

conjunction	600 Mar 17 j 06:47	29° κ 15'08	-16°-50'-59	min. Earth dist.	607 Sep 26 j 10:54	6° ϕ 51'48	47.45917 AU
minimum elong	600 Mar 17 j 06:50	29° κ 15'08	16°51'00	opposition	607 Sep 28 j 04:09	6° ϕ 49'49	-17°-29'-53
max. Earth dist.	600 Mar 19 j 09:39	29° κ 18'09	48.65645 AU	direct	607 Dec 18 j 10:24	5° ϕ 50'13	
	600 Apr 19 j 00:19	0° ϕ					
retrograde	600 Jun 28 j 10:15	0° ϕ 48'50		conjunction	608 Mar 25 j 10:57	7° ϕ 18'18	-16°-47'-15
	600 Sep 09 j 07:01	30° ϕ κ		minimum elong	608 Mar 25 j 11:02	7° ϕ 18'18	16°47'16
min. Earth dist.	600 Sep 18 j 09:08	29° κ 49'33	46.80083 AU	max. Earth dist.	608 Mar 27 j 05:42	7° ϕ 20'48	49.41103 AU
opposition	600 Sep 20 j 09:17	29° κ 47'14	-17°-33'-53	retrograde	608 Jul 06 j 12:23	8° ϕ 50'14	
direct	600 Dec 10 j 11:00	28° κ 47'02		min. Earth dist.	608 Sep 26 j 17:08	7° ϕ 51'21	47.54048 AU
	601 Mar 06 j 21:40	0° ϕ		opposition	608 Sep 28 j 09:54	7° ϕ 49'25	-17°-28'-5
				direct	608 Dec 18 j 14:20	6° ϕ 49'55	
conjunction	601 Mar 18 j 13:32	0° ϕ 16'32	-16°-51'-33				
minimum elong	601 Mar 18 j 13:35	0° ϕ 16'32	16°51'33	conjunction	609 Mar 26 j 17:02	8° ϕ 17'51	-16°-45'-27
max. Earth dist.	601 Mar 20 j 14:40	0° ϕ 19'27	48.76386 AU	minimum elong	609 Mar 26 j 17:09	8° ϕ 17'51	16°45'28
retrograde	601 Jun 29 j 15:59	1° ϕ 49'59		max. Earth dist.	609 Mar 28 j 11:39	8° ϕ 20'20	49.49075 AU
min. Earth dist.	601 Sep 19 j 17:32	0° ϕ 50'42	46.90596 AU	retrograde	609 Jul 07 j 19:56	9° ϕ 49'38	
opposition	601 Sep 21 j 15:57	0° ϕ 48'28	-17°-34'-14	min. Earth dist.	609 Sep 28 j 00:50	8° ϕ 50'46	47.61787 AU
	601 Nov 09 j 05:29	30° ϕ κ		opposition	609 Sep 29 j 15:39	8° ϕ 48'55	-17°-26'-1
direct	601 Dec 11 j 18:43	29° κ 48'21		direct	609 Dec 19 j 18:53	7° ϕ 49'32	
	602 Jan 12 j 21:54	0° ϕ					
				conjunction	610 Mar 27 j 23:18	9° ϕ 17'19	-16°-43'-23
conjunction	602 Mar 19 j 20:28	1° ϕ 17'37	-16°-51'-49	minimum elong	610 Mar 27 j 23:23	9° ϕ 17'19	16°43'24
minimum elong	602 Mar 19 j 20:31	1° ϕ 17'37	16°51'51	max. Earth dist.	610 Mar 29 j 16:30	9° ϕ 19'43	49.56643 AU
max. Earth dist.	602 Mar 21 j 21:25	1° ϕ 20'31	48.86665 AU	retrograde	610 Jul 09 j 02:01	10° ϕ 48'55	
retrograde	602 Jun 30 j 20:49	2° ϕ 50'49		min. Earth dist.	610 Sep 29 j 06:39	9° ϕ 50'09	47.69077 AU
min. Earth dist.	602 Sep 21 j 00:51	1° ϕ 51'34	47.00654 AU	opposition	610 Sep 30 j 21:05	9° ϕ 48'19	-17°-23'-40
opposition	602 Sep 22 j 22:13	1° ϕ 49'22	-17°-34'-17	direct	610 Dec 20 j 23:10	8° ϕ 49'01	
direct	602 Dec 13 j 03:24	0° ϕ 49'20					
				conjunction	611 Mar 29 j 05:30	10° ϕ 16'41	-16°-41'-5
conjunction	603 Mar 21 j 03:08	2° ϕ 18'21	-16°-51'-49	minimum elong	611 Mar 29 j 05:37	10° ϕ 16'41	16°41'06
minimum elong	603 Mar 21 j 03:12	2° ϕ 18'21	16°51'49	max. Earth dist.	611 Mar 30 j 20:52	10° ϕ 18'58	49.63715 AU
max. Earth dist.	603 Mar 23 j 02:03	2° ϕ 21'07	48.96530 AU	retrograde	611 Jul 10 j 06:54	11° ϕ 48'07	
retrograde	603 Jul 02 j 05:35	3° ϕ 51'18		min. Earth dist.	611 Sep 30 j 14:26	10° ϕ 49'19	47.75852 AU
min. Earth dist.	603 Sep 22 j 07:33	2° ϕ 52'07	47.10335 AU	opposition	611 Oct 02 j 02:44	10° ϕ 47'36	-17°-21'-4
opposition	603 Sep 24 j 04:27	2° ϕ 49'57	-17°-34'-1	direct	611 Dec 22 j 05:07	9° ϕ 48'23	
direct	603 Dec 14 j 08:16	1° ϕ 49'59					
				conjunction	612 Mar 29 j 11:41	11° ϕ 15'53	-16°-38'-31
conjunction	604 Mar 21 j 09:40	3° ϕ 18'47	-16°-51'-30	minimum elong	612 Mar 29 j 11:47	11° ϕ 15'54	16°38'32
minimum elong	604 Mar 21 j 09:43	3° ϕ 18'47	16°51'32	max. Earth dist.	612 Mar 31 j 02:25	11° ϕ 18'08	49.70258 AU
max. Earth dist.	604 Mar 23 j 08:31	3° ϕ 21'33	49.06031 AU	retrograde	612 Jul 10 j 10:02	12° ϕ 47'09	
retrograde	604 Jul 02 j 13:25	4° ϕ 51'30		min. Earth dist.	612 Sep 30 j 20:53	11° ϕ 48'23	47.82066 AU
min. Earth dist.	604 Sep 22 j 15:24	3° ϕ 52'19	47.19670 AU	opposition	612 Oct 02 j 08:09	11° ϕ 46'43	-17°-18'-14
opposition	604 Sep 24 j 10:34	3° ϕ 50'14	-17°-33'-27	direct	612 Dec 22 j 13:37	10° ϕ 47'32	
direct	604 Dec 14 j 12:51	2° ϕ 50'21					
				conjunction	613 Mar 30 j 17:40	12° ϕ 14'53	-16°-35'-44
conjunction	605 Mar 22 j 16:07	4° ϕ 18'57	-16°-50'-54	minimum elong	613 Mar 30 j 17:47	12° ϕ 14'53	16°35'45
minimum elong	605 Mar 22 j 16:12	4° ϕ 18'57	16°50'54	max. Earth dist.	613 Apr 01 j 06:00	12° ϕ 16'59	49.76262 AU
max. Earth dist.	605 Mar 24 j 13:57	4° ϕ 21'39	49.15235 AU	retrograde	613 Jul 11 j 16:46	13° ϕ 45'58	
retrograde	605 Jul 03 j 18:59	5° ϕ 51'26		min. Earth dist.	613 Oct 02 j 03:22	12° ϕ 47'12	47.87762 AU
min. Earth dist.	605 Sep 23 j 21:02	4° ϕ 52'22	47.28712 AU	opposition	613 Oct 03 j 13:32	12° ϕ 45'35	-17°-15'-9
opposition	605 Sep 25 j 16:30	4° ϕ 50'17	-17°-32'-35	direct	613 Dec 23 j 19:25	11° ϕ 46'27	
direct	605 Dec 15 j 17:51	3° ϕ 50'29					
				conjunction	614 Mar 31 j 23:39	13° ϕ 13'38	-16°-32'-42
conjunction	606 Mar 23 j 22:23	5° ϕ 18'54	-16°-49'-59	minimum elong	614 Mar 31 j 23:46	13° ϕ 13'38	16°32'42
minimum elong	606 Mar 23 j 22:26	5° ϕ 18'54	16°50'00	max. Earth dist.	614 Apr 02 j 11:27	13° ϕ 15'42	49.81755 AU
max. Earth dist.	606 Mar 25 j 18:58	5° ϕ 21'31	49.24147 AU	retrograde	614 Jul 13 j 00:11	14° ϕ 44'32	
retrograde	606 Jul 04 j 23:24	6° ϕ 51'11		min. Earth dist.	614 Oct 03 j 10:36	13° ϕ 45'42	47.92962 AU
min. Earth dist.	606 Sep 25 j 04:35	5° ϕ 52'08	47.37469 AU	opposition	614 Oct 04 j 18:49	13° ϕ 44'11	-17°-11'-50
opposition	606 Sep 26 j 22:30	5° ϕ 50'07	-17°-31'-23	direct	614 Dec 25 j 00:03	12° ϕ 45'05	
direct	606 Dec 17 j 01:45	4° ϕ 50'25					
				conjunction	615 Apr 02 j 05:33	14° ϕ 12'05	-16°-29'-25
conjunction	607 Mar 25 j 04:48	6° ϕ 18'40	-16°-48'-46	minimum elong	615 Apr 02 j 05:40	14° ϕ 12'06	16°29'26
minimum elong	607 Mar 25 j 04:54	6° ϕ 18'40	16°48'46	max. Earth dist.	615 Apr 03 j 15:53	14° ϕ 14'04	49.86800 AU
max. Earth dist.	607 Mar 27 j 01:33	6° ϕ 21'17	49.32778 AU	retrograde	615 Jul 14 j 07:04	15° ϕ 42'48	
retrograde	607 Jul 06 j 03:27	7° ϕ 50'46		opposition	615 Oct 05 j 23:44	14° ϕ 42'30	-17°-8'-14

min. Earth dist.	615 Oct 04 j 15:41	14°V44'01	47.97739 AU	conjunction	624 Apr 10 j 08:05	22°V50'43	-15°-48'-10
direct	615 Dec 26 j 02:59	13°V43'24		minimum elong	624 Apr 10 j 08:15	22°V50'44	15°48'11
				max. Earth dist.	624 Apr 11 j 08:39	22°V52'07	50.16363 AU
conjunction	616 Apr 02 j 11:17	15°V10'17	-16°-25'-53	retrograde	624 Jul 22 j 04:40	24°V20'24	
minimum elong	616 Apr 02 j 11:25	15°V10'17	16°25'53	opposition	624 Oct 13 j 19:10	23°V20'38	-16°-23'-55
max. Earth dist.	616 Apr 03 j 20:11	15°V12'10	49.91444 AU	min. Earth dist.	624 Oct 12 j 21:48	23°V21'38	48.24836 AU
retrograde	616 Jul 14 j 10:55	16°V40'48		direct	625 Jan 03 j 02:45	22°V21'57	
min. Earth dist.	616 Oct 04 j 22:36	15°V41'58	48.02150 AU				
opposition	616 Oct 06 j 04:52	15°V40'32	-17°-4'-23	conjunction	625 Apr 11 j 13:31	23°V48'04	-15°-42'-22
direct	616 Dec 26 j 09:08	14°V41'29		minimum elong	625 Apr 11 j 13:40	23°V48'05	15°42'23
				max. Earth dist.	625 Apr 12 j 12:21	23°V49'22	50.17492 AU
conjunction	617 Apr 03 j 16:55	16°V08'12	-16°-22'-4	retrograde	625 Jul 23 j 12:26	25°V17'39	
minimum elong	617 Apr 03 j 17:02	16°V08'13	16°22'05	opposition	625 Oct 14 j 23:45	24°V17'55	-16°-17'-47
max. Earth dist.	617 Apr 05 j 01:51	16°V10'06	49.95753 AU	min. Earth dist.	625 Oct 14 j 02:46	24°V18'54	48.25603 AU
retrograde	617 Jul 15 j 12:34	17°V38'35		direct	626 Jan 04 j 04:31	23°V19'15	
min. Earth dist.	617 Oct 06 j 04:03	16°V39'46	48.06227 AU				
opposition	617 Oct 07 j 09:49	16°V38'21	-17°00'-15	conjunction	626 Apr 12 j 19:01	24°V45'19	-15°-36'-22
direct	617 Dec 27 j 17:31	15°V39'19		minimum elong	626 Apr 12 j 19:11	24°V45'19	15°36'24
				max. Earth dist.	626 Apr 13 j 16:06	24°V46'31	50.18107 AU
conjunction	618 Apr 04 j 22:32	17°V05'56	-16°-18'00	retrograde	626 Jul 24 j 16:47	26°V14'48	
minimum elong	618 Apr 04 j 22:40	17°V05'56	16°18'00	min. Earth dist.	626 Oct 15 j 09:34	25°V15'58	48.25890 AU
max. Earth dist.	618 Apr 06 j 05:27	17°V07'42	49.99752 AU	opposition	626 Oct 16 j 04:17	25°V15'05	-16°-11'-25
retrograde	618 Jul 16 j 19:03	18°V36'10		direct	627 Jan 05 j 09:15	24°V16'24	
min. Earth dist.	618 Oct 07 j 09:30	17°V37'22	48.10009 AU				
opposition	618 Oct 08 j 14:39	17°V35'59	-16°-55'-50	conjunction	627 Apr 14 j 00:34	25°V42'25	-15°-30'-8
direct	618 Dec 28 j 22:19	16°V37'00		minimum elong	627 Apr 14 j 00:44	25°V42'25	15°30'09
				max. Earth dist.	627 Apr 14 j 21:17	25°V43'35	50.18281 AU
conjunction	619 Apr 06 j 04:13	18°V03'30	-16°-13'-39	retrograde	627 Jul 25 j 17:30	27°V11'48	
minimum elong	619 Apr 06 j 04:21	18°V03'31	16°13'41	opposition	627 Oct 17 j 08:41	26°V12'06	-16°-4'-49
max. Earth dist.	619 Apr 07 j 10:59	18°V05'16	50.03449 AU	min. Earth dist.	627 Oct 16 j 14:31	26°V12'57	48.25749 AU
retrograde	619 Jul 18 j 01:27	19°V33'37		direct	628 Jan 06 j 17:39	25°V13'25	
opposition	619 Oct 09 j 19:34	18°V33'31	-16°-51'-9				
min. Earth dist.	619 Oct 08 j 16:04	18°V34'49	48.13475 AU	conjunction	628 Apr 14 j 05:43	26°V39'22	-15°-23'-40
direct	619 Dec 30 j 03:08	17°V34'35		minimum elong	628 Apr 14 j 05:53	26°V39'23	15°23'41
				max. Earth dist.	628 Apr 15 j 00:17	26°V40'25	50.18060 AU
conjunction	620 Apr 06 j 09:42	19°V00'59	-16°-9'-3	retrograde	628 Jul 25 j 22:27	28°V08'41	
minimum elong	620 Apr 06 j 09:51	19°V01'00	16°09'04	opposition	628 Oct 17 j 13:07	27°V08'59	-15°-57'-57
max. Earth dist.	620 Apr 07 j 15:21	19°V02'41	50.06844 AU	min. Earth dist.	628 Oct 16 j 19:50	27°V09'48	48.25254 AU
retrograde	620 Jul 18 j 07:35	20°V30'59		direct	629 Jan 06 j 23:17	26°V10'18	
min. Earth dist.	620 Oct 08 j 20:47	19°V32'15	48.16617 AU				
opposition	620 Oct 10 j 00:18	19°V30'57	-16°-46'-12	conjunction	629 Apr 15 j 11:04	27°V36'12	-15°-16'-56
direct	620 Dec 30 j 06:05	18°V32'05		minimum elong	629 Apr 15 j 11:15	27°V36'13	15°16'57
				max. Earth dist.	629 Apr 16 j 05:31	27°V37'15	50.17503 AU
conjunction	621 Apr 07 j 15:11	19°V58'26	-16°-4'-11	retrograde	629 Jul 27 j 04:18	29°V05'27	
minimum elong	621 Apr 07 j 15:19	19°V58'26	16°04'12	opposition	629 Oct 18 j 17:29	28°V05'46	-15°-50'-50
max. Earth dist.	621 Apr 08 j 19:18	20°V00'02	50.09888 AU	min. Earth dist.	629 Oct 18 j 01:42	28°V06'31	48.24435 AU
retrograde	621 Jul 19 j 12:48	21°V28'21		direct	630 Jan 08 j 04:11	27°V07'05	
min. Earth dist.	621 Oct 10 j 03:34	20°V29'35	48.19393 AU				
opposition	621 Oct 11 j 05:07	20°V28'23	-16°-40'-59	conjunction	630 Apr 16 j 16:21	28°V32'57	-15°-9'-58
direct	621 Dec 31 j 10:22	19°V29'34		minimum elong	630 Apr 16 j 16:31	28°V32'57	15°09'59
				max. Earth dist.	630 Apr 17 j 09:36	28°V33'55	50.16658 AU
conjunction	622 Apr 08 j 20:50	20°V55'52	-15°-59'-4	retrograde	630 Jul 14 j 03:26	0°R	
minimum elong	622 Apr 08 j 21:00	20°V55'53	15°59'05	retrograde	630 Jul 28 j 10:53	0°R02'07	
max. Earth dist.	622 Apr 10 j 00:39	20°V57'28	50.12540 AU				
retrograde	622 Jul 20 j 15:44	22°V25'42		opposition	630 Aug 11 j 17:08	30°R	
min. Earth dist.	622 Oct 11 j 09:06	21°V26'59	48.21719 AU	opposition	630 Oct 19 j 21:45	29°V02'28	-15°-43'-27
opposition	622 Oct 12 j 09:47	21°V25'49	-16°-35'-32	min. Earth dist.	630 Oct 19 j 05:56	29°V03'13	48.23330 AU
direct	623 Jan 01 j 17:38	20°V27'04		direct	631 Jan 09 j 06:16	28°V03'47	
conjunction	623 Apr 10 j 02:26	21°V53'18	-15°-53'-43	conjunction	631 Apr 17 j 21:37	29°V29'38	-15°-2'-44
minimum elong	623 Apr 10 j 02:34	21°V53'19	15°53'44	minimum elong	631 Apr 17 j 21:49	29°V29'38	15°02'44
max. Earth dist.	623 Apr 11 j 03:44	21°V54'45	50.14714 AU	max. Earth dist.	631 Apr 18 j 13:26	29°V30'31	50.15518 AU
retrograde	623 Jul 21 j 21:52	23°V23'04					
opposition	623 Oct 13 j 14:25	22°V23'15	-16°-29'-50	retrograde	631 May 10 j 16:44	0°R	
min. Earth dist.	623 Oct 12 j 15:04	22°V24'21	48.23550 AU	retrograde	631 Jul 29 j 16:36	0°R58'45	
direct	624 Jan 02 j 22:27	21°V24'32		min. Earth dist.	631 Oct 20 j 11:58	29°V59'47	48.21936 AU
				opposition	631 Oct 20 j 07:28	30°R	
				opposition	631 Oct 21 j 02:04	29°V59'08	-15°-35'-49
				direct	632 Jan 10 j 09:13	29°V00'27	

	632 Mar 29 j 10:45	0°♄		conjunction	640 Apr 25 j 22:25	8°♄00'23	-13°-47'-9
				minimum elong	640 Apr 25 j 22:37	8°♄00'24	13°47'09
conjunction	632 Apr 18 j 02:58	0°♄26'18	-14°-55'-15	max. Earth dist.	640 Apr 26 j 02:47	8°♄00'38	49.87175 AU
minimum elong	632 Apr 18 j 03:08	0°♄26'19	14°55'16	retrograde	640 Aug 06 j 12:49	9°♄29'23	
max. Earth dist.	632 Apr 18 j 18:44	0°♄27'12	50.14100 AU	opposition	640 Oct 28 j 16:46	8°♄29'50	-14°-16'-21
retrograde	632 Jul 29 j 18:41	1°♄55'23		min. Earth dist.	640 Oct 28 j 12:56	8°♄30'01	47.90444 AU
opposition	632 Oct 21 j 06:20	0°♄55'47	-15°-27'-55	direct	641 Jan 18 j 03:46	7°♄31'01	
min. Earth dist.	632 Oct 20 j 16:38	0°♄56'26	48.20236 AU				
	632 Dec 25 j 09:52	30°♄♃		conjunction	641 Apr 27 j 03:42	8°♄57'04	-13°-37'-38
direct	633 Jan 10 j 15:42	29°♄57'08		minimum elong	641 Apr 27 j 03:53	8°♄57'05	13°37'39
	633 Jan 26 j 19:40	0°♄		max. Earth dist.	641 Apr 27 j 06:30	8°♄57'14	49.81798 AU
				retrograde	641 Aug 07 j 18:49	10°♄26'05	
conjunction	633 Apr 19 j 08:05	1°♄22'59	-14°-47'-31	opposition	641 Oct 29 j 21:10	9°♄26'31	-14°-6'-21
minimum elong	633 Apr 19 j 08:17	1°♄23'00	14°47'32	min. Earth dist.	641 Oct 29 j 19:13	9°♄26'36	47.84770 AU
max. Earth dist.	633 Apr 19 j 21:50	1°♄23'46	50.12362 AU	direct	642 Jan 19 j 07:05	8°♄27'40	
retrograde	633 Jul 30 j 23:39	2°♄52'03					
opposition	633 Oct 22 j 10:42	1°♄52'30	-15°-19'-46	conjunction	642 Apr 28 j 09:16	9°♄53'47	-13°-27'-52
min. Earth dist.	633 Oct 21 j 22:07	1°♄53'06	48.18195 AU	minimum elong	642 Apr 28 j 09:29	9°♄53'48	13°27'52
direct	634 Jan 11 j 20:31	0°♄53'52		max. Earth dist.	642 Apr 28 j 12:01	9°♄53'56	49.76109 AU
				retrograde	642 Aug 08 j 21:11	11°♄22'49	
conjunction	634 Apr 20 j 13:35	2°♄19'43	-14°-39'-33	opposition	642 Oct 31 j 01:19	10°♄23'14	-13°-56'-6
minimum elong	634 Apr 20 j 13:45	2°♄19'44	14°39'33	min. Earth dist.	642 Oct 30 j 23:41	10°♄23'19	47.78784 AU
max. Earth dist.	634 Apr 21 j 02:46	2°♄20'28	50.10234 AU	direct	643 Jan 20 j 13:28	9°♄24'21	
retrograde	634 Aug 01 j 04:52	3°♄48'48					
opposition	634 Oct 23 j 14:57	2°♄49'16	-15°-11'-22	conjunction	643 Apr 29 j 14:42	10°♄50'34	-13°-17'-51
min. Earth dist.	634 Oct 23 j 04:15	2°♄49'46	48.15723 AU	minimum elong	643 Apr 29 j 14:53	10°♄50'35	13°17'52
direct	635 Jan 13 j 02:08	1°♄50'38		max. Earth dist.	643 Apr 29 j 15:20	10°♄50'37	49.70122 AU
				retrograde	643 Aug 10 j 02:23	12°♄19'40	
conjunction	635 Apr 21 j 19:06	3°♄16'31	-14°-31'-21	opposition	643 Nov 01 j 05:41	11°♄20'05	-13°-45'-36
minimum elong	635 Apr 21 j 19:18	3°♄16'32	14°31'22	min. Earth dist.	643 Nov 01 j 05:05	11°♄20'07	47.72513 AU
max. Earth dist.	635 Apr 22 j 06:37	3°♄17'11	50.07660 AU	direct	644 Jan 21 j 18:03	10°♄21'11	
retrograde	635 Aug 02 j 12:53	4°♄45'35					
opposition	635 Oct 24 j 19:15	3°♄46'05	-15°-2'-45	conjunction	644 Apr 29 j 20:07	11°♄47'29	-13°-7'-35
min. Earth dist.	635 Oct 24 j 09:03	3°♄46'34	48.12766 AU	minimum elong	644 Apr 29 j 20:20	11°♄47'30	13°07'36
direct	636 Jan 14 j 04:00	2°♄47'27		max. Earth dist.	644 Apr 29 j 20:31	11°♄47'30	49.63835 AU
				retrograde	644 Aug 10 j 07:04	13°♄16'40	
conjunction	636 Apr 22 j 00:27	4°♄13'21	-14°-22'-57	opposition	644 Nov 01 j 10:06	12°♄17'05	-13°-34'-50
minimum elong	636 Apr 22 j 00:38	4°♄13'22	14°22'57	min. Earth dist.	644 Nov 01 j 10:50	12°♄17'03	47.65922 AU
max. Earth dist.	636 Apr 22 j 10:00	4°♄13'54	50.04560 AU	direct	645 Jan 21 j 23:56	11°♄18'10	
retrograde	636 Aug 02 j 19:06	5°♄42'24					
opposition	636 Oct 24 j 23:44	4°♄42'54	-14°-53'-55	conjunction	645 May 01 j 01:41	12°♄44'34	-12°-57'-5
min. Earth dist.	636 Oct 24 j 15:54	4°♄43'16	48.09276 AU	minimum elong	645 May 01 j 01:52	12°♄44'35	12°57'06
direct	637 Jan 14 j 06:51	3°♄44'15		max. Earth dist.	645 May 01 j 00:47	12°♄44'31	49.57235 AU
				retrograde	645 Aug 11 j 15:32	14°♄13'50	
conjunction	637 Apr 23 j 06:03	5°♄10'11	-14°-14'-19	opposition	645 Nov 02 j 14:22	13°♄14'16	-13°-23'-49
minimum elong	637 Apr 23 j 06:14	5°♄10'11	14°14'21	min. Earth dist.	645 Nov 02 j 15:26	13°♄14'13	47.58990 AU
max. Earth dist.	637 Apr 23 j 14:55	5°♄10'41	50.00937 AU	direct	646 Jan 23 j 01:27	12°♄15'19	
retrograde	637 Aug 03 j 21:00	6°♄39'12					
opposition	637 Oct 26 j 03:59	5°♄39'42	-14°-44'-52	conjunction	646 May 02 j 07:22	13°♄41'52	-12°-46'-20
min. Earth dist.	637 Oct 25 j 20:56	5°♄40'02	48.05251 AU	minimum elong	646 May 02 j 07:35	13°♄41'53	12°46'21
direct	638 Jan 15 j 14:13	4°♄41'01		max. Earth dist.	646 May 02 j 04:43	13°♄41'43	49.50241 AU
					646 Jul 10 j 22:09	15°♄	
conjunction	638 Apr 24 j 11:29	6°♄06'58	-14°-5'-29	retrograde	646 Aug 12 j 23:50	15°♄11'13	
minimum elong	638 Apr 24 j 11:40	6°♄06'58	14°05'30		646 Sep 14 j 22:33	15°♄♃	
max. Earth dist.	638 Apr 24 j 17:46	6°♄07'19	49.96801 AU	opposition	646 Nov 03 j 18:52	14°♄11'39	-13°-12'-34
retrograde	638 Aug 05 j 01:15	7°♄35'58		min. Earth dist.	646 Nov 03 j 22:15	14°♄11'30	47.51634 AU
opposition	638 Oct 27 j 08:19	6°♄36'27	-14°-35'-36	direct	647 Jan 24 j 02:37	13°♄12'41	
min. Earth dist.	638 Oct 27 j 02:37	6°♄36'43	48.00741 AU				
direct	639 Jan 16 j 19:57	5°♄37'43		conjunction	647 May 03 j 13:14	14°♄39'22	-12°-35'-22
				minimum elong	647 May 03 j 13:25	14°♄39'23	12°35'22
conjunction	639 Apr 25 j 17:01	7°♄03'42	-13°-56'-26	max. Earth dist.	647 May 03 j 09:55	14°♄39'11	49.42794 AU
minimum elong	639 Apr 25 j 17:12	7°♄03'42	13°56'28		647 May 18 j 19:32	15°♄	
max. Earth dist.	639 Apr 25 j 22:46	7°♄04'01	49.92187 AU	retrograde	647 Aug 14 j 02:36	16°♄08'48	
retrograde	639 Aug 06 j 06:14	8°♄32'42		opposition	647 Nov 04 j 23:13	15°♄09'14	-13°-1'-5
opposition	639 Oct 28 j 12:34	7°♄33'09	-14°-26'-6	min. Earth dist.	647 Nov 05 j 03:19	15°♄09'02	47.43781 AU
min. Earth dist.	639 Oct 28 j 08:39	7°♄33'20	47.95778 AU		647 Nov 13 j 02:46	15°♄♃	
direct	640 Jan 18 j 01:17	6°♄34'23		direct	648 Jan 25 j 09:44	14°♄10'13	

	648 Apr 05 j 18:02	15°♄		minimum elong	656 May 11 j 19:25	23°♄20'36	10°46'28
				max. Earth dist.	656 May 11 j 03:16	23°♄19'40	48.54956 AU
conjunction	648 May 03 j 19:03	15°♄37'02	-12°-24'-11	retrograde	656 Aug 22 j 05:36	24°♄50'54	
minimum elong	648 May 03 j 19:15	15°♄37'03	12°24'12	opposition	656 Nov 12 j 17:13	23°♄50'46	-11°-7'-5
max. Earth dist.	648 May 03 j 13:04	15°♄36'42	49.34831 AU	min. Earth dist.	656 Nov 13 j 08:14	23°♄50'02	46.52829 AU
retrograde	648 Aug 14 j 06:12	17°♄06'33		direct	657 Feb 02 j 05:24	22°♄50'56	
opposition	648 Nov 05 j 03:49	16°♄06'57	-12°-49'-23	max. Earth dist.	657 May 12 j 09:26	24°♄18'09	48.43534 AU
min. Earth dist.	648 Nov 05 j 09:31	16°♄06'40	47.35404 AU				
direct	649 Jan 25 j 16:15	15°♄07'52		conjunction	657 May 13 j 01:32	24°♄19'04	-10°-33'-7
				minimum elong	657 May 13 j 01:44	24°♄19'05	10°33'08
conjunction	649 May 05 j 00:57	16°♄34'49	-12°-12'-46	retrograde	657 Aug 23 j 10:32	25°♄49'34	
minimum elong	649 May 05 j 01:09	16°♄34'49	12°12'47	opposition	657 Nov 13 j 22:07	24°♄49'23	-10°-53'-7
max. Earth dist.	649 May 04 j 18:09	16°♄34'25	49.26325 AU	min. Earth dist.	657 Nov 14 j 13:22	24°♄48'39	46.41084 AU
retrograde	649 Aug 15 j 10:37	18°♄04'25		direct	658 Feb 03 j 11:25	23°♄49'28	
opposition	649 Nov 06 j 08:28	17°♄04'45	-12°-37'-27				
min. Earth dist.	649 Nov 06 j 16:03	17°♄04'23	47.26476 AU	conjunction	658 May 14 j 07:58	25°♄17'52	-10°-19'-32
direct	650 Jan 26 j 22:56	16°♄05'36		minimum elong	658 May 14 j 08:09	25°♄17'52	10°19'32
				max. Earth dist.	658 May 13 j 13:34	25°♄16'48	48.31766 AU
conjunction	650 May 06 j 06:58	17°♄32'39	-12°-1'-9	retrograde	658 Aug 24 j 15:58	26°♄48'33	
minimum elong	650 May 06 j 07:10	17°♄32'39	12°01'11	opposition	658 Nov 15 j 03:04	25°♄48'19	-10°-38'-54
max. Earth dist.	650 May 05 j 22:20	17°♄32'09	49.17301 AU	min. Earth dist.	658 Nov 15 j 19:57	25°♄47'30	46.28973 AU
retrograde	650 Aug 16 j 17:46	19°♄02'19		direct	659 Feb 04 j 17:16	24°♄48'20	
opposition	650 Nov 07 j 12:54	18°♄02'36	-12°-25'-18				
min. Earth dist.	650 Nov 07 j 21:01	18°♄02'13	47.17050 AU	conjunction	659 May 15 j 14:42	26°♄16'59	-10°-5'-42
direct	651 Jan 28 j 02:21	17°♄03'21		minimum elong	659 May 15 j 14:54	26°♄16'59	10°05'43
				max. Earth dist.	659 May 14 j 19:41	26°♄15'53	48.19581 AU
conjunction	651 May 07 j 12:57	18°♄30'30	-11°-49'-19	retrograde	659 Aug 25 j 20:39	27°♄47'52	
minimum elong	651 May 07 j 13:09	18°♄30'31	11°49'19	opposition	659 Nov 16 j 08:17	26°♄47'35	-10°-24'-27
max. Earth dist.	651 May 07 j 02:25	18°♄29'54	49.07788 AU	min. Earth dist.	659 Nov 17 j 02:50	26°♄46'42	46.16407 AU
retrograde	651 Aug 18 j 01:00	20°♄00'15		direct	660 Feb 06 j 00:26	25°♄47'31	
opposition	651 Nov 08 j 17:36	19°♄00'28	-12°-12'-54				
min. Earth dist.	651 Nov 09 j 03:52	18°♄59'58	47.07174 AU	conjunction	660 May 15 j 21:16	27°♄16'25	-9°-51'-38
direct	652 Jan 29 j 05:27	18°♄01'07		minimum elong	660 May 15 j 21:27	27°♄16'25	9°51'39
				max. Earth dist.	660 May 15 j 00:25	27°♄15'12	48.06931 AU
conjunction	652 May 07 j 18:52	19°♄28'23	-11°-37'-14	retrograde	660 Aug 26 j 04:34	28°♄47'31	
minimum elong	652 May 07 j 19:03	19°♄28'24	11°37'15	opposition	660 Nov 16 j 13:33	27°♄47'10	-10°-9'-44
max. Earth dist.	652 May 07 j 08:07	19°♄27'47	48.97862 AU	min. Earth dist.	660 Nov 17 j 08:38	27°♄46'15	46.03354 AU
retrograde	652 Aug 18 j 05:10	20°♄58'13		direct	661 Feb 06 j 04:23	26°♄47'00	
opposition	652 Nov 08 j 22:12	19°♄58'20	-12°00'-16	max. Earth dist.	661 May 16 j 05:16	28°♄14'49	47.93766 AU
min. Earth dist.	652 Nov 09 j 08:50	19°♄57'50	46.96906 AU				
direct	653 Jan 29 j 11:14	18°♄58'52		conjunction	661 May 17 j 04:08	28°♄16'08	-9°-37'-21
max. Earth dist.	653 May 08 j 11:50	20°♄25'33	48.87577 AU	minimum elong	661 May 17 j 04:20	28°♄16'09	9°37'23
				retrograde	661 Aug 27 j 12:51	29°♄47'27	
conjunction	653 May 09 j 00:48	20°♄26'18	-11°-24'-55	opposition	661 Nov 17 j 18:54	28°♄47'01	-9°-54'-47
minimum elong	653 May 09 j 01:00	20°♄26'19	11°24'55	min. Earth dist.	661 Nov 18 j 16:23	28°♄45'59	45.89793 AU
retrograde	653 Aug 19 j 10:26	21°♄56'13		direct	662 Feb 07 j 07:58	27°♄46'44	
opposition	653 Nov 10 j 02:48	20°♄56'15	-11°-47'-22	max. Earth dist.	662 May 17 j 11:42	29°♄14'45	47.80113 AU
min. Earth dist.	653 Nov 10 j 14:39	20°♄55'41	46.86316 AU				
direct	654 Jan 30 j 16:31	19°♄56'41		conjunction	662 May 18 j 11:12	29°♄16'07	-9°-22'-49
				minimum elong	662 May 18 j 11:23	29°♄16'08	9°22'50
conjunction	654 May 10 j 06:59	21°♄24'16	-11°-12'-21	retrograde	662 Jun 20 j 05:19	0°♄	
minimum elong	654 May 10 j 07:10	21°♄24'16	11°12'22	opposition	662 Aug 28 j 19:27	0°♄47'38	
max. Earth dist.	654 May 09 j 17:40	21°♄23'30	48.76977 AU	opposition	662 Nov 07 j 20:22	30°♄	
retrograde	654 Aug 20 j 13:33	22°♄54'18		min. Earth dist.	662 Nov 19 j 00:17	29°♄47'06	-9°-39'-35
opposition	654 Nov 11 j 07:35	21°♄54'16	-11°-34'-12	direct	662 Nov 19 j 22:17	29°♄46'02	45.75749 AU
min. Earth dist.	654 Nov 11 j 20:39	21°♄53'38	46.75420 AU	direct	663 Feb 08 j 13:57	28°♄46'40	
direct	655 Jan 31 j 23:51	20°♄54'36			663 May 08 j 00:13	0°♄	
				conjunction	663 May 19 j 18:07	0°♄16'20	-9°-8'-3
conjunction	655 May 11 j 13:04	22°♄22'20	-10°-59'-31	minimum elong	663 May 19 j 18:18	0°♄16'21	9°08'05
minimum elong	655 May 11 j 13:16	22°♄22'21	10°59'32	max. Earth dist.	663 May 18 j 16:04	0°♄14'49	47.65997 AU
max. Earth dist.	655 May 10 j 22:36	22°♄21'30	48.66104 AU	retrograde	663 Aug 30 j 02:03	1°♄48'03	
retrograde	655 Aug 21 j 20:41	23°♄52'30		opposition	663 Nov 20 j 05:44	0°♄47'24	-9°-24'-7
opposition	655 Nov 12 j 12:16	22°♄52'25	-11°-20'-47	min. Earth dist.	663 Nov 21 j 05:21	0°♄46'16	45.61284 AU
min. Earth dist.	655 Nov 13 j 01:25	22°♄51'47	46.64260 AU	direct	664 Jan 05 j 21:47	30°♄	
direct	656 Feb 02 j 03:35	21°♄52'39		direct	664 Feb 09 j 20:07	29°♄46'50	
					664 Mar 15 j 14:20	0°♄	
conjunction	656 May 11 j 19:14	23°♄20'35	-10°-46'-27				

max. Earth dist.	664 May 18 j 22:48	1°II15'13	47.51479 AU	minimum elong	672 May 28 j 15:06	9°II31'15	6°43'30
				retrograde	672 Sep 07 j 20:29	11°II05'29	
conjunction	664 May 20 j 01:16	1°II16'45	-8°-53'-2	opposition	672 Nov 28 j 12:25	10°II03'50	-6°-52'-38
minimum elong	664 May 20 j 01:27	1°II16'46	8°53'03	min. Earth dist.	672 Nov 29 j 21:08	10°II02'12	44.17233 AU
retrograde	664 Aug 30 j 05:35	2°II48'41		direct	673 Feb 18 j 02:55	9°II01'55	
opposition	664 Nov 20 j 11:18	1°II47'56	-9°-8'-24	max. Earth dist.	673 May 28 j 09:00	10°II32'37	46.07129 AU
min. Earth dist.	664 Nov 21 j 12:06	1°II46'43	45.46444 AU				
direct	665 Feb 10 j 04:17	0°II47'13		conjunction	673 May 29 j 23:27	10°II34'55	-6°-26'-7
max. Earth dist.	665 May 20 j 04:31	2°II15'46	47.36629 AU	minimum elong	673 May 29 j 23:35	10°II34'56	6°26'07
				retrograde	673 Sep 09 j 06:42	12°II09'29	
conjunction	665 May 21 j 08:22	2°II17'24	-8°-37'-46	opposition	673 Nov 29 j 19:23	11°II07'41	-6°-34'-25
minimum elong	665 May 21 j 08:33	2°II17'25	8°37'47	min. Earth dist.	673 Dec 01 j 06:05	11°II05'57	43.99346 AU
retrograde	665 Aug 31 j 12:38	3°II49'34		direct	674 Feb 19 j 08:56	10°II05'34	
opposition	665 Nov 21 j 16:54	2°II48'42	-8°-52'-25	max. Earth dist.	674 May 29 j 17:15	11°II36'37	45.89116 AU
min. Earth dist.	665 Nov 22 j 18:04	2°II47'28	45.31295 AU				
direct	666 Feb 11 j 10:00	1°II47'49		conjunction	674 May 31 j 08:21	11°II38'59	-6°-8'-30
max. Earth dist.	666 May 21 j 10:23	3°II16'34	47.21467 AU	minimum elong	674 May 31 j 08:29	11°II38'59	6°08'31
				retrograde	674 Sep 10 j 12:49	13°II13'53	
conjunction	666 May 22 j 15:44	3°II18'18	-8°-22'-14	opposition	674 Dec 01 j 02:22	12°II11'55	-6°-15'-57
minimum elong	666 May 22 j 15:55	3°II18'18	8°22'15	min. Earth dist.	674 Dec 02 j 14:20	12°II10'07	43.80979 AU
retrograde	666 Sep 01 j 22:42	4°II50'43		direct	675 Feb 20 j 18:12	11°II09'36	
opposition	666 Nov 22 j 22:41	3°II49'43	-8°-36'-8	max. Earth dist.	675 May 31 j 00:12	12°II40'55	45.70660 AU
min. Earth dist.	666 Nov 24 j 01:41	3°II48'24	45.15868 AU				
direct	667 Feb 12 j 12:40	2°II48'41		conjunction	675 Jun 01 j 17:13	12°II43'24	-5°-50'-37
				minimum elong	675 Jun 01 j 17:21	12°II43'25	5°50'37
conjunction	667 May 23 j 23:14	4°II19'29	-8°-6'-27	retrograde	675 Sep 11 j 20:03	14°II18'39	
minimum elong	667 May 23 j 23:24	4°II19'29	8°06'28	opposition	675 Dec 02 j 09:33	13°II16'31	-5°-57'-11
max. Earth dist.	667 May 22 j 17:44	4°II17'45	47.06058 AU	min. Earth dist.	675 Dec 03 j 22:18	13°II14'40	43.62202 AU
retrograde	667 Sep 03 j 06:10	5°II52'09		direct	676 Feb 22 j 02:27	12°II13'59	
opposition	667 Nov 24 j 04:36	4°II51'03	-8°-19'-35	max. Earth dist.	676 May 31 j 07:39	13°II45'38	45.51794 AU
min. Earth dist.	667 Nov 25 j 07:29	4°II49'44	45.00195 AU				
direct	668 Feb 13 j 17:58	3°II49'52		conjunction	676 Jun 02 j 02:07	13°II48'13	-5°-32'-29
max. Earth dist.	668 May 22 j 23:08	5°II19'08	46.90405 AU	minimum elong	676 Jun 02 j 02:15	13°II48'13	5°32'30
				retrograde	676 Sep 12 j 05:08	15°II23'50	
conjunction	668 May 24 j 06:34	5°II20'59	-7°-50'-23	opposition	676 Dec 02 j 16:59	14°II21'31	-5°-38'-9
minimum elong	668 May 24 j 06:44	5°II21'00	7°50'24	min. Earth dist.	676 Dec 04 j 07:42	14°II19'34	43.43051 AU
retrograde	668 Sep 03 j 13:37	6°II53'56		direct	677 Feb 22 j 08:50	13°II18'46	
opposition	668 Nov 24 j 10:43	5°II52'44	-8°-2'-45	max. Earth dist.	677 Jun 01 j 16:26	14°II50'48	45.32593 AU
min. Earth dist.	668 Nov 25 j 14:59	5°II51'20	44.84288 AU				
direct	669 Feb 14 j 00:26	4°II51'25		conjunction	677 Jun 03 j 11:22	14°II53'25	-5°-14'-4
max. Earth dist.	669 May 24 j 06:47	6°II21'01	46.74495 AU	minimum elong	677 Jun 03 j 11:30	14°II53'25	5°14'05
				retrograde	677 Sep 13 j 15:07	16°II29'25	
conjunction	669 May 25 j 14:25	6°II22'53	-7°-34'-3	opposition	677 Dec 04 j 00:21	15°II26'55	-5°-18'-50
minimum elong	669 May 25 j 14:34	6°II22'54	7°34'04	min. Earth dist.	677 Dec 05 j 15:05	15°II24'58	43.23591 AU
retrograde	669 Sep 04 j 17:59	7°II56'08		direct	678 Feb 23 j 14:54	14°II23'56	
opposition	669 Nov 25 j 16:52	6°II54'49	-7°-45'-38	max. Earth dist.	678 Jun 02 j 23:42	15°II56'19	45.13096 AU
min. Earth dist.	669 Nov 26 j 22:16	6°II53'22	44.68096 AU				
direct	670 Feb 15 j 09:49	5°II53'23		conjunction	678 Jun 04 j 20:46	15°II59'04	-4°-55'-24
				minimum elong	678 Jun 04 j 20:53	15°II59'04	4°55'25
conjunction	670 May 26 j 22:23	7°II25'13	-7°-17'-27	retrograde	678 Sep 15 j 01:41	17°II35'28	
minimum elong	670 May 26 j 22:33	7°II25'14	7°17'28	opposition	678 Dec 05 j 08:07	16°II32'47	-4°-59'-13
max. Earth dist.	670 May 25 j 13:05	7°II23'14	46.58288 AU	min. Earth dist.	678 Dec 07 j 00:32	16°II30'44	43.03874 AU
retrograde	670 Sep 06 j 01:47	8°II58'47		direct	679 Feb 24 j 21:55	15°II29'35	
opposition	670 Nov 26 j 23:10	7°II57'23	-7°-28'-14	max. Earth dist.	679 Jun 04 j 09:19	17°II02'26	44.93351 AU
min. Earth dist.	670 Nov 28 j 05:08	7°II55'54	44.51576 AU				
direct	671 Feb 16 j 16:04	6°II55'47		conjunction	679 Jun 06 j 06:21	17°II05'12	-4°-36'-27
max. Earth dist.	671 May 26 j 19:35	8°II25'55	46.41686 AU	minimum elong	679 Jun 06 j 06:27	17°II05'13	4°36'27
				retrograde	679 Sep 16 j 09:02	18°II42'02	
conjunction	671 May 28 j 06:31	8°II28'00	-7°00'-35	opposition	679 Dec 06 j 16:03	17°II39'11	-4°-39'-18
minimum elong	671 May 28 j 06:40	8°II28'01	7°00'36	min. Earth dist.	679 Dec 08 j 08:58	17°II37'06	42.83925 AU
retrograde	671 Sep 07 j 10:47	10°II01'55		direct	680 Feb 26 j 08:33	16°II35'46	
opposition	671 Nov 28 j 05:46	9°II00'23	-7°-10'-34	max. Earth dist.	680 Jun 04 j 17:23	18°II09'01	44.73404 AU
min. Earth dist.	671 Nov 29 j 14:00	8°II58'48	44.34636 AU				
direct	672 Feb 17 j 21:10	7°II58'39		conjunction	680 Jun 06 j 16:04	18°II11'54	-4°-17'-13
max. Earth dist.	672 May 27 j 03:18	9°II29'07	46.24651 AU	minimum elong	680 Jun 06 j 16:10	18°II11'54	4°17'15
				retrograde	680 Sep 16 j 18:37	19°II49'11	
conjunction	672 May 28 j 14:57	9°II31'15	-6°-43'-29	opposition	680 Dec 07 j 00:05	18°II46'10	-4°-19'-5

min. Earth dist.	680 Dec 08 j 17:31	18°II44'03	42.63786 AU	conjunction	689 Jun 17 j 21:05	28°II42'32	-1°-11'-57
direct	681 Feb 26 j 16:57	17°II42'33		minimum elong	689 Jun 17 j 21:07	28°II42'32	1°11'58
max. Earth dist.	681 Jun 06 j 02:33	19°II16'16	44.53233 AU		689 Aug 13 j 05:02	0°☾	
				retrograde	689 Sep 28 j 00:28	0°☾24'35	
conjunction	681 Jun 08 j 02:10	19°II19'13	-3°-57'-43		689 Nov 13 j 06:12	30°RII	
minimum elong	681 Jun 08 j 02:16	19°II19'14	3°57'43	opposition	689 Dec 17 j 12:38	29°II19'39	-1°-4'-3
retrograde	681 Sep 18 j 03:33	20°II57'00		min. Earth dist.	689 Dec 19 j 16:28	29°II16'54	40.67739 AU
opposition	681 Dec 08 j 08:32	19°II53'49	-3°-58'-35	direct	690 Mar 09 j 02:11	28°II13'39	
min. Earth dist.	681 Dec 10 j 03:41	19°II51'36	42.43409 AU	max. Earth dist.	690 Jun 16 j 21:57	29°II51'57	42.56206 AU
direct	682 Feb 28 j 01:02	18°II50'00					
max. Earth dist.	682 Jun 07 j 12:22	20°II24'14	44.32814 AU	conjunction	690 Jun 19 j 09:36	29°II55'50	0°-50'-2
				minimum elong	690 Jun 19 j 09:37	29°II55'50	0°50'02
conjunction	682 Jun 09 j 12:35	20°II27'14	-3°-37'-56		690 Jun 22 j 01:43	0°☾	
minimum elong	682 Jun 09 j 12:41	20°II27'14	3°37'57	retrograde	690 Sep 29 j 14:44	1°☾38'29	
retrograde	682 Sep 19 j 15:13	22°II05'31		opposition	690 Dec 18 j 23:18	0°☾33'16	0°-40'-56
opposition	682 Dec 09 j 16:59	21°II02'11	-3°-37'-47	min. Earth dist.	690 Dec 21 j 04:10	0°☾30'27	40.44446 AU
min. Earth dist.	682 Dec 11 j 12:22	20°II59'57	42.22755 AU		691 Jan 15 j 04:28	30°RII	
direct	683 Mar 01 j 07:53	19°II58'09		direct	691 Mar 10 j 12:38	29°II26'56	
max. Earth dist.	683 Jun 08 j 20:40	21°II32'49	44.12067 AU		691 May 03 j 03:44	0°☾	
				max. Earth dist.	691 Jun 18 j 10:40	1°☾05'55	42.32847 AU
conjunction	683 Jun 10 j 23:13	21°II35'59	-3°-17'-53				
minimum elong	683 Jun 10 j 23:19	21°II35'59	3°17'53	conjunction	691 Jun 20 j 22:33	1°☾09'50	0°-27'-51
retrograde	683 Sep 21 j 05:38	23°II14'47		minimum elong	691 Jun 20 j 22:34	1°☾09'50	0°27'53
opposition	683 Dec 11 j 01:57	22°II11'16	-3°-16'-41	retrograde	691 Oct 01 j 01:16	2°☾53'06	
min. Earth dist.	683 Dec 12 j 23:23	22°II08'56	42.01762 AU	opposition	691 Dec 20 j 10:28	1°☾47'37	0°-17'-32
direct	684 Mar 01 j 13:23	21°II07'01		min. Earth dist.	691 Dec 22 j 16:13	1°☾44'44	40.21017 AU
max. Earth dist.	684 Jun 09 j 07:15	22°II42'15	43.90943 AU	direct	692 Mar 11 j 01:08	0°☾40'59	
				max. Earth dist.	692 Jun 18 j 22:58	2°☾20'36	42.09383 AU
conjunction	684 Jun 11 j 10:08	22°II45'27	-2°-57'-33				
minimum elong	684 Jun 11 j 10:13	22°II45'27	2°57'34	conjunction	692 Jun 21 j 11:34	2°☾24'36	0°-5'-28
retrograde	684 Sep 21 j 15:48	24°II24'46		minimum elong	692 Jun 21 j 11:34	2°☾24'36	0°05'28
opposition	684 Dec 11 j 11:08	23°II21'04	-2°-55'-18	behind sun begin	692 Jun 21 j 05:17	2°☾24'13	
min. Earth dist.	684 Dec 13 j 09:21	23°II18'41	41.80358 AU	behind sun end	692 Jun 21 j 17:51	2°☾24'59	
direct	685 Mar 02 j 23:39	22°II16'34		asc. node	692 Sep 17 j 06:14	4°☾05'59	
max. Earth dist.	685 Jun 10 j 16:09	23°II52'14	43.69401 AU	retrograde	692 Oct 01 j 13:12	4°☾08'32	
				opposition	692 Dec 20 j 21:51	3°☾02'48	0°06'09
conjunction	685 Jun 12 j 21:23	23°II55'36	-2°-36'-58	min. Earth dist.	692 Dec 23 j 03:33	2°☾59'54	39.97495 AU
minimum elong	685 Jun 12 j 21:27	23°II55'36	2°36'59	direct	693 Mar 12 j 12:54	1°☾55'51	
retrograde	685 Sep 23 j 02:11	25°II35'27		max. Earth dist.	693 Jun 20 j 11:07	3°☾36'07	41.85799 AU
opposition	685 Dec 12 j 20:27	24°II31'32	-2°-33'-38				
min. Earth dist.	685 Dec 14 j 20:00	24°II29'04	41.58545 AU	conjunction	693 Jun 23 j 01:11	3°☾40'14	0°17'19
direct	686 Mar 04 j 10:32	23°II26'46		minimum elong	693 Jun 23 j 01:11	3°☾40'14	0°17'18
max. Earth dist.	686 Jun 12 j 02:32	25°II02'56	43.47426 AU	retrograde	693 Oct 03 j 03:16	5°☾24'52	
				opposition	693 Dec 22 j 09:34	4°☾18'53	0°30'07
conjunction	686 Jun 14 j 09:03	25°II06'25	-2°-16'-7	min. Earth dist.	693 Dec 24 j 17:02	4°☾15'53	39.73859 AU
minimum elong	686 Jun 14 j 09:07	25°II06'25	2°16'08	direct	694 Mar 13 j 21:56	3°☾11'39	
retrograde	686 Sep 24 j 10:57	26°II46'48		max. Earth dist.	694 Jun 22 j 01:14	4°☾52'42	41.62087 AU
opposition	686 Dec 14 j 06:13	25°II42'39	-2°-11'-40				
min. Earth dist.	686 Dec 16 j 07:36	25°II40'04	41.36318 AU	conjunction	694 Jun 24 j 15:15	4°☾56'50	0°40'15
direct	687 Mar 05 j 22:02	24°II37'36		minimum elong	694 Jun 24 j 15:14	4°☾56'50	0°40'15
max. Earth dist.	687 Jun 13 j 13:10	26°II14'17	43.25071 AU	retrograde	694 Oct 04 j 17:51	6°☾42'13	
				opposition	694 Dec 23 j 21:41	5°☾35'59	0°54'22
conjunction	687 Jun 15 j 20:43	26°II17'50	-1°-55'00	min. Earth dist.	694 Dec 26 j 05:06	5°☾32'59	39.50070 AU
minimum elong	687 Jun 15 j 20:46	26°II17'51	1°55'01	direct	695 Mar 15 j 09:10	4°☾28'27	
retrograde	687 Sep 25 j 22:05	27°II58'46		max. Earth dist.	695 Jun 23 j 13:25	6°☾10'11	41.38177 AU
opposition	687 Dec 15 j 16:03	26°II54'22	-1°-49'-26				
min. Earth dist.	687 Dec 17 j 17:38	26°II51'46	41.13738 AU	conjunction	695 Jun 26 j 05:30	6°☾14'29	1°03'27
direct	688 Mar 06 j 07:12	25°II49'01		minimum elong	695 Jun 26 j 05:28	6°☾14'29	1°03'27
max. Earth dist.	688 Jun 13 j 23:07	27°II26'10	43.02371 AU	retrograde	695 Oct 06 j 10:49	8°☾00'37	
				opposition	695 Dec 25 j 10:14	6°☾54'09	1°18'53
conjunction	688 Jun 16 j 08:43	27°II29'52	-1°-33'-36	min. Earth dist.	695 Dec 27 j 19:16	6°☾51'02	39.26073 AU
minimum elong	688 Jun 16 j 08:45	27°II29'53	1°33'37	direct	696 Mar 15 j 20:18	5°☾46'18	
retrograde	688 Sep 26 j 11:14	29°II11'22		max. Earth dist.	696 Jun 24 j 04:02	7°☾28'51	41.14011 AU
opposition	688 Dec 16 j 02:12	28°II06'42	-1°-26'-53				
min. Earth dist.	688 Dec 18 j 05:49	28°II03'58	40.90861 AU	conjunction	696 Jun 26 j 20:27	7°☾33'13	1°26'54
direct	689 Mar 07 j 15:23	27°II01'01		minimum elong	696 Jun 26 j 20:24	7°☾33'13	1°26'54
max. Earth dist.	689 Jun 15 j 11:27	28°II38'48	42.79399 AU	retrograde	696 Oct 07 j 01:24	9°☾20'07	

opposition	696 Dec 25 j 23:10	8°☾13'23	1°43'41	max. Earth dist.	705 Jul 07 j 04:11	20°☾05'18	38.86717 AU
min. Earth dist.	696 Dec 28 j 09:17	8°☾10'12	39.01800 AU				
direct	697 Mar 17 j 11:05	7°☾05'13		conjunction	705 Jul 10 j 05:46	20°☾10'38	5°07'29
max. Earth dist.	697 Jun 25 j 17:29	8°☾48'30	40.89559 AU	minimum elong	705 Jul 10 j 05:36	20°☾10'38	5°07'29
				retrograde	705 Oct 20 j 11:11	22°☾05'25	
conjunction	697 Jun 28 j 11:44	8°☾53'01	1°50'34	opposition	706 Jan 07 j 15:16	20°☾55'45	5°37'23
minimum elong	697 Jun 28 j 11:41	8°☾53'01	1°50'34	min. Earth dist.	706 Jan 10 j 08:40	20°☾51'58	36.74777 AU
retrograde	697 Oct 08 j 17:40	10°☾40'43		direct	706 Mar 29 j 22:22	19°☾44'05	
opposition	697 Dec 27 j 12:30	9°☾33'42	2°08'44	max. Earth dist.	706 Jul 09 j 00:14	21°☾35'30	38.61188 AU
min. Earth dist.	697 Dec 29 j 23:17	9°☾30'27	38.77239 AU				
direct	698 Mar 19 j 00:38	8°☾25'11		conjunction	706 Jul 12 j 01:17	21°☾40'51	5°32'49
max. Earth dist.	698 Jun 27 j 07:50	10°☾09'14	40.64787 AU	minimum elong	706 Jul 12 j 01:05	21°☾40'50	5°32'49
				retrograde	706 Oct 22 j 07:10	23°☾36'40	
conjunction	698 Jun 30 j 03:33	10°☾13'53	2°14'29	opposition	707 Jan 09 j 08:50	22°☾26'40	6°04'17
minimum elong	698 Jun 30 j 03:29	10°☾13'53	2°14'29	min. Earth dist.	707 Jan 12 j 01:58	22°☾22'52	36.49394 AU
retrograde	698 Oct 10 j 07:05	12°☾02'24		direct	707 Mar 31 j 14:06	21°☾14'36	
opposition	698 Dec 29 j 02:21	10°☾55'05	2°34'02	max. Earth dist.	707 Jul 10 j 18:27	23°☾07'01	38.35641 AU
min. Earth dist.	698 Dec 31 j 15:03	10°☾51'43	38.52383 AU				
direct	699 Mar 20 j 13:53	9°☾46'13		conjunction	707 Jul 13 j 21:18	23°☾12'32	5°58'16
max. Earth dist.	699 Jun 28 j 23:34	11°☾31'06	40.39748 AU	minimum elong	707 Jul 13 j 21:07	23°☾12'31	5°58'17
				retrograde	707 Oct 24 j 05:32	25°☾09'25	
conjunction	699 Jul 01 j 19:44	11°☾35'49	2°38'37	opposition	708 Jan 11 j 03:04	23°☾59'04	6°31'18
minimum elong	699 Jul 01 j 19:39	11°☾35'49	2°38'37	min. Earth dist.	708 Jan 13 j 21:31	23°☾55'11	36.23993 AU
retrograde	699 Oct 11 j 23:07	13°☾25'09		direct	708 Apr 01 j 05:21	22°☾46'37	
opposition	699 Dec 30 j 16:30	12°☾17'31	2°59'35	max. Earth dist.	708 Jul 11 j 15:16	24°☾40'10	38.10021 AU
min. Earth dist.	700 Jan 02 j 05:14	12°☾14'08	38.27287 AU				
direct	700 Mar 21 j 02:50	11°☾08'16		conjunction	708 Jul 14 j 18:01	24°☾45'44	6°23'49
max. Earth dist.	700 Jun 29 j 13:52	12°☾53'54	40.14474 AU	minimum elong	708 Jul 14 j 17:49	24°☾45'43	6°23'49
				retrograde	708 Oct 25 j 03:12	26°☾43'42	
conjunction	700 Jul 02 j 12:09	12°☾58'48	3°02'58	opposition	709 Jan 11 j 21:59	25°☾33'00	6°58'27
minimum elong	700 Jul 02 j 12:03	12°☾58'48	3°02'58	min. Earth dist.	709 Jan 14 j 17:04	25°☾29'03	35.98494 AU
retrograde	700 Oct 12 j 17:43	14°☾48'59		direct	709 Apr 03 j 01:18	24°☾20'08	
opposition	700 Dec 31 j 07:09	13°☾41'01	3°25'23	max. Earth dist.	709 Jul 13 j 11:07	26°☾14'44	37.84293 AU
min. Earth dist.	701 Jan 02 j 21:41	13°☾37'31	38.02002 AU				
direct	701 Mar 22 j 14:00	12°☾31'22		conjunction	709 Jul 16 j 15:22	26°☾20'28	6°49'26
max. Earth dist.	701 Jul 01 j 07:06	14°☾17'56	39.89025 AU	minimum elong	709 Jul 16 j 15:09	26°☾20'27	6°49'27
				retrograde	709 Oct 27 j 03:02	28°☾19'31	
conjunction	701 Jul 04 j 05:16	14°☾22'52	3°27'32	opposition	710 Jan 13 j 17:21	27°☾08'27	7°25'41
minimum elong	701 Jul 04 j 05:09	14°☾22'51	3°27'32	min. Earth dist.	710 Jan 16 j 12:56	27°☾04'27	35.72895 AU
retrograde	701 Oct 14 j 10:35	16°☾13'54		direct	710 Apr 04 j 21:24	25°☾55'08	
opposition	702 Jan 01 j 22:06	15°☾05'35	3°51'24	max. Earth dist.	710 Jul 15 j 08:24	27°☾50'52	37.58432 AU
min. Earth dist.	702 Jan 04 j 12:52	15°☾02'03	37.76579 AU				
direct	702 Mar 24 j 05:51	13°☾55'32		conjunction	710 Jul 18 j 13:29	27°☾56'43	7°15'07
max. Earth dist.	702 Jul 02 j 22:54	15°☾42'56	39.63469 AU	minimum elong	710 Jul 18 j 13:15	27°☾56'42	7°15'07
				retrograde	710 Oct 29 j 00:36	29°☾56'53	
conjunction	702 Jul 05 j 22:39	15°☾48'01	3°52'16	opposition	711 Jan 15 j 13:37	28°☾45'25	7°52'59
minimum elong	702 Jul 05 j 22:31	15°☾48'00	3°52'16	min. Earth dist.	711 Jan 18 j 10:44	28°☾41'18	35.47186 AU
retrograde	702 Oct 16 j 06:05	17°☾39'56		direct	711 Apr 06 j 17:12	27°☾31'39	
opposition	703 Jan 03 j 13:37	16°☾31'17	4°17'37	max. Earth dist.	711 Jul 17 j 06:33	29°☾28'33	37.32486 AU
min. Earth dist.	703 Jan 06 j 05:02	16°☾27'41	37.51103 AU				
direct	703 Mar 25 j 22:14	15°☾20'49		conjunction	711 Jul 20 j 11:56	29°☾34'28	7°40'50
max. Earth dist.	703 Jul 04 j 16:34	17°☾09'11	39.37860 AU	minimum elong	711 Jul 20 j 11:40	29°☾34'27	7°40'50
					711 Aug 03 j 11:15	0°♁	
conjunction	703 Jul 07 j 16:28	17°☾14'19	4°17'11	retrograde	711 Oct 30 j 22:11	1°♁35'46	
minimum elong	703 Jul 07 j 16:20	17°☾14'18	4°17'11	opposition	712 Jan 17 j 10:19	0°♁23'55	8°20'19
retrograde	703 Oct 17 j 23:33	19°☾07'09		min. Earth dist.	712 Jan 20 j 07:08	0°♁19'46	35.21416 AU
opposition	704 Jan 05 j 05:45	17°☾58'09	4°44'02		712 Feb 03 j 07:24	30°R☾	
min. Earth dist.	704 Jan 07 j 22:06	17°☾54'28	37.25615 AU	direct	712 Apr 07 j 13:53	29°☾09'40	
direct	704 Mar 26 j 15:26	16°☾47'17			712 Jun 08 j 21:14	0°♁	
max. Earth dist.	704 Jul 05 j 10:28	18°☾36'37	39.12274 AU	max. Earth dist.	712 Jul 18 j 04:11	1°♁07'39	37.06480 AU
conjunction	704 Jul 08 j 10:47	18°☾41'50	4°42'16	conjunction	712 Jul 21 j 11:09	1°♁13'45	8°06'33
minimum elong	704 Jul 08 j 10:38	18°☾41'49	4°42'15	minimum elong	712 Jul 21 j 10:53	1°♁13'44	8°06'32
retrograde	704 Oct 18 j 17:05	20°☾35'36		retrograde	712 Oct 31 j 21:14	3°♁16'12	
opposition	705 Jan 05 j 22:07	19°☾26'16	5°10'38	opposition	713 Jan 18 j 07:37	2°♁03'55	8°47'41
min. Earth dist.	705 Jan 08 j 14:04	19°☾22'35	37.00175 AU	min. Earth dist.	713 Jan 21 j 05:58	1°♁59'40	34.95640 AU
direct	705 Mar 28 j 07:46	18°☾15'00		direct	713 Apr 09 j 08:22	0°♁49'11	

max. Earth dist.	713 Jul 20 j 04:43	2°Ω48'27	36.80490 AU	max. Earth dist.	721 Aug 04 j 03:19	17°Ω18'00	34.80275 AU
conjunction	713 Jul 23 j 11:06	2°Ω54'34	8°32'14	conjunction	721 Aug 07 j 10:29	17°Ω24'41	11°51'17
minimum elong	713 Jul 23 j 10:48	2°Ω54'33	8°32'15	minimum elong	721 Aug 07 j 10:06	17°Ω24'40	11°51'18
retrograde	713 Nov 02 j 20:54	4°Ω58'11		retrograde	721 Nov 18 j 04:29	19°Ω38'52	
opposition	714 Jan 20 j 05:38	3°Ω45'29	9°15'00	opposition	722 Feb 03 j 16:29	18°Ω22'56	12°46'40
min. Earth dist.	714 Jan 23 j 03:39	3°Ω41'13	34.69915 AU	min. Earth dist.	722 Feb 06 j 15:05	18°Ω18'24	32.72977 AU
direct	714 Apr 11 j 05:38	2°Ω30'15		direct	722 Apr 25 j 06:43	17°Ω04'00	
max. Earth dist.	714 Jul 22 j 03:46	4°Ω30'41	36.54581 AU	max. Earth dist.	722 Aug 06 j 10:57	19°Ω15'49	34.56416 AU
conjunction	714 Jul 25 j 11:26	4°Ω36'57	8°57'51	conjunction	722 Aug 09 j 16:59	19°Ω22'28	12°14'42
minimum elong	714 Jul 25 j 11:08	4°Ω36'56	8°57'51	minimum elong	722 Aug 09 j 16:37	19°Ω22'26	12°14'41
retrograde	714 Nov 04 j 23:23	6°Ω41'47		retrograde	722 Nov 20 j 11:14	21°Ω38'02	
opposition	715 Jan 22 j 04:19	5°Ω28'39	9°42'14	opposition	723 Feb 05 j 21:40	20°Ω21'41	13°11'33
min. Earth dist.	715 Jan 25 j 02:58	5°Ω24'19	34.44336 AU	min. Earth dist.	723 Feb 08 j 20:13	20°Ω17'08	32.49547 AU
direct	715 Apr 13 j 02:35	4°Ω12'55		direct	723 Apr 27 j 11:28	19°Ω02'17	
max. Earth dist.	715 Jul 24 j 05:41	6°Ω14'43	36.28836 AU	max. Earth dist.	723 Aug 08 j 17:32	21°Ω15'30	34.32818 AU
conjunction	715 Jul 27 j 12:36	6°Ω20'59	9°23'21	conjunction	723 Aug 12 j 00:09	21°Ω22'16	12°37'37
minimum elong	715 Jul 27 j 12:17	6°Ω20'58	9°23'21	minimum elong	723 Aug 11 j 23:45	21°Ω22'14	12°37'37
retrograde	715 Nov 07 j 01:25	8°Ω27'03		retrograde	723 Nov 22 j 20:58	23°Ω39'14	
opposition	716 Jan 24 j 03:46	7°Ω13'29	10°09'21	opposition	724 Feb 08 j 03:29	22°Ω22'27	13°35'53
min. Earth dist.	716 Jan 27 j 02:31	7°Ω09'07	34.18968 AU	min. Earth dist.	724 Feb 11 j 01:34	22°Ω17'54	32.26405 AU
direct	716 Apr 14 j 03:04	5°Ω57'16		direct	724 Apr 28 j 16:23	21°Ω02'33	
max. Earth dist.	716 Jul 25 j 06:53	8°Ω00'22	36.03345 AU	max. Earth dist.	724 Aug 10 j 02:12	23°Ω17'17	34.09507 AU
conjunction	716 Jul 28 j 14:13	8°Ω06'44	9°48'41	conjunction	724 Aug 13 j 08:14	23°Ω24'04	12°59'58
minimum elong	716 Jul 28 j 13:53	8°Ω06'43	9°48'40	minimum elong	724 Aug 13 j 07:51	23°Ω24'02	12°59'58
retrograde	716 Nov 08 j 05:50	10°Ω14'05		retrograde	724 Nov 24 j 05:58	25°Ω42'25	
opposition	717 Jan 25 j 03:51	9°Ω00'06	10°36'18	opposition	725 Feb 09 j 10:22	24°Ω25'11	13°59'37
min. Earth dist.	717 Jan 28 j 01:57	8°Ω55'45	33.93890 AU	min. Earth dist.	725 Feb 12 j 08:52	24°Ω20'35	32.03574 AU
direct	717 Apr 16 j 03:10	7°Ω43'24		direct	725 Apr 30 j 23:39	23°Ω04'48	
max. Earth dist.	717 Jul 27 j 09:36	9°Ω47'53	35.78137 AU	max. Earth dist.	725 Aug 12 j 11:31	25°Ω21'01	33.86558 AU
conjunction	717 Jul 30 j 16:49	9°Ω54'19	10°13'48	conjunction	725 Aug 15 j 17:00	25°Ω27'50	13°21'42
minimum elong	717 Jul 30 j 16:29	9°Ω54'17	10°13'48	minimum elong	725 Aug 15 j 16:36	25°Ω27'47	13°21'42
retrograde	717 Nov 10 j 07:35	12°Ω02'58		retrograde	725 Nov 26 j 17:03	27°Ω47'32	
opposition	718 Jan 27 j 04:47	10°Ω48'35	11°03'01	opposition	726 Feb 11 j 17:51	26°Ω29'52	14°22'40
min. Earth dist.	718 Jan 30 j 03:38	10°Ω44'09	33.69122 AU	min. Earth dist.	726 Feb 14 j 15:01	26°Ω25'19	31.81139 AU
direct	718 Apr 18 j 02:54	9°Ω31'27		direct	726 May 03 j 07:58	25°Ω08'59	
max. Earth dist.	718 Jul 29 j 13:36	11°Ω37'23	35.53258 AU	max. Earth dist.	726 Aug 14 j 21:25	27°Ω26'40	33.64032 AU
conjunction	718 Aug 01 j 20:04	11°Ω43'50	10°38'40	conjunction	726 Aug 18 j 02:33	27°Ω33'31	13°42'43
minimum elong	718 Aug 01 j 19:43	11°Ω43'48	10°38'39	minimum elong	726 Aug 18 j 02:10	27°Ω33'29	13°42'43
retrograde	718 Nov 12 j 11:16	13°Ω53'49		retrograde	726 Nov 29 j 01:54	29°Ω54'36	
opposition	719 Jan 29 j 06:27	12°Ω39'04	11°29'27	opposition	727 Feb 14 j 02:28	28°Ω36'28	14°44'56
min. Earth dist.	719 Feb 01 j 04:14	12°Ω34'40	33.44681 AU	min. Earth dist.	727 Feb 16 j 23:58	28°Ω31'52	31.59179 AU
direct	719 Apr 20 j 03:50	11°Ω21'29		direct	727 May 05 j 14:30	27°Ω15'06	
max. Earth dist.	719 Jul 31 j 16:47	13°Ω28'49	35.28673 AU	max. Earth dist.	727 Aug 17 j 09:26	29°Ω34'22	33.42039 AU
conjunction	719 Aug 03 j 23:56	13°Ω35'22	11°03'14	conjunction	727 Aug 20 j 12:40	29°Ω41'07	14°02'57
minimum elong	719 Aug 03 j 23:34	13°Ω35'20	11°03'14	minimum elong	727 Aug 20 j 12:17	29°Ω41'05	14°02'58
	719 Sep 19 j 01:13	15°Ω			727 Aug 29 j 07:47	0°♄	
retrograde	719 Nov 14 j 15:56	15°Ω46'45		retrograde	727 Dec 01 j 12:10	2°♄03'34	
	720 Jan 12 j 04:50	15°RΩ		opposition	728 Feb 16 j 11:47	0°♄45'01	15°06'20
opposition	720 Jan 31 j 09:01	14°Ω31'36	11°55'34	min. Earth dist.	728 Feb 19 j 07:29	0°♄40'30	31.37781 AU
min. Earth dist.	720 Feb 03 j 07:48	14°Ω27'07	33.20534 AU		728 Mar 17 j 06:11	30°RΩ	
direct	720 Apr 21 j 02:10	13°Ω13'35		direct	728 May 06 j 23:43	29°Ω23'10	
	720 Jul 21 j 15:26	15°Ω			728 Jun 25 j 05:44	0°♄	
max. Earth dist.	720 Aug 01 j 22:48	15°Ω22'27	35.04358 AU	max. Earth dist.	728 Aug 18 j 20:36	1°♄43'53	33.20650 AU
conjunction	720 Aug 05 j 04:50	15°Ω28'59	11°27'27	conjunction	728 Aug 21 j 23:40	1°♄50'40	14°22'19
minimum elong	720 Aug 05 j 04:28	15°Ω28'57	11°27'26	minimum elong	728 Aug 21 j 23:17	1°♄50'38	14°22'18
retrograde	720 Nov 15 j 20:42	17°Ω41'45		retrograde	728 Dec 03 j 00:00	4°♄14'30	
opposition	721 Feb 01 j 12:14	16°Ω26'14	12°21'20	opposition	729 Feb 17 j 21:55	2°♄55'31	15°26'45
min. Earth dist.	721 Feb 04 j 10:19	16°Ω21'46	32.96635 AU	min. Earth dist.	729 Feb 20 j 17:17	2°♄51'00	31.17035 AU
direct	721 Apr 23 j 04:48	15°Ω07'46		direct	729 May 09 j 06:33	1°♄33'12	

max. Earth dist.	729 Aug 21 j 10:58	3° $\mathring{\mu}$ 55'34	32.99956 AU	minimum elong	737 Sep 12 j 13:06	22° $\mathring{\mu}$ 48'26	16°24'18
				retrograde	737 Dec 25 j 00:38	25° $\mathring{\mu}$ 23'39	
conjunction	729 Aug 24 j 11:34	4° $\mathring{\mu}$ 02'12	14°40'42	opposition	738 Mar 11 j 09:48	24° $\mathring{\mu}$ 01'48	17°33'25
minimum elong	729 Aug 24 j 11:12	4° $\mathring{\mu}$ 02'10	14°40'42	min. Earth dist.	738 Mar 13 j 16:58	23° $\mathring{\mu}$ 57'57	29.62200 AU
retrograde	729 Dec 05 j 11:26	6° $\mathring{\mu}$ 27'24		direct	738 May 30 j 09:05	22° $\mathring{\mu}$ 36'35	
opposition	730 Feb 20 j 09:07	5° $\mathring{\mu}$ 08'02	15°46'07	max. Earth dist.	738 Sep 12 j 22:11	25° $\mathring{\mu}$ 11'45	31.46488 AU
min. Earth dist.	730 Feb 23 j 02:46	5° $\mathring{\mu}$ 03'36	30.96988 AU				
direct	730 May 11 j 16:56	3° $\mathring{\mu}$ 45'20		conjunction	738 Sep 15 j 07:21	25° $\mathring{\mu}$ 17'22	16°30'46
max. Earth dist.	730 Aug 23 j 23:56	6° $\mathring{\mu}$ 09'09	32.80001 AU	minimum elong	738 Sep 15 j 07:11	25° $\mathring{\mu}$ 17'21	16°30'46
				retrograde	738 Dec 27 j 17:54	27° $\mathring{\mu}$ 53'32	
conjunction	730 Aug 26 j 23:59	6° $\mathring{\mu}$ 15'48	14°58'03	opposition	739 Mar 14 j 04:26	26° $\mathring{\mu}$ 31'25	17°39'45
minimum elong	730 Aug 26 j 23:38	6° $\mathring{\mu}$ 15'46	14°58'02	min. Earth dist.	739 Mar 16 j 08:58	26° $\mathring{\mu}$ 27'44	29.48687 AU
retrograde	730 Dec 08 j 01:45	8° $\mathring{\mu}$ 42'23		direct	739 Jun 02 j 04:19	25° $\mathring{\mu}$ 05'56	
opposition	731 Feb 22 j 21:08	7° $\mathring{\mu}$ 22'39	16°04'19	max. Earth dist.	739 Sep 15 j 18:02	27° $\mathring{\mu}$ 42'08	31.33339 AU
min. Earth dist.	731 Feb 25 j 13:32	7° $\mathring{\mu}$ 18'17	30.77688 AU				
direct	731 May 14 j 03:00	5° $\mathring{\mu}$ 59'34		conjunction	739 Sep 18 j 01:51	27° $\mathring{\mu}$ 47'38	16°35'34
max. Earth dist.	731 Aug 26 j 15:56	8° $\mathring{\mu}$ 25'03	32.60792 AU	minimum elong	739 Sep 18 j 01:43	27° $\mathring{\mu}$ 47'38	16°35'34
					739 Nov 23 j 03:37	0° $\mathring{\mu}$	
conjunction	731 Aug 29 j 13:27	8° $\mathring{\mu}$ 31'31	15°14'16	retrograde	739 Dec 30 j 13:03	0° $\mathring{\mu}$ 24'41	
minimum elong	731 Aug 29 j 13:06	8° $\mathring{\mu}$ 31'29	15°14'16		740 Feb 07 j 01:09	30° $\mathring{\mu}$	
retrograde	731 Dec 10 j 15:20	10° $\mathring{\mu}$ 59'28		opposition	740 Mar 15 j 23:31	29° $\mathring{\mu}$ 02'18	17°44'14
opposition	732 Feb 25 j 10:02	9° $\mathring{\mu}$ 39'24	16°21'18	min. Earth dist.	740 Mar 18 j 02:12	28° $\mathring{\mu}$ 58'44	29.36104 AU
min. Earth dist.	732 Feb 28 j 01:33	9° $\mathring{\mu}$ 35'05	30.59106 AU	direct	740 Jun 03 j 21:19	27° $\mathring{\mu}$ 36'34	
direct	732 May 15 j 14:46	8° $\mathring{\mu}$ 15'59		max. Earth dist.	740 Sep 11 j 19:37	0° $\mathring{\mu}$	
max. Earth dist.	732 Aug 28 j 06:52	10° $\mathring{\mu}$ 42'56	32.42320 AU		740 Sep 17 j 16:52	0° $\mathring{\mu}$ 13'58	31.21182 AU
conjunction	732 Aug 31 j 03:32	10° $\mathring{\mu}$ 49'23	15°29'18	conjunction	740 Sep 19 j 20:53	0° $\mathring{\mu}$ 19'08	16°38'36
minimum elong	732 Aug 31 j 03:13	10° $\mathring{\mu}$ 49'21	15°29'17	minimum elong	740 Sep 19 j 20:47	0° $\mathring{\mu}$ 19'07	16°38'36
retrograde	732 Dec 12 j 08:17	13° $\mathring{\mu}$ 18'40		retrograde	741 Jan 01 j 07:36	2° $\mathring{\mu}$ 56'59	
opposition	733 Feb 26 j 23:48	11° $\mathring{\mu}$ 58'18	16°36'59	opposition	741 Mar 18 j 19:25	1° $\mathring{\mu}$ 34'21	17°46'48
min. Earth dist.	733 Mar 01 j 13:28	11° $\mathring{\mu}$ 54'05	30.41232 AU	min. Earth dist.	741 Mar 20 j 19:39	1° $\mathring{\mu}$ 30'58	29.24507 AU
direct	733 May 18 j 03:30	10° $\mathring{\mu}$ 34'32		direct	741 Jun 06 j 16:07	0° $\mathring{\mu}$ 08'26	
max. Earth dist.	733 Aug 30 j 23:47	13° $\mathring{\mu}$ 03'02	32.24537 AU	max. Earth dist.	741 Sep 20 j 13:58	2° $\mathring{\mu}$ 46'44	31.10094 AU
conjunction	733 Sep 02 j 18:34	13° $\mathring{\mu}$ 09'21	15°43'04	conjunction	741 Sep 22 j 16:04	2° $\mathring{\mu}$ 51'44	16°39'49
minimum elong	733 Sep 02 j 18:16	13° $\mathring{\mu}$ 09'19	15°43'05	minimum elong	741 Sep 22 j 16:01	2° $\mathring{\mu}$ 51'43	16°39'50
retrograde	733 Dec 15 j 00:24	15° $\mathring{\mu}$ 39'57		retrograde	742 Jan 04 j 03:40	5° $\mathring{\mu}$ 30'20	
opposition	734 Mar 01 j 14:38	14° $\mathring{\mu}$ 19'16	16°51'19	opposition	742 Mar 21 j 15:47	4° $\mathring{\mu}$ 07'29	17°47'22
min. Earth dist.	734 Mar 04 j 03:54	14° $\mathring{\mu}$ 15'03	30.24025 AU	min. Earth dist.	742 Mar 23 j 13:02	4° $\mathring{\mu}$ 04'18	29.13991 AU
direct	734 May 20 j 17:37	12° $\mathring{\mu}$ 55'12		direct	742 Jun 09 j 11:34	2° $\mathring{\mu}$ 41'25	
max. Earth dist.	734 Sep 02 j 16:58	15° $\mathring{\mu}$ 25'08	32.07460 AU	max. Earth dist.	742 Sep 23 j 13:44	5° $\mathring{\mu}$ 20'45	31.00136 AU
conjunction	734 Sep 05 j 10:14	15° $\mathring{\mu}$ 31'22	15°55'32	conjunction	742 Sep 25 j 11:49	5° $\mathring{\mu}$ 25'22	16°39'10
minimum elong	734 Sep 05 j 09:57	15° $\mathring{\mu}$ 31'20	15°55'31	minimum elong	742 Sep 25 j 11:47	5° $\mathring{\mu}$ 25'22	16°39'09
retrograde	734 Dec 17 j 18:43	18° $\mathring{\mu}$ 03'12		retrograde	743 Jan 06 j 22:35	8° $\mathring{\mu}$ 04'37	
opposition	735 Mar 04 j 06:14	16° $\mathring{\mu}$ 42'14	17°04'11	opposition	743 Mar 24 j 12:46	6° $\mathring{\mu}$ 41'37	17°45'54
min. Earth dist.	735 Mar 06 j 17:06	16° $\mathring{\mu}$ 38'10	30.07501 AU	min. Earth dist.	743 Mar 26 j 07:46	6° $\mathring{\mu}$ 38'35	29.04582 AU
direct	735 May 23 j 09:39	15° $\mathring{\mu}$ 17'52		direct	743 Jun 12 j 08:10	5° $\mathring{\mu}$ 15'27	
max. Earth dist.	735 Sep 05 j 10:44	17° $\mathring{\mu}$ 49'10	31.91076 AU	max. Earth dist.	743 Sep 26 j 11:49	7° $\mathring{\mu}$ 55'33	30.91340 AU
conjunction	735 Sep 08 j 02:34	17° $\mathring{\mu}$ 55'18	16°06'36	conjunction	743 Sep 28 j 07:35	7° $\mathring{\mu}$ 59'57	16°36'36
minimum elong	735 Sep 08 j 02:18	17° $\mathring{\mu}$ 55'17	16°06'36	minimum elong	743 Sep 28 j 07:37	7° $\mathring{\mu}$ 59'57	16°36'36
retrograde	735 Dec 20 j 11:23	20° $\mathring{\mu}$ 28'20		retrograde	744 Jan 09 j 20:26	10° $\mathring{\mu}$ 39'47	
opposition	736 Mar 05 j 22:44	19° $\mathring{\mu}$ 07'04	17°15'33	opposition	744 Mar 26 j 10:00	9° $\mathring{\mu}$ 16'40	17°42'22
min. Earth dist.	736 Mar 08 j 09:17	19° $\mathring{\mu}$ 03'01	29.91664 AU	min. Earth dist.	744 Mar 28 j 01:23	9° $\mathring{\mu}$ 13'53	28.96289 AU
direct	736 May 25 j 00:09	17° $\mathring{\mu}$ 42'24		direct	744 Jun 14 j 04:38	7° $\mathring{\mu}$ 50'26	
max. Earth dist.	736 Sep 07 j 06:09	20° $\mathring{\mu}$ 15'06	31.75428 AU	max. Earth dist.	744 Sep 28 j 11:43	10° $\mathring{\mu}$ 31'21	30.83667 AU
conjunction	736 Sep 09 j 19:38	20° $\mathring{\mu}$ 21'03	16°16'13	conjunction	744 Sep 30 j 03:53	10° $\mathring{\mu}$ 35'24	16°32'07
minimum elong	736 Sep 09 j 19:24	20° $\mathring{\mu}$ 21'02	16°16'12	minimum elong	744 Sep 30 j 03:56	10° $\mathring{\mu}$ 35'24	16°32'06
retrograde	736 Dec 22 j 06:03	22° $\mathring{\mu}$ 55'12		retrograde	745 Jan 11 j 16:28	13° $\mathring{\mu}$ 15'43	
opposition	737 Mar 08 j 15:48	21° $\mathring{\mu}$ 33'38	17°25'20	opposition	745 Mar 29 j 07:44	11° $\mathring{\mu}$ 52'30	17°36'45
min. Earth dist.	737 Mar 10 j 23:52	21° $\mathring{\mu}$ 29'44	29.76543 AU	min. Earth dist.	745 Mar 30 j 21:23	11° $\mathring{\mu}$ 49'51	28.89075 AU
direct	737 May 27 j 17:42	20° $\mathring{\mu}$ 08'42		direct	745 Jun 17 j 01:46	10° $\mathring{\mu}$ 26'15	
max. Earth dist.	737 Sep 10 j 00:56	22° $\mathring{\mu}$ 42'35	31.60539 AU	max. Earth dist.	745 Oct 01 j 10:51	13° $\mathring{\mu}$ 07'46	30.77105 AU
conjunction	737 Sep 12 j 13:18	22° $\mathring{\mu}$ 48'28	16°24'18	conjunction	745 Oct 03 j 00:16	13° $\mathring{\mu}$ 11'33	16°25'43

minimum elong	745 Oct 03 j 00:22	13°♁11'34	16°25'43	max. Earth dist.	753 Oct 23 j 06:35	4°♁02'12	30.62604 AU
retrograde	746 Jan 14 j 14:48	15°♁52'15		retrograde	754 Feb 04 j 07:47	6°♁43'09	
opposition	746 Apr 01 j 05:49	14°♁28'59	17°29'03	opposition	754 Apr 22 j 17:42	5°♁19'54	15°15'45
min. Earth dist.	746 Apr 02 j 15:44	14°♁26'35	28.82917 AU	min. Earth dist.	754 Apr 23 j 04:22	5°♁19'10	28.70684 AU
direct	746 Jun 20 j 01:12	13°♁02'44		direct	754 Jul 11 j 15:10	3°♁54'24	
max. Earth dist.	746 Oct 04 j 10:28	15°♁44'48	30.71603 AU				
conjunction	746 Oct 05 j 20:44	15°♁48'16	16°17'24	conjunction	754 Oct 26 j 12:31	6°♁37'18	14°05'01
minimum elong	746 Oct 05 j 20:52	15°♁48'16	16°17'23	minimum elong	754 Oct 26 j 12:52	6°♁37'20	14°05'01
retrograde	747 Jan 17 j 11:24	18°♁29'15		max. Earth dist.	754 Oct 26 j 03:51	6°♁36'25	30.65876 AU
opposition	747 Apr 04 j 04:20	17°♁05'55	17°19'18	retrograde	755 Feb 07 j 03:41	9°♁16'35	
min. Earth dist.	747 Apr 05 j 12:31	17°♁03'39	28.77785 AU	opposition	755 Apr 25 j 15:19	7°♁53'28	14°50'43
direct	747 Jun 22 j 22:34	15°♁39'42		min. Earth dist.	755 Apr 25 j 21:32	7°♁53'02	28.74220 AU
max. Earth dist.	747 Oct 07 j 10:21	18°♁22'10	30.67157 AU	direct	755 Jul 14 j 12:09	6°♁28'11	
conjunction	747 Oct 08 j 17:23	18°♁25'19	16°07'11	conjunction	755 Oct 29 j 07:00	9°♁10'19	13°40'51
minimum elong	747 Oct 08 j 17:34	18°♁25'20	16°07'11	minimum elong	755 Oct 29 j 07:24	9°♁10'21	13°40'50
retrograde	748 Jan 20 j 09:21	21°♁06'27		max. Earth dist.	755 Oct 29 j 02:50	9°♁09'53	30.70387 AU
opposition	748 Apr 06 j 02:43	19°♁43'06	17°07'31	retrograde	756 Feb 09 j 20:16	11°♁49'01	
min. Earth dist.	748 Apr 07 j 07:18	19°♁41'05	28.73652 AU	opposition	756 Apr 27 j 12:33	10°♁26'03	14°24'01
direct	748 Jun 24 j 22:27	18°♁16'55		min. Earth dist.	756 Apr 27 j 16:20	10°♁25'47	28.78970 AU
max. Earth dist.	748 Oct 09 j 09:27	20°♁59'37	30.63730 AU	direct	756 Jul 16 j 09:01	9°♁01'03	
conjunction	748 Oct 10 j 14:04	21°♁02'31	15°55'05	conjunction	756 Oct 31 j 00:55	11°♁42'19	13°15'12
minimum elong	748 Oct 10 j 14:15	21°♁02'32	15°55'05	minimum elong	756 Oct 31 j 01:17	11°♁42'22	13°15'12
retrograde	749 Jan 22 j 07:02	23°♁43'42		max. Earth dist.	756 Oct 30 j 23:31	11°♁42'11	30.76123 AU
opposition	749 Apr 09 j 01:30	22°♁20'19	16°53'43	retrograde	757 Feb 11 j 14:58	14°♁20'21	
min. Earth dist.	749 Apr 10 j 03:59	22°♁18'27	28.70521 AU	opposition	757 Apr 30 j 09:26	12°♁57'35	13°55'47
direct	749 Jun 27 j 20:46	20°♁54'12		min. Earth dist.	757 Apr 30 j 08:47	12°♁57'38	28.84905 AU
max. Earth dist.	749 Oct 12 j 09:42	23°♁37'06	30.61339 AU	direct	757 Jul 19 j 07:16	11°♁32'53	
conjunction	749 Oct 13 j 10:35	23°♁39'38	15°41'09	conjunction	757 Nov 02 j 18:16	14°♁13'15	12°48'11
minimum elong	749 Oct 13 j 10:50	23°♁39'39	15°41'09	minimum elong	757 Nov 02 j 18:40	14°♁13'18	12°48'11
retrograde	750 Jan 25 j 02:58	26°♁20'44		max. Earth dist.	757 Nov 02 j 20:54	14°♁13'31	30.83010 AU
opposition	750 Apr 12 j 00:15	24°♁57'21	16°37'56	retrograde	757 Nov 22 j 14:31	15°♁	
min. Earth dist.	750 Apr 12 j 23:19	24°♁55'44	28.68385 AU	opposition	758 Feb 14 j 07:44	16°♁50'35	
direct	750 Jun 30 j 21:06	23°♁31'20		opposition	758 May 03 j 06:04	15°♁28'01	13°26'07
max. Earth dist.	750 Oct 15 j 08:13	26°♁14'10	30.59987 AU	min. Earth dist.	758 May 03 j 03:06	15°♁28'13	28.91967 AU
conjunction	750 Oct 16 j 06:52	26°♁16'28	15°25'24	direct	758 May 20 j 12:58	15°♁	
minimum elong	750 Oct 16 j 07:07	26°♁16'29	15°25'24	direct	758 Jul 22 j 02:40	14°♁03'39	
retrograde	751 Jan 27 j 23:47	28°♁57'24		758 Sep 19 j 06:01	15°♁		
opposition	751 Apr 14 j 22:52	27°♁34'01	16°20'12	conjunction	758 Nov 05 j 11:08	16°♁43'01	12°19'53
min. Earth dist.	751 Apr 15 j 19:12	27°♁32'35	28.67296 AU	minimum elong	758 Nov 05 j 11:31	16°♁43'03	12°19'54
direct	751 Jul 03 j 19:02	26°♁08'04		max. Earth dist.	758 Nov 05 j 16:49	16°♁43'35	30.91006 AU
max. Earth dist.	751 Oct 18 j 08:35	28°♁50'57	30.59719 AU	retrograde	759 Feb 17 j 01:27	19°♁19'32	
conjunction	751 Oct 19 j 02:56	28°♁52'48	15°07'52	opposition	759 May 06 j 01:58	17°♁57'13	12°55'08
minimum elong	751 Oct 19 j 03:14	28°♁52'50	15°07'52	min. Earth dist.	759 May 05 j 18:56	17°♁57'42	29.00089 AU
retrograde	751 Nov 16 j 13:58	0°♁		direct	759 Jul 25 j 00:19	16°♁33'11	
opposition	752 Jan 30 j 18:58	1°♁33'27	16°00'34	conjunction	759 Nov 08 j 03:26	19°♁11'30	11°50'27
min. Earth dist.	752 Apr 16 j 21:22	0°♁10'05	28.67268 AU	minimum elong	759 Nov 08 j 03:51	19°♁11'32	11°50'26
direct	752 Apr 22 j 21:21	30°♁		max. Earth dist.	759 Nov 08 j 12:08	19°♁12'21	31.00021 AU
conjunction	752 Jul 05 j 18:31	28°♁44'16	15°07'52	retrograde	760 Feb 19 j 18:50	21°♁47'10	
minimum elong	752 Sep 12 j 09:27	0°♁		opposition	760 May 07 j 21:31	20°♁25'04	12°22'58
conjunction	752 Oct 20 j 22:30	1°♁28'28	14°48'35	min. Earth dist.	760 May 07 j 12:09	20°♁25'43	29.09213 AU
minimum elong	752 Oct 20 j 22:49	1°♁28'30	14°48'35	direct	760 Jul 26 j 20:18	19°♁01'23	
max. Earth dist.	752 Oct 20 j 06:32	1°♁26'51	30.60568 AU	conjunction	760 Nov 09 j 19:12	21°♁38'34	11°19'56
retrograde	753 Feb 01 j 14:40	4°♁08'45		minimum elong	760 Nov 09 j 19:35	21°♁38'37	11°19'56
opposition	753 Apr 19 j 19:33	2°♁45'25	15°39'04	max. Earth dist.	760 Nov 10 j 07:11	21°♁39'45	31.10008 AU
min. Earth dist.	753 Apr 20 j 09:10	2°♁44'28	28.68383 AU	retrograde	761 Feb 21 j 10:19	24°♁13'18	
direct	753 Jul 08 j 16:33	1°♁19'44		opposition	761 May 10 j 16:26	22°♁51'28	11°49'44
conjunction	753 Oct 23 j 17:52	4°♁03'20	14°27'37	min. Earth dist.	761 May 10 j 03:46	22°♁52'19	29.19266 AU
minimum elong	753 Oct 23 j 18:13	4°♁03'22	14°27'37	direct	761 Jul 29 j 17:37	21°♁28'07	
				conjunction	761 Nov 12 j 10:18	24°♁04'07	10°48'30
				minimum elong	761 Nov 12 j 10:41	24°♁04'09	10°48'29

max. Earth dist.	761 Nov 13 j 00:31	24° ℓ 05'30	31.20899 AU	max. Earth dist.	769 Dec 01 j 22:11	12° ♁ 26'30	32.39893 AU
retrograde	762 Feb 24 j 01:50	26° ℓ 37'52		retrograde	770 Mar 13 j 18:59	14° ♁ 47'45	
opposition	762 May 13 j 10:51	25° ℓ 16'15	11°15'32	min. Earth dist.	770 May 30 j 20:39	13° ♁ 30'52	30.50229 AU
min. Earth dist.	762 May 12 j 19:21	25° ℓ 17'18	29.30232 AU	opposition	770 Jun 01 j 11:21	13° ♁ 28'22	6°19'41
direct	762 Aug 01 j 11:43	23° ℓ 53'16		direct	770 Aug 20 j 19:07	12° ♁ 08'24	
conjunction	762 Nov 15 j 00:46	26° ℓ 28'00	10°16'12	conjunction	770 Dec 02 j 17:12	14° ♁ 32'19	5°38'24
minimum elong	762 Nov 15 j 01:08	26° ℓ 28'02	10°16'12	minimum elong	770 Dec 02 j 17:25	14° ♁ 32'20	5°38'25
max. Earth dist.	762 Nov 15 j 18:40	26° ℓ 29'44	31.32674 AU	max. Earth dist.	770 Dec 04 j 08:40	14° ♁ 35'55	32.58671 AU
retrograde	763 Feb 26 j 15:34	29° ℓ 00'41		retrograde	771 Mar 16 j 04:47	16° ♁ 55'52	
min. Earth dist.	763 May 15 j 10:29	27° ℓ 40'32	29.42056 AU	min. Earth dist.	771 Jun 02 j 06:08	15° ♁ 39'29	30.69149 AU
opposition	763 May 16 j 04:32	27° ℓ 39'19	10°40'29	opposition	771 Jun 03 j 23:09	15° ♁ 36'51	5°41'23
direct	763 Aug 04 j 08:29	26° ℓ 16'40		direct	771 Aug 23 j 06:44	14° ♁ 17'21	
conjunction	763 Nov 17 j 14:27	28° ℓ 50'06	9°43'10	conjunction	771 Dec 05 j 01:11	16° ♁ 39'56	5°02'34
minimum elong	763 Nov 17 j 14:49	28° ℓ 50'08	9°43'09	minimum elong	771 Dec 05 j 01:23	16° ♁ 39'57	5°02'33
max. Earth dist.	763 Nov 18 j 10:05	28° ℓ 51'59	31.45297 AU	max. Earth dist.	771 Dec 06 j 19:38	16° ♁ 43'46	32.78142 AU
	763 Dec 19 j 00:56	0° ♁		retrograde	772 Mar 17 j 12:38	19° ♁ 02'19	
retrograde	764 Feb 29 j 05:36	1° ♁ 21'41		min. Earth dist.	772 Jun 03 j 15:10	17° ♁ 46'25	30.88722 AU
opposition	764 May 17 j 21:18	0° ♁ 00'33	10°04'42	opposition	772 Jun 05 j 10:05	17° ♁ 43'41	5°03'05
min. Earth dist.	764 May 16 j 23:50	0° ♁ 01'59	29.54755 AU	direct	772 Aug 24 j 20:20	16° ♁ 24'38	
	764 May 18 j 05:32	30° ℓ		conjunction	772 Dec 06 j 08:21	18° ♁ 45'53	4°26'46
direct	764 Aug 06 j 01:57	28° ℓ 38'13		minimum elong	772 Dec 06 j 08:31	18° ♁ 45'54	4°26'46
	764 Oct 18 j 06:03	0° ♁		max. Earth dist.	772 Dec 08 j 03:57	18° ♁ 49'49	32.98208 AU
conjunction	764 Nov 19 j 03:31	1° ♁ 10'19	9°09'28	retrograde	773 Mar 19 j 21:11	21° ♁ 07'09	
minimum elong	764 Nov 19 j 03:51	1° ♁ 10'21	9°09'28	min. Earth dist.	773 Jun 05 j 22:45	19° ♁ 51'46	31.08894 AU
max. Earth dist.	764 Nov 20 j 03:01	1° ♁ 12'34	31.58785 AU	opposition	773 Jun 07 j 20:29	19° ♁ 48'52	4°24'54
retrograde	765 Mar 02 j 15:42	3° ♁ 40'46		direct	773 Aug 27 j 06:34	18° ♁ 30'16	
opposition	765 May 20 j 13:37	2° ♁ 19'52	9°28'15	conjunction	773 Dec 08 j 14:56	20° ♁ 50'12	3°51'03
min. Earth dist.	765 May 19 j 14:06	2° ♁ 21'26	29.68340 AU	minimum elong	773 Dec 08 j 15:05	20° ♁ 50'13	3°51'03
direct	765 Aug 08 j 19:53	0° ♁ 57'53		max. Earth dist.	773 Dec 10 j 13:29	20° ♁ 54'21	33.18800 AU
conjunction	765 Nov 21 j 15:30	3° ♁ 28'36	8°35'12	retrograde	774 Mar 22 j 01:24	23° ♁ 10'19	
minimum elong	765 Nov 21 j 15:50	3° ♁ 28'38	8°35'11	min. Earth dist.	774 Jun 08 j 07:33	21° ♁ 55'21	31.29569 AU
max. Earth dist.	765 Nov 22 j 16:57	3° ♁ 31'01	31.73170 AU	opposition	774 Jun 10 j 06:15	21° ♁ 52'23	3°46'52
retrograde	766 Mar 05 j 03:34	5° ♁ 57'54		direct	774 Aug 29 j 18:12	20° ♁ 34'13	
min. Earth dist.	766 May 22 j 01:32	4° ♁ 39'05	29.82860 AU	conjunction	774 Dec 10 j 20:52	22° ♁ 52'49	3°15'31
opposition	766 May 23 j 05:05	4° ♁ 37'15	8°51'16	minimum elong	774 Dec 10 j 20:59	22° ♁ 52'50	3°15'32
direct	766 Aug 11 j 11:51	3° ♁ 15'37		max. Earth dist.	774 Dec 12 j 20:05	22° ♁ 57'01	33.39848 AU
conjunction	766 Nov 24 j 02:59	5° ♁ 44'57	8°00'27	retrograde	775 Mar 24 j 07:00	25° ♁ 11'47	
minimum elong	766 Nov 24 j 03:18	5° ♁ 44'59	8°00'28	min. Earth dist.	775 Jun 10 j 13:31	23° ♁ 57'18	31.50698 AU
max. Earth dist.	766 Nov 25 j 08:17	5° ♁ 47'43	31.88477 AU	opposition	775 Jun 12 j 14:58	23° ♁ 54'12	3°09'05
retrograde	767 Mar 07 j 13:14	8° ♁ 13'06		direct	775 Sep 01 j 03:47	22° ♁ 36'26	
opposition	767 May 25 j 19:45	6° ♁ 52'44	8°13'49	conjunction	775 Dec 13 j 02:11	24° ♁ 53'43	2°40'11
min. Earth dist.	767 May 24 j 14:18	6° ♁ 54'40	29.98335 AU	minimum elong	775 Dec 13 j 02:17	24° ♁ 53'44	2°40'11
direct	767 Aug 14 j 02:19	5° ♁ 31'28		max. Earth dist.	775 Dec 15 j 03:50	24° ♁ 58'05	33.61296 AU
conjunction	767 Nov 26 j 13:38	7° ♁ 59'26	7°25'18	retrograde	776 Mar 25 j 10:45	27° ♁ 11'31	
minimum elong	767 Nov 26 j 13:56	7° ♁ 59'28	7°25'18	min. Earth dist.	776 Jun 11 j 21:05	25° ♁ 57'23	31.72242 AU
max. Earth dist.	767 Nov 27 j 21:12	8° ♁ 02'23	32.04730 AU	opposition	776 Jun 13 j 23:15	25° ♁ 54'15	2°31'35
retrograde	768 Mar 08 j 23:38	10° ♁ 26'25		direct	776 Sep 02 j 12:09	24° ♁ 36'53	
min. Earth dist.	768 May 26 j 00:08	9° ♁ 08'33	30.14750 AU	conjunction	776 Dec 14 j 06:37	26° ♁ 52'49	2°05'08
opposition	768 May 27 j 09:36	9° ♁ 06'21	7°36'00	minimum elong	776 Dec 14 j 06:42	26° ♁ 52'50	2°05'09
direct	768 Aug 15 j 17:23	7° ♁ 45'30		max. Earth dist.	776 Dec 16 j 09:32	26° ♁ 57'16	33.83143 AU
conjunction	768 Nov 27 j 23:31	10° ♁ 12'07	6°49'51	retrograde	777 Mar 27 j 14:33	29° ♁ 09'28	
minimum elong	768 Nov 27 j 23:47	10° ♁ 12'08	6°49'52	min. Earth dist.	777 Jun 14 j 01:49	27° ♁ 55'48	31.94203 AU
max. Earth dist.	768 Nov 29 j 10:13	10° ♁ 15'20	32.21878 AU	opposition	777 Jun 16 j 06:38	27° ♁ 52'31	1°54'26
retrograde	769 Mar 11 j 09:42	12° ♁ 37'57		direct	777 Sep 04 j 20:38	26° ♁ 35'31	
min. Earth dist.	769 May 28 j 11:20	11° ♁ 20'32	30.32073 AU	conjunction	777 Dec 16 j 10:23	28° ♁ 50'08	1°30'25
opposition	769 May 29 j 22:55	11° ♁ 18'13	6°57'55	minimum elong	777 Dec 16 j 10:26	28° ♁ 50'09	1°30'24
direct	769 Aug 18 j 05:42	9° ♁ 57'48		max. Earth dist.	777 Dec 18 j 15:10	28° ♁ 54'42	34.05394 AU
conjunction	769 Nov 30 j 08:47	12° ♁ 23'03	6°14'12		778 Jan 20 j 19:34	0° ♁	
minimum elong	769 Nov 30 j 09:02	12° ♁ 23'05	6°14'11	retrograde	778 Mar 29 j 19:17	1° ♁ 05'38	

	778 Jun 11 j 02:02	30°R 2		max. Earth dist.	786 Jan 02 j 11:29	13° 3 35'42	35.98324 AU
min. Earth dist.	778 Jun 16 j 07:12	29° 2 52'19	32.16631 AU	retrograde	786 Apr 13 j 01:38	15° 3 37'31	
opposition	778 Jun 18 j 13:24	29° 2 48'58	1°17'40	min. Earth dist.	786 Jul 01 j 00:26	14° 3 27'25	34.11122 AU
direct	778 Sep 07 j 01:47	28° 2 32'21		opposition	786 Jul 03 j 18:34	14° 3 23'30	-3°-17'-54
	778 Nov 25 j 22:01	0° 3		direct	786 Sep 22 j 12:12	13° 3 10'02	
conjunction	778 Dec 18 j 13:30	0° 3 45'40	0°56'02	conjunction	787 Jan 01 j 16:59	15° 3 14'03	-3°-21'-55
minimum elong	778 Dec 18 j 13:32	0° 3 45'40	0°56'02	minimum elong	787 Jan 01 j 16:53	15° 3 14'03	3°21'56
max. Earth dist.	778 Dec 20 j 20:25	0° 3 50'23	34.28106 AU	max. Earth dist.	787 Jan 04 j 10:07	15° 3 19'18	36.23515 AU
retrograde	779 Mar 31 j 21:49	3° 3 00'02		retrograde	787 Apr 15 j 02:36	17° 3 20'11	
min. Earth dist.	779 Jun 18 j 11:10	1° 3 47'07	32.39532 AU	min. Earth dist.	787 Jul 03 j 00:22	16° 3 10'26	34.36450 AU
opposition	779 Jun 20 j 19:17	1° 3 43'40	0°41'20	opposition	787 Jul 05 j 19:32	16° 3 06'29	-3°-49'-37
direct	779 Sep 09 j 08:30	0° 3 27'25		direct	787 Sep 24 j 11:44	14° 3 53'23	
conjunction	779 Dec 20 j 15:51	2° 3 39'28	0°22'05	conjunction	788 Jan 03 j 15:11	16° 3 56'20	-3°-51'-40
minimum elong	779 Dec 20 j 15:52	2° 3 39'28	0°22'04	minimum elong	788 Jan 03 j 15:03	16° 3 56'19	3°51'42
max. Earth dist.	779 Dec 22 j 23:52	2° 3 44'14	34.51278 AU	max. Earth dist.	788 Jan 06 j 09:54	17° 3 01'40	36.48729 AU
retrograde	780 Apr 02 j 01:31	4° 3 52'43		retrograde	788 Apr 16 j 00:12	19° 3 01'30	
min. Earth dist.	780 Jun 19 j 14:06	3° 3 40'14	32.62937 AU	min. Earth dist.	788 Jul 04 j 00:45	17° 3 52'01	34.61782 AU
opposition	780 Jun 22 j 00:28	3° 3 36'41	0°05'28	opposition	788 Jul 06 j 19:52	17° 3 48'06	-4°-20'-42
desc. node	780 Aug 17 j 11:30	2° 3 29'14		direct	788 Sep 25 j 13:27	16° 3 35'20	
direct	780 Sep 10 j 13:46	2° 3 20'49		conjunction	789 Jan 04 j 12:45	18° 3 37'14	-4°-20'-50
conjunction	780 Dec 21 j 17:47	4° 3 31'39	0°-11'-30	minimum elong	789 Jan 04 j 12:37	18° 3 37'13	4°20'51
minimum elong	780 Dec 21 j 17:47	4° 3 31'39	0°11'31	max. Earth dist.	789 Jan 07 j 07:10	18° 3 42'30	36.73948 AU
behind sun begin	780 Dec 21 j 13:08	4° 3 31'16		retrograde	789 Apr 17 j 21:56	20° 3 41'27	
behind sun end	780 Dec 21 j 22:25	4° 3 32'01		min. Earth dist.	789 Jul 05 j 22:46	19° 3 32'20	34.87148 AU
max. Earth dist.	780 Dec 24 j 04:33	4° 3 36'36	34.74928 AU	opposition	789 Jul 08 j 19:40	19° 3 28'20	-4°-51'-6
retrograde	781 Apr 04 j 02:42	6° 3 43'48		direct	789 Sep 27 j 13:31	18° 3 15'53	
min. Earth dist.	781 Jun 21 j 17:39	5° 3 31'42	32.86811 AU	conjunction	790 Jan 06 j 09:43	20° 3 16'45	-4°-49'-22
opposition	781 Jun 24 j 05:08	5° 3 28'05	0°-29'-52	minimum elong	790 Jan 06 j 09:34	20° 3 16'44	4°49'23
direct	781 Sep 12 j 20:50	4° 3 12'38		max. Earth dist.	790 Jan 09 j 05:54	20° 3 22'07	36.99190 AU
conjunction	781 Dec 23 j 18:51	6° 3 22'16	0°-44'-33	retrograde	790 Apr 19 j 16:25	22° 3 20'02	
minimum elong	781 Dec 23 j 18:50	6° 3 22'15	0°44'34	min. Earth dist.	790 Jul 07 j 22:17	21° 3 11'09	35.12571 AU
max. Earth dist.	781 Dec 26 j 06:16	6° 3 27'14	34.99012 AU	opposition	790 Jul 10 j 18:56	21° 3 07'10	-5°-20'-49
retrograde	782 Apr 06 j 05:15	8° 3 33'22		direct	790 Sep 29 j 15:14	19° 3 55'02	
min. Earth dist.	782 Jun 23 j 18:54	7° 3 21'44	33.11117 AU	conjunction	791 Jan 08 j 06:15	21° 3 54'53	-5°-17'-17
opposition	782 Jun 26 j 09:03	7° 3 17'59	-1°-4'-40	minimum elong	791 Jan 08 j 06:06	21° 3 54'52	5°17'18
direct	782 Sep 15 j 00:53	6° 3 02'56		max. Earth dist.	791 Jan 11 j 02:39	22° 3 00'14	37.24510 AU
conjunction	782 Dec 25 j 19:36	8° 3 11'24	-1°-17'-7	retrograde	791 Apr 21 j 11:40	23° 3 57'15	
minimum elong	782 Dec 25 j 19:33	8° 3 11'23	1°17'07	min. Earth dist.	791 Jul 09 j 18:58	22° 3 48'43	35.38097 AU
max. Earth dist.	782 Dec 28 j 09:25	8° 3 16'32	35.23466 AU	opposition	791 Jul 12 j 17:18	22° 3 44'40	-5°-49'-51
retrograde	783 Apr 08 j 03:18	10° 3 21'28		direct	791 Oct 01 j 14:52	21° 3 32'51	
min. Earth dist.	783 Jun 25 j 21:50	9° 3 10'11	33.35778 AU	conjunction	792 Jan 10 j 02:12	23° 3 31'43	-5°-44'-34
opposition	783 Jun 28 j 12:16	9° 3 06'26	-1°-38'-53	minimum elong	792 Jan 10 j 02:02	23° 3 31'42	5°44'35
direct	783 Sep 17 j 05:33	7° 3 51'48		max. Earth dist.	792 Jan 12 j 23:41	23° 3 37'07	37.49937 AU
conjunction	783 Dec 27 j 19:44	9° 3 59'06	-1°-49'-9	retrograde	792 Apr 22 j 08:04	25° 3 33'12	
minimum elong	783 Dec 27 j 19:40	9° 3 59'06	1°49'10	min. Earth dist.	792 Jul 10 j 16:41	24° 3 24'57	35.63774 AU
max. Earth dist.	783 Dec 30 j 10:09	10° 3 04'15	35.48226 AU	opposition	792 Jul 13 j 15:26	24° 3 20'54	-6°-18'-11
retrograde	784 Apr 09 j 02:37	12° 3 08'09		direct	792 Oct 02 j 12:08	23° 3 09'25	
min. Earth dist.	784 Jun 26 j 22:19	10° 3 57'20	33.60715 AU	conjunction	793 Jan 10 j 21:40	25° 3 07'19	-6°-11'-12
opposition	784 Jun 29 j 14:53	10° 3 53'29	-2°-12'-31	minimum elong	793 Jan 10 j 21:30	25° 3 07'18	6°11'14
direct	784 Sep 18 j 08:58	9° 3 39'15		max. Earth dist.	793 Jan 13 j 20:33	25° 3 12'47	37.75517 AU
conjunction	784 Dec 28 j 19:12	11° 3 45'26	-2°-20'-38	retrograde	793 Apr 24 j 03:56	27° 3 07'57	
minimum elong	784 Dec 28 j 19:07	11° 3 45'26	2°20'39	min. Earth dist.	793 Jul 12 j 13:09	26° 3 00'02	35.89590 AU
max. Earth dist.	784 Dec 31 j 11:08	11° 3 50'40	35.73196 AU	opposition	793 Jul 15 j 12:58	25° 3 55'56	-6°-45'-49
retrograde	785 Apr 11 j 02:41	13° 3 53'31		direct	793 Oct 04 j 09:41	24° 3 44'47	
min. Earth dist.	785 Jun 29 j 00:03	12° 3 43'02	33.85861 AU	conjunction	794 Jan 12 j 16:40	26° 3 41'46	-6°-37'-12
opposition	785 Jul 01 j 17:08	12° 3 39'10	-2°-45'-31	minimum elong	794 Jan 12 j 16:29	26° 3 41'46	6°37'12
direct	785 Sep 20 j 09:44	11° 3 25'20		max. Earth dist.	794 Jan 15 j 15:37	26° 3 47'12	38.01225 AU
conjunction	785 Dec 30 j 18:25	13° 3 30'25	-2°-51'-34	retrograde	794 Apr 26 j 02:08	28° 3 41'35	
minimum elong	785 Dec 30 j 18:19	13° 3 30'24	2°51'35	min. Earth dist.	794 Jul 14 j 08:51	27° 3 34'00	36.15548 AU

opposition	794 Jul 17 j 09:57	27°☾29'52	-7°-12'-44	retrograde	802 May 07 j 20:00	10°☾35'07	
direct	794 Oct 06 j 03:56	26°☾19'03		min. Earth dist.	802 Jul 26 j 16:18	9°☾29'37	38.21165 AU
				opposition	802 Jul 29 j 18:10	9°☾25'34	-10°-23'-31
conjunction	795 Jan 14 j 11:23	28°☾15'10	-7°-2'-32	direct	802 Oct 18 j 14:52	8°☾17'10	
minimum elong	795 Jan 14 j 11:12	28°☾15'09	7°02'33				
max. Earth dist.	795 Jan 17 j 12:05	28°☾20'41	38.27040 AU	conjunction	803 Jan 26 j 03:18	10°☾06'46	-10°-2'-36
	795 Mar 26 j 00:39	0°☾		minimum elong	803 Jan 26 j 03:05	10°☾06'45	10°02'38
retrograde	795 Apr 27 j 20:20	0°☾14'10		max. Earth dist.	803 Jan 29 j 05:00	10°☾12'06	40.30480 AU
	795 May 31 j 07:27	30°☾		retrograde	803 May 09 j 09:59	11°☾59'46	
min. Earth dist.	795 Jul 16 j 05:38	29°☾06'52	36.41577 AU	min. Earth dist.	803 Jul 28 j 08:09	10°☾54'32	38.46124 AU
opposition	795 Jul 19 j 06:30	29°☾02'46	-7°-38'-57	opposition	803 Jul 31 j 11:08	10°☾50'26	-10°-44'-24
direct	795 Oct 08 j 00:59	27°☾52'17		direct	803 Oct 20 j 09:41	9°☾42'16	
conjunction	796 Jan 16 j 05:31	29°☾47'33	-7°-27'-14	conjunction	804 Jan 27 j 18:31	11°☾31'08	-10°-22'-21
minimum elong	796 Jan 16 j 05:19	29°☾47'32	7°27'15	minimum elong	804 Jan 27 j 18:18	11°☾31'07	10°22'22
max. Earth dist.	796 Jan 19 j 05:51	29°☾53'01	38.52900 AU	max. Earth dist.	804 Jan 30 j 20:55	11°☾36'28	40.55166 AU
	796 Jan 23 j 02:42	0°☾		retrograde	804 May 10 j 00:17	13°☾23'26	
retrograde	796 Apr 28 j 13:55	1°☾45'46		min. Earth dist.	804 Jul 29 j 01:19	12°☾18'22	38.71000 AU
min. Earth dist.	796 Jul 17 j 00:04	0°☾38'51	36.67634 AU	opposition	804 Aug 01 j 03:53	12°☾14'19	-11°-4'-38
opposition	796 Jul 20 j 02:32	0°☾34'40	-8°-4'-29	direct	804 Oct 21 j 03:19	11°☾06'24	
	796 Aug 15 j 21:56	30°☾					
direct	796 Oct 08 j 22:14	29°☾24'32		conjunction	805 Jan 28 j 09:32	12°☾54'32	-10°-41'-30
	796 Nov 29 j 15:23	0°☾		minimum elong	805 Jan 28 j 09:19	12°☾54'31	10°41'31
				max. Earth dist.	805 Jan 31 j 12:28	12°☾59'53	40.79797 AU
conjunction	797 Jan 16 j 23:24	1°☾18'57	-7°-51'-17	retrograde	805 May 11 j 14:17	14°☾46'10	
minimum elong	797 Jan 16 j 23:12	1°☾18'56	7°51'19	min. Earth dist.	805 Jul 30 j 16:57	13°☾41'22	38.95809 AU
max. Earth dist.	797 Jan 20 j 01:05	1°☾24'29	38.78743 AU	opposition	805 Aug 02 j 20:06	13°☾37'17	-11°-24'-13
retrograde	797 Apr 30 j 06:22	3°☾16'25		direct	805 Oct 22 j 20:33	12°☾29'38	
min. Earth dist.	797 Jul 18 j 20:28	2°☾09'44	36.93656 AU				
opposition	797 Jul 21 j 22:19	2°☾05'36	-8°-29'-19	conjunction	806 Jan 30 j 00:04	14°☾17'03	-11°00'-2
direct	797 Oct 10 j 19:34	0°☾55'49		minimum elong	806 Jan 29 j 23:52	14°☾17'03	11°00'03
				max. Earth dist.	806 Feb 02 j 02:34	14°☾22'20	41.04362 AU
conjunction	798 Jan 18 j 16:56	2°☾49'25	-8°-14'-42	806 Feb 24 j 22:11	15°☾		
minimum elong	798 Jan 18 j 16:44	2°☾49'24	8°14'43	retrograde	806 May 13 j 07:24	16°☾08'03	
max. Earth dist.	798 Jan 21 j 18:34	2°☾54'54	39.04516 AU	min. Earth dist.	806 Aug 01 j 08:30	15°☾03'30	39.20561 AU
retrograde	798 May 01 j 22:58	4°☾46'07		opposition	806 Aug 04 j 12:05	14°☾59'25	-11°-43'-9
min. Earth dist.	798 Jul 20 j 14:47	3°☾39'46	37.19558 AU	806 Aug 04 j 01:20	15°☾		
opposition	798 Jul 23 j 17:30	3°☾35'36	-8°-53'-28	direct	806 Oct 24 j 10:21	13°☾52'02	
direct	798 Oct 12 j 15:56	2°☾26'08		807 Jan 08 j 03:38	15°☾		
conjunction	799 Jan 20 j 10:10	4°☾18'55	-8°-37'-30	conjunction	807 Jan 31 j 14:32	15°☾38'48	-11°-17'-58
minimum elong	799 Jan 20 j 09:57	4°☾18'54	8°37'32	minimum elong	807 Jan 31 j 14:19	15°☾38'47	11°18'00
max. Earth dist.	799 Jan 23 j 11:38	4°☾24'21	39.30122 AU	max. Earth dist.	807 Feb 03 j 18:14	15°☾44'08	41.28852 AU
retrograde	799 May 03 j 17:17	6°☾14'53		retrograde	807 May 14 j 22:27	17°☾29'11	
min. Earth dist.	799 Jul 22 j 09:52	5°☾08'46	37.45289 AU	min. Earth dist.	807 Aug 03 j 00:37	16°☾24'49	39.45205 AU
opposition	799 Jul 25 j 12:16	5°☾04'38	-9°-16'-58	opposition	807 Aug 06 j 03:32	16°☾20'48	-12°-1'-28
direct	799 Oct 14 j 09:42	3°☾55'28		direct	807 Oct 26 j 01:11	15°☾13'42	
conjunction	800 Jan 22 j 03:09	5°☾47'26	-8°-59'-41	conjunction	808 Feb 02 j 04:32	16°☾59'50	-11°-35'-20
minimum elong	800 Jan 22 j 02:57	5°☾47'25	8°59'41	minimum elong	808 Feb 02 j 04:20	16°☾59'49	11°35'20
max. Earth dist.	800 Jan 25 j 05:20	5°☾52'54	39.55532 AU	max. Earth dist.	808 Feb 05 j 07:22	17°☾05'04	41.53229 AU
retrograde	800 May 04 j 10:55	7°☾42'40		retrograde	808 May 15 j 13:47	18°☾49'36	
min. Earth dist.	800 Jul 23 j 04:32	6°☾36'46	37.70787 AU	min. Earth dist.	808 Aug 03 j 14:48	17°☾45'33	39.69717 AU
opposition	800 Jul 26 j 06:40	6°☾32'40	-9°-39'-48	opposition	808 Aug 06 j 18:47	17°☾41'30	-12°-19'-9
direct	800 Oct 15 j 03:39	5°☾23'46		direct	808 Oct 26 j 14:57	16°☾34'40	
conjunction	801 Jan 22 j 19:28	7°☾14'56	-9°-21'-16	conjunction	809 Feb 02 j 18:13	18°☾20'12	-11°-52'-6
minimum elong	801 Jan 22 j 19:16	7°☾14'56	9°21'17	minimum elong	809 Feb 02 j 18:00	18°☾20'11	11°52'07
max. Earth dist.	801 Jan 25 j 20:43	7°☾20'18	39.80707 AU	max. Earth dist.	809 Feb 05 j 21:49	18°☾25'28	41.77433 AU
retrograde	801 May 06 j 05:38	9°☾09'25		retrograde	809 May 17 j 01:37	20°☾09'24	
min. Earth dist.	801 Jul 24 j 21:48	8°☾03'46	37.96072 AU	min. Earth dist.	809 Aug 05 j 07:07	19°☾05'32	39.94030 AU
opposition	801 Jul 28 j 00:42	7°☾59'39	-10°-1'-59	opposition	809 Aug 08 j 09:51	19°☾01'33	-12°-36'-14
direct	801 Oct 16 j 19:42	6°☾51'00		direct	809 Oct 28 j 07:56	17°☾55'01	
conjunction	802 Jan 24 j 11:38	8°☾41'23	-9°-42'-14	conjunction	810 Feb 04 j 07:53	19°☾39'56	-12°-8'-20
minimum elong	802 Jan 24 j 11:25	8°☾41'22	9°42'14	minimum elong	810 Feb 04 j 07:42	19°☾39'55	12°08'20
max. Earth dist.	802 Jan 27 j 13:57	8°☾46'47	40.05672 AU	max. Earth dist.	810 Feb 07 j 11:01	19°☾45'09	42.01417 AU

retrograde	810 May 18 j 13:41	21° \approx 28'35		retrograde	818 May 28 j 18:21	1° \times 37'37	
min. Earth dist.	810 Aug 06 j 21:18	20° \approx 24'59	40.18073 AU	min. Earth dist.	818 Aug 17 j 10:29	0° \times 35'19	41.98420 AU
opposition	810 Aug 10 j 00:18	20° \approx 20'59	-12°-52'-45	opposition	818 Aug 20 j 10:14	0° \times 31'36	-14°-45'-19
direct	810 Oct 30 j 00:07	19° \approx 14'44			818 Sep 15 j 23:12	30° \approx	
				direct	818 Nov 09 j 10:03	29° \approx 27'01	
conjunction	811 Feb 05 j 21:13	20° \approx 59'04	-12°-24'-1		818 Dec 31 j 21:51	0° \times	
minimum elong	811 Feb 05 j 21:01	20° \approx 59'03	12°24'02				
max. Earth dist.	811 Feb 08 j 23:38	21° \approx 04'12	42.25089 AU	conjunction	819 Feb 15 j 22:31	1° \times 06'51	-14°-11'-5
retrograde	811 May 20 j 04:31	22° \approx 47'10		minimum elong	819 Feb 15 j 22:22	1° \times 06'51	14°11'06
min. Earth dist.	811 Aug 08 j 12:29	21° \approx 43'45	40.41788 AU	max. Earth dist.	819 Feb 18 j 23:05	1° \times 11'39	44.02759 AU
opposition	811 Aug 11 j 14:43	21° \approx 39'49	-13°-8'-42	retrograde	819 May 30 j 06:11	2° \times 50'39	
direct	811 Oct 31 j 13:35	20° \approx 33'49		min. Earth dist.	819 Aug 18 j 23:30	1° \times 48'29	42.19849 AU
				opposition	819 Aug 21 j 22:09	1° \times 44'50	-14°-57'00
conjunction	812 Feb 07 j 10:23	22° \approx 17'33	-12°-39'-10	direct	819 Nov 10 j 21:12	0° \times 40'28	
minimum elong	812 Feb 07 j 10:12	22° \approx 17'33	12°39'12				
max. Earth dist.	812 Feb 10 j 13:05	22° \approx 22'41	42.48408 AU	conjunction	820 Feb 17 j 09:24	2° \times 19'49	-14°-22'-13
retrograde	812 May 20 j 17:49	24° \approx 05'07		minimum elong	820 Feb 17 j 09:15	2° \times 19'48	14°22'14
min. Earth dist.	812 Aug 09 j 03:21	23° \approx 01'51	40.65108 AU	max. Earth dist.	820 Feb 20 j 08:52	2° \times 24'31	44.23915 AU
opposition	812 Aug 12 j 04:46	22° \approx 57'59	-13°-24'-6	retrograde	820 May 30 j 17:51	4° \times 03'08	
direct	812 Nov 01 j 03:58	21° \approx 52'13		min. Earth dist.	820 Aug 19 j 10:32	3° \times 01'10	42.41047 AU
				opposition	820 Aug 22 j 09:48	2° \times 57'31	-15°-8'-11
conjunction	813 Feb 07 j 23:13	23° \approx 35'22	-12°-53'-49	direct	820 Nov 11 j 07:40	1° \times 53'21	
minimum elong	813 Feb 07 j 23:02	23° \approx 35'22	12°53'50				
max. Earth dist.	813 Feb 11 j 00:15	23° \approx 40'21	42.71340 AU	conjunction	821 Feb 17 j 20:15	3° \times 32'14	-14°-32'-51
retrograde	813 May 22 j 09:27	25° \approx 22'21		minimum elong	821 Feb 17 j 20:07	3° \times 32'13	14°32'52
min. Earth dist.	813 Aug 10 j 16:57	24° \approx 19'18	40.88052 AU	max. Earth dist.	821 Feb 20 j 19:45	3° \times 36'55	44.44814 AU
opposition	813 Aug 13 j 18:31	24° \approx 15'26	-13°-38'-58	retrograde	821 Jun 01 j 03:49	5° \times 15'06	
direct	813 Nov 02 j 14:55	23° \approx 09'53		min. Earth dist.	821 Aug 20 j 23:31	4° \times 13'16	42.61970 AU
				opposition	821 Aug 23 j 21:18	4° \times 09'41	-15°-18'-52
conjunction	814 Feb 09 j 11:50	24° \approx 52'28	-13°-7'-58	direct	821 Nov 12 j 19:34	3° \times 05'44	
minimum elong	814 Feb 09 j 11:39	24° \approx 52'27	13°08'00				
max. Earth dist.	814 Feb 12 j 13:26	24° \approx 57'27	42.93897 AU	conjunction	822 Feb 19 j 07:01	4° \times 44'09	-14°-43'-3
retrograde	814 May 23 j 22:17	26° \approx 38'53		minimum elong	822 Feb 19 j 06:53	4° \times 44'08	14°43'04
min. Earth dist.	814 Aug 12 j 08:00	25° \approx 35'54	41.10630 AU	max. Earth dist.	822 Feb 22 j 06:14	4° \times 48'48	44.65419 AU
opposition	814 Aug 15 j 07:59	25° \approx 32'09	-13°-53'-19	retrograde	822 Jun 02 j 12:17	6° \times 26'35	
direct	814 Nov 04 j 04:08	24° \approx 26'47		min. Earth dist.	822 Aug 22 j 10:53	5° \times 24'55	42.82541 AU
				opposition	822 Aug 25 j 08:26	5° \times 21'22	-15°-29'-5
conjunction	815 Feb 11 j 00:08	26° \approx 08'47	-13°-21'-37	direct	822 Nov 14 j 09:11	4° \times 17'37	
minimum elong	815 Feb 10 j 23:57	26° \approx 08'46	13°21'37				
max. Earth dist.	815 Feb 14 j 00:45	26° \approx 13'41	43.16129 AU	conjunction	823 Feb 20 j 17:32	5° \times 55'35	-14°-52'-47
retrograde	815 May 25 j 07:41	27° \approx 54'38		minimum elong	823 Feb 20 j 17:25	5° \times 55'35	14°52'48
min. Earth dist.	815 Aug 13 j 20:14	26° \approx 51'52	41.32906 AU	max. Earth dist.	823 Feb 23 j 15:11	6° \times 00'07	44.85638 AU
opposition	815 Aug 16 j 20:51	26° \approx 48'05	-14°-7'-7	retrograde	823 Jun 04 j 00:34	7° \times 37'35	
direct	815 Nov 05 j 19:01	25° \approx 42'54		min. Earth dist.	823 Aug 23 j 22:39	6° \times 36'04	43.02714 AU
				opposition	823 Aug 26 j 19:24	6° \times 32'34	-15°-38'-50
conjunction	816 Feb 12 j 12:03	27° \approx 24'20	-13°-34'-45	direct	823 Nov 15 j 19:21	5° \times 29'00	
minimum elong	816 Feb 12 j 11:53	27° \approx 24'20	13°34'46				
max. Earth dist.	816 Feb 15 j 12:29	27° \approx 29'12	43.38086 AU	conjunction	824 Feb 22 j 04:02	7° \times 06'32	-15°-2'-7
retrograde	816 May 25 j 17:54	29° \approx 09'40		minimum elong	824 Feb 22 j 03:55	7° \times 06'31	15°02'08
min. Earth dist.	816 Aug 14 j 10:03	28° \approx 07'00	41.54948 AU	max. Earth dist.	824 Feb 25 j 01:51	7° \times 11'03	45.05436 AU
opposition	816 Aug 17 j 09:43	28° \approx 03'16	-14°-20'-23	retrograde	824 Jun 04 j 11:38	8° \times 48'06	
direct	816 Nov 06 j 09:52	26° \approx 58'17		min. Earth dist.	824 Aug 24 j 11:03	7° \times 46'40	43.22426 AU
				opposition	824 Aug 27 j 06:14	7° \times 43'15	-15°-48'-10
conjunction	817 Feb 12 j 23:44	28° \approx 39'10	-13°-47'-22	direct	824 Nov 16 j 05:52	6° \times 39'52	
minimum elong	817 Feb 12 j 23:35	28° \approx 39'10	13°47'22				
max. Earth dist.	817 Feb 16 j 00:34	28° \approx 44'03	43.59839 AU	conjunction	825 Feb 22 j 14:09	8° \times 16'57	-15°-11'-1
	817 Apr 11 j 15:44	0° \times		minimum elong	825 Feb 22 j 14:03	8° \times 16'57	15°11'02
retrograde	817 May 27 j 04:49	0° \times 23'58		max. Earth dist.	825 Feb 25 j 10:11	8° \times 21'20	45.24779 AU
	817 Jul 13 j 02:21	30° \approx		retrograde	825 Jun 05 j 22:51	9° \times 58'05	
min. Earth dist.	817 Aug 15 j 22:33	29° \approx 21'29	41.76775 AU	min. Earth dist.	825 Aug 25 j 21:33	8° \times 56'48	43.41677 AU
opposition	817 Aug 18 j 22:09	29° \approx 17'46	-14°-33'-7	opposition	825 Aug 28 j 16:49	8° \times 53'24	-15°-57'-5
direct	817 Nov 07 j 23:44	28° \approx 12'59		direct	825 Nov 17 j 14:56	7° \times 50'10	
conjunction	818 Feb 14 j 11:11	29° \approx 53'19	-13°-59'-29	conjunction	826 Feb 24 j 00:11	9° \times 26'49	-15°-19'-32
minimum elong	818 Feb 14 j 11:01	29° \approx 53'19	13°59'30	minimum elong	826 Feb 24 j 00:04	9° \times 26'49	15°19'32
max. Earth dist.	818 Feb 17 j 10:58	29° \approx 58'06	43.81394 AU	max. Earth dist.	826 Feb 26 j 19:54	9° \times 31'10	45.43664 AU
	818 Feb 18 j 15:33	0° \times		retrograde	826 Jun 07 j 07:04	11° \times 07'30	

min. Earth dist.	826 Aug 27 j 09:41	10° ✕ 06'16	43.60491 AU	conjunction	835 Mar 06 j 09:15	19° ✕ 33'38	-16°-17'-37
opposition	826 Aug 30 j 03:04	10° ✕ 02'58	-16°-5'-34	minimum elong	835 Mar 06 j 09:12	19° ✕ 33'38	16°17'39
direct	826 Nov 19 j 02:33	8° ✕ 59'53		max. Earth dist.	835 Mar 08 j 23:08	19° ✕ 37'28	47.00016 AU
				retrograde	835 Jun 17 j 15:54	21° ✕ 11'00	
conjunction	827 Feb 25 j 10:00	10° ✕ 36'06	-15°-27'-38	min. Earth dist.	835 Sep 07 j 01:31	20° ✕ 10'53	45.16415 AU
minimum elong	827 Feb 25 j 09:56	10° ✕ 36'06	15°27'39	opposition	835 Sep 09 j 13:46	20° ✕ 07'54	-17°-2'-47
max. Earth dist.	827 Feb 28 j 05:01	10° ✕ 40'23	45.62155 AU	direct	835 Nov 29 j 14:34	19° ✕ 06'18	
retrograde	827 Jun 08 j 14:02	12° ✕ 16'21					
min. Earth dist.	827 Aug 28 j 19:39	11° ✕ 15'15	43.78924 AU	conjunction	836 Mar 06 j 17:34	20° ✕ 39'15	-16°-22'-10
opposition	827 Aug 31 j 13:01	11° ✕ 11'57	-16°-13'-38	minimum elong	836 Mar 06 j 17:33	20° ✕ 39'15	16°22'10
direct	827 Nov 20 j 14:42	10° ✕ 09'02		max. Earth dist.	836 Mar 09 j 07:15	20° ✕ 43'03	47.15746 AU
				retrograde	836 Jun 18 j 00:58	22° ✕ 16'17	
conjunction	828 Feb 26 j 19:19	11° ✕ 44'49	-15°-35'-19	min. Earth dist.	836 Sep 07 j 11:58	21° ✕ 16'13	45.31981 AU
minimum elong	828 Feb 26 j 19:13	11° ✕ 44'49	15°35'20	opposition	836 Sep 09 j 22:15	21° ✕ 13'21	-17°-7'-11
max. Earth dist.	828 Feb 29 j 13:16	11° ✕ 49'01	45.80297 AU	direct	836 Nov 29 j 21:48	20° ✕ 11'53	
retrograde	828 Jun 09 j 00:05	13° ✕ 24'40					
min. Earth dist.	828 Aug 29 j 06:19	12° ✕ 23'39	43.97056 AU	conjunction	837 Mar 08 j 01:55	21° ✕ 44'31	-16°-26'-22
opposition	828 Aug 31 j 22:56	12° ✕ 20'24	-16°-21'-15	minimum elong	837 Mar 08 j 01:53	21° ✕ 44'30	16°26'23
direct	828 Nov 21 j 00:46	11° ✕ 17'38		max. Earth dist.	837 Mar 10 j 14:03	21° ✕ 48'12	47.30997 AU
				retrograde	837 Jun 19 j 08:22	23° ✕ 21'11	
conjunction	829 Feb 27 j 04:43	12° ✕ 53'00	-15°-42'-35	min. Earth dist.	837 Sep 08 j 20:18	22° ✕ 21'14	45.47046 AU
minimum elong	829 Feb 27 j 04:39	12° ✕ 53'00	15°42'36	opposition	837 Sep 11 j 06:20	22° ✕ 18'23	-17°-11'-15
max. Earth dist.	829 Mar 01 j 23:14	12° ✕ 57'13	45.98171 AU	direct	837 Dec 01 j 05:31	21° ✕ 17'01	
retrograde	829 Jun 10 j 09:34	14° ✕ 32'27					
min. Earth dist.	829 Aug 30 j 16:38	13° ✕ 31'33	44.14917 AU	conjunction	838 Mar 09 j 10:02	22° ✕ 49'20	-16°-30'-14
opposition	829 Sep 02 j 08:26	13° ✕ 28'20	-16°-28'-26	minimum elong	838 Mar 09 j 10:02	22° ✕ 49'20	16°30'15
direct	829 Nov 22 j 10:52	12° ✕ 25'43		max. Earth dist.	838 Mar 11 j 20:48	22° ✕ 52'56	47.45746 AU
				retrograde	838 Jun 20 j 15:07	24° ✕ 25'40	
conjunction	830 Feb 28 j 13:49	14° ✕ 00'42	-15°-49'-25	min. Earth dist.	838 Sep 10 j 06:12	23° ✕ 25'43	45.61630 AU
minimum elong	830 Feb 28 j 13:44	14° ✕ 00'42	15°49'26	opposition	838 Sep 12 j 14:27	23° ✕ 22'58	-17°-14'-59
max. Earth dist.	830 Mar 03 j 06:47	14° ✕ 04'48	46.15804 AU	direct	838 Dec 02 j 14:56	22° ✕ 21'43	
retrograde	830 Jun 11 j 21:39	15° ✕ 39'46					
min. Earth dist.	830 Sep 01 j 01:38	14° ✕ 39'01	44.32546 AU	conjunction	839 Mar 10 j 18:02	23° ✕ 53'41	-16°-33'-47
opposition	830 Sep 03 j 17:47	14° ✕ 35'49	-16°-35'-11	minimum elong	839 Mar 10 j 18:00	23° ✕ 53'40	16°33'48
direct	830 Nov 23 j 16:56	13° ✕ 33'22		max. Earth dist.	839 Mar 13 j 04:36	23° ✕ 57'15	47.60045 AU
				retrograde	839 Jun 21 j 20:04	25° ✕ 29'41	
conjunction	831 Mar 01 j 22:47	15° ✕ 07'59	-15°-55'-51	min. Earth dist.	839 Sep 11 j 14:40	24° ✕ 29'48	45.75774 AU
minimum elong	831 Mar 01 j 22:43	15° ✕ 07'59	15°55'53	opposition	839 Sep 13 j 22:08	24° ✕ 27'04	-17°-18'-22
max. Earth dist.	831 Mar 04 j 16:05	15° ✕ 12'05	46.33198 AU	direct	839 Dec 04 j 01:56	23° ✕ 25'55	
retrograde	831 Jun 13 j 07:02	16° ✕ 46'41					
min. Earth dist.	831 Sep 02 j 12:22	15° ✕ 46'01	44.49930 AU	conjunction	840 Mar 11 j 01:42	24° ✕ 57'33	-16°-37'00
opposition	831 Sep 05 j 02:56	15° ✕ 42'54	-16°-41'-31	minimum elong	840 Mar 11 j 01:43	24° ✕ 57'33	16°37'01
direct	831 Nov 25 j 00:51	14° ✕ 40'37		max. Earth dist.	840 Mar 13 j 10:25	25° ✕ 01'00	47.73951 AU
				retrograde	840 Jun 22 j 05:54	26° ✕ 33'13	
conjunction	832 Mar 02 j 07:36	16° ✕ 14'53	-16°-1'-52	min. Earth dist.	840 Sep 11 j 22:41	25° ✕ 33'25	45.89567 AU
minimum elong	832 Mar 02 j 07:33	16° ✕ 14'53	16°01'53	opposition	840 Sep 14 j 05:48	25° ✕ 30'43	-17°-21'-24
max. Earth dist.	832 Mar 05 j 00:15	16° ✕ 18'56	46.50366 AU	direct	840 Dec 04 j 08:25	24° ✕ 29'40	
retrograde	832 Jun 13 j 12:42	17° ✕ 53'13					
min. Earth dist.	832 Sep 02 j 20:53	16° ✕ 52'45	44.67058 AU	conjunction	841 Mar 12 j 09:18	26° ✕ 00'59	-16°-39'-52
opposition	832 Sep 05 j 11:53	16° ✕ 49'37	-16°-47'-25	minimum elong	841 Mar 12 j 09:17	26° ✕ 00'59	16°39'53
direct	832 Nov 25 j 11:58	15° ✕ 47'30		max. Earth dist.	841 Mar 14 j 18:15	26° ✕ 04'26	47.87523 AU
				retrograde	841 Jun 23 j 14:42	27° ✕ 36'20	
conjunction	833 Mar 03 j 16:07	17° ✕ 21'26	-16°-7'-30	min. Earth dist.	841 Sep 13 j 07:51	26° ✕ 36'32	46.03034 AU
minimum elong	833 Mar 03 j 16:03	17° ✕ 21'26	16°07'31	opposition	841 Sep 15 j 13:20	26° ✕ 33'56	-17°-24'-5
max. Earth dist.	833 Mar 06 j 07:47	17° ✕ 25'25	46.67256 AU	direct	841 Dec 05 j 15:12	25° ✕ 32'59	
retrograde	833 Jun 14 j 20:31	18° ✕ 59'27					
min. Earth dist.	833 Sep 04 j 07:03	17° ✕ 59'05	44.83894 AU	conjunction	842 Mar 13 j 16:50	27° ✕ 04'00	-16°-42'-23
opposition	833 Sep 06 j 20:49	17° ✕ 56'01	-16°-52'-55	minimum elong	842 Mar 13 j 16:51	27° ✕ 04'00	16°42'24
direct	833 Nov 26 j 22:18	16° ✕ 54'05		max. Earth dist.	842 Mar 16 j 00:41	27° ✕ 07'23	48.00807 AU
				retrograde	842 Jun 24 j 21:07	28° ✕ 39'02	
conjunction	834 Mar 05 j 00:49	18° ✕ 27'41	-16°-12'-44	min. Earth dist.	842 Sep 14 j 14:39	27° ✕ 39'23	46.16215 AU
minimum elong	834 Mar 05 j 00:47	18° ✕ 27'41	16°12'45	opposition	842 Sep 16 j 20:27	27° ✕ 36'45	-17°-26'-24
max. Earth dist.	834 Mar 07 j 16:38	18° ✕ 31'40	46.83831 AU	direct	842 Dec 06 j 21:47	26° ✕ 35'55	
retrograde	834 Jun 16 j 04:48	20° ✕ 05'23					
min. Earth dist.	834 Sep 05 j 16:35	19° ✕ 05'08	45.00361 AU	conjunction	843 Mar 15 j 00:08	28° ✕ 06'40	-16°-44'-34
opposition	834 Sep 08 j 05:16	19° ✕ 02'07	-16°-58'-2	minimum elong	843 Mar 15 j 00:09	28° ✕ 06'40	16°44'34
direct	834 Nov 28 j 08:08	18° ✕ 00'21		max. Earth dist.	843 Mar 17 j 07:03	28° ✕ 09'59	48.13806 AU

retrograde	843 Jun 26 j 02:58	29° ✕ 41'26		minimum elong	851 Mar 23 j 08:11	6° ∇ 20'14	16°50'46
min. Earth dist.	843 Sep 15 j 23:21	28° ✕ 41'49	46.29121 AU	max. Earth dist.	851 Mar 25 j 07:09	6° ∇ 23'00	49.04327 AU
opposition	843 Sep 18 j 03:44	28° ✕ 39'16	-17°-28'-22	retrograde	851 Jul 04 j 11:16	7° ∇ 53'05	
direct	843 Dec 08 j 05:59	27° ✕ 38'34		min. Earth dist.	851 Sep 24 j 13:40	6° ∇ 53'59	47.17961 AU
				opposition	851 Sep 26 j 08:56	6° ∇ 51'54	-17°-32'-45
conjunction	844 Mar 15 j 07:18	29° ✕ 09'03	-16°-46'-24	direct	851 Dec 16 j 12:48	5° ∇ 52'06	
minimum elong	844 Mar 15 j 07:20	29° ✕ 09'03	16°46'26				
max. Earth dist.	844 Mar 17 j 14:22	29° ✕ 12'22	48.26538 AU	conjunction	852 Mar 23 j 14:28	7° ∇ 20'48	-16°-50'-15
	844 Apr 21 j 14:27	0° ∇		minimum elong	852 Mar 23 j 14:32	7° ∇ 20'48	16°50'16
retrograde	844 Jun 26 j 08:09	0° ∇ 43'33		max. Earth dist.	852 Mar 25 j 11:56	7° ∇ 23'28	49.13525 AU
	844 Sep 02 j 08:27	30° R ✕		retrograde	852 Jul 04 j 18:32	8° ∇ 53'25	
min. Earth dist.	844 Sep 16 j 06:52	29° ✕ 44'03	46.41726 AU	min. Earth dist.	852 Sep 24 j 19:42	7° ∇ 54'22	47.26950 AU
opposition	844 Sep 18 j 10:47	29° ✕ 41'32	-17°-29'-59	opposition	852 Sep 26 j 14:59	7° ∇ 52'18	-17°-32'00
direct	844 Dec 08 j 15:22	28° ✕ 40'58		direct	852 Dec 16 j 16:54	6° ∇ 52'33	
	845 Mar 08 j 18:58	0° ∇					
conjunction	845 Mar 16 j 14:24	0° ∇ 11'12	-16°-47'-54	conjunction	853 Mar 24 j 20:54	8° ∇ 21'02	-16°-49'-29
minimum elong	845 Mar 16 j 14:26	0° ∇ 11'12	16°47'55	minimum elong	853 Mar 24 j 20:59	8° ∇ 21'02	16°49'30
max. Earth dist.	845 Mar 18 j 19:42	0° ∇ 14'24	48.38967 AU	max. Earth dist.	853 Mar 26 j 17:23	8° ∇ 23'39	49.22337 AU
retrograde	845 Jun 27 j 17:13	1° ∇ 45'28		retrograde	853 Jul 05 j 23:25	9° ∇ 53'25	
min. Earth dist.	845 Sep 17 j 14:22	0° ∇ 46'05	46.54016 AU	min. Earth dist.	853 Sep 26 j 03:29	8° ∇ 54'21	47.35584 AU
opposition	845 Sep 19 j 17:41	0° ∇ 43'35	-17°-31'-16	opposition	853 Sep 27 j 20:56	8° ∇ 52'22	-17°-30'-58
	845 Oct 31 j 11:28	30° R ✕		direct	853 Dec 17 j 23:21	7° ∇ 52'41	
direct	845 Dec 09 j 21:04	29° ✕ 43'10		conjunction	854 Mar 26 j 03:21	9° ∇ 20'58	-16°-48'-24
	846 Jan 17 j 12:46	0° ∇		minimum elong	854 Mar 26 j 03:25	9° ∇ 20'58	16°48'25
				max. Earth dist.	854 Mar 27 j 23:36	9° ∇ 23'34	49.30832 AU
conjunction	846 Mar 17 j 21:35	1° ∇ 13'11	-16°-49'-6	retrograde	854 Jul 07 j 01:48	10° ∇ 53'07	
minimum elong	846 Mar 17 j 21:36	1° ∇ 13'11	16°49'08	min. Earth dist.	854 Sep 27 j 09:32	9° ∇ 54'06	47.43896 AU
max. Earth dist.	846 Mar 20 j 02:53	1° ∇ 16'22	48.51046 AU	opposition	854 Sep 29 j 02:42	9° ∇ 52'08	-17°-29'-37
retrograde	846 Jun 29 j 01:37	2° ∇ 47'13		direct	854 Dec 19 j 07:58	8° ∇ 52'31	
min. Earth dist.	846 Sep 18 j 23:03	1° ∇ 47'53	46.65912 AU				
opposition	846 Sep 21 j 00:33	1° ∇ 45'29	-17°-32'-14	conjunction	855 Mar 27 j 09:25	10° ∇ 20'37	-16°-47'-2
direct	846 Dec 11 j 02:56	0° ∇ 45'12		minimum elong	855 Mar 27 j 09:31	10° ∇ 20'37	16°47'04
				max. Earth dist.	855 Mar 29 j 03:55	10° ∇ 23'06	49.39018 AU
conjunction	847 Mar 19 j 04:35	2° ∇ 15'01	-16°-49'-59	retrograde	855 Jul 08 j 08:15	11° ∇ 52'33	
minimum elong	847 Mar 19 j 04:38	2° ∇ 15'01	16°49'59	min. Earth dist.	855 Sep 28 j 16:03	10° ∇ 53'36	47.51918 AU
max. Earth dist.	847 Mar 21 j 08:13	2° ∇ 18'05	48.62716 AU	opposition	855 Sep 30 j 08:28	10° ∇ 51'40	-17°-27'-58
retrograde	847 Jun 30 j 09:49	3° ∇ 48'48		direct	855 Dec 20 j 14:05	9° ∇ 52'07	
min. Earth dist.	847 Sep 20 j 05:53	2° ∇ 49'36	46.77360 AU				
opposition	847 Sep 22 j 07:10	2° ∇ 47'13	-17°-32'-53	conjunction	856 Mar 27 j 15:37	11° ∇ 20'01	-16°-45'-22
direct	847 Dec 12 j 07:25	1° ∇ 47'04		minimum elong	856 Mar 27 j 15:42	11° ∇ 20'02	16°45'23
				max. Earth dist.	856 Mar 29 j 10:15	11° ∇ 22'30	49.46921 AU
conjunction	848 Mar 19 j 11:34	3° ∇ 16'40	-16°-50'-35	retrograde	856 Jul 08 j 14:39	12° ∇ 51'47	
minimum elong	848 Mar 19 j 11:36	3° ∇ 16'40	16°50'36	min. Earth dist.	856 Sep 28 j 23:02	11° ∇ 52'50	47.59639 AU
max. Earth dist.	848 Mar 21 j 13:54	3° ∇ 19'40	48.73899 AU	opposition	856 Sep 30 j 14:09	11° ∇ 50'58	-17°-26'-1
retrograde	848 Jun 30 j 16:06	4° ∇ 50'15		direct	856 Dec 20 j 20:45	10° ∇ 51'30	
min. Earth dist.	848 Sep 20 j 14:51	3° ∇ 51'03	46.88303 AU				
opposition	848 Sep 22 j 13:55	3° ∇ 48'47	-17°-33'-16	conjunction	857 Mar 28 j 21:39	12° ∇ 19'14	-16°-43'-25
direct	848 Dec 12 j 14:01	2° ∇ 48'44		minimum elong	857 Mar 28 j 21:45	12° ∇ 19'15	16°43'27
				max. Earth dist.	857 Mar 30 j 14:50	12° ∇ 21'38	49.54533 AU
conjunction	849 Mar 20 j 18:33	4° ∇ 18'08	-16°-50'-54	retrograde	857 Jul 09 j 23:17	13° ∇ 50'48	
minimum elong	849 Mar 20 j 18:37	4° ∇ 18'08	16°50'55	min. Earth dist.	857 Sep 30 j 04:38	12° ∇ 51'58	47.67043 AU
max. Earth dist.	849 Mar 22 j 20:12	4° ∇ 21'05	48.84570 AU	opposition	857 Oct 01 j 19:40	12° ∇ 50'06	-17°-23'-46
retrograde	849 Jul 01 j 19:33	5° ∇ 51'28		direct	857 Dec 21 j 23:31	11° ∇ 50'43	
min. Earth dist.	849 Sep 21 j 22:06	4° ∇ 52'21	46.98695 AU				
opposition	849 Sep 23 j 20:24	4° ∇ 50'07	-17°-33'-22	conjunction	858 Mar 30 j 03:44	13° ∇ 18'19	-16°-41'-11
direct	849 Dec 14 j 00:05	3° ∇ 50'10		minimum elong	858 Mar 30 j 03:50	13° ∇ 18'19	16°41'11
				max. Earth dist.	858 Mar 31 j 19:55	13° ∇ 20'38	49.61791 AU
conjunction	850 Mar 22 j 01:22	5° ∇ 19'20	-16°-50'-58	retrograde	858 Jul 11 j 06:15	14° ∇ 49'42	
minimum elong	850 Mar 22 j 01:24	5° ∇ 19'20	16°50'59	min. Earth dist.	858 Oct 01 j 12:10	13° ∇ 50'51	47.74075 AU
max. Earth dist.	850 Mar 24 j 00:32	5° ∇ 22'07	48.94698 AU	opposition	858 Oct 03 j 01:07	13° ∇ 49'06	-17°-21'-14
retrograde	850 Jul 03 j 03:16	6° ∇ 52'26		direct	858 Dec 23 j 03:06	12° ∇ 49'48	
min. Earth dist.	850 Sep 23 j 05:37	5° ∇ 53'20	47.08570 AU				
opposition	850 Sep 25 j 02:41	5° ∇ 51'10	-17°-33'-12	conjunction	859 Mar 31 j 09:50	14° ∇ 17'15	-16°-38'-41
direct	850 Dec 15 j 06:54	4° ∇ 51'17		minimum elong	859 Mar 31 j 09:57	14° ∇ 17'15	16°38'42
				max. Earth dist.	859 Apr 02 j 01:28	14° ∇ 19'32	49.68662 AU
conjunction	851 Mar 23 j 08:06	6° ∇ 20'14	-16°-50'-45	retrograde	859 Jul 12 j 08:58	15° ∇ 48'28	

min. Earth dist.	859 Oct 02 j 18:04	14° Υ 49'41	47.80668 AU	conjunction	868 Apr 08 j 13:17	22° Υ 59'52	-16°-5'-4
opposition	859 Oct 04 j 06:29	14° Υ 47'57	-17°-18'-26	minimum elong	868 Apr 08 j 13:26	22° Υ 59'52	16°05'05
direct	859 Dec 24 j 11:07	13° Υ 48'44		max. Earth dist.	868 Apr 09 j 18:06	23° Υ 01'30	50.09928 AU
conjunction	860 Mar 31 j 15:40	15° Υ 16'03	-16°-35'-56	retrograde	868 Jul 20 j 12:57	24° Υ 29'47	
minimum elong	860 Mar 31 j 15:48	15° Υ 16'03	16°35'56	min. Earth dist.	868 Oct 11 j 01:44	23° Υ 31'01	48.19533 AU
max. Earth dist.	860 Apr 02 j 05:01	15° Υ 18'12	49.75064 AU	opposition	868 Oct 12 j 03:46	23° Υ 29'48	-16°-41'-57
retrograde	860 Jul 12 j 14:15	16° Υ 47'07		direct	869 Jan 01 j 07:35	22° Υ 30'59	
min. Earth dist.	860 Oct 03 j 00:58	15° Υ 48'21	47.86774 AU	conjunction	869 Apr 09 j 18:50	23° Υ 57'15	-16°00'-2
opposition	860 Oct 04 j 11:58	15° Υ 46'41	-17°-15'-24	minimum elong	869 Apr 09 j 18:59	23° Υ 57'15	16°00'02
direct	860 Dec 24 j 17:44	14° Υ 47'32		max. Earth dist.	869 Apr 10 j 23:16	23° Υ 58'52	50.12782 AU
conjunction	861 Apr 01 j 21:48	16° Υ 14'42	-16°-32'-56	retrograde	869 Jul 21 j 15:32	25° Υ 27'04	
minimum elong	861 Apr 01 j 21:55	16° Υ 14'42	16°32'57	min. Earth dist.	869 Oct 12 j 06:24	24° Υ 28'23	48.22132 AU
max. Earth dist.	861 Apr 03 j 10:45	16° Υ 16'50	49.80952 AU	opposition	869 Oct 13 j 08:17	24° Υ 27'10	-16°-36'-34
retrograde	861 Jul 13 j 20:22	17° Υ 45'37		direct	870 Jan 02 j 14:01	23° Υ 28'24	
min. Earth dist.	861 Oct 04 j 08:09	16° Υ 46'49	47.92340 AU	conjunction	870 Apr 11 j 00:16	24° Υ 54'37	-15°-54'-45
opposition	861 Oct 05 j 17:14	16° Υ 45'15	-17°-12'-7	minimum elong	870 Apr 11 j 00:25	24° Υ 54'37	15°54'46
direct	861 Dec 25 j 23:59	15° Υ 46'09		max. Earth dist.	870 Apr 12 j 02:39	24° Υ 56'07	50.15300 AU
conjunction	862 Apr 03 j 03:47	17° Υ 13'10	-16°-29'-42	retrograde	870 Jul 22 j 19:18	26° Υ 24'21	
minimum elong	862 Apr 03 j 03:55	17° Υ 13'11	16°29'43	opposition	870 Oct 14 j 13:00	25° Υ 24'32	-16°-30'-55
max. Earth dist.	862 Apr 04 j 14:36	17° Υ 15'11	49.86321 AU	min. Earth dist.	870 Oct 13 j 12:34	25° Υ 25'41	48.24378 AU
retrograde	862 Jul 15 j 03:58	18° Υ 43'55		direct	871 Jan 03 j 20:26	24° Υ 25'50	
opposition	862 Oct 06 j 22:24	17° Υ 43'36	-17°-8'-35	conjunction	871 Apr 12 j 05:43	25° Υ 52'00	-15°-49'-13
min. Earth dist.	862 Oct 05 j 13:42	17° Υ 45'09	47.97389 AU	minimum elong	871 Apr 12 j 05:53	25° Υ 52'00	15°49'13
direct	862 Dec 27 j 03:21	16° Υ 44'33		max. Earth dist.	871 Apr 13 j 08:00	25° Υ 53'29	50.17426 AU
conjunction	863 Apr 04 j 09:29	18° Υ 11'26	-16°-26'-15	retrograde	871 Jul 24 j 00:16	27° Υ 21'40	
minimum elong	863 Apr 04 j 09:36	18° Υ 11'26	16°26'16	opposition	871 Oct 15 j 17:39	26° Υ 21'55	-16°-25'-1
max. Earth dist.	863 Apr 05 j 19:01	18° Υ 13'21	49.91178 AU	min. Earth dist.	871 Oct 14 j 18:46	26° Υ 22'59	48.26185 AU
retrograde	863 Jul 16 j 09:06	19° Υ 42'00		direct	872 Jan 05 j 02:59	25° Υ 23'16	
min. Earth dist.	863 Oct 06 j 21:02	18° Υ 43'11	48.01961 AU	conjunction	872 Apr 12 j 11:14	26° Υ 49'23	-15°-43'-27
opposition	863 Oct 08 j 03:36	18° Υ 41'44	-17°-4'-49	minimum elong	872 Apr 12 j 11:23	26° Υ 49'23	15°43'28
direct	863 Dec 28 j 08:17	17° Υ 42'43		max. Earth dist.	872 Apr 13 j 11:24	26° Υ 50'45	50.19100 AU
conjunction	864 Apr 04 j 15:16	19° Υ 09'28	-16°-22'-32	retrograde	872 Jul 24 j 08:30	28° Υ 18'59	
minimum elong	864 Apr 04 j 15:25	19° Υ 09'28	16°22'33	opposition	872 Oct 15 j 22:12	27° Υ 19'17	-16°-18'-54
max. Earth dist.	864 Apr 06 j 00:22	19° Υ 11'22	49.95608 AU	min. Earth dist.	872 Oct 14 j 23:54	27° Υ 20'20	48.27510 AU
retrograde	864 Jul 16 j 11:23	20° Υ 39'52		direct	873 Jan 05 j 05:29	26° Υ 20'41	
min. Earth dist.	864 Oct 07 j 02:17	19° Υ 41'05	48.06121 AU	conjunction	873 Apr 13 j 16:47	27° Υ 46'44	-15°-37'-28
opposition	864 Oct 08 j 08:29	19° Υ 39'39	-17°00'-47	minimum elong	873 Apr 13 j 16:57	27° Υ 46'45	15°37'28
direct	864 Dec 28 j 15:23	18° Υ 40'39		max. Earth dist.	873 Apr 14 j 15:26	27° Υ 48'01	50.20249 AU
conjunction	865 Apr 05 j 20:49	20° Υ 07'17	-16°-18'-34	retrograde	873 Jul 25 j 14:42	29° Υ 16'15	
minimum elong	865 Apr 05 j 20:56	20° Υ 07'17	16°18'34	min. Earth dist.	873 Oct 16 j 07:01	28° Υ 17'32	48.28289 AU
max. Earth dist.	865 Apr 07 j 03:52	20° Υ 09'04	49.99655 AU	opposition	873 Oct 17 j 02:55	28° Υ 16'36	-16°-12'-33
retrograde	865 Jul 17 j 16:45	21° Υ 37'33		direct	874 Jan 06 j 08:44	27° Υ 18'00	
min. Earth dist.	865 Oct 08 j 08:23	20° Υ 38'45	48.09933 AU	conjunction	874 Apr 14 j 22:25	28° Υ 44'00	-15°-31'-16
opposition	865 Oct 09 j 13:27	20° Υ 37'23	-16°-56'-29	minimum elong	874 Apr 14 j 22:34	28° Υ 44'01	15°31'17
direct	865 Dec 29 j 21:08	19° Υ 38'25		max. Earth dist.	874 Apr 15 j 20:07	28° Υ 45'14	50.20863 AU
conjunction	866 Apr 07 j 02:29	21° Υ 04'55	-16°-14'-20	retrograde	874 Jun 20 j 10:54	0° Υ	
minimum elong	866 Apr 07 j 02:38	21° Υ 04'56	16°14'21	retrograde	874 Jul 26 j 17:45	0° Υ 13'25	
max. Earth dist.	866 Apr 08 j 09:35	21° Υ 06'42	50.03368 AU	retrograde	874 Sep 01 j 06:48	30° Υ	
retrograde	866 Jul 18 j 21:34	22° Υ 35'04		opposition	874 Oct 18 j 07:19	29° Υ 13'47	-16°-6'00
opposition	866 Oct 10 j 18:10	21° Υ 34'57	-16°-51'-55	min. Earth dist.	874 Oct 17 j 12:05	29° Υ 14'41	48.28525 AU
min. Earth dist.	866 Oct 09 j 14:20	21° Υ 36'16	48.13417 AU	direct	875 Jan 07 j 14:22	28° Υ 15'11	
direct	866 Dec 31 j 03:36	20° Υ 36'02		conjunction	875 Apr 16 j 03:46	29° Υ 41'08	-15°-24'-51
conjunction	867 Apr 08 j 07:57	22° Υ 02'26	-16°-9'-50	minimum elong	875 Apr 16 j 03:57	29° Υ 41'09	15°24'52
minimum elong	867 Apr 08 j 08:05	22° Υ 02'27	16°09'50	max. Earth dist.	875 Apr 16 j 23:02	29° Υ 42'14	50.20955 AU
max. Earth dist.	867 Apr 09 j 13:32	22° Υ 04'08	50.06793 AU	retrograde	875 Apr 30 j 02:48	0° Υ	
retrograde	867 Jul 20 j 05:34	23° Υ 32'27		retrograde	875 Jul 27 j 21:45	1° Υ 10'27	
opposition	867 Oct 11 j 22:55	22° Υ 32'24	-16°-47'-4	opposition	875 Oct 19 j 11:52	0° Υ 10'49	-15°-59'-12
min. Earth dist.	867 Oct 10 j 19:03	22° Υ 33'43	48.16620 AU	min. Earth dist.	875 Oct 18 j 18:10	0° Υ 11'39	48.28276 AU
direct	868 Jan 01 j 05:36	21° Υ 33'32		retrograde	875 Oct 29 j 03:18	30° Υ	
				direct	876 Jan 08 j 20:07	29° Υ 12'13	

	876 Mar 18 j 09:20	0°♃		minimum elong	884 Apr 24 j 03:50	8°♃11'07	14°16'22
				max. Earth dist.	884 Apr 24 j 13:43	8°♃11'40	50.04889 AU
conjunction	876 Apr 16 j 09:07	0°♃38'05	-15°-18'-12	retrograde	884 Aug 04 j 19:59	9°♃40'06	
minimum elong	876 Apr 16 j 09:16	0°♃38'06	15°18'13	opposition	884 Oct 27 j 02:48	8°♃40'40	-14°-47'00
max. Earth dist.	876 Apr 17 j 04:07	0°♃39'10	50.20581 AU	min. Earth dist.	884 Oct 26 j 18:31	8°♃41'03	48.09421 AU
retrograde	876 Jul 28 j 00:45	2°♃07'19		direct	885 Jan 16 j 11:46	7°♃42'04	
opposition	876 Oct 19 j 16:20	1°♃07'41	-15°-52'-11				
min. Earth dist.	876 Oct 19 j 00:03	1°♃08'27	48.27574 AU	conjunction	885 Apr 25 j 09:09	9°♃08'00	-14°-7'-36
direct	877 Jan 09 j 03:14	0°♃09'04		minimum elong	885 Apr 25 j 09:20	9°♃08'00	14°07'37
				max. Earth dist.	885 Apr 25 j 16:29	9°♃08'25	50.01108 AU
conjunction	877 Apr 17 j 14:29	1°♃34'52	-15°-11'-20	retrograde	885 Aug 06 j 00:09	10°♃37'00	
minimum elong	877 Apr 17 j 14:40	1°♃34'53	15°11'21	opposition	885 Oct 28 j 07:07	9°♃37'35	-14°-37'-48
max. Earth dist.	877 Apr 18 j 07:46	1°♃35'51	50.19802 AU	min. Earth dist.	885 Oct 28 j 00:46	9°♃37'53	48.05240 AU
retrograde	877 Jul 29 j 07:31	3°♃04'02		direct	886 Jan 17 j 17:16	8°♃38'58	
opposition	877 Oct 20 j 20:33	2°♃04'24	-15°-44'-55				
min. Earth dist.	877 Oct 20 j 04:39	2°♃05'09	48.26496 AU	conjunction	886 Apr 26 j 14:48	10°♃04'56	-13°-58'-37
direct	878 Jan 10 j 06:45	1°♃05'45		minimum elong	886 Apr 26 j 15:01	10°♃04'57	13°58'37
				max. Earth dist.	886 Apr 26 j 21:32	10°♃05'19	49.96781 AU
conjunction	878 Apr 18 j 19:50	2°♃31'32	-15°-4'-13	retrograde	886 Aug 07 j 03:20	11°♃33'58	
minimum elong	878 Apr 18 j 19:59	2°♃31'32	15°04'14	opposition	886 Oct 29 j 11:30	10°♃34'32	-14°-28'-22
max. Earth dist.	878 Apr 19 j 11:59	2°♃32'26	50.18651 AU	min. Earth dist.	886 Oct 29 j 06:42	10°♃34'46	48.00504 AU
retrograde	878 Jul 30 j 14:53	4°♃00'36		direct	887 Jan 19 j 00:06	9°♃35'54	
min. Earth dist.	878 Oct 21 j 10:59	3°♃01'38	48.25072 AU				
opposition	878 Oct 22 j 01:00	3°♃00'59	-15°-37'-24	conjunction	887 Apr 27 j 20:08	11°♃01'53	-13°-49'-25
direct	879 Jan 11 j 08:59	2°♃02'20		minimum elong	887 Apr 27 j 20:19	11°♃01'54	13°49'26
				max. Earth dist.	887 Apr 28 j 00:49	11°♃02'09	49.91934 AU
conjunction	879 Apr 20 j 01:02	3°♃28'04	-14°-56'-51	retrograde	887 Aug 08 j 10:01	12°♃30'55	
minimum elong	879 Apr 20 j 01:13	3°♃28'05	14°56'53	opposition	887 Oct 30 j 15:49	11°♃31'28	-14°-18'-44
max. Earth dist.	879 Apr 20 j 16:52	3°♃28'58	50.17187 AU	min. Earth dist.	887 Oct 30 j 11:40	11°♃31'40	47.95273 AU
retrograde	879 Jul 31 j 18:19	4°♃57'05		direct	888 Jan 20 j 03:54	10°♃32'47	
opposition	879 Oct 23 j 05:17	3°♃57'29	-15°-29'-38				
min. Earth dist.	879 Oct 22 j 15:14	3°♃58'08	48.23332 AU	conjunction	888 Apr 28 j 01:36	11°♃58'49	-13°-40'00
direct	880 Jan 12 j 13:48	2°♃58'49		minimum elong	888 Apr 28 j 01:48	11°♃58'50	13°40'01
				max. Earth dist.	888 Apr 28 j 04:53	11°♃59'00	49.86603 AU
conjunction	880 Apr 20 j 06:14	4°♃24'34	-14°-49'-15	retrograde	888 Aug 08 j 17:54	13°♃27'51	
minimum elong	880 Apr 20 j 06:24	4°♃24'34	14°49'15	opposition	888 Oct 30 j 20:07	12°♃28'22	-14°-8'-51
max. Earth dist.	880 Apr 20 j 20:06	4°♃25'21	50.15420 AU	min. Earth dist.	888 Oct 30 j 18:06	12°♃28'28	47.89595 AU
retrograde	880 Jul 31 j 22:10	5°♃53'33		direct	889 Jan 20 j 05:52	11°♃29'38	
opposition	880 Oct 23 j 09:38	4°♃53'57	-15°-21'-36				
min. Earth dist.	880 Oct 22 j 20:55	4°♃54'33	48.21301 AU	conjunction	889 Apr 29 j 07:08	12°♃55'42	-13°-30'-21
direct	881 Jan 12 j 19:12	3°♃55'19		minimum elong	889 Apr 29 j 07:19	12°♃55'43	13°30'22
				max. Earth dist.	889 Apr 29 j 09:49	12°♃55'52	49.80870 AU
conjunction	881 Apr 21 j 11:35	5°♃21'03	-14°-41'-23	retrograde	889 Aug 09 j 22:50	14°♃24'44	
minimum elong	881 Apr 21 j 11:47	5°♃21'04	14°41'25	opposition	889 Nov 01 j 00:19	13°♃25'14	-13°-58'-44
max. Earth dist.	881 Apr 22 j 01:28	5°♃21'51	50.13349 AU	min. Earth dist.	889 Oct 31 j 22:28	13°♃25'19	47.83526 AU
retrograde	881 Aug 02 j 01:44	6°♃50'02		direct	890 Jan 21 j 09:26	12°♃26'25	
opposition	881 Oct 24 j 13:57	5°♃50'29	-15°-13'-18				
min. Earth dist.	881 Oct 24 j 02:27	5°♃51'01	48.18936 AU	conjunction	890 Apr 30 j 12:30	13°♃52'34	-13°-20'-28
direct	882 Jan 14 j 01:55	4°♃51'51		minimum elong	890 Apr 30 j 12:43	13°♃52'34	13°20'29
				max. Earth dist.	890 Apr 30 j 13:08	13°♃52'36	49.74765 AU
conjunction	882 Apr 22 j 16:53	6°♃17'37	-14°-33'-17		890 Jun 25 j 17:48	15°♃	
minimum elong	882 Apr 22 j 17:04	6°♃17'38	14°33'17	retrograde	890 Aug 11 j 02:27	15°♃21'36	
max. Earth dist.	882 Apr 23 j 04:57	6°♃18'18	50.10946 AU		890 Sep 26 j 19:10	15°♃	
retrograde	882 Aug 03 j 09:20	7°♃46'36		opposition	890 Nov 02 j 04:34	14°♃22'03	-13°-48'-22
opposition	882 Oct 25 j 18:07	6°♃47'06	-15°-4'-46	min. Earth dist.	890 Nov 02 j 04:13	14°♃22'04	47.77128 AU
min. Earth dist.	882 Oct 25 j 06:59	6°♃47'37	48.16216 AU	direct	891 Jan 22 j 15:03	13°♃23'12	
direct	883 Jan 15 j 04:16	5°♃48'29					
				conjunction	891 May 01 j 18:00	14°♃49'24	-13°-10'-21
conjunction	883 Apr 23 j 22:14	7°♃14'18	-14°-24'-56	minimum elong	891 May 01 j 18:12	14°♃49'25	13°10'21
minimum elong	883 Apr 23 j 22:25	7°♃14'19	14°24'58	max. Earth dist.	891 May 01 j 18:35	14°♃49'26	49.68352 AU
max. Earth dist.	883 Apr 24 j 09:04	7°♃14'55	50.08142 AU		891 May 09 j 13:43	15°♃	
retrograde	883 Aug 04 j 15:59	8°♃43'18		retrograde	891 Aug 12 j 03:49	16°♃18'29	
opposition	883 Oct 26 j 22:30	7°♃43'50	-14°-56'00	opposition	891 Nov 03 j 08:52	15°♃18'54	-13°-37'-45
min. Earth dist.	883 Oct 26 j 13:40	7°♃44'14	48.13067 AU	min. Earth dist.	891 Nov 03 j 09:25	15°♃18'52	47.70427 AU
direct	884 Jan 16 j 06:40	6°♃45'14			891 Nov 20 j 07:48	15°♃	
				direct	892 Jan 23 j 23:15	14°♃19'59	
conjunction	884 Apr 24 j 03:38	8°♃11'06	-14°-16'-22		892 Mar 27 j 01:34	15°♃	

conjunction	892 May 01 j 23:20	15°♄46'16	-12°-59'-59	retrograde	900 Aug 20 j 09:03	24°♄55'33	
minimum elong	892 May 01 j 23:32	15°♄46'17	13°00'00	opposition	900 Nov 11 j 01:18	23°♄55'40	-11°-51'-3
max. Earth dist.	892 May 01 j 22:22	15°♄46'13	49.61666 AU	min. Earth dist.	900 Nov 11 j 12:41	23°♄55'07	46.93436 AU
retrograde	892 Aug 12 j 10:31	17°♄15'24		direct	901 Jan 31 j 13:25	22°♄56'12	
opposition	892 Nov 03 j 13:10	16°♄15'48	-13°-26'-52				
min. Earth dist.	892 Nov 03 j 13:56	16°♄15'46	47.63457 AU	conjunction	901 May 11 j 03:52	24°♄23'39	-11°-15'-59
direct	893 Jan 24 j 03:00	15°♄16'50		minimum elong	901 May 11 j 04:05	24°♄23'40	11°16'00
				max. Earth dist.	901 May 10 j 15:23	24°♄22'56	48.84120 AU
conjunction	893 May 03 j 04:55	16°♄43'12	-12°-49'-21	retrograde	901 Aug 21 j 11:02	25°♄53'36	
minimum elong	893 May 03 j 05:07	16°♄43'13	12°49'21	opposition	901 Nov 12 j 05:52	24°♄53'39	-11°-38'-1
max. Earth dist.	893 May 03 j 02:55	16°♄43'06	49.54691 AU	min. Earth dist.	901 Nov 12 j 18:18	24°♄53'03	46.82646 AU
retrograde	893 Aug 13 j 17:52	18°♄12'24		direct	902 Feb 01 j 21:42	23°♄54'05	
opposition	893 Nov 04 j 17:31	17°♄12'47	-13°-15'-44				
min. Earth dist.	893 Nov 04 j 20:12	17°♄12'39	47.56193 AU	conjunction	902 May 12 j 09:57	25°♄21'42	-11°-3'-17
direct	894 Jan 25 j 05:24	16°♄13'47		minimum elong	902 May 12 j 10:08	25°♄21'43	11°03'18
				max. Earth dist.	902 May 11 j 19:42	25°♄20'53	48.73318 AU
conjunction	894 May 04 j 10:36	17°♄40'16	-12°-38'-29	retrograde	902 Aug 22 j 17:27	26°♄51'47	
minimum elong	894 May 04 j 10:47	17°♄40'17	12°38'31	opposition	902 Nov 13 j 10:35	25°♄51'46	-11°-24'-43
max. Earth dist.	894 May 04 j 08:10	17°♄40'08	49.47426 AU	min. Earth dist.	902 Nov 13 j 23:27	25°♄51'09	46.71534 AU
retrograde	894 Aug 14 j 23:15	19°♄09'32		direct	903 Feb 03 j 02:19	24°♄52'07	
opposition	894 Nov 05 j 21:51	18°♄09'54	-13°-4'-20				
min. Earth dist.	894 Nov 06 j 00:44	18°♄09'46	47.48604 AU	conjunction	903 May 13 j 15:58	26°♄19'54	-10°-50'-20
direct	895 Jan 26 j 09:26	17°♄10'52		minimum elong	903 May 13 j 16:10	26°♄19'55	10°50'21
				max. Earth dist.	903 May 13 j 00:45	26°♄19'02	48.62195 AU
conjunction	895 May 05 j 16:03	18°♄37'29	-12°-27'-22	retrograde	903 Aug 24 j 01:19	27°♄50'09	
minimum elong	895 May 05 j 16:15	18°♄37'29	12°27'23	opposition	903 Nov 14 j 15:31	26°♄50'04	-11°-11'-9
max. Earth dist.	895 May 05 j 11:24	18°♄37'13	49.39802 AU	min. Earth dist.	903 Nov 15 j 06:10	26°♄49'21	46.60124 AU
retrograde	895 Aug 16 j 04:25	20°♄06'50		direct	904 Feb 04 j 05:10	25°♄50'19	
opposition	895 Nov 07 j 02:22	19°♄07'11	-12°-52'-42				
min. Earth dist.	895 Nov 07 j 06:55	19°♄06'58	47.40636 AU	conjunction	904 May 13 j 22:15	27°♄18'18	-10°-37'-8
direct	896 Jan 27 j 13:52	18°♄08'07		minimum elong	904 May 13 j 22:26	27°♄18'19	10°37'08
				max. Earth dist.	904 May 13 j 06:39	27°♄17'25	48.50806 AU
conjunction	896 May 05 j 21:56	19°♄34'52	-12°-16'-2	retrograde	904 Aug 24 j 07:34	28°♄48'42	
minimum elong	896 May 05 j 22:08	19°♄34'53	12°16'03	opposition	904 Nov 14 j 20:16	27°♄48'34	-10°-57'-20
max. Earth dist.	896 May 05 j 16:54	19°♄34'35	49.31756 AU	min. Earth dist.	904 Nov 15 j 10:51	27°♄47'52	46.48447 AU
retrograde	896 Aug 16 j 07:40	21°♄04'19		direct	905 Feb 04 j 09:31	26°♄48'44	
opposition	896 Nov 07 j 06:49	20°♄04'39	-12°-40'-50	max. Earth dist.	905 May 14 j 10:51	28°♄15'56	48.39145 AU
min. Earth dist.	896 Nov 07 j 12:51	20°♄04'22	47.32201 AU				
direct	897 Jan 27 j 20:48	19°♄05'32		conjunction	905 May 15 j 04:33	28°♄16'57	-10°-23'-40
				minimum elong	905 May 15 j 04:45	28°♄16'58	10°23'42
conjunction	897 May 07 j 03:50	20°♄32'24	-12°-4'-28	retrograde	905 Aug 25 j 14:08	29°♄47'31	
minimum elong	897 May 07 j 04:03	20°♄32'25	12°04'28	opposition	905 Nov 16 j 01:19	28°♄47'20	-10°-43'-14
max. Earth dist.	897 May 06 j 20:37	20°♄32'00	49.23228 AU	min. Earth dist.	905 Nov 16 j 17:27	28°♄46'34	46.36499 AU
retrograde	897 Aug 17 j 13:41	22°♄01'58		direct	906 Feb 05 j 14:07	27°♄47'26	
opposition	897 Nov 08 j 11:24	21°♄02'15	-12°-28'-44				
min. Earth dist.	897 Nov 08 j 18:15	21°♄01'56	47.23261 AU	conjunction	906 May 16 j 11:03	29°♄15'54	-10°-9'-57
direct	898 Jan 29 j 01:30	20°♄03'04		minimum elong	906 May 16 j 11:14	29°♄15'55	10°09'57
				max. Earth dist.	906 May 15 j 17:20	29°♄14'53	48.27192 AU
conjunction	898 May 08 j 09:47	21°♄30'05	-11°-52'-41		906 Jun 18 j 16:36	0°♂	
minimum elong	898 May 08 j 09:58	21°♄30'05	11°52'42	retrograde	906 Aug 26 j 17:45	0°♂46'40	
max. Earth dist.	898 May 08 j 00:49	21°♄29'34	49.14163 AU		906 Nov 05 j 09:56	30°♂	
retrograde	898 Aug 18 j 21:02	22°♄59'44		opposition	906 Nov 17 j 06:21	29°♄46'26	-10°-28'-52
opposition	898 Nov 09 j 16:02	21°♄59'59	-12°-16'-24	min. Earth dist.	906 Nov 17 j 23:25	29°♄45'37	46.24231 AU
min. Earth dist.	898 Nov 10 j 01:11	21°♄59'33	47.13789 AU	direct	907 Feb 06 j 21:51	28°♄46'27	
direct	899 Jan 30 j 04:54	21°♄00'42			907 May 06 j 17:29	0°♂	
				conjunction	907 May 17 j 17:33	0°♂15'11	-9°-55'-58
conjunction	899 May 09 j 15:48	22°♄27'51	-11°-40'-41	minimum elong	907 May 17 j 17:44	0°♂15'11	9°56'00
minimum elong	899 May 09 j 16:00	22°♄27'52	11°40'42	max. Earth dist.	907 May 16 j 21:58	0°♂14'03	48.14912 AU
max. Earth dist.	899 May 09 j 06:01	22°♄27'18	49.04602 AU	retrograde	907 Aug 28 j 00:02	1°♂46'10	
retrograde	899 Aug 20 j 03:27	23°♄57'35		opposition	907 Nov 18 j 11:26	0°♂45'53	-10°-14'-15
opposition	899 Nov 10 j 20:35	22°♄57'47	-12°-3'-51	min. Earth dist.	907 Nov 19 j 05:18	0°♂45'02	46.11608 AU
min. Earth dist.	899 Nov 11 j 06:06	22°♄57'20	47.03830 AU		908 Jan 02 j 14:17	30°♂	
direct	900 Jan 31 j 08:29	21°♄58'25		direct	908 Feb 08 j 03:03	29°♄45'50	
					908 Mar 15 j 05:57	0°♂	
conjunction	900 May 09 j 21:40	23°♄25'43	-11°-28'-27	max. Earth dist.	908 May 17 j 03:14	1°♂13'35	48.02214 AU
minimum elong	900 May 09 j 21:52	23°♄25'43	11°28'28				
max. Earth dist.	900 May 09 j 09:31	23°♄25'01	48.94569 AU				

conjunction	908 May 18 j 00:16	1°II14'48	-9°-41'-46	opposition	916 Nov 26 j 14:40	9°II52'38	-7°-51'-16
minimum elong	908 May 18 j 00:28	1°II14'49	9°41'46	min. Earth dist.	916 Nov 27 j 19:41	9°II51'12	44.77515 AU
retrograde	908 Aug 28 j 07:59	2°II46'01		direct	917 Feb 16 j 06:58	8°II51'14	
opposition	908 Nov 18 j 16:49	1°II45'41	-9°-59'-22	max. Earth dist.	917 May 26 j 09:01	10°II20'48	46.67615 AU
min. Earth dist.	908 Nov 19 j 12:53	1°II44'43	45.98530 AU				
direct	909 Feb 08 j 07:25	0°II45'32		conjunction	917 May 27 j 18:13	10°II22'46	-7°-22'-57
max. Earth dist.	909 May 18 j 09:16	2°II13'30	47.89041 AU	minimum elong	917 May 27 j 18:22	10°II22'47	7°22'58
				retrograde	917 Sep 06 j 22:40	11°II56'05	
conjunction	909 May 19 j 07:18	2°II14'46	-9°-27'-19	opposition	917 Nov 27 j 20:49	10°II54'41	-7°-34'-1
minimum elong	909 May 19 j 07:29	2°II14'47	9°27'19	min. Earth dist.	917 Nov 29 j 02:30	10°II53'13	44.60930 AU
retrograde	909 Aug 29 j 17:20	3°II46'12		direct	918 Feb 17 j 13:17	9°II53'08	
opposition	909 Nov 19 j 22:06	2°II45'47	-9°-44'-15	max. Earth dist.	918 May 27 j 16:08	11°II23'01	46.51020 AU
min. Earth dist.	909 Nov 20 j 18:43	2°II44'48	45.84946 AU				
direct	910 Feb 09 j 10:22	1°II45'31		conjunction	918 May 29 j 02:14	11°II25'02	-7°-6'-14
				minimum elong	918 May 29 j 02:24	11°II25'03	7°06'16
conjunction	910 May 20 j 14:20	3°II15'02	-9°-12'-38	retrograde	918 Sep 08 j 05:38	12°II58'41	
minimum elong	910 May 20 j 14:31	3°II15'02	9°12'38	opposition	918 Nov 29 j 03:21	11°II57'11	-7°-16'-30
max. Earth dist.	910 May 19 j 13:37	3°II13'36	47.75342 AU	min. Earth dist.	918 Nov 30 j 10:40	11°II55'38	44.44067 AU
retrograde	910 Aug 31 j 01:22	4°II46'39		direct	919 Feb 18 j 20:04	10°II55'30	
opposition	910 Nov 21 j 03:43	3°II46'09	-9°-28'-54	max. Earth dist.	919 May 28 j 23:35	12°II25'43	46.34141 AU
min. Earth dist.	910 Nov 22 j 02:28	3°II45'03	45.70845 AU				
direct	911 Feb 10 j 14:43	2°II45'45		conjunction	919 May 30 j 10:16	12°II27'47	-6°-49'-15
				minimum elong	919 May 30 j 10:25	12°II27'48	6°49'16
conjunction	911 May 21 j 21:24	4°II15'31	-8°-57'-43	retrograde	919 Sep 09 j 15:38	14°II01'47	
minimum elong	911 May 21 j 21:34	4°II15'31	8°57'44	opposition	919 Nov 30 j 09:52	13°II00'11	-6°-58'-41
max. Earth dist.	911 May 20 j 20:06	4°II14'02	47.61129 AU	min. Earth dist.	919 Dec 01 j 17:25	12°II58'37	44.26884 AU
retrograde	911 Sep 01 j 04:32	5°II47'21		direct	920 Feb 20 j 00:37	11°II58'21	
opposition	911 Nov 22 j 09:22	4°II46'43	-9°-13'-17	max. Earth dist.	920 May 29 j 05:38	13°II28'51	46.16888 AU
min. Earth dist.	911 Nov 23 j 09:12	4°II45'34	45.56236 AU				
direct	912 Feb 11 j 23:56	3°II46'10		conjunction	920 May 30 j 18:40	13°II31'04	-6°-32'-1
max. Earth dist.	912 May 21 j 01:11	5°II14'35	47.46443 AU	minimum elong	920 May 30 j 18:48	13°II31'04	6°32'02
				retrograde	920 Sep 10 j 02:29	15°II05'26	
conjunction	912 May 22 j 04:35	5°II16'11	-8°-42'-33	opposition	920 Nov 30 j 16:36	14°II03'42	-6°-40'-36
minimum elong	912 May 22 j 04:46	5°II16'12	8°42'35	min. Earth dist.	920 Dec 02 j 02:25	14°II02'01	44.09308 AU
retrograde	912 Sep 01 j 09:52	6°II48'14		direct	921 Feb 20 j 04:39	13°II01'43	
opposition	912 Nov 22 j 14:55	5°II47'29	-8°-57'-25	max. Earth dist.	921 May 30 j 13:52	14°II32'36	45.99205 AU
min. Earth dist.	912 Nov 23 j 15:41	5°II46'16	45.41186 AU				
direct	913 Feb 12 j 07:20	4°II46'45		conjunction	921 Jun 01 j 03:28	14°II34'52	-6°-14'-31
max. Earth dist.	913 May 22 j 07:16	6°II15'22	47.31319 AU	minimum elong	921 Jun 01 j 03:36	14°II34'52	6°14'31
				retrograde	921 Sep 11 j 09:20	16°II09'36	
conjunction	913 May 23 j 11:59	6°II17'03	-8°-27'-9	opposition	921 Dec 01 j 23:35	15°II07'44	-6°-22'-15
minimum elong	913 May 23 j 12:08	6°II17'03	8°27'10	min. Earth dist.	921 Dec 03 j 10:14	15°II06'01	43.91269 AU
retrograde	913 Sep 02 j 16:57	7°II49'19		direct	922 Feb 21 j 13:50	14°II05'35	
opposition	913 Nov 23 j 20:45	6°II48'26	-8°-41'-17	max. Earth dist.	922 May 31 j 20:10	15°II36'45	45.81053 AU
min. Earth dist.	913 Nov 24 j 23:32	6°II47'07	45.25731 AU				
direct	914 Feb 13 j 13:04	5°II47'32		conjunction	922 Jun 02 j 12:09	15°II39'10	-5°-56'-45
				minimum elong	922 Jun 02 j 12:17	15°II39'10	5°56'46
conjunction	914 May 24 j 19:20	7°II18'06	-8°-11'-30	retrograde	922 Sep 12 j 16:37	17°II14'15	
minimum elong	914 May 24 j 19:31	7°II18'06	8°11'31	opposition	922 Dec 03 j 06:41	16°II12'16	-6°-3'-38
max. Earth dist.	914 May 23 j 13:59	7°II16'22	47.15830 AU	min. Earth dist.	922 Dec 04 j 18:36	16°II10'28	43.72766 AU
retrograde	914 Sep 04 j 00:40	8°II50'36		direct	923 Feb 22 j 22:34	15°II09'54	
opposition	914 Nov 25 j 02:31	7°II49'34	-8°-24'-54	max. Earth dist.	923 Jun 02 j 03:59	16°II41'26	45.62424 AU
min. Earth dist.	914 Nov 26 j 05:18	7°II48'16	45.09936 AU				
direct	915 Feb 14 j 18:08	6°II48'30		conjunction	923 Jun 03 j 21:12	16°II43'56	-5°-38'-44
max. Earth dist.	915 May 24 j 19:19	8°II17'31	47.00021 AU	minimum elong	923 Jun 03 j 21:20	16°II43'56	5°38'45
				retrograde	923 Sep 13 j 23:54	18°II19'24	
conjunction	915 May 26 j 02:45	8°II19'22	-7°-55'-35	opposition	923 Dec 04 j 14:01	17°II17'14	-5°-44'-44
minimum elong	915 May 26 j 02:55	8°II19'22	7°55'36	min. Earth dist.	923 Dec 06 j 03:52	17°II15'20	43.53804 AU
retrograde	915 Sep 05 j 09:49	9°II52'07		direct	924 Feb 24 j 06:42	16°II14'41	
opposition	915 Nov 26 j 08:32	8°II50'57	-8°-8'-13	max. Earth dist.	924 Jun 02 j 11:59	17°II46'33	45.43373 AU
min. Earth dist.	915 Nov 27 j 12:58	8°II49'33	44.93860 AU				
direct	916 Feb 15 j 22:36	7°II49'43		conjunction	924 Jun 04 j 06:21	17°II49'08	-5°-20'-28
max. Earth dist.	916 May 25 j 03:05	9°II19'03	46.83943 AU	minimum elong	924 Jun 04 j 06:28	17°II49'08	5°20'29
				retrograde	924 Sep 14 j 09:29	19°II24'59	
conjunction	916 May 26 j 10:25	9°II20'54	-7°-39'-24	opposition	924 Dec 04 j 21:23	18°II22'39	-5°-25'-33
minimum elong	916 May 26 j 10:35	9°II20'55	7°39'25	min. Earth dist.	924 Dec 06 j 11:31	18°II20'43	43.34438 AU
retrograde	916 Sep 05 j 15:23	10°II53'55		direct	925 Feb 24 j 13:07	17°II19'51	

max. Earth dist.	925 Jun 03 j 19:08	18°II52'02	45.23920 AU	minimum elong	933 Jun 15 j 02:15	27°II58'28	2°23'51
				retrograde	933 Sep 25 j 06:18	29°II38'32	
conjunction	925 Jun 05 j 15:41	18°II54'45	-5°-1'-56	opposition	933 Dec 15 j 01:40	28°II34'28	-2°-19'-48
minimum elong	925 Jun 05 j 15:48	18°II54'46	5°01'57	min. Earth dist.	933 Dec 17 j 01:26	28°II31'59	41.48389 AU
retrograde	925 Sep 15 j 21:01	20°II31'00		direct	934 Mar 06 j 16:38	27°II29'34	
opposition	925 Dec 06 j 04:58	19°II28'28	-5°-6'-5	max. Earth dist.	934 Jun 14 j 07:44	29°II05'58	43.37350 AU
min. Earth dist.	925 Dec 07 j 21:08	19°II26'26	43.14719 AU				
direct	926 Feb 25 j 18:34	18°II25'27		conjunction	934 Jun 16 j 13:49	29°II09'25	-2°-2'-51
max. Earth dist.	926 Jun 05 j 04:42	19°II58'05	45.04145 AU	minimum elong	934 Jun 16 j 13:53	29°II09'26	2°02'51
					934 Jul 21 j 02:03	0°☾	
conjunction	926 Jun 07 j 01:16	20°II00'48	-4°-43'-8	retrograde	934 Sep 26 j 17:03	0°☾50'02	
minimum elong	926 Jun 07 j 01:22	20°II00'49	4°43'08		934 Dec 05 j 01:27	30°RII	
retrograde	926 Sep 17 j 06:39	21°II37'27		opposition	934 Dec 16 j 11:28	29°II45'46	-1°-57'-42
opposition	926 Dec 07 j 12:46	20°II34'43	-4°-46'-20	min. Earth dist.	934 Dec 18 j 11:44	29°II43'14	41.26247 AU
min. Earth dist.	926 Dec 09 j 05:16	20°II32'40	42.94704 AU	direct	935 Mar 08 j 02:38	28°II40'35	
direct	927 Feb 27 j 03:14	19°II31'27			935 Jun 04 j 06:41	0°☾	
max. Earth dist.	927 Jun 06 j 12:12	21°II04'27	44.84105 AU	max. Earth dist.	935 Jun 15 j 17:36	0°☾17'29	43.15046 AU
conjunction	927 Jun 08 j 10:41	21°II07'18	-4°-24'-3	conjunction	935 Jun 18 j 01:39	0°☾21'05	-1°-41'-36
minimum elong	927 Jun 08 j 10:48	21°II07'19	4°24'04	minimum elong	935 Jun 18 j 01:42	0°☾21'05	1°41'37
retrograde	927 Sep 18 j 16:46	22°II44'22		retrograde	935 Sep 28 j 04:43	2°☾02'16	
opposition	927 Dec 08 j 20:46	21°II41'26	-4°-26'-18	opposition	935 Dec 17 j 21:40	0°☾57'45	-1°-35'-19
min. Earth dist.	927 Dec 10 j 14:12	21°II39'20	42.74462 AU	min. Earth dist.	935 Dec 20 j 00:05	0°☾55'06	41.03708 AU
direct	928 Feb 28 j 11:09	20°II37'56			936 Feb 11 j 22:23	30°RII	
max. Earth dist.	928 Jun 06 j 21:39	22°II11'22	44.63835 AU	direct	936 Mar 08 j 11:23	29°II52'17	
					936 Apr 02 j 21:20	0°☾	
conjunction	928 Jun 08 j 20:40	22°II14'17	-4°-4'-42	max. Earth dist.	936 Jun 16 j 05:33	1°☾29'47	42.92367 AU
minimum elong	928 Jun 08 j 20:46	22°II14'17	4°04'43				
retrograde	928 Sep 18 j 22:38	23°II51'47		conjunction	936 Jun 18 j 13:59	1°☾33'25	-1°-20'-5
opposition	928 Dec 09 j 04:57	22°II48'40	-4°-5'-57	minimum elong	936 Jun 18 j 14:02	1°☾33'26	1°20'06
min. Earth dist.	928 Dec 10 j 23:35	22°II46'29	42.54012 AU	retrograde	936 Sep 28 j 17:58	3°☾15'12	
direct	929 Feb 28 j 21:58	21°II44'56		opposition	936 Dec 18 j 07:53	2°☾10'26	-1°-12'-39
max. Earth dist.	929 Jun 08 j 07:04	23°II18'50	44.43388 AU	min. Earth dist.	936 Dec 20 j 10:38	2°☾07'45	40.80815 AU
				direct	937 Mar 09 j 20:46	1°☾04'39	
conjunction	929 Jun 10 j 06:49	23°II21'48	-3°-45'-5	max. Earth dist.	937 Jun 17 j 15:39	2°☾42'39	42.69346 AU
minimum elong	929 Jun 10 j 06:55	23°II21'48	3°45'06				
retrograde	929 Sep 20 j 08:21	24°II59'46		conjunction	937 Jun 20 j 02:30	2°☾46'28	0°-58'-19
opposition	929 Dec 10 j 13:22	23°II56'28	-3°-45'-19	minimum elong	937 Jun 20 j 02:32	2°☾46'28	0°58'20
min. Earth dist.	929 Dec 12 j 07:57	23°II54'16	42.33390 AU	retrograde	937 Sep 30 j 08:14	4°☾28'50	
direct	930 Mar 02 j 05:58	22°II52'30		opposition	937 Dec 19 j 18:32	3°☾23'48	0°-49'-41
max. Earth dist.	930 Jun 09 j 15:40	24°II26'50	44.22741 AU	min. Earth dist.	937 Dec 21 j 22:58	3°☾21'01	40.57629 AU
				direct	938 Mar 11 j 05:49	2°☾17'42	
conjunction	930 Jun 11 j 17:05	24°II29'55	-3°-25'-10	max. Earth dist.	938 Jun 19 j 04:12	3°☾56'22	42.46041 AU
minimum elong	930 Jun 11 j 17:10	24°II29'55	3°25'11				
retrograde	930 Sep 21 j 20:46	26°II08'24		conjunction	938 Jun 21 j 15:16	4°☾00'14	0°-36'-17
opposition	930 Dec 11 j 22:06	25°II04'54	-3°-24'-22	minimum elong	938 Jun 21 j 15:17	4°☾00'14	0°36'17
min. Earth dist.	930 Dec 13 j 18:32	25°II02'37	42.12571 AU	retrograde	938 Oct 01 j 19:17	5°☾43'12	
direct	931 Mar 03 j 10:54	24°II00'43		opposition	938 Dec 21 j 05:30	4°☾37'55	0°-26'-26
max. Earth dist.	931 Jun 11 j 02:21	25°II35'37	44.01884 AU	min. Earth dist.	938 Dec 23 j 10:41	4°☾35'04	40.34192 AU
				direct	939 Mar 12 j 19:00	3°☾31'30	
conjunction	931 Jun 13 j 03:47	25°II38'43	-3°-5'00	max. Earth dist.	939 Jun 20 j 15:53	5°☾10'46	42.22528 AU
minimum elong	931 Jun 13 j 03:52	25°II38'43	3°05'02				
retrograde	931 Sep 23 j 07:41	27°II17'42		conjunction	939 Jun 23 j 04:17	5°☾14'44	0°-14'00
opposition	931 Dec 13 j 06:55	26°II14'02	-3°-3'-9	minimum elong	939 Jun 23 j 04:17	5°☾14'45	0°14'01
min. Earth dist.	931 Dec 15 j 03:35	26°II11'43	41.91511 AU	behind sun begin	939 Jun 23 j 01:13	5°☾14'33	
direct	932 Mar 03 j 20:13	25°II09'37		behind sun end	939 Jun 23 j 07:21	5°☾14'56	
max. Earth dist.	932 Jun 11 j 11:01	26°II44'58	43.80746 AU	retrograde	939 Oct 03 j 07:32	6°☾58'22	
				opposition	939 Dec 22 j 16:37	5°☾52'48	0°-2'-54
conjunction	932 Jun 13 j 14:43	26°II48'13	-2°-44'-33	min. Earth dist.	939 Dec 24 j 22:10	5°☾49'56	40.10590 AU
minimum elong	932 Jun 13 j 14:47	26°II48'14	2°44'33	asc. node	940 Feb 05 j 21:45	5°☾01'42	
retrograde	932 Sep 23 j 20:29	28°II27'44		direct	940 Mar 13 j 07:11	4°☾46'04	
opposition	932 Dec 13 j 16:09	27°II23'53	-2°-41'-37	max. Earth dist.	940 Jun 21 j 04:16	6°☾26'00	41.98841 AU
min. Earth dist.	932 Dec 15 j 14:20	27°II21'29	41.70144 AU				
direct	933 Mar 05 j 05:09	26°II19'14		conjunction	940 Jun 23 j 17:45	6°☾30'04	0°08'37
max. Earth dist.	933 Jun 12 j 21:45	27°II55'09	43.59241 AU	minimum elong	940 Jun 23 j 17:45	6°☾30'04	0°08'38
				behind sun begin	940 Jun 23 j 12:06	6°☾29'43	
conjunction	933 Jun 15 j 02:11	27°II58'28	-2°-23'-50	behind sun end	940 Jun 23 j 23:24	6°☾30'25	

retrograde	940 Oct 03 j 19:54	8° \mathring{C} 14'22		direct	949 Mar 24 j 23:16	16° \mathring{C} 42'16	
opposition	940 Dec 23 j 04:19	7° \mathring{C} 08'33	0°20'53	max. Earth dist.	949 Jul 03 j 13:49	18° \mathring{C} 29'12	39.77610 AU
min. Earth dist.	940 Dec 25 j 11:27	7° \mathring{C} 05'34	39.86843 AU				
direct	941 Mar 14 j 17:41	6° \mathring{C} 01'30		conjunction	949 Jul 06 j 13:18	18° \mathring{C} 34'14	3°42'18
max. Earth dist.	941 Jun 22 j 17:56	7° \mathring{C} 42'10	41.75036 AU	minimum elong	949 Jul 06 j 13:11	18° \mathring{C} 34'14	3°42'18
				retrograde	949 Oct 16 j 21:48	20° \mathring{C} 25'45	
conjunction	941 Jun 25 j 07:34	7° \mathring{C} 46'16	0°31'24	opposition	950 Jan 04 j 06:42	19° \mathring{C} 17'19	4°07'01
minimum elong	941 Jun 25 j 07:33	7° \mathring{C} 46'16	0°31'24	min. Earth dist.	950 Jan 06 j 22:00	19° \mathring{C} 13'44	37.65136 AU
retrograde	941 Oct 05 j 09:53	9° \mathring{C} 31'17		direct	950 Mar 26 j 13:34	18° \mathring{C} 07'07	
opposition	941 Dec 24 j 16:11	8° \mathring{C} 25'13	0°44'59	max. Earth dist.	950 Jul 05 j 07:32	19° \mathring{C} 55'00	39.51855 AU
min. Earth dist.	941 Dec 26 j 22:59	8° \mathring{C} 22'14	39.62994 AU				
direct	942 Mar 16 j 04:40	7° \mathring{C} 17'52		conjunction	950 Jul 08 j 07:07	20° \mathring{C} 00'05	4°07'06
max. Earth dist.	942 Jun 24 j 06:11	8° \mathring{C} 59'12	41.51120 AU	minimum elong	950 Jul 08 j 07:00	20° \mathring{C} 00'04	4°07'06
				retrograde	950 Oct 18 j 15:10	21° \mathring{C} 52'29	
conjunction	942 Jun 26 j 21:41	9° \mathring{C} 03'27	0°54'27	opposition	951 Jan 05 j 22:33	20° \mathring{C} 43'40	4°33'19
minimum elong	942 Jun 26 j 21:39	9° \mathring{C} 03'27	0°54'26	min. Earth dist.	951 Jan 08 j 14:42	20° \mathring{C} 40'01	37.39436 AU
retrograde	942 Oct 07 j 03:11	10° \mathring{C} 49'13		direct	951 Mar 28 j 06:15	19° \mathring{C} 33'02	
opposition	942 Dec 26 j 04:35	9° \mathring{C} 42'53	1°09'21	max. Earth dist.	951 Jul 07 j 00:36	21° \mathring{C} 21'49	39.26013 AU
min. Earth dist.	942 Dec 28 j 12:53	9° \mathring{C} 39'49	39.39048 AU				
direct	943 Mar 17 j 13:57	8° \mathring{C} 35'14		conjunction	951 Jul 10 j 01:08	21° \mathring{C} 27'01	4°32'05
max. Earth dist.	943 Jun 25 j 21:00	10° \mathring{C} 17'25	41.27079 AU	minimum elong	951 Jul 10 j 01:00	21° \mathring{C} 27'00	4°32'06
				retrograde	951 Oct 20 j 09:05	23° \mathring{C} 20'19	
conjunction	943 Jun 28 j 12:13	10° \mathring{C} 21'41	1°17'44	opposition	952 Jan 07 j 14:46	22° \mathring{C} 11'08	4°59'48
minimum elong	943 Jun 28 j 12:10	10° \mathring{C} 21'40	1°17'45	min. Earth dist.	952 Jan 10 j 06:58	22° \mathring{C} 07'27	37.13691 AU
retrograde	943 Oct 08 j 18:59	12° \mathring{C} 08'13		direct	952 Mar 28 j 23:22	21° \mathring{C} 00'03	
opposition	943 Dec 27 j 17:20	11° \mathring{C} 01'38	1°33'58	max. Earth dist.	952 Jul 07 j 18:19	22° \mathring{C} 49'46	39.00123 AU
min. Earth dist.	943 Dec 30 j 02:08	10° \mathring{C} 58'32	39.14949 AU				
direct	944 Mar 18 j 03:12	9° \mathring{C} 53'41		conjunction	952 Jul 10 j 19:54	22° \mathring{C} 55'05	4°57'13
max. Earth dist.	944 Jun 26 j 10:08	11° \mathring{C} 36'36	41.02855 AU	minimum elong	952 Jul 10 j 19:44	22° \mathring{C} 55'04	4°57'12
				retrograde	952 Oct 21 j 02:13	24° \mathring{C} 49'20	
conjunction	944 Jun 29 j 03:14	11° \mathring{C} 41'01	1°41'17	opposition	953 Jan 08 j 07:33	23° \mathring{C} 39'47	5°26'28
minimum elong	944 Jun 29 j 03:10	11° \mathring{C} 41'01	1°41'16	min. Earth dist.	953 Jan 11 j 01:07	23° \mathring{C} 35'59	36.87951 AU
retrograde	944 Oct 09 j 11:25	13° \mathring{C} 28'21		direct	953 Mar 30 j 15:32	22° \mathring{C} 28'16	
opposition	944 Dec 28 j 06:21	12° \mathring{C} 21'31	1°58'52	max. Earth dist.	953 Jul 09 j 13:54	24° \mathring{C} 19'02	38.74271 AU
min. Earth dist.	944 Dec 30 j 16:10	12° \mathring{C} 18'20	38.90654 AU				
direct	945 Mar 19 j 15:40	11° \mathring{C} 13'14		conjunction	953 Jul 12 j 15:07	24° \mathring{C} 24'23	5°22'28
max. Earth dist.	945 Jun 28 j 00:43	12° \mathring{C} 56'57	40.78372 AU	minimum elong	953 Jul 12 j 14:57	24° \mathring{C} 24'22	5°22'29
				retrograde	953 Oct 22 j 20:58	26° \mathring{C} 19'37	
conjunction	945 Jun 30 j 18:51	13° \mathring{C} 01'29	2°05'03	opposition	954 Jan 10 j 00:54	25° \mathring{C} 09'42	5°53'16
minimum elong	945 Jun 30 j 18:48	13° \mathring{C} 01'29	2°05'03	min. Earth dist.	954 Jan 12 j 17:49	25° \mathring{C} 05'56	36.62276 AU
retrograde	945 Oct 11 j 00:28	14° \mathring{C} 49'38		direct	954 Apr 01 j 07:35	23° \mathring{C} 57'47	
opposition	945 Dec 29 j 20:03	13° \mathring{C} 42'31	2°24'00	max. Earth dist.	954 Jul 11 j 08:02	25° \mathring{C} 49'31	38.48482 AU
min. Earth dist.	946 Jan 01 j 07:32	13° \mathring{C} 39'14	38.66085 AU				
direct	946 Mar 21 j 06:57	12° \mathring{C} 33'54		conjunction	954 Jul 14 j 10:40	25° \mathring{C} 55'00	5°47'51
max. Earth dist.	946 Jun 29 j 15:41	14° \mathring{C} 18'26	40.53607 AU	minimum elong	954 Jul 14 j 10:29	25° \mathring{C} 54'59	5°47'50
				retrograde	954 Oct 24 j 18:09	27° \mathring{C} 51'17	
conjunction	946 Jul 02 j 10:40	14° \mathring{C} 23'04	2°29'02	opposition	955 Jan 11 j 18:50	26° \mathring{C} 41'01	6°20'12
minimum elong	946 Jul 02 j 10:36	14° \mathring{C} 23'04	2°29'02	min. Earth dist.	955 Jan 14 j 12:57	26° \mathring{C} 37'09	36.36691 AU
retrograde	946 Oct 12 j 15:35	16° \mathring{C} 12'02		direct	955 Apr 02 j 22:44	25° \mathring{C} 28'41	
opposition	946 Dec 31 j 10:04	15° \mathring{C} 04'37	2°49'24	max. Earth dist.	955 Jul 13 j 05:01	27° \mathring{C} 21'36	38.22766 AU
min. Earth dist.	947 Jan 02 j 21:44	15° \mathring{C} 01'18	38.41231 AU				
direct	947 Mar 22 j 20:36	13° \mathring{C} 55'39		conjunction	955 Jul 16 j 07:04	27° \mathring{C} 27'05	6°13'18
max. Earth dist.	947 Jul 01 j 05:58	15° \mathring{C} 40'56	40.28535 AU	minimum elong	955 Jul 16 j 06:51	27° \mathring{C} 27'04	6°13'18
				retrograde	955 Oct 26 j 15:37	29° \mathring{C} 24'26	
conjunction	947 Jul 04 j 03:06	15° \mathring{C} 45'44	2°53'15	opposition	956 Jan 13 j 13:12	28° \mathring{C} 13'50	6°47'15
minimum elong	947 Jul 04 j 03:00	15° \mathring{C} 45'43	2°53'15	min. Earth dist.	956 Jan 16 j 07:25	28° \mathring{C} 09'56	36.11168 AU
retrograde	947 Oct 14 j 08:21	17° \mathring{C} 35'32		direct	956 Apr 03 j 17:13	27° \mathring{C} 01'06	
opposition	948 Jan 02 j 00:31	16° \mathring{C} 27'48	3°15'03	max. Earth dist.	956 Jul 14 j 00:27	28° \mathring{C} 55'05	37.97089 AU
min. Earth dist.	948 Jan 04 j 14:20	16° \mathring{C} 24'21	38.16096 AU				
direct	948 Mar 23 j 07:54	15° \mathring{C} 18'26		conjunction	956 Jul 17 j 03:59	29° \mathring{C} 00'44	6°38'51
max. Earth dist.	948 Jul 01 j 22:43	17° \mathring{C} 04'36	40.03191 AU	minimum elong	956 Jul 17 j 03:46	29° \mathring{C} 00'43	6°38'50
					956 Aug 20 j 14:40	0° \mathring{C}	
conjunction	948 Jul 04 j 20:04	17° \mathring{C} 09'27	3°17'40	retrograde	956 Oct 27 j 15:45	0° \mathring{C} 59'11	
minimum elong	948 Jul 04 j 19:58	17° \mathring{C} 09'27	3°17'40		957 Jan 06 j 00:24	30° \mathring{C} R \mathring{C}	
retrograde	948 Oct 15 j 01:33	19° \mathring{C} 00'07		opposition	957 Jan 14 j 08:14	29° \mathring{C} 48'14	7°14'22
opposition	949 Jan 02 j 15:24	17° \mathring{C} 52'02	3°40'55	min. Earth dist.	957 Jan 17 j 03:01	29° \mathring{C} 44'18	35.85675 AU
min. Earth dist.	949 Jan 05 j 05:26	17° \mathring{C} 48'33	37.90708 AU	direct	957 Apr 05 j 11:33	28° \mathring{C} 35'06	

	957 Jun 28 j 21:42	0° Ω		conjunction	965 Aug 02 j 05:39	14° Ω 17'32	10°27'56
max. Earth dist.	957 Jul 15 j 21:52	0° Ω 30'16	37.71381 AU	minimum elong	965 Aug 02 j 05:18	14° Ω 17'30	10°27'56
					965 Aug 24 j 07:28	15° Ω	
conjunction	957 Jul 19 j 01:39	0° Ω 36'00	7°04'27	retrograde	965 Nov 12 j 23:05	16° Ω 26'52	
minimum elong	957 Jul 19 j 01:24	0° Ω 35'59	7°04'27	opposition	966 Jan 29 j 18:05	15° Ω 12'15	11°18'00
retrograde	957 Oct 29 j 13:01	2° Ω 35'36		min. Earth dist.	966 Feb 01 j 15:49	15° Ω 07'53	33.57060 AU
opposition	958 Jan 16 j 04:03	1° Ω 24'18	7°41'35		966 Feb 06 j 22:12	15° Ω	
min. Earth dist.	958 Jan 19 j 00:03	1° Ω 20'15	35.60142 AU	direct	966 Apr 20 j 15:58	13° Ω 54'53	
direct	958 Apr 07 j 07:14	0° Ω 10'45			966 Jun 29 j 06:43	15° Ω	
max. Earth dist.	958 Jul 17 j 19:29	2° Ω 07'05	37.45631 AU	max. Earth dist.	966 Aug 01 j 02:17	16° Ω 01'26	35.41059 AU
conjunction	958 Jul 20 j 23:51	2° Ω 12'54	7°30'04	conjunction	966 Aug 04 j 09:15	16° Ω 07'56	10°52'36
minimum elong	958 Jul 20 j 23:37	2° Ω 12'53	7°30'04	minimum elong	966 Aug 04 j 08:54	16° Ω 07'55	10°52'36
retrograde	958 Oct 31 j 11:26	4° Ω 13'39		retrograde	966 Nov 15 j 02:33	18° Ω 18'37	
opposition	959 Jan 18 j 00:23	3° Ω 02'00	8°08'50	opposition	967 Jan 31 j 20:10	17° Ω 03'36	11°44'14
min. Earth dist.	959 Jan 20 j 20:15	2° Ω 57'56	35.34569 AU	min. Earth dist.	967 Feb 03 j 18:42	16° Ω 59'08	33.32705 AU
direct	959 Apr 09 j 03:39	1° Ω 48'01		direct	967 Apr 22 j 15:21	15° Ω 45'45	
max. Earth dist.	959 Jul 19 j 16:53	3° Ω 45'29	37.19807 AU	max. Earth dist.	967 Aug 03 j 07:51	17° Ω 53'49	35.16606 AU
conjunction	959 Jul 22 j 22:44	3° Ω 51'28	7°55'43	conjunction	967 Aug 06 j 13:35	18° Ω 00'18	11°16'55
minimum elong	959 Jul 22 j 22:27	3° Ω 51'27	7°55'44	minimum elong	967 Aug 06 j 13:13	18° Ω 00'16	11°16'55
retrograde	959 Nov 02 j 10:01	5° Ω 53'24		retrograde	967 Nov 17 j 06:11	20° Ω 12'20	
opposition	960 Jan 19 j 21:33	4° Ω 41'21	8°36'06	opposition	968 Feb 02 j 23:00	18° Ω 56'55	12°10'05
min. Earth dist.	960 Jan 22 j 19:05	4° Ω 37'10	35.08940 AU	min. Earth dist.	968 Feb 05 j 20:22	18° Ω 52'30	33.08724 AU
direct	960 Apr 09 j 21:59	3° Ω 26'55		direct	968 Apr 23 j 17:45	17° Ω 38'37	
max. Earth dist.	960 Jul 20 j 16:46	5° Ω 25'38	36.93939 AU	max. Earth dist.	968 Aug 04 j 12:11	19° Ω 48'05	34.92505 AU
conjunction	960 Jul 23 j 22:22	5° Ω 31'40	8°21'21	conjunction	968 Aug 07 j 18:45	19° Ω 54'41	11°40'52
minimum elong	960 Jul 23 j 22:06	5° Ω 31'39	8°21'21	minimum elong	968 Aug 07 j 18:23	19° Ω 54'39	11°40'52
retrograde	960 Nov 03 j 09:11	7° Ω 34'47		retrograde	968 Nov 18 j 12:25	22° Ω 08'06	
opposition	961 Jan 20 j 19:09	6° Ω 22'20	9°03'22	opposition	969 Feb 04 j 02:40	20° Ω 52'18	12°35'32
min. Earth dist.	961 Jan 23 j 16:19	6° Ω 18'08	34.83290 AU	min. Earth dist.	969 Feb 07 j 00:36	20° Ω 47'50	32.85100 AU
direct	961 Apr 11 j 18:49	5° Ω 07'26		direct	969 Apr 25 j 17:46	19° Ω 33'34	
max. Earth dist.	961 Jul 22 j 15:18	7° Ω 07'18	36.68064 AU	max. Earth dist.	969 Aug 06 j 19:39	21° Ω 44'37	34.68733 AU
conjunction	961 Jul 25 j 22:32	7° Ω 13'30	8°46'56	conjunction	969 Aug 10 j 00:51	21° Ω 51'10	12°04'23
minimum elong	961 Jul 25 j 22:14	7° Ω 13'29	8°46'56	minimum elong	969 Aug 10 j 00:28	21° Ω 51'08	12°04'23
retrograde	961 Nov 05 j 10:57	9° Ω 17'50		retrograde	969 Nov 20 j 18:42	24° Ω 06'00	
opposition	962 Jan 22 j 17:36	8° Ω 04'58	9°30'35	opposition	970 Feb 06 j 07:22	22° Ω 49'48	13°00'31
min. Earth dist.	962 Jan 25 j 15:54	8° Ω 00'40	34.57684 AU	min. Earth dist.	970 Feb 09 j 04:52	22° Ω 45'20	32.61784 AU
direct	962 Apr 13 j 14:57	6° Ω 49'34		direct	970 Apr 27 j 20:56	21° Ω 30'37	
max. Earth dist.	962 Jul 24 j 16:50	8° Ω 50'47	36.42246 AU	max. Earth dist.	970 Aug 09 j 01:39	23° Ω 43'05	34.45261 AU
conjunction	962 Jul 27 j 23:17	8° Ω 56'59	9°12'26	conjunction	970 Aug 12 j 07:28	23° Ω 49'45	12°27'25
minimum elong	962 Jul 27 j 22:59	8° Ω 56'58	9°12'26	minimum elong	970 Aug 12 j 07:06	23° Ω 49'43	12°27'25
retrograde	962 Nov 07 j 12:36	11° Ω 02'32		retrograde	970 Nov 23 j 04:12	26° Ω 06'00	
opposition	963 Jan 24 j 16:41	9° Ω 49'13	9°57'43	opposition	971 Feb 08 j 12:49	24° Ω 49'25	13°24'59
min. Earth dist.	963 Jan 27 j 15:03	9° Ω 44'54	34.32175 AU	min. Earth dist.	971 Feb 11 j 10:12	24° Ω 44'55	32.38768 AU
direct	963 Apr 15 j 14:21	8° Ω 33'20		direct	971 Apr 30 j 01:03	23° Ω 29'46	
max. Earth dist.	963 Jul 26 j 17:13	10° Ω 35'46	36.16566 AU	max. Earth dist.	971 Aug 11 j 10:12	25° Ω 43'47	34.22066 AU
conjunction	963 Jul 30 j 00:39	10° Ω 42'07	9°37'48	conjunction	971 Aug 14 j 15:16	25° Ω 50'27	12°49'55
minimum elong	963 Jul 30 j 00:20	10° Ω 42'06	9°37'48	minimum elong	971 Aug 14 j 14:52	25° Ω 50'25	12°49'55
retrograde	963 Nov 09 j 16:03	12° Ω 48'55		retrograde	971 Nov 25 j 12:52	28° Ω 08'06	
opposition	964 Jan 26 j 16:15	11° Ω 35'09	10°24'41	opposition	972 Feb 10 j 19:11	26° Ω 51'06	13°48'52
min. Earth dist.	964 Jan 29 j 14:36	11° Ω 30'49	34.06859 AU	min. Earth dist.	972 Feb 13 j 16:58	26° Ω 46'33	32.16030 AU
direct	964 Apr 16 j 13:02	10° Ω 18'45		direct	972 May 01 j 07:39	25° Ω 31'00	
max. Earth dist.	964 Jul 27 j 19:48	12° Ω 22'34	35.91086 AU	max. Earth dist.	972 Aug 12 j 18:41	27° Ω 46'29	33.99177 AU
conjunction	964 Jul 31 j 02:56	12° Ω 28'57	10°02'59	conjunction	972 Aug 15 j 23:46	27° Ω 53'14	13°11'50
minimum elong	964 Jul 31 j 02:36	12° Ω 28'55	10°02'59	minimum elong	972 Aug 15 j 23:23	27° Ω 53'12	13°11'50
retrograde	964 Nov 10 j 18:24	14° Ω 37'00			972 Oct 30 j 08:15	0° Ω	
opposition	965 Jan 27 j 16:52	13° Ω 22'49	10°51'28	retrograde	972 Nov 26 j 23:40	0° Ω 12'17	
min. Earth dist.	965 Jan 30 j 15:44	13° Ω 18'24	33.81792 AU		972 Dec 24 j 21:51	30° Ω	
direct	965 Apr 18 j 14:12	12° Ω 05'55		opposition	973 Feb 12 j 02:24	28° Ω 54'51	14°12'07
max. Earth dist.	965 Jul 29 j 22:56	14° Ω 11'06	35.65902 AU	min. Earth dist.	973 Feb 14 j 23:09	28° Ω 50'21	31.93611 AU
				direct	973 May 03 j 15:05	27° Ω 34'17	

max. Earth dist.	973 Aug 15 j 04:12	29° Ω 51'16	33.76611 AU	max. Earth dist.	981 Sep 02 j 20:06	17° Υ 42'41	32.16678 AU
conjunction	973 Aug 18 j 09:02	29° Ω 58'03	13°33'06	conjunction	981 Sep 05 j 14:02	17° Υ 48'56	15°49'37
minimum elong	973 Aug 18 j 08:38	29° Ω 58'01	13°33'05	minimum elong	981 Sep 05 j 13:44	17° Υ 48'54	15°49'37
	973 Aug 19 j 07:09	0° Υ		retrograde	981 Dec 17 j 21:40	20° Υ 20'11	
retrograde	973 Nov 29 j 09:01	2° Υ 18'30		opposition	982 Mar 04 j 10:51	18° Υ 59'22	16°58'01
opposition	974 Feb 14 j 10:38	1° Υ 00'39	14°34'39	min. Earth dist.	982 Mar 06 j 22:06	18° Υ 55'17	30.16468 AU
min. Earth dist.	974 Feb 17 j 07:59	0° Υ 56'04	31.71547 AU	direct	982 May 23 j 13:10	17° Υ 35'11	
	974 Mar 29 j 16:52	30° Υ 0		max. Earth dist.	982 Sep 05 j 13:58	20° Υ 05'50	32.00007 AU
direct	974 May 05 j 21:45	29° Ω 39'37					
	974 Jun 11 j 10:22	0° Υ		conjunction	982 Sep 08 j 06:07	20° Υ 11'58	16°01'16
max. Earth dist.	974 Aug 17 j 15:32	1° Υ 58'09	33.54451 AU	minimum elong	982 Sep 08 j 05:52	20° Υ 11'56	16°01'16
				retrograde	982 Dec 20 j 14:44	22° Υ 44'26	
conjunction	974 Aug 20 j 19:04	2° Υ 04'53	13°53'37	opposition	983 Mar 07 j 02:49	21° Υ 23'19	17°10'00
minimum elong	974 Aug 20 j 18:42	2° Υ 04'51	13°53'37	min. Earth dist.	983 Mar 09 j 13:41	21° Υ 19'15	30.00373 AU
retrograde	974 Dec 01 j 20:20	4° Υ 26'42		direct	983 May 26 j 03:25	19° Υ 58'52	
opposition	975 Feb 16 j 19:29	3° Υ 08'27	14°56'23	max. Earth dist.	983 Sep 08 j 08:43	22° Υ 30'54	31.84097 AU
min. Earth dist.	975 Feb 19 j 15:20	3° Υ 03'56	31.49912 AU				
direct	975 May 08 j 06:40	1° Υ 46'57		conjunction	983 Sep 10 j 22:50	22° Υ 36'53	16°11'29
max. Earth dist.	975 Aug 20 j 02:14	4° Υ 06'55	33.32751 AU	minimum elong	983 Sep 10 j 22:35	22° Υ 36'52	16°11'29
				retrograde	983 Dec 23 j 10:13	25° Υ 10'30	
conjunction	975 Aug 23 j 05:51	4° Υ 13'43	14°13'20	opposition	984 Mar 08 j 19:35	23° Υ 49'07	17°20'26
minimum elong	975 Aug 23 j 05:27	4° Υ 13'41	14°13'20	min. Earth dist.	984 Mar 11 j 03:59	23° Υ 45'13	29.84997 AU
retrograde	975 Dec 04 j 07:33	6° Υ 36'56		direct	984 May 27 j 21:02	22° Υ 24'23	
opposition	976 Feb 19 j 05:21	5° Υ 18'14	15°17'13	max. Earth dist.	984 Sep 10 j 03:23	24° Υ 57'40	31.68923 AU
min. Earth dist.	976 Feb 22 j 01:27	5° Υ 13'41	31.28779 AU				
direct	976 May 09 j 13:28	3° Υ 56'16		conjunction	984 Sep 12 j 16:13	25° Υ 03'35	16°20'12
max. Earth dist.	976 Aug 21 j 15:58	6° Υ 17'51	33.11601 AU	minimum elong	984 Sep 12 j 16:01	25° Υ 03'33	16°20'11
				retrograde	984 Dec 25 j 03:45	27° Υ 38'17	
conjunction	976 Aug 24 j 17:26	6° Υ 24'32	14°32'08	opposition	985 Mar 11 j 13:14	26° Υ 16'37	17°29'13
minimum elong	976 Aug 24 j 17:05	6° Υ 24'30	14°32'09	min. Earth dist.	985 Mar 13 j 21:01	26° Υ 12'44	29.70357 AU
retrograde	976 Dec 05 j 18:19	8° Υ 49'06		direct	985 May 30 j 12:43	24° Υ 51'37	
opposition	977 Feb 20 j 16:04	7° Υ 30'00	15°37'03	max. Earth dist.	985 Sep 13 j 00:08	27° Υ 26'12	31.54534 AU
min. Earth dist.	977 Feb 23 j 10:27	7° Υ 25'32	31.08225 AU				
direct	977 May 12 j 00:13	6° Υ 07'36		conjunction	985 Sep 15 j 10:13	27° Υ 31'52	16°27'21
max. Earth dist.	977 Aug 24 j 04:23	8° Υ 30'36	32.91091 AU	minimum elong	985 Sep 15 j 10:01	27° Υ 31'51	16°27'21
					985 Dec 07 j 05:51	0° Ω	
conjunction	977 Aug 27 j 05:37	8° Υ 37'20	14°49'58	retrograde	985 Dec 27 j 22:01	0° Ω 07'35	
minimum elong	977 Aug 27 j 05:14	8° Υ 37'18	14°49'58		986 Jan 17 j 19:52	30° Υ	
retrograde	977 Dec 08 j 07:39	11° Υ 03'16		opposition	986 Mar 14 j 07:33	28° Υ 45'39	17°36'18
opposition	978 Feb 23 j 03:41	9° Υ 43'46	15°55'48	min. Earth dist.	986 Mar 16 j 12:46	28° Υ 41'55	29.56480 AU
min. Earth dist.	978 Feb 25 j 21:09	9° Υ 39'21	30.88361 AU	direct	986 Jun 02 j 07:31	27° Υ 20'22	
direct	978 May 14 j 09:05	8° Υ 20'56		max. Earth dist.	986 Sep 15 j 19:35	29° Υ 56'00	31.40957 AU
max. Earth dist.	978 Aug 26 j 20:03	10° Υ 45'36	32.71308 AU		986 Sep 17 j 12:11	0° Ω	
conjunction	978 Aug 29 j 18:33	10° Υ 52'08	15°06'42	conjunction	986 Sep 18 j 04:32	0° Ω 01'36	16°32'52
minimum elong	978 Aug 29 j 18:13	10° Υ 52'06	15°06'42	minimum elong	986 Sep 18 j 04:24	0° Ω 01'36	16°32'52
retrograde	978 Dec 10 j 20:33	13° Υ 19'26		retrograde	986 Dec 30 j 17:41	2° Ω 38'14	
opposition	979 Feb 25 j 16:16	11° Υ 59'34	16°13'21	opposition	987 Mar 17 j 02:29	1° Ω 16'01	17°41'36
min. Earth dist.	979 Feb 28 j 08:20	11° Υ 55'12	30.69226 AU	min. Earth dist.	987 Mar 19 j 06:19	1° Ω 12'24	29.43420 AU
direct	979 May 16 j 19:59	10° Υ 36'21			987 May 11 j 19:56	30° Υ	
max. Earth dist.	979 Aug 29 j 10:32	13° Υ 02'29	32.52310 AU	direct	987 Jun 05 j 00:16	29° Υ 50'30	
					987 Jun 28 j 20:16	0° Ω	
conjunction	979 Sep 01 j 08:16	13° Υ 08'59	15°22'16	max. Earth dist.	987 Sep 18 j 17:55	2° Ω 27'18	31.28250 AU
minimum elong	979 Sep 01 j 07:55	13° Υ 08'57	15°22'16				
retrograde	979 Dec 13 j 12:39	15° Υ 37'38		conjunction	987 Sep 20 j 23:31	2° Ω 32'37	16°36'42
opposition	980 Feb 28 j 05:25	14° Υ 17'25	16°29'37	minimum elong	987 Sep 20 j 23:24	2° Ω 32'36	16°36'42
min. Earth dist.	980 Mar 01 j 19:48	14° Υ 13'10	30.50878 AU	retrograde	988 Jan 02 j 11:27	5° Ω 10'04	
direct	980 May 18 j 08:07	12° Υ 53'51		opposition	988 Mar 18 j 21:57	3° Ω 47'36	17°45'03
max. Earth dist.	980 Aug 31 j 03:36	15° Υ 21'36	32.34098 AU	min. Earth dist.	988 Mar 20 j 23:30	3° Ω 44'06	29.31219 AU
				direct	988 Jun 06 j 19:44	2° Ω 21'50	
conjunction	980 Sep 02 j 22:56	15° Υ 27'56	15°36'36	max. Earth dist.	988 Sep 20 j 14:39	4° Ω 59'32	31.16483 AU
minimum elong	980 Sep 02 j 22:38	15° Υ 27'54	15°36'36				
retrograde	980 Dec 15 j 04:04	17° Υ 57'53		conjunction	988 Sep 22 j 18:43	5° Ω 04'42	16°38'46
opposition	981 Mar 01 j 19:47	16° Υ 37'22	16°44'32	minimum elong	988 Sep 22 j 18:38	5° Ω 04'42	16°38'45
min. Earth dist.	981 Mar 04 j 09:23	16° Υ 33'09	30.33293 AU	retrograde	989 Jan 04 j 07:00	7° Ω 42'55	
direct	981 May 20 j 22:09	15° Υ 13'30		opposition	989 Mar 21 j 18:03	6° Ω 20'11	17°46'34

min. Earth dist.	989 Mar 23 j 17:11	6° <u>♁</u> 16'52	29.19982 AU	conjunction	997 Oct 16 j 08:14	28° <u>♁</u> 24'54	15°32'05
direct	989 Jun 09 j 14:49	4° <u>♁</u> 54'12		minimum elong	997 Oct 16 j 08:29	28° <u>♁</u> 24'56	15°32'06
max. Earth dist.	989 Sep 23 j 14:07	7° <u>♁</u> 32'57	31.05738 AU		997 Nov 27 j 00:30	0° <u>♁</u>	
				retrograde	998 Jan 28 j 02:12	1° <u>♁</u> 05'55	
conjunction	989 Sep 25 j 14:12	7° <u>♁</u> 37'46	16°39'00		998 Apr 04 j 13:26	30° <u>♁</u>	
minimum elong	989 Sep 25 j 14:09	7° <u>♁</u> 37'45	16°39'01	opposition	998 Apr 14 j 23:01	29° <u>♁</u> 42'34	16°27'43
retrograde	990 Jan 07 j 01:31	10° <u>♁</u> 16'38		min. Earth dist.	998 Apr 15 j 20:31	29° <u>♁</u> 41'04	28.68467 AU
opposition	990 Mar 24 j 14:45	8° <u>♁</u> 53'41	17°46'06	direct	998 Jul 03 j 18:40	28° <u>♁</u> 16'38	
min. Earth dist.	990 Mar 26 j 11:39	8° <u>♁</u> 50'31	29.09770 AU		998 Sep 23 j 05:21	0° <u>♁</u>	
direct	990 Jun 12 j 10:53	7° <u>♁</u> 27'32		max. Earth dist.	998 Oct 18 j 08:50	0° <u>♁</u> 59'36	30.60596 AU
max. Earth dist.	990 Sep 26 j 12:00	10° <u>♁</u> 07'03	30.96108 AU				
				conjunction	998 Oct 19 j 04:31	1° <u>♁</u> 01'35	15°15'19
conjunction	990 Sep 28 j 09:55	10° <u>♁</u> 11'39	16°37'22	minimum elong	998 Oct 19 j 04:48	1° <u>♁</u> 01'37	15°15'18
minimum elong	990 Sep 28 j 09:55	10° <u>♁</u> 11'39	16°37'22	retrograde	999 Jan 30 j 21:46	3° <u>♁</u> 42'22	
retrograde	991 Jan 09 j 22:33	12° <u>♁</u> 51'06		opposition	999 Apr 17 j 21:24	2° <u>♁</u> 19'05	16°08'54
opposition	991 Mar 27 j 11:34	11° <u>♁</u> 27'59	17°43'34	min. Earth dist.	999 Apr 18 j 15:49	2° <u>♁</u> 17'47	28.68083 AU
min. Earth dist.	991 Mar 29 j 04:59	11° <u>♁</u> 25'03	29.00679 AU	direct	999 Jul 06 j 18:29	0° <u>♁</u> 53'17	
direct	991 Jun 15 j 06:52	10° <u>♁</u> 01'42		max. Earth dist.	999 Oct 21 j 06:54	3° <u>♁</u> 36'00	30.61039 AU
max. Earth dist.	991 Sep 29 j 12:01	12° <u>♁</u> 42'05	30.87644 AU				
				conjunction	999 Oct 22 j 00:26	3° <u>♁</u> 37'47	14°56'48
conjunction	991 Oct 01 j 06:05	12° <u>♁</u> 46'19	16°33'49	minimum elong	999 Oct 22 j 00:45	3° <u>♁</u> 37'49	14°56'48
minimum elong	991 Oct 01 j 06:07	12° <u>♁</u> 46'19	16°33'50	retrograde	1000 Feb 02 j 17:36	6° <u>♁</u> 18'15	
retrograde	992 Jan 12 j 17:52	15° <u>♁</u> 26'16		opposition	1000 Apr 19 j 19:47	4° <u>♁</u> 55'00	15°48'13
opposition	992 Mar 29 j 09:06	14° <u>♁</u> 03'01	17°38'57	min. Earth dist.	1000 Apr 20 j 11:06	4° <u>♁</u> 53'56	28.68751 AU
min. Earth dist.	992 Mar 31 j 00:25	14° <u>♁</u> 00'14	28.92732 AU	direct	1000 Jul 08 j 16:36	3° <u>♁</u> 29'20	
direct	992 Jun 17 j 04:16	12° <u>♁</u> 36'41					
max. Earth dist.	992 Oct 01 j 10:51	15° <u>♁</u> 17'42	30.80386 AU	conjunction	1000 Oct 23 j 20:00	6° <u>♁</u> 13'17	14°36'35
				minimum elong	1000 Oct 23 j 20:19	6° <u>♁</u> 13'18	14°36'35
conjunction	992 Oct 03 j 02:11	15° <u>♁</u> 21'40	16°28'19	max. Earth dist.	1000 Oct 23 j 06:51	6° <u>♁</u> 11'57	30.62561 AU
minimum elong	992 Oct 03 j 02:16	15° <u>♁</u> 21'41	16°28'19	retrograde	1001 Feb 04 j 11:30	8° <u>♁</u> 53'19	
retrograde	993 Jan 14 j 15:41	18° <u>♁</u> 02'03		opposition	1001 Apr 22 j 18:00	7° <u>♁</u> 30'08	15°25'44
opposition	993 Apr 01 j 06:49	16° <u>♁</u> 38'42	17°32'14	min. Earth dist.	1001 Apr 23 j 06:29	7° <u>♁</u> 29'15	28.70482 AU
min. Earth dist.	993 Apr 02 j 18:07	16° <u>♁</u> 36'13	28.85950 AU	direct	1001 Jul 11 j 15:34	6° <u>♁</u> 04'37	
direct	993 Jun 20 j 02:35	15° <u>♁</u> 12'22					
max. Earth dist.	993 Oct 04 j 10:51	17° <u>♁</u> 54'02	30.74307 AU	conjunction	1001 Oct 26 j 15:01	8° <u>♁</u> 47'52	14°14'44
				minimum elong	1001 Oct 26 j 15:23	8° <u>♁</u> 47'55	14°14'45
conjunction	993 Oct 05 j 22:36	17° <u>♁</u> 57'39	16°20'53	max. Earth dist.	1001 Oct 26 j 04:15	8° <u>♁</u> 46'47	30.65201 AU
minimum elong	993 Oct 05 j 22:43	17° <u>♁</u> 57'40	16°20'54	retrograde	1002 Feb 07 j 07:27	11° <u>♁</u> 27'24	
retrograde	994 Jan 17 j 12:07	20° <u>♁</u> 38'22		opposition	1002 Apr 25 j 15:41	10° <u>♁</u> 04'17	15°01'31
opposition	994 Apr 04 j 04:58	19° <u>♁</u> 14'59	17°23'24	min. Earth dist.	1002 Apr 26 j 00:10	10° <u>♁</u> 03'41	28.73355 AU
min. Earth dist.	994 Apr 05 j 14:26	19° <u>♁</u> 12'37	28.80311 AU	direct	1002 Jul 14 j 12:55	8° <u>♁</u> 38'56	
direct	994 Jun 22 j 23:14	17° <u>♁</u> 48'41					
max. Earth dist.	994 Oct 07 j 10:26	20° <u>♁</u> 30'50	30.69396 AU	conjunction	1002 Oct 29 j 09:41	11° <u>♁</u> 21'26	13°51'19
				minimum elong	1002 Oct 29 j 10:03	11° <u>♁</u> 21'28	13°51'18
conjunction	994 Oct 08 j 18:57	20° <u>♁</u> 34'08	16°11'30	max. Earth dist.	1002 Oct 29 j 03:25	11° <u>♁</u> 20'48	30.69011 AU
minimum elong	994 Oct 08 j 19:06	20° <u>♁</u> 34'09	16°11'30	retrograde	1003 Feb 09 j 23:19	14° <u>♁</u> 00'21	
retrograde	995 Jan 20 j 10:30	23° <u>♁</u> 15'05		opposition	1003 Apr 28 j 13:12	12° <u>♁</u> 37'21	14°35'37
opposition	995 Apr 07 j 03:12	21° <u>♁</u> 51'41	17°12'31	min. Earth dist.	1003 Apr 28 j 19:04	12° <u>♁</u> 36'56	28.77397 AU
min. Earth dist.	995 Apr 08 j 08:46	21° <u>♁</u> 49'36	28.75770 AU	direct	1003 Jul 17 j 11:08	11° <u>♁</u> 12'13	
direct	995 Jun 25 j 22:59	20° <u>♁</u> 25'27					
max. Earth dist.	995 Oct 10 j 09:52	23° <u>♁</u> 07'58	30.65583 AU	conjunction	1003 Nov 01 j 03:43	13° <u>♁</u> 53'51	13°26'23
				minimum elong	1003 Nov 01 j 04:07	13° <u>♁</u> 53'53	13°26'23
conjunction	995 Oct 11 j 15:28	23° <u>♁</u> 10'58	16°00'14	max. Earth dist.	1003 Nov 01 j 00:09	13° <u>♁</u> 53'30	30.74033 AU
minimum elong	995 Oct 11 j 15:39	23° <u>♁</u> 10'59	16°00'14		1003 Nov 29 j 12:43	15° <u>♁</u>	
retrograde	996 Jan 23 j 07:36	25° <u>♁</u> 52'03		retrograde	1004 Feb 12 j 17:42	16° <u>♁</u> 32'06	
opposition	996 Apr 09 j 01:42	24° <u>♁</u> 28'39	16°59'34	opposition	1004 Apr 30 j 10:08	15° <u>♁</u> 09'14	14°08'07
min. Earth dist.	996 Apr 10 j 05:20	24° <u>♁</u> 26'43	28.72298 AU	min. Earth dist.	1004 Apr 30 j 11:29	15° <u>♁</u> 09'09	28.82653 AU
direct	996 Jun 27 j 20:53	23° <u>♁</u> 02'30			1004 May 05 j 23:41	15° <u>♁</u>	
max. Earth dist.	996 Oct 12 j 09:58	25° <u>♁</u> 45'19	30.62865 AU	direct	1004 Jul 19 j 08:30	13° <u>♁</u> 44'21	
					1004 Sep 26 j 08:23	15° <u>♁</u>	
conjunction	996 Oct 13 j 12:00	25° <u>♁</u> 47'58	15°47'04				
minimum elong	996 Oct 13 j 12:13	25° <u>♁</u> 47'59	15°47'04	conjunction	1004 Nov 02 j 21:25	16° <u>♁</u> 25'05	13°00'01
retrograde	997 Jan 25 j 04:27	28° <u>♁</u> 29'03		minimum elong	1004 Nov 02 j 21:48	16° <u>♁</u> 25'07	13°00'01
opposition	997 Apr 12 j 00:20	27° <u>♁</u> 05'42	16°44'38	max. Earth dist.	1004 Nov 02 j 22:08	16° <u>♁</u> 25'09	30.80279 AU
min. Earth dist.	997 Apr 13 j 00:17	27° <u>♁</u> 04'00	28.69864 AU	retrograde	1005 Feb 14 j 10:07	19° <u>♁</u> 02'37	
direct	997 Jun 30 j 20:40	25° <u>♁</u> 39'39		opposition	1005 May 03 j 06:53	17° <u>♁</u> 39'56	13°39'08
max. Earth dist.	997 Oct 15 j 08:36	28° <u>♁</u> 22'31	30.61201 AU	min. Earth dist.	1005 May 03 j 05:43	17° <u>♁</u> 40'01	28.89124 AU

direct	1005 Jul 22 j 03:51	16°M.15'21		direct	1013 Aug 11 j 13:47	5°Z.32'41	
conjunction	1005 Nov 05 j 14:21	18°M.55'05	12°32'19	conjunction	1013 Nov 24 j 09:03	8°Z.02'44	8°15'42
minimum elong	1005 Nov 05 j 14:46	18°M.55'07	12°32'19	minimum elong	1013 Nov 24 j 09:23	8°Z.02'46	8°15'42
max. Earth dist.	1005 Nov 05 j 18:13	18°M.55'28	30.87738 AU	max. Earth dist.	1013 Nov 25 j 12:29	8°Z.05'20	31.82902 AU
retrograde	1006 Feb 17 j 03:42	21°M.31'50		retrograde	1014 Mar 07 j 19:59	10°Z.31'25	
opposition	1006 May 06 j 02:56	20°M.09'22	13°08'46	opposition	1014 May 25 j 23:07	9°Z.11'04	8°30'16
min. Earth dist.	1006 May 05 j 21:23	20°M.09'45	28.96764 AU	min. Earth dist.	1014 May 24 j 19:43	9°Z.12'52	29.92607 AU
direct	1006 Jul 25 j 02:05	18°M.45'07		direct	1014 Aug 14 j 05:50	7°Z.49'44	
conjunction	1006 Nov 08 j 06:55	21°M.23'49	12°03'24	conjunction	1014 Nov 26 j 20:08	10°Z.18'24	7°40'47
minimum elong	1006 Nov 08 j 07:19	21°M.23'51	12°03'24	minimum elong	1014 Nov 26 j 20:26	10°Z.18'26	7°40'46
max. Earth dist.	1006 Nov 08 j 14:15	21°M.24'32	30.96328 AU	max. Earth dist.	1014 Nov 28 j 01:26	10°Z.21'09	31.98565 AU
retrograde	1007 Feb 19 j 20:15	23°M.59'43		retrograde	1015 Mar 10 j 06:18	12°Z.45'54	
opposition	1007 May 08 j 22:29	22°M.37'30	12°37'07	min. Earth dist.	1015 May 27 j 06:03	11°Z.27'53	30.08387 AU
min. Earth dist.	1007 May 08 j 14:33	22°M.38'02	29.05516 AU	opposition	1015 May 28 j 13:16	11°Z.25'50	7°52'40
direct	1007 Jul 27 j 21:19	21°M.13'35		direct	1015 Aug 16 j 20:57	10°Z.04'53	
conjunction	1007 Nov 10 j 22:55	23°M.51'12	11°33'21	conjunction	1015 Nov 29 j 06:31	12°Z.32'10	7°05'31
minimum elong	1007 Nov 10 j 23:19	23°M.51'15	11°33'22	minimum elong	1015 Nov 29 j 06:48	12°Z.32'12	7°05'30
max. Earth dist.	1007 Nov 11 j 09:33	23°M.52'15	31.06002 AU	max. Earth dist.	1015 Nov 30 j 15:12	12°Z.35'13	32.15063 AU
retrograde	1008 Feb 22 j 12:20	26°M.26'13		retrograde	1016 Mar 11 j 15:40	14°Z.58'31	
opposition	1008 May 10 j 17:35	25°M.04'15	12°04'21	min. Earth dist.	1016 May 28 j 17:49	13°Z.40'54	30.25047 AU
min. Earth dist.	1008 May 10 j 05:57	25°M.05'03	29.15299 AU	opposition	1016 May 30 j 03:00	13°Z.38'44	7°14'45
direct	1008 Jul 29 j 18:06	23°M.40'43		direct	1016 Aug 18 j 09:23	12°Z.18'10	
conjunction	1008 Nov 12 j 14:09	26°M.17'11	11°02'19	conjunction	1016 Nov 30 j 16:02	14°Z.44'05	6°29'59
minimum elong	1008 Nov 12 j 14:32	26°M.17'13	11°02'19	minimum elong	1016 Nov 30 j 16:17	14°Z.44'06	6°29'59
max. Earth dist.	1008 Nov 13 j 03:24	26°M.18'28	31.16662 AU	max. Earth dist.	1016 Dec 02 j 03:14	14°Z.47'20	32.32432 AU
retrograde	1009 Feb 24 j 04:41	28°M.51'15		retrograde	1017 Mar 14 j 01:10	17°Z.09'16	
opposition	1009 May 13 j 12:15	27°M.29'33	11°30'33	min. Earth dist.	1017 May 31 j 03:02	15°Z.52'11	30.42577 AU
min. Earth dist.	1009 May 12 j 21:58	27°M.30'31	29.26062 AU	opposition	1017 Jun 01 j 15:49	15°Z.49'48	6°36'39
direct	1009 Aug 01 j 12:49	26°M.06'23		direct	1017 Aug 20 j 23:23	14°Z.29'39	
conjunction	1009 Nov 15 j 04:59	28°M.41'40	10°30'22	conjunction	1017 Dec 03 j 00:54	16°Z.54'12	5°54'18
minimum elong	1009 Nov 15 j 05:23	28°M.41'42	10°30'23	minimum elong	1017 Dec 03 j 01:08	16°Z.54'14	5°54'18
max. Earth dist.	1009 Nov 15 j 21:49	28°M.43'18	31.28260 AU	max. Earth dist.	1017 Dec 04 j 14:35	16°Z.57'40	32.50632 AU
retrograde	1009 Dec 20 j 11:12	0°Z.		retrograde	1018 Mar 16 j 11:16	19°Z.18'14	
opposition	1010 Feb 26 j 19:22	1°Z.14'44		min. Earth dist.	1018 Jun 02 j 12:48	18°Z.01'37	30.60958 AU
min. Earth dist.	1010 May 12 j 02:36	30°R.M.		opposition	1018 Jun 04 j 03:49	17°Z.59'06	5°58'24
direct	1010 May 16 j 06:05	29°M.53'18	10°55'51	direct	1018 Aug 23 j 11:21	16°Z.39'23	
retrograde	1010 May 15 j 13:04	29°M.54'27	29.37720 AU	conjunction	1018 Dec 05 j 09:08	19°Z.02'36	5°18'30
direct	1010 Aug 04 j 09:23	28°M.30'31		minimum elong	1018 Dec 05 j 09:21	19°Z.02'37	5°18'31
conjunction	1010 Nov 17 j 19:02	1°Z.04'33	9°57'39	max. Earth dist.	1018 Dec 07 j 01:46	19°Z.06'18	32.69631 AU
minimum elong	1010 Nov 17 j 19:24	1°Z.04'35	9°57'39	retrograde	1019 Mar 18 j 19:54	21°Z.25'28	
max. Earth dist.	1010 Nov 18 j 13:40	1°Z.06'20	31.40717 AU	min. Earth dist.	1019 Jun 04 j 21:39	20°Z.09'20	30.80100 AU
retrograde	1011 Mar 01 j 09:47	3°Z.36'35		opposition	1019 Jun 06 j 15:07	20°Z.06'41	5°20'08
opposition	1011 May 18 j 23:23	2°Z.15'25	10°20'22	direct	1019 Aug 26 j 00:32	18°Z.47'25	
min. Earth dist.	1011 May 18 j 03:14	2°Z.16'46	29.50235 AU	conjunction	1019 Dec 07 j 16:27	21°Z.09'18	4°42'43
direct	1011 Aug 07 j 02:41	0°Z.53'00		minimum elong	1019 Dec 07 j 16:38	21°Z.09'19	4°42'43
conjunction	1011 Nov 20 j 08:31	3°Z.25'45	9°24'14	max. Earth dist.	1019 Dec 09 j 10:42	21°Z.13'06	32.89332 AU
minimum elong	1011 Nov 20 j 08:53	3°Z.25'47	9°24'14	retrograde	1020 Mar 20 j 04:05	23°Z.31'01	
max. Earth dist.	1011 Nov 21 j 06:48	3°Z.27'53	31.53990 AU	min. Earth dist.	1020 Jun 06 j 05:31	22°Z.15'25	30.99951 AU
retrograde	1012 Mar 02 j 21:13	5°Z.56'41		opposition	1020 Jun 08 j 01:47	22°Z.12'36	4°41'55
opposition	1012 May 20 j 16:03	4°Z.35'48	9°44'13	direct	1020 Aug 27 j 10:30	20°Z.53'46	
min. Earth dist.	1012 May 19 j 17:51	4°Z.37'17	29.63548 AU	conjunction	1020 Dec 08 j 23:21	23°Z.14'20	4°06'58
direct	1012 Aug 08 j 21:27	3°Z.13'46		minimum elong	1020 Dec 08 j 23:31	23°Z.14'20	4°06'59
conjunction	1012 Nov 21 j 21:09	5°Z.45'10	8°50'13	max. Earth dist.	1020 Dec 10 j 20:45	23°Z.18'23	33.09673 AU
minimum elong	1012 Nov 21 j 21:29	5°Z.45'12	8°50'13	retrograde	1021 Mar 22 j 09:44	25°Z.34'54	
max. Earth dist.	1012 Nov 22 j 20:56	5°Z.47'26	31.68052 AU	min. Earth dist.	1021 Jun 08 j 14:06	24°Z.19'44	31.20413 AU
retrograde	1013 Mar 05 j 10:28	8°Z.14'59		opposition	1021 Jun 10 j 11:45	24°Z.16'50	4°03'50
min. Earth dist.	1013 May 22 j 06:08	6°Z.56'05	29.77673 AU	direct	1021 Aug 29 j 23:18	22°Z.58'27	
opposition	1013 May 23 j 07:55	6°Z.54'22	9°07'29	conjunction	1021 Dec 11 j 05:24	25°Z.17'41	3°31'22

minimum elong	1021 Dec 11 j 05:33	25°♂17'42	3°31'22	direct	1029 Sep 15 j 09:04	8°♁33'08	
max. Earth dist.	1021 Dec 13 j 03:40	25°♂21'48	33.30563 AU				
retrograde	1022 Mar 24 j 17:03	27°♂37'06		conjunction	1029 Dec 26 j 06:54	10°♁42'07	-1°-2'-30
min. Earth dist.	1022 Jun 10 j 20:22	26°♂22'27	31.41411 AU	minimum elong	1029 Dec 26 j 06:51	10°♁42'07	1°02'31
opposition	1022 Jun 12 j 20:53	26°♂19'24	3°25'57	max. Earth dist.	1029 Dec 28 j 19:16	10°♁47'08	35.11852 AU
direct	1022 Sep 01 j 09:27	25°♂01'27		retrograde	1030 Apr 08 j 13:12	12°♁52'32	
				min. Earth dist.	1030 Jun 26 j 07:45	11°♁40'58	33.23973 AU
conjunction	1022 Dec 13 j 11:00	27°♂19'22	2°55'58	opposition	1030 Jun 28 j 20:45	11°♁37'18	-1°-23'-32
minimum elong	1022 Dec 13 j 11:07	27°♂19'22	2°55'57	direct	1030 Sep 17 j 14:58	10°♁22'22	
max. Earth dist.	1022 Dec 15 j 11:55	27°♂23'40	33.51913 AU				
retrograde	1023 Mar 26 j 20:16	29°♂37'38		conjunction	1030 Dec 28 j 07:08	12°♁30'10	-1°-34'-46
min. Earth dist.	1023 Jun 13 j 04:14	28°♂23'21	31.62858 AU	minimum elong	1030 Dec 28 j 07:05	12°♁30'10	1°34'47
opposition	1023 Jun 15 j 05:23	28°♂20'16	2°48'20	max. Earth dist.	1030 Dec 30 j 20:07	12°♁35'13	35.36301 AU
direct	1023 Sep 03 j 19:00	27°♂02'44		retrograde	1031 Apr 10 j 13:02	14°♁39'34	
				min. Earth dist.	1031 Jun 28 j 07:57	13°♁28'29	33.48654 AU
conjunction	1023 Dec 15 j 15:56	29°♂19'19	2°20'48	opposition	1031 Jun 30 j 23:30	13°♁24'41	-1°-57'-25
minimum elong	1023 Dec 15 j 16:02	29°♂19'20	2°20'48	direct	1031 Sep 19 j 18:39	12°♁10'09	
max. Earth dist.	1023 Dec 17 j 17:43	29°♂23'41	33.73671 AU				
	1024 Jan 04 j 07:56	0°♁		conjunction	1031 Dec 30 j 06:53	14°♁16'50	-2°-6'-29
retrograde	1024 Mar 27 j 23:59	1°♁36'27		minimum elong	1031 Dec 30 j 06:48	14°♁16'50	2°06'30
min. Earth dist.	1024 Jun 14 j 09:20	0°♁22'38	31.84702 AU	max. Earth dist.	1032 Jan 01 j 21:55	14°♁22'01	35.61096 AU
opposition	1024 Jun 16 j 13:09	0°♁19'25	2°11'02	retrograde	1032 Apr 11 j 12:25	16°♁25'16	
	1024 Jun 29 j 16:26	30°♁		min. Earth dist.	1032 Jun 29 j 09:48	15°♁14'32	33.73683 AU
direct	1024 Sep 05 j 03:34	29°♂02'16		opposition	1032 Jul 02 j 01:56	15°♁10'43	-2°-30'-41
	1024 Nov 07 j 04:13	0°♁		direct	1032 Sep 20 j 20:32	13°♁56'36	
conjunction	1024 Dec 16 j 20:05	1°♁17'32	1°45'56	conjunction	1032 Dec 31 j 06:04	16°♁02'11	-2°-37'-39
minimum elong	1024 Dec 16 j 20:09	1°♁17'32	1°45'56	minimum elong	1032 Dec 31 j 05:58	16°♁02'11	2°37'41
max. Earth dist.	1024 Dec 18 j 23:50	1°♁22'02	33.95773 AU	max. Earth dist.	1033 Jan 02 j 22:20	16°♁07'26	35.86190 AU
retrograde	1025 Mar 30 j 03:40	3°♁33'31		retrograde	1033 Apr 13 j 11:40	18°♁09'39	
min. Earth dist.	1025 Jun 16 j 15:37	2°♁20'02	32.06914 AU	min. Earth dist.	1033 Jul 01 j 09:46	16°♁59'22	33.98967 AU
opposition	1025 Jun 18 j 20:21	2°♁16'47	1°34'06	opposition	1033 Jul 04 j 03:37	16°♁55'28	-3°-3'-19
direct	1025 Sep 07 j 09:39	1°♁00'00		direct	1033 Sep 22 j 22:32	15°♁41'45	
conjunction	1025 Dec 18 j 23:42	3°♁13'57	1°11'25	conjunction	1034 Jan 02 j 04:46	17°♁46'17	-3°-8'-14
minimum elong	1025 Dec 18 j 23:45	3°♁13'58	1°11'25	minimum elong	1034 Jan 02 j 04:40	17°♁46'16	3°08'15
max. Earth dist.	1025 Dec 21 j 04:58	3°♁18'33	34.18221 AU	max. Earth dist.	1034 Jan 04 j 21:45	17°♁51'32	36.11478 AU
retrograde	1026 Apr 01 j 06:25	5°♁28'47		retrograde	1034 Apr 15 j 13:08	19°♁52'48	
min. Earth dist.	1026 Jun 18 j 19:49	4°♁15'42	32.29478 AU	min. Earth dist.	1034 Jul 03 j 09:52	18°♁42'53	34.24447 AU
opposition	1026 Jun 21 j 02:28	4°♁12'20	0°57'35	opposition	1034 Jul 06 j 04:39	18°♁38'58	-3°-35'-19
direct	1026 Sep 09 j 17:18	2°♁55'55		direct	1034 Sep 24 j 21:01	17°♁25'39	
conjunction	1026 Dec 21 j 02:28	5°♁08'35	0°37'16	conjunction	1035 Jan 04 j 03:09	19°♁29'08	-3°-38'-14
minimum elong	1026 Dec 21 j 02:29	5°♁08'35	0°37'16	minimum elong	1035 Jan 04 j 03:02	19°♁29'08	3°38'16
max. Earth dist.	1026 Dec 23 j 08:49	5°♁13'13	34.41010 AU	max. Earth dist.	1035 Jan 06 j 21:42	19°♁34'29	36.36905 AU
retrograde	1027 Apr 03 j 10:33	7°♁22'16		retrograde	1035 Apr 17 j 11:08	21°♁34'44	
min. Earth dist.	1027 Jun 20 j 23:45	6°♁09'33	32.52445 AU	min. Earth dist.	1035 Jul 05 j 10:10	20°♁25'09	34.50022 AU
opposition	1027 Jun 23 j 08:06	6°♁06'06	0°21'32	opposition	1035 Jul 08 j 05:15	20°♁21'14	-4°-6'-39
direct	1027 Sep 11 j 22:30	4°♁50'02		direct	1035 Sep 26 j 22:04	19°♁08'18	
conjunction	1027 Dec 23 j 04:34	7°♁01'25	0°03'37	conjunction	1036 Jan 06 j 00:47	21°♁10'46	-4°-7'-38
minimum elong	1027 Dec 23 j 04:33	7°♁01'25	0°03'37	minimum elong	1036 Jan 06 j 00:39	21°♁10'45	4°07'38
behind sun begin	1027 Dec 22 j 22:15	7°♁00'55		max. Earth dist.	1036 Jan 08 j 19:08	21°♁16'02	36.62383 AU
behind sun end	1027 Dec 23 j 10:52	7°♁01'56		retrograde	1036 Apr 18 j 10:13	23°♁15'25	
max. Earth dist.	1027 Dec 25 j 13:28	7°♁06'14	34.64196 AU	min. Earth dist.	1036 Jul 06 j 08:41	22°♁06'14	34.75646 AU
desc. node	1028 Jan 31 j 00:19	8°♁15'43		opposition	1036 Jul 09 j 05:22	22°♁02'15	-4°-37'-19
retrograde	1028 Apr 04 j 12:14	9°♁13'59		direct	1036 Sep 27 j 22:14	20°♁49'41	
min. Earth dist.	1028 Jun 22 j 03:23	8°♁01'37	32.75832 AU				
opposition	1028 Jun 24 j 13:02	7°♁58'07	0°-14'-1	conjunction	1037 Jan 06 j 22:13	22°♁51'08	-4°-36'-25
direct	1028 Sep 13 j 05:16	6°♁42'24		minimum elong	1037 Jan 06 j 22:05	22°♁51'07	4°36'26
				max. Earth dist.	1037 Jan 09 j 18:15	22°♁56'30	36.87865 AU
conjunction	1028 Dec 24 j 05:59	8°♁52'34	0°-29'-44	retrograde	1037 Apr 20 j 05:57	24°♁54'52	
minimum elong	1028 Dec 24 j 05:58	8°♁52'34	0°29'45	min. Earth dist.	1037 Jul 08 j 08:35	23°♁45'56	35.01261 AU
max. Earth dist.	1028 Dec 26 j 15:40	8°♁57'24	34.87807 AU	opposition	1037 Jul 11 j 04:52	23°♁41'59	-5°-7'-19
retrograde	1029 Apr 06 j 14:35	11°♁04'03		direct	1037 Sep 30 j 00:17	22°♁29'46	
min. Earth dist.	1029 Jun 24 j 04:50	9°♁52'08	32.99687 AU				
opposition	1029 Jun 26 j 17:10	9°♁48'29	0°-49'-3	conjunction	1038 Jan 08 j 19:02	24°♁30'12	-5°-4'-36

minimum elong	1038 Jan 08 j 18:53	24°☾30'11	5°04'36	minimum elong	1046 Jan 21 j 00:13	6°☾58'05	8°27'02
max. Earth dist.	1038 Jan 11 j 14:44	24°☾35'31	37.13328 AU	max. Earth dist.	1046 Jan 24 j 02:01	7°☾03'34	39.18745 AU
retrograde	1038 Apr 22 j 02:10	26°☾33'01		retrograde	1046 May 04 j 06:13	8°☾54'18	
min. Earth dist.	1038 Jul 10 j 05:48	25°☾24'27	35.26860 AU	min. Earth dist.	1046 Jul 22 j 22:00	7°☾48'03	37.33944 AU
opposition	1038 Jul 13 j 03:41	25°☾20'25	-5°-36'-38	opposition	1046 Jul 26 j 00:22	7°☾43'55	-9°-6'-8
direct	1038 Oct 02 j 00:21	24°☾08'31		direct	1046 Oct 14 j 22:38	6°☾34'34	
conjunction	1039 Jan 10 j 15:16	26°☾07'56	-5°-32'-9	conjunction	1047 Jan 22 j 17:24	8°☾26'53	-8°-49'-27
minimum elong	1039 Jan 10 j 15:06	26°☾07'55	5°32'11	minimum elong	1047 Jan 22 j 17:11	8°☾26'52	8°49'29
max. Earth dist.	1039 Jan 13 j 12:05	26°☾13'18	37.38765 AU	max. Earth dist.	1047 Jan 25 j 19:36	8°☾32'22	39.44447 AU
retrograde	1039 Apr 23 j 20:41	28°☾09'51		retrograde	1047 May 05 j 23:20	10°☾22'22	
min. Earth dist.	1039 Jul 12 j 04:21	27°☾01'31	35.52480 AU	min. Earth dist.	1047 Jul 24 j 16:27	9°☾16'24	37.59764 AU
opposition	1039 Jul 15 j 02:05	26°☾57'30	-6°-5'-16	opposition	1047 Jul 27 j 18:55	9°☾12'17	-9°-29'-14
direct	1039 Oct 03 j 23:35	25°☾45'55		direct	1047 Oct 16 j 17:08	8°☾03'14	
conjunction	1040 Jan 12 j 11:05	27°☾44'20	-5°-59'-4	conjunction	1048 Jan 24 j 10:01	9°☾54'47	-9°-11'-16
minimum elong	1040 Jan 12 j 10:54	27°☾44'19	5°59'05	minimum elong	1048 Jan 24 j 09:48	9°☾54'46	9°11'16
max. Earth dist.	1040 Jan 15 j 08:45	27°☾49'44	37.64249 AU	max. Earth dist.	1048 Jan 27 j 11:29	10°☾00'10	39.69959 AU
retrograde	1040 Apr 24 j 15:48	29°☾45'21		retrograde	1048 May 06 j 18:09	11°☾49'34	
min. Earth dist.	1040 Jul 13 j 00:54	28°☾37'20	35.78165 AU	min. Earth dist.	1048 Jul 25 j 10:16	10°☾43'52	37.85389 AU
opposition	1040 Jul 15 j 23:51	28°☾33'16	-6°-33'-13	opposition	1048 Jul 28 j 13:12	10°☾39'44	-9°-51'-40
direct	1040 Oct 04 j 21:56	27°☾21'59		direct	1048 Oct 17 j 09:24	9°☾31'00	
conjunction	1041 Jan 13 j 06:15	29°☾19'27	-6°-25'-21	conjunction	1049 Jan 25 j 02:25	11°☾21'47	-9°-32'-28
minimum elong	1041 Jan 13 j 06:04	29°☾19'26	6°25'22	minimum elong	1049 Jan 25 j 02:12	11°☾21'46	9°32'29
max. Earth dist.	1041 Jan 16 j 04:20	29°☾24'50	37.89805 AU	max. Earth dist.	1049 Jan 28 j 04:49	11°☾27'12	39.95236 AU
retrograde	1041 Feb 04 j 16:43	0°☾		retrograde	1049 May 08 j 10:11	13°☾15'51	
min. Earth dist.	1041 Apr 26 j 13:07	1°☾19'36		min. Earth dist.	1049 Jul 27 j 05:09	12°☾10'20	38.10741 AU
opposition	1041 Jul 14 j 21:13	0°☾11'52	36.03964 AU	opposition	1049 Jul 30 j 07:04	12°☾06'17	-10°-13'-27
direct	1041 Jul 17 j 21:11	0°☾07'47	-7°00'-27	direct	1049 Oct 19 j 04:05	10°☾57'49	
conjunction	1041 Jul 23 j 14:03	30°☾☾		conjunction	1050 Jan 26 j 18:27	12°☾47'51	-9°-53'-5
direct	1041 Oct 06 j 16:43	28°☾56'48		minimum elong	1050 Jan 26 j 18:14	12°☾47'50	9°53'05
conjunction	1041 Dec 15 j 19:23	0°☾		max. Earth dist.	1050 Jan 29 j 19:37	12°☾53'09	40.20240 AU
conjunction	1042 Jan 15 j 01:13	0°☾53'20	-6°-50'-58	retrograde	1050 May 10 j 02:14	14°☾41'11	
minimum elong	1042 Jan 15 j 01:02	0°☾53'19	6°50'59	min. Earth dist.	1050 Jul 28 j 21:34	13°☾35'57	38.35824 AU
max. Earth dist.	1042 Jan 18 j 00:56	0°☾58'48	38.15472 AU	opposition	1050 Aug 01 j 00:16	13°☾31'52	-10°-34'-37
retrograde	1042 Apr 28 j 07:22	2°☾52'39		direct	1050 Oct 20 j 21:48	12°☾23'40	
min. Earth dist.	1042 Jul 16 j 17:39	1°☾45'11	36.29864 AU	conjunction	1051 Jan 28 j 10:03	14°☾12'57	-10°-13'-6
opposition	1042 Jul 19 j 17:46	1°☾41'06	-7°-26'-59	minimum elong	1051 Jan 28 j 09:49	14°☾12'56	10°13'07
direct	1042 Oct 08 j 14:34	0°☾30'26		max. Earth dist.	1051 Jan 31 j 11:52	14°☾18'16	40.44977 AU
conjunction	1043 Jan 16 j 19:35	2°☾26'04	-7°-15'-57	retrograde	1051 Feb 25 j 12:43	15°☾	
minimum elong	1043 Jan 16 j 19:23	2°☾26'04	7°15'58	min. Earth dist.	1051 May 11 j 16:24	16°☾05'36	
max. Earth dist.	1043 Jan 19 j 18:59	2°☾31'29	38.41238 AU	opposition	1051 Jul 30 j 15:42	15°☾00'30	38.60671 AU
retrograde	1043 Apr 30 j 03:13	4°☾24'34		direct	1051 Jul 31 j 00:58	15°☾☾	
min. Earth dist.	1043 Jul 18 j 12:18	3°☾17'27	36.55865 AU	opposition	1051 Aug 02 j 17:21	14°☾56'30	-10°-55'-9
opposition	1043 Jul 21 j 14:03	3°☾13'18	-7°-52'-49	direct	1051 Oct 22 j 15:58	13°☾48'33	
direct	1043 Oct 10 j 10:13	2°☾02'57		conjunction	1052 Jan 08 j 00:23	15°☾	
conjunction	1044 Jan 18 j 13:30	3°☾57'44	-7°-40'-17	conjunction	1052 Jan 30 j 01:10	15°☾37'05	-10°-32'-32
minimum elong	1044 Jan 18 j 13:19	3°☾57'44	7°40'17	minimum elong	1052 Jan 30 j 00:58	15°☾37'04	10°32'33
max. Earth dist.	1044 Jan 21 j 14:41	4°☾03'14	38.67073 AU	max. Earth dist.	1052 Feb 02 j 03:01	15°☾42'22	40.69514 AU
retrograde	1044 Apr 30 j 20:44	5°☾55'26		retrograde	1052 May 12 j 05:41	17°☾29'03	
min. Earth dist.	1044 Jul 19 j 08:40	4°☾48'35	36.81918 AU	min. Earth dist.	1052 Jul 31 j 07:27	16°☾24'12	38.85332 AU
opposition	1044 Jul 22 j 10:02	4°☾44'28	-8°-17'-57	opposition	1052 Aug 03 j 09:51	16°☾20'10	-11°-15'-2
direct	1044 Oct 11 j 07:03	3°☾34'28		direct	1052 Oct 23 j 10:26	15°☾12'27	
conjunction	1045 Jan 19 j 07:10	5°☾28'24	-8°-3'-58	conjunction	1053 Jan 30 j 15:58	17°☾00'17	-10°-51'-22
minimum elong	1045 Jan 19 j 06:57	5°☾28'23	8°03'59	minimum elong	1053 Jan 30 j 15:45	17°☾00'16	10°51'22
max. Earth dist.	1045 Jan 22 j 08:17	5°☾33'52	38.92936 AU	max. Earth dist.	1053 Feb 02 j 17:34	17°☾05'31	40.93886 AU
retrograde	1045 May 02 j 13:03	7°☾25'20		retrograde	1053 May 13 j 22:14	18°☾51'35	
min. Earth dist.	1045 Jul 21 j 02:35	6°☾18'50	37.07965 AU	min. Earth dist.	1053 Aug 01 j 23:35	17°☾46'56	39.09874 AU
opposition	1045 Jul 24 j 05:17	6°☾14'40	-8°-42'-23	opposition	1053 Aug 05 j 01:58	17°☾42'55	-11°-34'-17
direct	1045 Oct 13 j 03:29	5°☾04'58		direct	1053 Oct 25 j 01:16	16°☾35'28	
conjunction	1046 Jan 21 j 00:25	6°☾58'06	-8°-27'-1	conjunction	1054 Feb 01 j 06:34	18°☾22'36	-11°-9'-36

minimum elong	1054 Feb 01 j 06:22	18°22'35	11°09'37	retrograde	1062 May 26 j 00:41	0°41'00	
max. Earth dist.	1054 Feb 04 j 09:11	18°27'52	41.18156 AU		1062 Jul 27 j 12:41	30°R	
retrograde	1054 May 15 j 13:05	20°13'16		min. Earth dist.	1062 Aug 14 j 11:21	29°38'10	41.22988 AU
min. Earth dist.	1054 Aug 03 j 15:36	19°08'48	39.34303 AU	opposition	1062 Aug 17 j 11:58	29°34'23	-14°00'-31
opposition	1054 Aug 06 j 17:40	19°04'49	-11°-52'-55	direct	1062 Nov 06 j 10:03	28°29'07	
direct	1054 Oct 26 j 16:26	17°57'37			1063 Feb 06 j 12:01	0°	
conjunction	1055 Feb 02 j 20:35	19°44'05	-11°-27'-14	conjunction	1063 Feb 13 j 04:47	0°10'49	-13°-28'-27
minimum elong	1055 Feb 02 j 20:22	19°44'04	11°27'15	minimum elong	1063 Feb 13 j 04:37	0°10'48	13°28'28
max. Earth dist.	1055 Feb 05 j 22:25	19°49'16	41.42327 AU	max. Earth dist.	1063 Feb 16 j 05:08	0°15'41	43.28311 AU
retrograde	1055 May 17 j 05:02	21°34'07		retrograde	1063 May 27 j 10:59	1°56'21	
min. Earth dist.	1055 Aug 05 j 05:56	20°29'57	39.58642 AU	min. Earth dist.	1063 Aug 16 j 01:46	0°53'36	41.45103 AU
opposition	1055 Aug 08 j 09:04	20°25'56	-12°-10'-54	opposition	1063 Aug 19 j 01:02	0°49'53	-14°-14'-1
direct	1055 Oct 28 j 06:08	19°18'59			1063 Oct 03 j 07:28	30°R	
conjunction	1056 Feb 04 j 10:31	21°04'48	-11°-44'-18	direct	1063 Nov 08 j 00:41	29°44'48	
minimum elong	1056 Feb 04 j 10:19	21°04'48	11°44'19		1063 Dec 12 j 23:12	0°	
max. Earth dist.	1056 Feb 07 j 13:31	21°10'02	41.66397 AU	conjunction	1064 Feb 14 j 16:43	1°25'56	-13°-41'-19
retrograde	1056 May 17 j 17:48	22°54'15		minimum elong	1064 Feb 14 j 16:32	1°25'55	13°41'20
min. Earth dist.	1056 Aug 05 j 22:00	21°50'15	39.82865 AU	max. Earth dist.	1064 Feb 17 j 16:50	1°30'46	43.50086 AU
opposition	1056 Aug 09 j 00:11	21°46'17	-12°-28'-17	retrograde	1064 May 27 j 20:38	3°10'55	
direct	1056 Oct 28 j 22:13	20°39'37		min. Earth dist.	1064 Aug 16 j 14:15	2°08'19	41.66910 AU
conjunction	1057 Feb 05 j 00:06	22°24'49	-12°00'-47	opposition	1064 Aug 19 j 13:33	2°04'37	-14°-27'-1
minimum elong	1057 Feb 04 j 23:53	22°24'48	12°00'47	direct	1064 Nov 08 j 15:27	0°59'42	
max. Earth dist.	1057 Feb 08 j 02:30	22°29'59	41.90347 AU	conjunction	1065 Feb 15 j 04:13	2°40'16	-13°-53'-40
retrograde	1057 May 19 j 06:09	24°13'40		minimum elong	1065 Feb 15 j 04:04	2°40'16	13°53'41
min. Earth dist.	1057 Aug 07 j 11:49	23°09'57	40.06930 AU	max. Earth dist.	1065 Feb 18 j 03:25	2°45'01	43.71584 AU
opposition	1057 Aug 10 j 14:51	23°05'58	-12°-45'-4	retrograde	1065 May 29 j 09:19	4°24'44	
direct	1057 Oct 30 j 13:47	21°59'33		min. Earth dist.	1065 Aug 18 j 02:53	3°22'17	41.88482 AU
conjunction	1058 Feb 06 j 13:27	23°44'09	-12°-16'-42	opposition	1065 Aug 21 j 01:55	3°18'36	-14°-39'-28
minimum elong	1058 Feb 06 j 13:15	23°44'08	12°16'44	direct	1065 Nov 10 j 03:15	2°13'52	
max. Earth dist.	1058 Feb 09 j 15:51	23°49'18	42.14104 AU	conjunction	1066 Feb 16 j 15:38	3°53'54	-14°-5'-32
retrograde	1058 May 20 j 19:08	25°32'27		minimum elong	1066 Feb 16 j 15:28	3°53'53	14°05'33
min. Earth dist.	1058 Aug 09 j 03:08	24°28'55	40.30792 AU	max. Earth dist.	1066 Feb 19 j 15:41	3°58'41	43.92866 AU
opposition	1058 Aug 12 j 05:14	24°24'59	-13°-1'-15	retrograde	1066 May 30 j 21:04	5°37'51	
direct	1058 Nov 01 j 04:57	23°18'50		min. Earth dist.	1066 Aug 19 j 15:35	4°35'31	42.09838 AU
conjunction	1059 Feb 08 j 02:39	25°02'50	-12°-32'-5	opposition	1066 Aug 22 j 13:49	4°31'54	-14°-51'-25
minimum elong	1059 Feb 08 j 02:28	25°02'50	12°32'05	direct	1066 Nov 11 j 14:58	3°27'21	
max. Earth dist.	1059 Feb 11 j 05:22	25°07'59	42.37636 AU	conjunction	1067 Feb 18 j 02:40	5°06'53	-14°-16'-53
retrograde	1059 May 22 j 07:39	26°50'36		minimum elong	1067 Feb 18 j 02:32	5°06'53	14°16'54
min. Earth dist.	1059 Aug 10 j 17:29	25°47'16	40.54375 AU	max. Earth dist.	1067 Feb 21 j 01:31	5°11'34	44.13967 AU
opposition	1059 Aug 13 j 19:20	25°43'22	-13°-16'-52	retrograde	1067 Jun 01 j 10:21	6°50'20	
direct	1059 Nov 02 j 20:14	24°37'27		min. Earth dist.	1067 Aug 21 j 02:32	5°48'14	42.31020 AU
conjunction	1060 Feb 09 j 15:25	26°20'53	-12°-46'-56	opposition	1067 Aug 24 j 01:34	5°44'35	-15°-2'-50
minimum elong	1060 Feb 09 j 15:13	26°20'52	12°46'57	direct	1067 Nov 13 j 00:14	4°40'14	
max. Earth dist.	1060 Feb 12 j 16:50	26°25'55	42.60862 AU	conjunction	1068 Feb 19 j 13:26	6°19'17	-14°-27'-46
retrograde	1060 May 22 j 23:53	28°08'05		minimum elong	1068 Feb 19 j 13:17	6°19'17	14°27'46
min. Earth dist.	1060 Aug 11 j 07:29	27°04'57	40.77638 AU	max. Earth dist.	1068 Feb 22 j 12:50	6°23'59	44.34886 AU
opposition	1060 Aug 14 j 09:16	27°01'05	-13°-31'-57	retrograde	1068 Jun 01 j 19:58	8°02'17	
direct	1060 Nov 03 j 07:13	25°55'24		min. Earth dist.	1068 Aug 21 j 15:30	7°00'18	42.52010 AU
conjunction	1061 Feb 10 j 04:16	27°38'16	-13°-1'-16	opposition	1068 Aug 24 j 13:12	6°56'43	-15°-13'-44
minimum elong	1061 Feb 10 j 04:05	27°38'15	13°01'16	direct	1068 Nov 13 j 12:18	5°52'36	
max. Earth dist.	1061 Feb 13 j 06:08	27°43'17	42.83733 AU	conjunction	1069 Feb 20 j 00:12	7°31'11	-14°-38'-9
retrograde	1061 May 24 j 12:55	29°24'55		minimum elong	1069 Feb 20 j 00:04	7°31'11	14°38'10
min. Earth dist.	1061 Aug 12 j 22:33	28°21'53	41.00510 AU	max. Earth dist.	1069 Feb 22 j 23:15	7°35'50	44.55616 AU
opposition	1061 Aug 15 j 22:45	28°18'06	-13°-46'-29	retrograde	1069 Jun 03 j 04:10	9°13'44	
direct	1061 Nov 04 j 20:42	27°12'39		min. Earth dist.	1069 Aug 23 j 02:12	8°11'58	42.72775 AU
conjunction	1062 Feb 11 j 16:45	28°54'55	-13°-15'-6	opposition	1069 Aug 26 j 00:15	8°08'23	-15°-24'-9
minimum elong	1062 Feb 11 j 16:34	28°54'54	13°15'08	direct	1069 Nov 15 j 01:38	7°04'29	
max. Earth dist.	1062 Feb 14 j 17:09	28°59'49	43.06218 AU	conjunction	1070 Feb 21 j 10:37	8°42'38	-14°-48'-4
	1062 Mar 26 j 21:06	0°		minimum elong	1070 Feb 21 j 10:29	8°42'38	14°48'05

max. Earth dist.	1070 Feb 24 j 08:48	8° K 47'13	44.76099 AU	opposition	1078 Sep 05 j 19:52	18° K 33'17	-16°-38'-2
retrograde	1070 Jun 04 j 15:43	10° K 24'46		direct	1078 Nov 25 j 20:34	17° K 30'57	
min. Earth dist.	1070 Aug 24 j 14:06	9° K 23'10	42.93280 AU				
opposition	1070 Aug 27 j 11:22	9° K 19'38	-15°-34'-4	conjunction	1079 Mar 04 j 01:28	19° K 05'21	-15°-58'-35
direct	1070 Nov 16 j 12:40	8° K 15'58		minimum elong	1079 Mar 04 j 01:24	19° K 05'21	15°58'36
				max. Earth dist.	1079 Mar 06 j 17:39	19° K 09'23	46.43384 AU
conjunction	1071 Feb 22 j 20:55	9° K 53'41	-14°-57'-32	retrograde	1079 Jun 15 j 07:11	20° K 43'49	
minimum elong	1071 Feb 22 j 20:49	9° K 53'40	14°57'34	min. Earth dist.	1079 Sep 04 j 14:06	19° K 43'17	44.60022 AU
max. Earth dist.	1071 Feb 25 j 19:31	9° K 58'16	44.96297 AU	opposition	1079 Sep 07 j 04:57	19° K 40'09	-16°-44'-9
retrograde	1071 Jun 06 j 02:01	11° K 35'25		direct	1079 Nov 27 j 05:12	18° K 37'57	
min. Earth dist.	1071 Aug 26 j 01:55	10° K 33'58	43.13448 AU				
opposition	1071 Aug 28 j 22:12	10° K 30'29	-15°-43'-33	conjunction	1080 Mar 04 j 10:10	20° K 12'00	-16°-4'-24
direct	1071 Nov 17 j 23:58	9° K 27'02		minimum elong	1080 Mar 04 j 10:08	20° K 12'00	16°04'25
				max. Earth dist.	1080 Mar 07 j 01:51	20° K 15'59	46.60280 AU
conjunction	1072 Feb 24 j 07:05	11° K 04'20	-15°-6'-34	retrograde	1080 Jun 15 j 14:29	21° K 50'06	
minimum elong	1072 Feb 24 j 06:58	11° K 04'20	15°06'35	min. Earth dist.	1080 Sep 05 j 00:20	20° K 49'38	44.76896 AU
max. Earth dist.	1072 Feb 27 j 03:57	11° K 08'47	45.16139 AU	opposition	1080 Sep 07 j 13:54	20° K 46'35	-16°-49'-51
retrograde	1072 Jun 06 j 15:06	12° K 45'40		direct	1080 Nov 27 j 14:47	19° K 44'32	
min. Earth dist.	1072 Aug 26 j 12:37	11° K 44'24	43.33236 AU				
opposition	1072 Aug 29 j 08:47	11° K 40'57	-15°-52'-34	conjunction	1081 Mar 05 j 18:51	21° K 18'14	-16°-9'-50
direct	1072 Nov 18 j 07:42	10° K 37'42		minimum elong	1081 Mar 05 j 18:47	21° K 18'14	16°09'51
				max. Earth dist.	1081 Mar 08 j 10:32	21° K 22'12	46.76929 AU
conjunction	1073 Feb 24 j 17:15	12° K 14'35	-15°-15'-12	retrograde	1081 Jun 16 j 21:02	22° K 55'59	
minimum elong	1073 Feb 24 j 17:09	12° K 14'35	15°15'13	min. Earth dist.	1081 Sep 06 j 09:23	21° K 55'39	44.93482 AU
max. Earth dist.	1073 Feb 27 j 14:09	12° K 19'01	45.35559 AU	opposition	1081 Sep 08 j 22:35	21° K 52'37	-16°-55'-9
retrograde	1073 Jun 08 j 01:37	13° K 55'31		direct	1081 Nov 29 j 01:45	20° K 50'44	
min. Earth dist.	1073 Aug 28 j 01:05	12° K 54'19	43.52567 AU				
opposition	1073 Aug 30 j 19:17	12° K 50'59	-16°-1'-11	conjunction	1082 Mar 07 j 03:11	22° K 24'05	-16°-14'-52
direct	1073 Nov 19 j 17:30	11° K 47'55		minimum elong	1082 Mar 07 j 03:10	22° K 24'05	16°14'53
				max. Earth dist.	1082 Mar 09 j 17:18	22° K 27'57	46.93280 AU
conjunction	1074 Feb 26 j 03:13	13° K 24'24	-15°-23'-25	retrograde	1082 Jun 18 j 07:07	24° K 01'31	
minimum elong	1074 Feb 26 j 03:07	13° K 24'23	15°23'25	min. Earth dist.	1082 Sep 07 j 18:25	23° K 01'18	45.09760 AU
max. Earth dist.	1074 Feb 28 j 22:39	13° K 28'43	45.54523 AU	opposition	1082 Sep 10 j 07:08	22° K 58'18	-17°00'-3
retrograde	1074 Jun 09 j 09:52	15° K 04'53		direct	1082 Nov 30 j 09:35	21° K 56'35	
min. Earth dist.	1074 Aug 29 j 11:08	14° K 03'52	43.71419 AU				
opposition	1074 Sep 01 j 05:21	14° K 00'32	-16°-9'-22	conjunction	1083 Mar 08 j 11:35	23° K 29'37	-16°-19'-33
direct	1074 Nov 21 j 03:58	12° K 57'37		minimum elong	1083 Mar 08 j 11:32	23° K 29'37	16°19'34
				max. Earth dist.	1083 Mar 11 j 01:59	23° K 33'28	47.09298 AU
conjunction	1075 Feb 27 j 12:52	14° K 33'41	-15°-31'-15	retrograde	1083 Jun 19 j 16:55	25° K 06'43	
minimum elong	1075 Feb 27 j 12:46	14° K 33'41	15°31'16	min. Earth dist.	1083 Sep 09 j 04:33	24° K 06'35	45.25664 AU
max. Earth dist.	1075 Mar 02 j 07:12	14° K 37'55	45.73018 AU	opposition	1083 Sep 11 j 15:36	24° K 03'41	-17°-4'-35
retrograde	1075 Jun 10 j 18:00	16° K 13'46		direct	1083 Dec 01 j 17:04	23° K 02'08	
min. Earth dist.	1075 Aug 30 j 22:46	15° K 12'48	43.89830 AU				
opposition	1075 Sep 02 j 15:27	15° K 09'33	-16°-17'-10	conjunction	1084 Mar 08 j 19:47	24° K 34'50	-16°-23'-52
direct	1075 Nov 22 j 16:06	14° K 06'48		minimum elong	1084 Mar 08 j 19:46	24° K 34'50	16°23'53
				max. Earth dist.	1084 Mar 11 j 08:33	24° K 38'35	47.24926 AU
conjunction	1076 Feb 28 j 22:21	15° K 42'25	-15°-38'-41	retrograde	1084 Jun 20 j 02:53	26° K 11'37	
minimum elong	1076 Feb 28 j 22:16	15° K 42'25	15°38'41	min. Earth dist.	1084 Sep 09 j 12:52	25° K 11'38	45.41136 AU
max. Earth dist.	1076 Mar 02 j 16:47	15° K 46'39	45.91102 AU	opposition	1084 Sep 11 j 23:51	25° K 08'44	-17°-8'-46
retrograde	1076 Jun 11 j 01:55	17° K 22'06		direct	1084 Dec 01 j 23:03	24° K 07'20	
min. Earth dist.	1076 Aug 31 j 09:10	16° K 21'13	44.07835 AU				
opposition	1076 Sep 03 j 01:10	16° K 18'01	-16°-24'-32	conjunction	1085 Mar 10 j 04:01	25° K 39'45	-16°-27'-51
direct	1076 Nov 23 j 04:21	15° K 15'24		minimum elong	1085 Mar 10 j 03:59	25° K 39'45	16°27'51
				max. Earth dist.	1085 Mar 12 j 15:43	25° K 43'25	47.40079 AU
conjunction	1077 Mar 01 j 07:35	16° K 50'36	-15°-45'-43	retrograde	1085 Jun 21 j 09:33	27° K 16'13	
minimum elong	1077 Mar 01 j 07:30	16° K 50'36	15°45'44	min. Earth dist.	1085 Sep 10 j 23:09	26° K 16'16	45.56112 AU
max. Earth dist.	1077 Mar 04 j 00:19	16° K 54'42	46.08820 AU	opposition	1085 Sep 13 j 07:57	26° K 13'29	-17°-12'-36
retrograde	1077 Jun 12 j 13:54	18° K 29'52		direct	1085 Dec 03 j 08:11	25° K 12'13	
min. Earth dist.	1077 Sep 01 j 18:43	17° K 29'06	44.25514 AU				
opposition	1077 Sep 04 j 10:33	17° K 25'55	-16°-31'-30	conjunction	1086 Mar 11 j 12:13	26° K 44'20	-16°-31'-31
direct	1077 Nov 24 j 11:38	16° K 23'26		minimum elong	1086 Mar 11 j 12:13	26° K 44'20	16°31'32
				max. Earth dist.	1086 Mar 13 j 23:15	26° K 47'57	47.54733 AU
conjunction	1078 Mar 02 j 16:43	17° K 58'14	-15°-52'-21	retrograde	1086 Jun 22 j 14:31	28° K 20'29	
minimum elong	1078 Mar 02 j 16:39	17° K 58'14	15°52'22	min. Earth dist.	1086 Sep 12 j 07:46	27° K 20'38	45.70557 AU
max. Earth dist.	1078 Mar 05 j 09:51	18° K 02'20	46.26231 AU	opposition	1086 Sep 14 j 15:53	27° K 17'52	-17°-16'-7
retrograde	1078 Jun 13 j 23:22	19° K 37'06		direct	1086 Dec 04 j 19:02	26° K 16'44	
min. Earth dist.	1078 Sep 03 j 05:32	18° K 36'23	44.42897 AU				

conjunction	1087 Mar 12 j 19:55	27° ✕ 48'32	-16°-34'-52	direct	1094 Dec 13 j 02:49	4° ♃ 39'26	
minimum elong	1087 Mar 12 j 19:54	27° ✕ 48'32	16°34'53				
max. Earth dist.	1087 Mar 15 j 04:50	27° ✕ 52'00	47.68866 AU	conjunction	1095 Mar 21 j 05:50	6° ♃ 09'05	-16°-49'-52
retrograde	1087 Jun 23 j 23:40	29° ✕ 24'22		minimum elong	1095 Mar 21 j 05:54	6° ♃ 09'05	16°49'53
min. Earth dist.	1087 Sep 13 j 16:37	28° ✕ 24'35	45.84506 AU	max. Earth dist.	1095 Mar 23 j 09:03	6° ♃ 12'08	48.68775 AU
opposition	1087 Sep 15 j 23:47	28° ✕ 21'53	-17°-19'-19	retrograde	1095 Jul 02 j 10:57	7° ♃ 42'43	
direct	1087 Dec 06 j 02:41	27° ✕ 20'51		min. Earth dist.	1095 Sep 22 j 08:17	6° ♃ 43'28	46.83333 AU
				opposition	1095 Sep 24 j 08:08	6° ♃ 41'10	-17°-32'-38
conjunction	1088 Mar 13 j 03:46	28° ✕ 52'20	-16°-37'-54	direct	1095 Dec 14 j 08:30	5° ♃ 41'03	
minimum elong	1088 Mar 13 j 03:46	28° ✕ 52'20	16°37'56				
max. Earth dist.	1088 Mar 15 j 12:42	28° ✕ 55'47	47.82524 AU	conjunction	1096 Mar 21 j 12:47	7° ♃ 10'29	-16°-50'-18
	1088 May 03 j 17:35	0° ♃		minimum elong	1096 Mar 21 j 12:49	7° ♃ 10'30	16°50'18
retrograde	1088 Jun 24 j 07:33	0° ♃ 27'51		max. Earth dist.	1096 Mar 23 j 15:18	7° ♃ 13'30	48.79818 AU
	1088 Aug 16 j 00:45	30° ♂		retrograde	1096 Jul 02 j 14:23	8° ♃ 43'53	
min. Earth dist.	1088 Sep 14 j 01:54	29° ✕ 28'05	45.97996 AU	min. Earth dist.	1096 Sep 22 j 15:04	7° ♃ 44'45	46.94156 AU
opposition	1088 Sep 16 j 07:19	29° ✕ 25'28	-17°-22'-11	opposition	1096 Sep 24 j 14:29	7° ♃ 42'28	-17°-32'-49
direct	1088 Dec 06 j 10:53	28° ✕ 24'33		direct	1096 Dec 14 j 17:16	6° ♃ 42'28	
conjunction	1089 Mar 14 j 11:21	29° ✕ 55'43	-16°-40'-37	conjunction	1097 Mar 22 j 19:34	8° ♃ 11'42	-16°-50'-26
minimum elong	1089 Mar 14 j 11:21	29° ✕ 55'43	16°40'38	minimum elong	1097 Mar 22 j 19:38	8° ♃ 11'42	16°50'27
max. Earth dist.	1089 Mar 16 j 18:37	29° ✕ 59'04	47.95774 AU	max. Earth dist.	1097 Mar 24 j 19:57	8° ♃ 14'34	48.90400 AU
	1089 Mar 17 j 10:01	0° ♃		retrograde	1097 Jul 03 j 20:24	9° ♃ 44'52	
retrograde	1089 Jun 25 j 16:01	1° ♃ 30'55		min. Earth dist.	1097 Sep 23 j 23:03	8° ♃ 45'46	47.04498 AU
min. Earth dist.	1089 Sep 15 j 09:10	0° ♃ 31'15	46.11102 AU	opposition	1097 Sep 25 j 20:58	8° ♃ 43'33	-17°-32'-43
opposition	1089 Sep 17 j 14:40	0° ♃ 28'39	-17°-24'-42	direct	1097 Dec 16 j 01:06	7° ♃ 43'39	
	1089 Oct 13 j 01:23	30° ♂					
direct	1089 Dec 07 j 16:09	29° ✕ 27'49		conjunction	1098 Mar 24 j 02:21	9° ♃ 12'40	-16°-50'-18
	1090 Jan 30 j 19:58	0° ♃		minimum elong	1098 Mar 24 j 02:24	9° ♃ 12'40	16°50'18
				max. Earth dist.	1098 Mar 26 j 02:25	9° ♃ 15'30	49.00477 AU
conjunction	1090 Mar 15 j 18:42	0° ♃ 58'43	-16°-43'00	retrograde	1098 Jul 05 j 02:07	10° ♃ 45'37	
minimum elong	1090 Mar 15 j 18:42	0° ♃ 58'43	16°43'01	min. Earth dist.	1098 Sep 25 j 06:57	9° ♃ 46'31	47.14304 AU
max. Earth dist.	1090 Mar 18 j 01:26	1° ♃ 02'01	48.08655 AU	opposition	1098 Sep 27 j 03:17	9° ♃ 44'23	-17°-32'-22
retrograde	1090 Jun 26 j 22:29	2° ♃ 33'37		direct	1098 Dec 17 j 09:16	8° ♃ 44'33	
min. Earth dist.	1090 Sep 16 j 18:08	1° ♃ 33'58	46.23873 AU				
opposition	1090 Sep 18 j 21:56	1° ♃ 31'26	-17°-26'-53	conjunction	1099 Mar 25 j 08:57	10° ♃ 13'20	-16°-49'-54
direct	1090 Dec 08 j 23:15	0° ♃ 30'43		minimum elong	1099 Mar 25 j 09:01	10° ♃ 13'20	16°49'56
				max. Earth dist.	1099 Mar 27 j 06:55	10° ♃ 16'03	49.10045 AU
conjunction	1091 Mar 17 j 02:02	2° ♃ 01'21	-16°-45'-2	retrograde	1099 Jul 06 j 10:47	11° ♃ 46'02	
minimum elong	1091 Mar 17 j 02:03	2° ♃ 01'21	16°45'03	min. Earth dist.	1099 Sep 26 j 13:34	10° ♃ 47'00	47.23612 AU
max. Earth dist.	1091 Mar 19 j 08:27	2° ♃ 04'37	48.21248 AU	opposition	1099 Sep 28 j 09:27	10° ♃ 44'54	-17°-31'-43
retrograde	1091 Jun 28 j 02:43	3° ♃ 35'58		direct	1099 Dec 18 j 13:46	9° ♃ 45'07	
min. Earth dist.	1091 Sep 18 j 01:08	2° ♃ 36'25	46.36351 AU				
opposition	1091 Sep 20 j 04:58	2° ♃ 33'54	-17°-28'-43	conjunction	1100 Mar 25 j 15:24	11° ♃ 13'41	-16°-49'-14
direct	1091 Dec 10 j 08:27	1° ♃ 33'17		minimum elong	1100 Mar 25 j 15:28	11° ♃ 13'41	16°49'15
				max. Earth dist.	1100 Mar 27 j 12:32	11° ♃ 16'20	49.19120 AU
conjunction	1092 Mar 17 j 09:03	3° ♃ 03'39	-16°-46'-44	retrograde	1100 Jul 06 j 18:10	12° ♃ 46'08	
minimum elong	1092 Mar 17 j 09:03	3° ♃ 03'39	16°46'45	min. Earth dist.	1100 Sep 26 j 21:45	11° ♃ 47'03	47.32451 AU
max. Earth dist.	1092 Mar 19 j 13:59	3° ♃ 06'50	48.33560 AU	opposition	1100 Sep 28 j 15:35	11° ♃ 45'03	-17°-30'-49
retrograde	1092 Jun 28 j 10:01	4° ♃ 38'01		direct	1100 Dec 18 j 18:37	10° ♃ 45'20	
min. Earth dist.	1092 Sep 18 j 09:02	3° ♃ 38'32	46.48561 AU				
opposition	1092 Sep 20 j 12:01	3° ♃ 36'04	-17°-30'-12				
direct	1092 Dec 10 j 16:17	2° ♃ 35'34					
conjunction	1093 Mar 18 j 16:13	4° ♃ 05'41	-16°-48'-6				
minimum elong	1093 Mar 18 j 16:16	4° ♃ 05'41	16°48'07				
max. Earth dist.	1093 Mar 20 j 21:31	4° ♃ 08'52	48.45600 AU				
retrograde	1093 Jun 29 j 17:50	5° ♃ 39'48					
min. Earth dist.	1093 Sep 19 j 16:56	4° ♃ 40'23	46.60474 AU				
opposition	1093 Sep 21 j 18:43	4° ♃ 37'59	-17°-31'-20				
direct	1093 Dec 11 j 23:37	3° ♃ 37'36					
conjunction	1094 Mar 19 j 23:07	5° ♃ 07'29	-16°-49'-9				
minimum elong	1094 Mar 19 j 23:09	5° ♃ 07'29	16°49'10				
max. Earth dist.	1094 Mar 22 j 02:46	5° ♃ 10'34	48.57355 AU				
retrograde	1094 Jul 01 j 04:18	6° ♃ 41'21					
min. Earth dist.	1094 Sep 20 j 23:32	5° ♃ 42'05	46.72084 AU				
opposition	1094 Sep 23 j 01:24	5° ♃ 39'40	-17°-32'-8				