum elong	10536 Mar 12 03:21	25° ✕ 56'36	0°42'24
opposition	10529 Aug 24 21:50	11° ✕ 47'54	0°52'43	morning rise	10536 Mar 27 18:51	26° ✕ 31'16	
min. Earth dist.	10529 Aug 25 14:07	11° ✕ 46'47	29.34166 AU	retrograde	10536 Jun 22 22:56	28° ✕ 23'35	
direct	10529 Nov 13 10:27	10° ✕ 23'18		opposition	10536 Sep 09 01:47	27° ✕ 01'35	0°44'30
evening set	10530 Feb 11 15:49	12° ✕ 18'23		min. Earth dist.	10536 Sep 09 18:28	27° ✕ 00'26	29.34473 AU
				direct	10536 Nov 28 19:33	25° ✕ 37'12	
conjunction	10530 Feb 27 11:47	12° ✕ 53'21	0°48'54	evening set	10537 Feb 26 20:05	27° ✕ 32'20	
minimum elong	10530 Feb 27 11:48	12° ✕ 53'21	0°49'06				
max. Earth dist.	10530 Feb 26 17:48	12° ✕ 51'41	31.34211 AU	conjunction	10537 Mar 14 13:43	28° ✕ 07'12	0°41'00
morning rise	10530 Mar 15 05:20	13° ✕ 28'07		minimum elong	10537 Mar 14 13:43	28° ✕ 07'12	0°41'04
retrograde	10530 Jun 10 08:58	15° ✕ 20'15		max. Earth dist.	10537 Mar 13 19:10	28° ✕ 05'28	31.34251 AU
opposition	10530 Aug 27 08:24	13° ✕ 58'09	0°51'45	morning rise	10537 Mar 30 05:01	28° ✕ 41'51	
min. Earth dist.	10530 Aug 27 23:58	13° ✕ 57'05	29.34348 AU		10537 May 10 20:47	0° ∇	
direct	10530 Nov 15 20:49	12° ✕ 33'35		retrograde	10537 Jun 25 09:31	0° ∇ 34'11	
evening set	10531 Feb 14 02:36	14° ✕ 28'42			10537 Aug 11 10:15	30° ℞ ✕	
				opposition	10537 Sep 11 12:54	29° ✕ 12'08	0°43'04
conjunction	10531 Mar 01 22:26	15° ✕ 03'39	0°47'58	min. Earth dist.	10537 Sep 12 05:42	29° ✕ 10'59	29.34066 AU
minimum elong	10531 Mar 01 22:26	15° ✕ 03'39	0°48'09	direct	10537 Dec 01 05:31	27° ✕ 47'44	
max. Earth dist.	10531 Mar 01 05:35	15° ✕ 02'05	31.34415 AU	evening set	10538 Mar 01 06:43	29° ✕ 42'50	
morning rise	10531 Mar 17 15:31	15° ✕ 38'24			10538 Mar 09 02:06	0° ∇	
retrograde	10531 Jun 12 18:23	17° ✕ 30'35		max. Earth dist.	10538 Mar 16 06:39	0° ∇ 16'02	31.33788 AU
opposition	10531 Aug 29 19:11	16° ✕ 08'30	0°50'43				
min. Earth dist.	10531 Aug 30 11:36	16° ✕ 07'23	29.34558 AU	conjunction	10538 Mar 17 00:12	0° ∇ 17'40	0°39'38
direct	10531 Nov 18 07:23	14° ✕ 44'00		minimum elong	10538 Mar 17 00:12	0° ∇ 17'40	0°39'40
evening set	10532 Feb 16 13:38	16° ✕ 39'08		morning rise	10538 Apr 01 15:04	0° ∇ 52'19	
				retrograde	10538 Jun 27 17:29	2° ∇ 44'39	
conjunction	10532 Mar 03 08:59	17° ✕ 14'04	0°46'58	opposition	10538 Sep 13 23:58	1° ∇ 22'33	0°41'34
minimum elong	10532 Mar 03 08:59	17° ✕ 14'04	0°47'07	min. Earth dist.	10538 Sep 14 17:05	1° ∇ 21'23	29.33552 AU
max. Earth dist.	10532 Mar 02 15:25	17° ✕ 12'27	31.34631 AU		10538 Nov 22 21:06	30° ℞ ✕	
morning rise	10532 Mar 19 01:52	17° ✕ 48'49		direct	10538 Dec 03 17:45	29° ✕ 58'07	
retrograde	10532 Jun 14 06:24	19° ✕ 41'01			10538 Dec 14 11:49	0° ∇	
opposition	10532 Aug 31 05:49	18° ✕ 19'00	0°49'37	evening set	10539 Mar 03 17:22	1° ∇ 53'10	
min. Earth dist.	10532 Aug 31 21:21	18° ✕ 17'56	29.34752 AU				
direct	10532 Nov 19 19:22	16° ✕ 54'32		conjunction	10539 Mar 19 10:24	2° ∇ 28'00	0°38'12
evening set	10533 Feb 18 00:34	18° ✕ 49'42		minimum elong	10539 Mar 19 10:24	2° ∇ 28'00	0°38'14
				max. Earth dist.	10539 Mar 18 15:53	2° ∇ 26'16	31.33251 AU
conjunction	10533 Mar 05 19:39	19° ✕ 24'37	0°45'54	morning rise	10539 Apr 04 01:11	3° ∇ 02'38	
minimum elong	10533 Mar 05 19:39	19° ✕ 24'37	0°46'03	retrograde	10539 Jun 30 04:17	4° ∇ 54'58	
max. Earth dist.	10533 Mar 05 02:26	19° ✕ 23'02	31.34789 AU	opposition	10539 Sep 16 11:00	3° ∇ 32'49	0°40'01
morning rise	10533 Mar 21 12:05	19° ✕ 59'20		min. Earth dist.	10539 Sep 17 03:23	3° ∇ 31'41	29.32998 AU
retrograde	10533 Jun 16 17:29	21° ✕ 51'36		direct	10539 Dec 06 04:06	2° ∇ 08'20	
opposition	10533 Sep 02 16:51	20° ✕ 29'35	0°48'26	evening set	10540 Mar 05 03:49	4° ∇ 03'21	
min. Earth dist.	10533 Sep 03 09:29	20° ✕ 28'27	29.34876 AU				
direct	10533 Nov 22 07:21	19° ✕ 05'11		conjunction	10540 Mar 20 20:39	4° ∇ 38'09	0°36'43
evening set	10534 Feb 20 11:22	21° ✕ 00'21		minimum elong	10540 Mar 20 20:40	4° ∇ 38'09	0°36'43

max. Earth dist.	10540 Mar 20 03:24	4° Υ 36'33	31.32690 AU	conjunction	10547 Apr 05 19:01	19° Υ 50'22	0°25'01
morning rise	10540 Apr 05 10:59	5° Υ 12'46		minimum elong	10547 Apr 05 19:01	19° Υ 50'22	0°24'53
retrograde	10540 Jul 01 13:12	7° Υ 05'09		max. Earth dist.	10547 Apr 05 04:31	19° Υ 49'01	31.30338 AU
opposition	10540 Sep 17 22:12	5° Υ 42'55	0°38'25	morning rise	10547 Apr 21 07:34	20° Υ 24'58	
min. Earth dist.	10540 Sep 18 15:09	5° Υ 41'46	29.32455 AU	retrograde	10547 Jul 17 14:38	22° Υ 17'53	
direct	10540 Dec 07 14:46	4° Υ 18'26		opposition	10547 Oct 04 05:50	20° Υ 55'41	0°25'44
evening set	10541 Mar 07 14:19	6° Υ 13'25		min. Earth dist.	10547 Oct 04 20:16	20° Υ 54'42	29.30124 AU
				direct	10547 Dec 23 23:27	19° Υ 31'32	
conjunction	10541 Mar 23 06:44	6° Υ 48'12	0°35'12	evening set	10548 Mar 22 14:46	21° Υ 26'34	
minimum elong	10541 Mar 23 06:44	6° Υ 48'12	0°35'11				
max. Earth dist.	10541 Mar 22 13:19	6° Υ 46'35	31.32191 AU	conjunction	10548 Apr 07 05:03	22° Υ 01'18	0°23'11
morning rise	10541 Apr 07 20:54	7° Υ 22'48		minimum elong	10548 Apr 07 05:03	22° Υ 01'18	0°23'01
retrograde	10541 Jul 04 00:45	9° Υ 15'13		max. Earth dist.	10548 Apr 06 13:37	21° Υ 59'52	31.29848 AU
opposition	10541 Sep 20 09:21	7° Υ 52'57	0°36'45	morning rise	10548 Apr 22 17:31	22° Υ 35'54	
min. Earth dist.	10541 Sep 21 00:44	7° Υ 51'54	29.32002 AU	retrograde	10548 Jul 19 01:57	24° Υ 28'55	
direct	10541 Dec 10 02:48	6° Υ 28'28		opposition	10548 Oct 05 17:31	23° Υ 06'42	0°23'45
evening set	10542 Mar 10 00:32	8° Υ 23'26		min. Earth dist.	10548 Oct 06 07:11	23° Υ 05'46	29.29571 AU
				direct	10548 Dec 25 09:23	21° Υ 42'34	
conjunction	10542 Mar 25 16:42	8° Υ 58'13	0°33'37	evening set	10549 Mar 25 01:08	23° Υ 37'35	
minimum elong	10542 Mar 25 16:42	8° Υ 58'13	0°33'34				
max. Earth dist.	10542 Mar 25 00:08	8° Υ 56'40	31.31784 AU	conjunction	10549 Apr 09 15:17	24° Υ 12'20	0°21'19
morning rise	10542 Apr 10 06:32	9° Υ 32'48		minimum elong	10549 Apr 09 15:17	24° Υ 12'20	0°21'08
retrograde	10542 Jul 06 11:36	11° Υ 25'17		max. Earth dist.	10549 Apr 09 00:50	24° Υ 10'59	31.29221 AU
opposition	10542 Sep 22 20:39	10° Υ 03'00	0°35'02	morning rise	10549 Apr 25 03:22	24° Υ 46'56	
min. Earth dist.	10542 Sep 23 12:31	10° Υ 01'55	29.31649 AU	retrograde	10549 Jul 21 11:36	26° Υ 40'01	
direct	10542 Dec 12 14:13	8° Υ 38'34		opposition	10549 Oct 08 05:25	25° Υ 17'47	0°21'44
evening set	10543 Mar 12 10:52	10° Υ 33'32		min. Earth dist.	10549 Oct 08 19:52	25° Υ 16'48	29.28878 AU
max. Earth dist.	10543 Mar 27 10:41	11° Υ 06'48	31.31484 AU	direct	10549 Dec 27 19:28	23° Υ 53'40	
				evening set	10550 Mar 27 11:26	25° Υ 48'39	
conjunction	10543 Mar 28 02:45	11° Υ 08'18	0°31'59	max. Earth dist.	10550 Apr 11 10:27	26° Υ 22'00	31.28475 AU
minimum elong	10543 Mar 28 02:45	11° Υ 08'18	0°31'56				
morning rise	10543 Apr 12 16:22	11° Υ 42'53		conjunction	10550 Apr 12 01:15	26° Υ 23'23	0°19'24
retrograde	10543 Jul 08 22:34	13° Υ 35'26		minimum elong	10550 Apr 12 01:15	26° Υ 23'23	0°19'12
opposition	10543 Sep 25 07:45	12° Υ 13'10	0°33'16	morning rise	10550 Apr 27 13:18	26° Υ 57'59	
min. Earth dist.	10543 Sep 25 22:19	12° Υ 12'10	29.31371 AU	retrograde	10550 Jul 23 23:27	28° Υ 51'08	
direct	10543 Dec 15 02:50	10° Υ 48'47		opposition	10550 Oct 10 17:09	27° Υ 28'50	0°19'41
evening set	10544 Mar 13 21:17	12° Υ 43'46		min. Earth dist.	10550 Oct 11 06:23	27° Υ 27'56	29.28066 AU
				direct	10550 Dec 30 08:01	26° Υ 04'43	
conjunction	10544 Mar 29 12:48	13° Υ 18'32	0°30'19	evening set	10551 Mar 29 21:45	27° Υ 59'40	
minimum elong	10544 Mar 29 12:48	13° Υ 18'32	0°30'14				
max. Earth dist.	10544 Mar 28 20:42	13° Υ 17'02	31.31230 AU	conjunction	10551 Apr 14 11:21	28° Υ 34'24	0°17'29
morning rise	10544 Apr 14 02:11	13° Υ 53'07		minimum elong	10551 Apr 14 11:21	28° Υ 34'24	0°17'16
retrograde	10544 Jul 10 08:53	15° Υ 45'45		max. Earth dist.	10551 Apr 13 20:58	28° Υ 33'03	31.27610 AU
opposition	10544 Sep 26 19:11	14° Υ 23'31	0°31'27	morning rise	10551 Apr 29 23:08	29° Υ 08'59	
min. Earth dist.	10544 Sep 27 10:09	14° Υ 22'30	29.31135 AU		10551 May 24 22:33	0° \mathcal{B}	
direct	10544 Dec 16 13:02	12° Υ 59'12		retrograde	10551 Jul 26 10:47	1° \mathcal{B} 02'13	
evening set	10545 Mar 16 07:29	14° Υ 54'12			10551 Sep 30 17:45	30° \mathcal{R} Υ	
				opposition	10551 Oct 13 04:57	29° Υ 39'50	0°17'36
conjunction	10545 Mar 31 22:47	15° Υ 28'57	0°28'35	min. Earth dist.	10551 Oct 13 18:54	29° Υ 38'53	29.27171 AU
minimum elong	10545 Mar 31 22:47	15° Υ 28'57	0°28'30	direct	10552 Jan 01 19:34	28° Υ 15'42	
max. Earth dist.	10545 Mar 31 07:53	15° Υ 27'34	31.30993 AU		10552 Mar 26 10:24	0° \mathcal{B}	
morning rise	10545 Apr 16 11:49	16° Υ 03'32		evening set	10552 Mar 31 07:58	0° \mathcal{B} 10'37	
retrograde	10545 Jul 12 18:30	17° Υ 56'16					
opposition	10545 Sep 29 06:41	16° Υ 34'03	0°29'35	conjunction	10552 Apr 15 21:19	0° \mathcal{B} 45'19	0°15'32
min. Earth dist.	10545 Sep 29 21:02	16° Υ 33'04	29.30872 AU	minimum elong	10552 Apr 15 21:19	0° \mathcal{B} 45'19	0°15'17
direct	10545 Dec 19 01:41	15° Υ 09'48		behind sun begin	10552 Apr 15 19:11	0° \mathcal{B} 45'08	
evening set	10546 Mar 18 17:56	17° Υ 04'49		behind sun end	10552 Apr 15 23:27	0° \mathcal{B} 45'31	
				max. Earth dist.	10552 Apr 15 07:36	0° \mathcal{B} 44'03	31.26707 AU
conjunction	10546 Apr 03 08:48	17° Υ 39'34	0°26'50	morning rise	10552 May 01 08:56	1° \mathcal{B} 19'54	
minimum elong	10546 Apr 03 08:48	17° Υ 39'34	0°26'42	retrograde	10552 Jul 27 21:43	3° \mathcal{B} 13'11	
max. Earth dist.	10546 Apr 02 17:10	17° Υ 38'07	31.30706 AU	opposition	10552 Oct 14 16:48	1° \mathcal{B} 50'45	0°15'30
morning rise	10546 Apr 18 21:44	18° Υ 14'10		min. Earth dist.	10552 Oct 15 05:19	1° \mathcal{B} 49'54	29.26260 AU
retrograde	10546 Jul 15 06:02	20° Υ 06'59		direct	10553 Jan 03 08:27	0° \mathcal{B} 26'35	
opposition	10546 Oct 01 18:08	18° Υ 44'47	0°27'41	evening set	10553 Apr 02 18:02	2° \mathcal{B} 21'28	
min. Earth dist.	10546 Oct 02 08:20	18° Υ 43'49	29.30558 AU				
direct	10546 Dec 21 11:26	17° Υ 20'35		conjunction	10553 Apr 18 07:03	2° \mathcal{B} 56'10	0°13'34
evening set	10547 Mar 21 04:15	19° Υ 15'37		minimum elong	10553 Apr 18 07:03	2° \mathcal{B} 56'09	0°13'19

behind sun begin	10553 Apr 18 03:17	2°8'55"49		opposition	10558 Oct 28 17:07	14°8'56"52	0°02'30
behind sun end	10553 Apr 18 10:49	2°8'56"30		min. Earth dist.	10558 Oct 29 02:54	14°8'56"12	29.22177 AU
max. Earth dist.	10553 Apr 17 17:29	2°8'54"54	31.25813 AU	direct	10559 Jan 17 04:37	13°8'32"55	
morning rise	10553 May 03 18:32	3°8'30"45			10559 Apr 03 06:46	15°8'	
retrograde	10553 Jul 30 08:34	5°8'24"06		evening set	10559 Apr 16 06:46	15°8'27"42	
opposition	10553 Oct 17 04:48	4°8'01"35	0°13'23				
min. Earth dist.	10553 Oct 17 17:19	4°8'00"44	29.25413 AU	conjunction	10559 May 01 18:29	16°8'02"24	0°01'22
direct	10554 Jan 05 19:36	2°8'37"25		minimum elong	10559 May 01 18:29	16°8'02"24	0°01'01
evening set	10554 Apr 05 04:06	4°8'32"16		behind sun begin	10559 May 01 12:05	16°8'01"49	
				behind sun end	10559 May 02 00:54	16°8'02"58	
conjunction	10554 Apr 20 16:59	5°8'06"57	0°11'34	max. Earth dist.	10559 May 01 08:50	16°8'01"30	31.21838 AU
minimum elong	10554 Apr 20 17:00	5°8'06"57	0°11'18	morning rise	10559 May 17 05:07	16°8'37"01	
behind sun begin	10554 Apr 20 12:14	5°8'06"32		retrograde	10559 Aug 13 00:56	18°8'31"01	
behind sun end	10554 Apr 20 21:45	5°8'07"23		opposition	10559 Oct 31 05:17	17°8'08"23	0°00'18
max. Earth dist.	10554 Apr 20 05:02	5°8'05"51	31.25010 AU	min. Earth dist.	10559 Oct 31 13:43	17°8'07"49	29.21478 AU
morning rise	10554 May 06 04:12	5°8'41"32		desc. node	10559 Dec 17 23:12	16°8'01"09	
retrograde	10554 Aug 01 18:53	7°8'34"58		direct	10560 Jan 19 16:22	15°8'44"28	
opposition	10554 Oct 19 16:36	6°8'12"24	0°11'14	evening set	10560 Apr 17 17:04	17°8'39"16	
min. Earth dist.	10554 Oct 20 04:05	6°8'11"37	29.24650 AU				
direct	10555 Jan 08 09:17	4°8'48"16		conjunction	10560 May 03 04:37	18°8'13"58	-0°00'47
evening set	10555 Apr 07 14:17	6°8'43"05		minimum elong	10560 May 03 04:36	18°8'13"58	0°01'09
				behind sun begin	10560 May 02 22:11	18°8'13"24	
conjunction	10555 Apr 23 02:49	7°8'17"47	0°09'34	behind sun end	10560 May 03 11:01	18°8'14"33	
minimum elong	10555 Apr 23 02:49	7°8'17"47	0°09'17	max. Earth dist.	10560 May 02 19:20	18°8'13"07	31.21080 AU
behind sun begin	10555 Apr 22 21:23	7°8'17"17		morning rise	10560 May 18 15:04	18°8'48"36	
behind sun end	10555 Apr 23 08:15	7°8'18"16		retrograde	10560 Aug 14 12:51	20°8'42"44	
max. Earth dist.	10555 Apr 22 14:31	7°8'16"38	31.24301 AU	opposition	10560 Nov 01 17:54	19°8'20"04	-0°01'55
morning rise	10555 May 08 14:01	7°8'52"22		min. Earth dist.	10560 Nov 02 02:59	19°8'19"27	29.20668 AU
retrograde	10555 Aug 04 06:33	9°8'45"53		direct	10561 Jan 21 03:00	17°8'56"12	
opposition	10555 Oct 22 04:35	8°8'23"18	0°09'04	evening set	10561 Apr 20 03:15	19°8'50"59	
min. Earth dist.	10555 Oct 22 15:18	8°8'22"34	29.23990 AU				
direct	10556 Jan 10 19:52	6°8'59"12		conjunction	10561 May 05 14:39	20°8'25"41	-0°02'53
evening set	10556 Apr 09 00:16	8°8'54"00		minimum elong	10561 May 05 14:39	20°8'25"41	0°03'15
				behind sun begin	10561 May 05 08:16	20°8'25"06	
conjunction	10556 Apr 24 12:43	9°8'28"42	0°07'32	behind sun end	10561 May 05 21:02	20°8'26"15	
minimum elong	10556 Apr 24 12:43	9°8'28"42	0°07'14	max. Earth dist.	10561 May 05 05:58	20°8'24"53	31.20207 AU
behind sun begin	10556 Apr 24 06:48	9°8'28"10		morning rise	10561 May 21 01:00	21°8'00"19	
behind sun end	10556 Apr 24 18:39	9°8'29"14		retrograde	10561 Aug 17 00:36	22°8'54"34	
max. Earth dist.	10556 Apr 24 02:09	9°8'27"43	31.23671 AU	opposition	10561 Nov 04 06:23	21°8'31"52	-0°04'07
morning rise	10556 May 09 23:36	10°8'03"17		min. Earth dist.	10561 Nov 04 14:15	21°8'31"20	29.19715 AU
retrograde	10556 Aug 05 15:12	11°8'56"55		direct	10562 Jan 23 15:35	20°8'08"00	
opposition	10556 Oct 23 16:42	10°8'34"19	0°06'54	evening set	10562 Apr 22 13:39	22°8'02"47	
min. Earth dist.	10556 Oct 24 03:09	10°8'33"37	29.23378 AU				
direct	10557 Jan 12 08:02	9°8'10"16		conjunction	10562 May 08 00:48	22°8'37"29	-0°04'56
evening set	10557 Apr 11 10:28	11°8'05"04		minimum elong	10562 May 08 00:47	22°8'37"29	0°05'20
				behind sun begin	10562 May 07 18:34	22°8'36"55	
conjunction	10557 Apr 26 22:31	11°8'39"45	0°05'30	behind sun end	10562 May 08 07:00	22°8'38"02	
minimum elong	10557 Apr 26 22:32	11°8'39"46	0°05'12	max. Earth dist.	10562 May 07 15:43	22°8'36"39	31.19180 AU
behind sun begin	10557 Apr 26 16:18	11°8'39"12		morning rise	10562 May 23 11:09	23°8'12"08	
behind sun end	10557 Apr 27 04:46	11°8'40"19		retrograde	10562 Aug 19 12:45	25°8'06"29	
max. Earth dist.	10557 Apr 26 11:36	11°8'38"45	31.23086 AU	opposition	10562 Nov 06 18:51	23°8'43"43	-0°06'19
morning rise	10557 May 12 09:27	12°8'14"22		min. Earth dist.	10562 Nov 07 03:09	23°8'43"09	29.18626 AU
retrograde	10557 Aug 08 02:47	14°8'08"07		direct	10563 Jan 26 02:57	22°8'19"52	
opposition	10557 Oct 26 04:47	12°8'45"30	0°04'42	evening set	10563 Apr 24 23:55	24°8'14"37	
min. Earth dist.	10557 Oct 26 14:01	12°8'44"52	29.22798 AU				
direct	10558 Jan 14 18:11	11°8'21"30		conjunction	10563 May 10 11:03	24°8'49"19	-0°06'58
evening set	10558 Apr 13 20:30	13°8'16"17		minimum elong	10563 May 10 11:03	24°8'49"19	0°07'22
				behind sun begin	10563 May 10 05:10	24°8'48"48	
conjunction	10558 Apr 29 08:31	13°8'50"59	0°03'27	behind sun end	10563 May 10 16:56	24°8'49"51	
minimum elong	10558 Apr 29 08:31	13°8'50"59	0°03'06	max. Earth dist.	10563 May 10 03:14	24°8'48"36	31.18028 AU
behind sun begin	10558 Apr 29 02:07	13°8'50"25		morning rise	10563 May 25 21:13	25°8'23"59	
behind sun end	10558 Apr 29 14:55	13°8'51"34		retrograde	10563 Aug 22 00:03	27°8'18"25	
max. Earth dist.	10558 Apr 28 22:54	13°8'50"06	31.22488 AU	opposition	10563 Nov 09 07:25	25°8'55"35	-0°08'30
morning rise	10558 May 14 19:11	14°8'25"36		min. Earth dist.	10563 Nov 09 15:01	25°8'55"04	29.17409 AU
	10558 May 31 01:44	15°8'		direct	10564 Jan 28 17:08	24°8'31"44	
retrograde	10558 Aug 10 12:58	16°8'19"29		evening set	10564 Apr 26 10:09	26°8'26"26	
	10558 Oct 26 18:55	15°8'					

conjunction	10564 May 11 20:57	27° 8 01'09	-0°09'00	min. Earth dist.	10569 Nov 22 14:43	9° II 07'05	29.10822 AU
minimum elong	10564 May 11 20:57	27° 8 01'09	0°09'26	direct	10570 Feb 10 12:19	7° II 43'32	
behind sun begin	10564 May 11 15:34	27° 8 00'40		evening set	10570 May 09 22:56	9° II 38'09	
behind sun end	10564 May 12 02:21	27° 8 01'38					
max. Earth dist.	10564 May 11 12:40	27° 8 00'23	31.16780 AU	conjunction	10570 May 25 09:13	10° II 12'54	-0°20'50
morning rise	10564 May 27 07:14	27° 8 35'49		minimum elong	10570 May 25 09:12	10° II 12'54	0°21'20
retrograde	10564 Aug 23 12:13	29° 8 30'21		max. Earth dist.	10570 May 25 06:31	10° II 12'39	31.10382 AU
opposition	10564 Nov 10 20:03	28° 8 07'26	-0°10'41	morning rise	10570 Jun 09 19:15	10° II 47'39	
min. Earth dist.	10564 Nov 11 03:00	28° 8 06'58	29.16151 AU	retrograde	10570 Sep 06 07:04	12° II 42'57	
direct	10565 Jan 30 04:26	26° 8 43'33		opposition	10570 Nov 24 23:54	11° II 19'46	-0°23'18
evening set	10565 Apr 28 20:14	28° 8 38'13		min. Earth dist.	10570 Nov 25 01:47	11° II 19'38	29.09943 AU
				direct	10571 Feb 12 23:57	9° II 56'01	
				evening set	10571 May 12 09:21	11° II 50'38	
conjunction	10565 May 14 07:04	29° 8 12'56	-0°11'01				
minimum elong	10565 May 14 07:04	29° 8 12'56	0°11'27	conjunction	10571 May 27 19:24	12° II 25'23	-0°22'44
behind sun begin	10565 May 14 02:22	29° 8 12'30		minimum elong	10571 May 27 19:24	12° II 25'23	0°23'13
behind sun end	10565 May 14 11:46	29° 8 13'21		max. Earth dist.	10571 May 27 16:37	12° II 25'08	31.09498 AU
max. Earth dist.	10565 May 14 00:31	29° 8 12'20	31.15517 AU	morning rise	10571 Jun 12 05:34	13° II 00'11	
morning rise	10565 May 29 17:08	29° 8 47'37		retrograde	10571 Sep 08 20:27	14° II 55'37	
	10565 Jun 04 09:23	0° II		opposition	10571 Nov 27 12:52	13° II 32'23	-0°25'19
retrograde	10565 Aug 25 21:19	1° II 42'15		min. Earth dist.	10571 Nov 27 14:54	13° II 32'15	29.09054 AU
opposition	10565 Nov 13 08:38	0° II 19'15	-0°12'50	direct	10572 Feb 15 11:14	12° II 08'41	
min. Earth dist.	10565 Nov 13 15:10	0° II 18'48	29.14907 AU	evening set	10572 May 13 19:34	14° II 03'19	
	10565 Nov 25 05:54	30° 8					
direct	10566 Feb 01 17:19	28° 8 55'22		conjunction	10572 May 29 05:42	14° II 38'04	-0°24'36
	10566 Apr 06 23:16	0° II		minimum elong	10572 May 29 05:41	14° II 38'04	0°25'06
evening set	10566 May 01 06:24	0° II 50'00		max. Earth dist.	10572 May 29 04:28	14° II 37'58	31.08581 AU
				morning rise	10572 Jun 13 15:43	15° II 12'52	
conjunction	10566 May 16 16:58	1° II 24'43	-0°13'01	retrograde	10572 Sep 10 09:10	17° II 08'27	
minimum elong	10566 May 16 16:58	1° II 24'43	0°13'29	opposition	10572 Nov 29 01:52	15° II 45'11	-0°27'17
behind sun begin	10566 May 16 13:17	1° II 24'23		min. Earth dist.	10572 Nov 29 03:04	15° II 45'06	29.08097 AU
behind sun end	10566 May 16 20:39	1° II 25'03		direct	10573 Feb 17 00:54	14° II 21'30	
max. Earth dist.	10566 May 16 10:17	1° II 24'06	31.14313 AU	evening set	10573 May 16 06:09	16° II 16'08	
morning rise	10566 Jun 01 03:10	1° II 59'24					
retrograde	10566 Aug 28 09:07	3° II 54'09		conjunction	10573 May 31 16:03	16° II 50'54	-0°26'25
opposition	10566 Nov 15 21:10	2° II 31'05	-0°14'58	minimum elong	10573 May 31 16:03	16° II 50'54	0°26'55
min. Earth dist.	10566 Nov 16 02:10	2° II 30'45	29.13749 AU	max. Earth dist.	10573 May 31 14:13	16° II 50'44	31.07582 AU
direct	10567 Feb 04 04:20	1° II 07'12		morning rise	10573 Jun 16 02:17	17° II 25'43	
evening set	10567 May 03 16:30	3° II 01'49		retrograde	10573 Sep 12 22:09	19° II 21'25	
				opposition	10573 Dec 01 14:49	17° II 58'06	-0°29'13
conjunction	10567 May 19 03:02	3° II 36'32	-0°15'00	min. Earth dist.	10573 Dec 01 15:37	17° II 58'03	29.07058 AU
minimum elong	10567 May 19 03:02	3° II 36'32	0°15'27	direct	10574 Feb 19 11:47	16° II 34'26	
behind sun begin	10567 May 19 01:03	3° II 36'22		evening set	10574 May 18 16:34	18° II 29'02	
behind sun end	10567 May 19 05:01	3° II 36'43					
max. Earth dist.	10567 May 18 21:54	3° II 36'04	31.13194 AU	conjunction	10574 Jun 03 02:37	19° II 03'49	-0°28'12
morning rise	10567 Jun 03 13:03	4° II 11'15		minimum elong	10574 Jun 03 02:37	19° II 03'49	0°28'44
retrograde	10567 Aug 30 19:20	6° II 06'07		max. Earth dist.	10574 Jun 03 02:06	19° II 03'47	31.06476 AU
opposition	10567 Nov 18 09:49	4° II 43'01	-0°17'05	morning rise	10574 Jun 18 12:46	19° II 38'39	
min. Earth dist.	10567 Nov 18 14:54	4° II 42'40	29.12683 AU	retrograde	10574 Sep 15 09:02	21° II 34'28	
direct	10568 Feb 06 15:14	3° II 19'09		opposition	10574 Dec 04 03:54	20° II 11'05	-0°31'06
evening set	10568 May 05 02:40	5° II 13'45		min. Earth dist.	10574 Dec 04 04:38	20° II 11'02	29.05885 AU
				direct	10575 Feb 22 01:31	18° II 47'24	
conjunction	10568 May 20 13:03	5° II 48'29	-0°16'58	evening set	10575 May 21 03:09	20° II 41'59	
minimum elong	10568 May 20 13:03	5° II 48'29	0°17'27				
max. Earth dist.	10568 May 20 08:28	5° II 48'04	31.12190 AU	conjunction	10575 Jun 05 13:02	21° II 16'46	-0°29'57
morning rise	10568 Jun 04 23:07	6° II 23'13		minimum elong	10575 Jun 05 13:02	21° II 16'46	0°30'28
retrograde	10568 Sep 01 07:07	8° II 18'13		max. Earth dist.	10575 Jun 05 11:59	21° II 16'40	31.05252 AU
opposition	10568 Nov 19 22:29	6° II 55'04	-0°19'11	morning rise	10575 Jun 20 23:23	21° II 51'37	
min. Earth dist.	10568 Nov 20 01:38	6° II 54'52	29.11720 AU	retrograde	10575 Sep 17 22:09	23° II 47'31	
direct	10569 Feb 08 02:42	5° II 31'15		opposition	10575 Dec 06 16:55	22° II 24'03	-0°32'57
evening set	10569 May 07 12:44	7° II 25'51		min. Earth dist.	10575 Dec 06 16:32	22° II 24'04	29.04610 AU
				direct	10576 Feb 24 13:56	21° II 00'21	
conjunction	10569 May 22 23:01	8° II 00'36	-0°18'55	evening set	10576 May 22 13:37	22° II 54'52	
minimum elong	10569 May 22 23:01	8° II 00'36	0°19'23				
max. Earth dist.	10569 May 22 19:15	8° II 00'15	31.11258 AU	conjunction	10576 Jun 06 23:35	23° II 29'40	-0°31'39
morning rise	10569 Jun 07 09:06	8° II 35'20		minimum elong	10576 Jun 06 23:35	23° II 29'40	0°32'11
retrograde	10569 Sep 03 18:59	10° II 30'30		max. Earth dist.	10576 Jun 06 23:43	23° II 29'41	31.03933 AU
opposition	10569 Nov 22 11:19	9° II 07'19	-0°21'16				

morning rise	10576 Jun 22 09:55	24° Π 04'32	opposition	10582 Dec 22 12:18	7° \mathfrak{D} 54'37	-0°44'22
retrograde	10576 Sep 19 08:39	26° Π 00'31	min. Earth dist.	10582 Dec 22 06:40	7° \mathfrak{D} 55'00	28.96927 AU
opposition	10576 Dec 08 06:05	24° Π 36'57 -0°34'45	direct	10583 Mar 11 22:06	6° \mathfrak{D} 30'56	
min. Earth dist.	10576 Dec 08 06:03	24° Π 36'57 29.03271 AU	evening set	10583 Jun 07 14:51	8° \mathfrak{D} 25'21	
direct	10577 Feb 26 02:07	23° Π 13'13				
evening set	10577 May 24 23:57	25° Π 07'40	conjunction	10583 Jun 23 01:08	9° \mathfrak{D} 00'15	-0°42'08
			minimum elong	10583 Jun 23 01:08	9° \mathfrak{D} 00'15	0°42'40
conjunction	10577 Jun 09 09:56	25° Π 42'29 -0°33'18	max. Earth dist.	10583 Jun 23 07:24	9° \mathfrak{D} 00'51	30.96532 AU
minimum elong	10577 Jun 09 09:55	25° Π 42'29 0°33'50	morning rise	10583 Jul 08 12:22	9° \mathfrak{D} 35'16	
max. Earth dist.	10577 Jun 09 10:33	25° Π 42'33 31.02599 AU	retrograde	10583 Oct 05 23:51	11° \mathfrak{D} 32'06	
morning rise	10577 Jun 24 20:27	26° Π 17'22	opposition	10583 Dec 25 01:32	10° \mathfrak{D} 08'10	-0°45'46
retrograde	10577 Sep 21 20:06	28° Π 13'26	min. Earth dist.	10583 Dec 24 19:30	10° \mathfrak{D} 08'35	28.96181 AU
opposition	10577 Dec 10 19:04	26° Π 49'46 -0°36'29	direct	10584 Mar 13 11:33	8° \mathfrak{D} 44'33	
min. Earth dist.	10577 Dec 10 17:17	26° Π 49'53 29.01947 AU	evening set	10584 Jun 09 01:40	10° \mathfrak{D} 38'59	
direct	10578 Feb 28 14:12	25° Π 25'59				
evening set	10578 May 27 10:26	27° Π 20'24	conjunction	10584 Jun 24 11:55	11° \mathfrak{D} 13'54	-0°43'24
			minimum elong	10584 Jun 24 11:55	11° \mathfrak{D} 13'54	0°43'57
conjunction	10578 Jun 11 20:23	27° Π 55'14 -0°34'54	max. Earth dist.	10584 Jun 24 17:56	11° \mathfrak{D} 14'28	30.95804 AU
minimum elong	10578 Jun 11 20:23	27° Π 55'14 0°35'27	morning rise	10584 Jul 09 23:28	11° \mathfrak{D} 48'57	
max. Earth dist.	10578 Jun 11 21:41	27° Π 55'21 31.01296 AU	retrograde	10584 Oct 07 14:48	13° \mathfrak{D} 45'55	
morning rise	10578 Jun 27 07:00	28° Π 30'08	opposition	10584 Dec 26 14:45	12° \mathfrak{D} 21'59	-0°47'05
	10578 Aug 15 06:45	0° \mathfrak{D}	min. Earth dist.	10584 Dec 26 07:33	12° \mathfrak{D} 22'28	28.95455 AU
retrograde	10578 Sep 24 07:25	0° \mathfrak{D} 26'18	direct	10585 Mar 15 23:43	10° \mathfrak{D} 58'24	
	10578 Nov 04 17:08	30° \mathfrak{R} Π	evening set	10585 Jun 11 12:27	12° \mathfrak{D} 52'51	
opposition	10578 Dec 13 08:03	29° Π 02'32 -0°38'11				
min. Earth dist.	10578 Dec 13 06:27	29° Π 02'39 29.00701 AU	conjunction	10585 Jun 26 22:53	13° \mathfrak{D} 27'48	-0°44'37
direct	10579 Mar 03 00:25	27° Π 38'45	minimum elong	10585 Jun 26 22:53	13° \mathfrak{D} 27'48	0°45'08
evening set	10579 May 29 20:51	29° Π 33'08	max. Earth dist.	10585 Jun 27 06:01	13° \mathfrak{D} 28'28	30.95047 AU
	10579 Jun 10 19:02	0° \mathfrak{D}	morning rise	10585 Jul 12 10:32	14° \mathfrak{D} 02'52	
			retrograde	10585 Oct 10 02:22	15° \mathfrak{D} 59'59	
conjunction	10579 Jun 14 06:53	0° \mathfrak{D} 07'58 -0°36'28	opposition	10585 Dec 29 04:07	14° \mathfrak{D} 36'01	-0°48'20
minimum elong	10579 Jun 14 06:53	0° \mathfrak{D} 07'58 0°36'59	min. Earth dist.	10585 Dec 28 21:26	14° \mathfrak{D} 36'29	28.94671 AU
max. Earth dist.	10579 Jun 14 09:32	0° \mathfrak{D} 08'13 31.00109 AU	direct	10586 Mar 18 11:50	13° \mathfrak{D} 12'29	
morning rise	10579 Jun 29 17:33	0° \mathfrak{D} 42'53	evening set	10586 Jun 13 23:28	15° \mathfrak{D} 06'56	
retrograde	10579 Sep 26 19:33	2° \mathfrak{D} 39'10				
opposition	10579 Dec 15 21:03	1° \mathfrak{D} 15'20 -0°39'49	conjunction	10586 Jun 29 10:00	15° \mathfrak{D} 41'54	-0°45'45
min. Earth dist.	10579 Dec 15 17:32	1° \mathfrak{D} 15'35 28.99573 AU	minimum elong	10586 Jun 29 10:00	15° \mathfrak{D} 41'54	0°46'17
	10580 Feb 10 17:39	30° \mathfrak{R} Π	max. Earth dist.	10586 Jun 29 17:13	15° \mathfrak{D} 42'35	30.94227 AU
direct	10580 Mar 04 12:24	29° Π 51'33	morning rise	10586 Jul 14 21:52	16° \mathfrak{D} 17'00	
	10580 Mar 26 22:52	0° \mathfrak{D}	retrograde	10586 Oct 12 14:45	18° \mathfrak{D} 14'13	
evening set	10580 May 31 07:16	1° \mathfrak{D} 45'55	opposition	10586 Dec 31 17:17	16° \mathfrak{D} 50'14	-0°49'31
			min. Earth dist.	10586 Dec 31 09:18	16° \mathfrak{D} 50'47	28.93799 AU
conjunction	10580 Jun 15 17:13	2° \mathfrak{D} 20'46 -0°37'58	direct	10587 Mar 21 00:08	15° \mathfrak{D} 26'43	
minimum elong	10580 Jun 15 17:13	2° \mathfrak{D} 20'46 0°38'31	evening set	10587 Jun 16 10:35	17° \mathfrak{D} 21'09	
max. Earth dist.	10580 Jun 15 20:04	2° \mathfrak{D} 21'02 30.99046 AU				
morning rise	10580 Jul 01 04:07	2° \mathfrak{D} 55'42	conjunction	10587 Jul 01 21:12	17° \mathfrak{D} 56'08	-0°46'49
retrograde	10580 Sep 28 08:54	4° \mathfrak{D} 52'07	minimum elong	10587 Jul 01 21:12	17° \mathfrak{D} 56'08	0°47'20
opposition	10580 Dec 17 10:14	3° \mathfrak{D} 28'14 -0°41'24	max. Earth dist.	10587 Jul 02 04:34	17° \mathfrak{D} 56'50	30.93296 AU
min. Earth dist.	10580 Dec 17 06:28	3° \mathfrak{D} 28'30 28.98585 AU	morning rise	10587 Jul 17 09:18	18° \mathfrak{D} 31'16	
direct	10581 Mar 06 23:08	2° \mathfrak{D} 04'28	retrograde	10587 Oct 15 02:58	20° \mathfrak{D} 28'35	
evening set	10581 Jun 02 17:41	3° \mathfrak{D} 58'51	opposition	10588 Jan 03 06:47	19° \mathfrak{D} 04'33	-0°50'38
			min. Earth dist.	10588 Jan 02 23:28	19° \mathfrak{D} 05'03	28.92823 AU
conjunction	10581 Jun 18 03:52	4° \mathfrak{D} 33'43 -0°39'25	direct	10588 Mar 22 10:48	17° \mathfrak{D} 41'01	
minimum elong	10581 Jun 18 03:51	4° \mathfrak{D} 33'43 0°39'57	evening set	10588 Jun 17 21:29	19° \mathfrak{D} 35'25	
max. Earth dist.	10581 Jun 18 08:38	4° \mathfrak{D} 34'10 30.98119 AU				
morning rise	10581 Jul 03 14:46	5° \mathfrak{D} 08'40	conjunction	10588 Jul 03 08:22	20° \mathfrak{D} 10'25	-0°47'49
retrograde	10581 Sep 30 21:45	7° \mathfrak{D} 05'13	minimum elong	10588 Jul 03 08:22	20° \mathfrak{D} 10'25	0°48'21
opposition	10581 Dec 19 23:10	5° \mathfrak{D} 41'19 -0°42'55	max. Earth dist.	10588 Jul 03 16:35	20° \mathfrak{D} 11'12	30.92280 AU
min. Earth dist.	10581 Dec 19 18:14	5° \mathfrak{D} 41'39 28.97708 AU	morning rise	10588 Jul 18 20:38	20° \mathfrak{D} 45'34	
direct	10582 Mar 09 11:47	4° \mathfrak{D} 17'35	retrograde	10588 Oct 16 15:13	22° \mathfrak{D} 42'59	
evening set	10582 Jun 05 04:20	6° \mathfrak{D} 11'59	opposition	10589 Jan 04 20:04	21° \mathfrak{D} 18'52	-0°51'40
			min. Earth dist.	10589 Jan 04 11:21	21° \mathfrak{D} 19'27	28.91763 AU
conjunction	10582 Jun 20 14:25	6° \mathfrak{D} 46'52 -0°40'48	direct	10589 Mar 24 23:31	19° \mathfrak{D} 55'18	
minimum elong	10582 Jun 20 14:25	6° \mathfrak{D} 46'52 0°41'21	evening set	10589 Jun 20 08:35	21° \mathfrak{D} 49'40	
max. Earth dist.	10582 Jun 20 18:55	6° \mathfrak{D} 47'17 30.97294 AU				
morning rise	10582 Jul 06 01:40	7° \mathfrak{D} 21'51	conjunction	10589 Jul 05 19:30	22° \mathfrak{D} 24'40	-0°48'45
retrograde	10582 Oct 03 11:33	9° \mathfrak{D} 18'32	minimum elong	10589 Jul 05 19:31	22° \mathfrak{D} 24'40	0°49'15

max. Earth dist.	10589 Jul 06 03:26	22° Ω 25'25	30.91199 AU	min. Earth dist.	10596 Jan 21 03:01	6° Ω 59'19	28.86233 AU
morning rise	10589 Jul 21 08:10	22° Ω 59'50		direct	10596 Apr 09 11:37	5° Ω 34'48	
retrograde	10589 Oct 19 03:50	24° Ω 57'19		evening set	10596 Jul 05 14:21	7° Ω 29'02	
opposition	10590 Jan 07 09:16	23° Ω 33'06	-0°52'37				
min. Earth dist.	10590 Jan 07 00:52	23° Ω 33'41	28.90689 AU	conjunction	10596 Jul 21 02:47	8° Ω 04'10	-0°53'08
direct	10590 Mar 27 10:17	22° Ω 09'30		minimum elong	10596 Jul 21 02:47	8° Ω 04'10	0°53'35
evening set	10590 Jun 22 19:34	24° Ω 03'49		max. Earth dist.	10596 Jul 21 15:55	8° Ω 05'25	30.85982 AU
				morning rise	10596 Aug 05 17:22	8° Ω 39'31	
conjunction	10590 Jul 08 06:49	24° Ω 38'51	-0°49'36	retrograde	10596 Nov 04 01:01	10° Ω 37'33	
minimum elong	10590 Jul 08 06:49	24° Ω 38'51	0°50'07	opposition	10597 Jan 23 05:43	9° Ω 13'01	-0°57'01
max. Earth dist.	10590 Jul 08 16:24	24° Ω 39'45	30.90137 AU	min. Earth dist.	10597 Jan 22 17:00	9° Ω 13'54	28.85808 AU
morning rise	10590 Jul 23 19:34	25° Ω 14'02		direct	10597 Apr 11 22:49	7° Ω 49'27	
retrograde	10590 Oct 21 16:03	27° Ω 11'34		evening set	10597 Jul 08 01:49	9° Ω 43'41	
opposition	10591 Jan 09 22:26	25° Ω 47'16	-0°53'29				
min. Earth dist.	10591 Jan 09 12:57	25° Ω 47'56	28.89653 AU	conjunction	10597 Jul 23 14:36	10° Ω 18'51	-0°53'26
direct	10591 Mar 29 22:34	24° Ω 23'38		minimum elong	10597 Jul 23 14:36	10° Ω 18'51	0°53'52
evening set	10591 Jun 25 06:35	26° Ω 17'55		max. Earth dist.	10597 Jul 24 04:34	10° Ω 20'11	30.85562 AU
				morning rise	10597 Aug 08 05:25	10° Ω 54'13	
conjunction	10591 Jul 10 17:50	26° Ω 52'57	-0°50'23	retrograde	10597 Nov 06 13:42	12° Ω 52'21	
minimum elong	10591 Jul 10 17:50	26° Ω 52'57	0°50'53	opposition	10598 Jan 25 18:44	11° Ω 27'49	-0°57'18
max. Earth dist.	10591 Jul 11 03:08	26° Ω 53'50	30.89146 AU	min. Earth dist.	10598 Jan 25 04:50	11° Ω 28'46	28.85370 AU
morning rise	10591 Jul 26 06:59	27° Ω 28'10		direct	10598 Apr 14 11:23	10° Ω 04'17	
retrograde	10591 Oct 24 05:55	29° Ω 25'47		evening set	10598 Jul 10 13:33	11° Ω 58'32	
opposition	10592 Jan 12 11:41	28° Ω 01'24	-0°54'17				
min. Earth dist.	10592 Jan 12 01:33	28° Ω 02'06	28.88729 AU	conjunction	10598 Jul 26 02:27	12° Ω 33'43	-0°53'40
direct	10592 Mar 31 09:12	26° Ω 37'44		minimum elong	10598 Jul 26 02:27	12° Ω 33'43	0°54'06
evening set	10592 Jun 26 17:35	28° Ω 32'00		max. Earth dist.	10598 Jul 26 15:48	12° Ω 34'59	30.85094 AU
				morning rise	10598 Aug 10 17:42	13° Ω 09'07	
conjunction	10592 Jul 12 05:11	29° Ω 07'03	-0°51'05		10598 Oct 19 00:58	15° Ω	
minimum elong	10592 Jul 12 05:11	29° Ω 07'03	0°51'36	retrograde	10598 Nov 09 02:41	15° Ω 07'20	
max. Earth dist.	10592 Jul 12 16:16	29° Ω 08'06	30.88277 AU		10598 Nov 30 12:08	15° Ω	
morning rise	10592 Jul 27 18:27	29° Ω 42'16		opposition	10599 Jan 28 08:07	13° Ω 42'47	-0°57'29
	10592 Aug 04 21:02	0° Ω		min. Earth dist.	10599 Jan 27 18:52	13° Ω 43'42	28.84874 AU
retrograde	10592 Oct 25 18:50	1° Ω 39'58		direct	10599 Apr 16 21:48	12° Ω 19'16	
opposition	10593 Jan 14 00:52	0° Ω 15'31	-0°55'00	evening set	10599 Jul 13 01:05	14° Ω 13'31	
min. Earth dist.	10593 Jan 13 14:09	0° Ω 16'15	28.87926 AU				
	10593 Jan 23 11:16	30° Ω		conjunction	10599 Jul 28 14:25	14° Ω 48'43	-0°53'48
direct	10593 Apr 02 22:45	28° Ω 51'51		minimum elong	10599 Jul 28 14:26	14° Ω 48'44	0°54'13
	10593 Jun 07 03:50	0° Ω		max. Earth dist.	10599 Jul 29 04:56	14° Ω 50'06	30.84546 AU
evening set	10593 Jun 29 04:41	0° Ω 46'06			10599 Aug 02 12:54	15° Ω	
				morning rise	10599 Aug 13 05:50	15° Ω 24'09	
conjunction	10593 Jul 14 16:25	1° Ω 21'10	-0°51'43	retrograde	10599 Nov 11 15:14	17° Ω 22'27	
minimum elong	10593 Jul 14 16:25	1° Ω 21'10	0°52'12	opposition	10600 Jan 30 21:26	15° Ω 57'52	-0°57'36
max. Earth dist.	10593 Jul 15 03:21	1° Ω 22'12	30.87548 AU	min. Earth dist.	10600 Jan 30 07:32	15° Ω 58'50	28.84267 AU
morning rise	10593 Jul 30 06:07	1° Ω 56'25			10600 Mar 10 08:23	15° Ω	
retrograde	10593 Oct 28 09:50	3° Ω 54'11		direct	10600 Apr 19 09:58	14° Ω 34'21	
opposition	10594 Jan 16 14:00	2° Ω 29'42	-0°55'38		10600 May 28 08:26	15° Ω	
min. Earth dist.	10594 Jan 16 01:58	2° Ω 30'31	28.87262 AU	evening set	10600 Jul 15 12:57	16° Ω 28'35	
direct	10594 Apr 05 10:51	1° Ω 06'02					
evening set	10594 Jul 01 15:50	3° Ω 00'16		conjunction	10600 Jul 31 02:26	17° Ω 03'49	-0°53'52
				minimum elong	10600 Jul 31 02:26	17° Ω 03'49	0°54'17
conjunction	10594 Jul 17 03:50	3° Ω 35'22	-0°52'16	max. Earth dist.	10600 Jul 31 15:58	17° Ω 05'06	30.83894 AU
minimum elong	10594 Jul 17 03:50	3° Ω 35'22	0°52'45	morning rise	10600 Aug 15 18:23	17° Ω 39'16	
max. Earth dist.	10594 Jul 17 16:04	3° Ω 36'31	30.86931 AU	retrograde	10600 Nov 14 05:31	19° Ω 37'37	
morning rise	10594 Aug 01 17:43	4° Ω 10'39		opposition	10601 Feb 02 10:41	18° Ω 12'59	-0°57'37
retrograde	10594 Oct 30 21:46	6° Ω 08'30		min. Earth dist.	10601 Feb 01 20:55	18° Ω 13'56	28.83574 AU
opposition	10595 Jan 19 03:10	4° Ω 43'59	-0°56'11	direct	10601 Apr 21 20:41	16° Ω 49'26	
min. Earth dist.	10595 Jan 18 15:22	4° Ω 44'48	28.86699 AU	evening set	10601 Jul 18 00:37	18° Ω 43'39	
direct	10595 Apr 07 22:53	3° Ω 20'21					
evening set	10595 Jul 04 03:05	5° Ω 14'34		conjunction	10601 Aug 02 14:35	19° Ω 18'54	-0°53'51
				minimum elong	10601 Aug 02 14:35	19° Ω 18'54	0°54'14
conjunction	10595 Jul 19 15:18	5° Ω 49'41	-0°52'44	max. Earth dist.	10601 Aug 03 05:18	19° Ω 20'17	30.83160 AU
minimum elong	10595 Jul 19 15:18	5° Ω 49'41	0°53'12	morning rise	10601 Aug 18 06:44	19° Ω 54'22	
max. Earth dist.	10595 Jul 20 04:00	5° Ω 50'53	30.86428 AU	retrograde	10601 Nov 16 18:25	21° Ω 52'45	
morning rise	10595 Aug 04 05:31	6° Ω 25'00					
retrograde	10595 Nov 02 11:48	8° Ω 22'56					
opposition	10596 Jan 21 16:21	6° Ω 58'24	-0°56'38				