

conjunction	100 Mar 08 j 07:52	16° ✕ 43'33	-16°-43'-18	minimum elong	108 Mar 16 j 17:07	24° ✕ 59'57	16°53'09
minimum elong	100 Mar 08 j 07:51	16° ✕ 43'33	16°43'19	max. Earth dist.	108 Mar 18 j 18:16	25° ✕ 02'52	48.88280 AU
max. Earth dist.	100 Mar 10 j 16:17	16° ✕ 46'58	47.96033 AU	retrograde	108 Jun 27 j 22:48	26° ✕ 33'08	
retrograde	100 Jun 19 j 13:13	18° ✕ 18'49		min. Earth dist.	108 Sep 17 j 21:48	25° ✕ 33'54	47.02358 AU
min. Earth dist.	100 Sep 09 j 07:38	17° ✕ 19'09	46.11531 AU	opposition	108 Sep 19 j 19:08	25° ✕ 31'43	-17°-35'-32
opposition	100 Sep 11 j 13:06	17° ✕ 16'33	-17°-27'-27	direct	108 Dec 09 j 20:21	24° ✕ 31'41	
direct	100 Dec 01 j 13:44	16° ✕ 15'44					
conjunction	101 Mar 09 j 15:37	17° ✕ 46'41	-16°-45'-36	conjunction	109 Mar 17 j 23:42	26° ✕ 00'43	-16°-52'-57
minimum elong	101 Mar 09 j 15:39	17° ✕ 46'41	16°45'37	minimum elong	109 Mar 17 j 23:45	26° ✕ 00'43	16°52'59
max. Earth dist.	101 Mar 11 j 23:39	17° ✕ 50'05	48.09107 AU	max. Earth dist.	109 Mar 19 j 23:32	26° ✕ 03'32	48.98290 AU
retrograde	101 Jun 20 j 19:54	19° ✕ 21'42		retrograde	109 Jun 29 j 05:51	27° ✕ 33'40	
min. Earth dist.	101 Sep 10 j 16:00	18° ✕ 22'06	46.24377 AU	min. Earth dist.	109 Sep 19 j 03:47	26° ✕ 34'33	47.12200 AU
opposition	101 Sep 12 j 20:22	18° ✕ 19'33	-17°-29'-33	opposition	109 Sep 21 j 01:17	26° ✕ 32'22	-17°-35'-6
direct	101 Dec 02 j 22:53	17° ✕ 18'52		direct	109 Dec 11 j 00:39	25° ✕ 32'27	
conjunction	102 Mar 10 j 23:03	18° ✕ 49'34	-16°-47'-35	conjunction	110 Mar 19 j 06:12	27° ✕ 01'17	-16°-52'-29
minimum elong	102 Mar 10 j 23:04	18° ✕ 49'34	16°47'35	minimum elong	110 Mar 19 j 06:17	27° ✕ 01'17	16°52'30
max. Earth dist.	102 Mar 13 j 04:43	18° ✕ 52'47	48.21661 AU	max. Earth dist.	110 Mar 21 j 05:00	27° ✕ 04'02	49.07966 AU
retrograde	102 Jun 22 j 05:28	20° ✕ 24'17		retrograde	110 Jun 30 j 10:11	28° ✕ 34'02	
min. Earth dist.	102 Sep 11 j 23:55	19° ✕ 24'47	46.36714 AU	min. Earth dist.	110 Sep 20 j 11:47	27° ✕ 34'56	47.21693 AU
opposition	102 Sep 14 j 03:29	19° ✕ 22'16	-17°-31'-21	opposition	110 Sep 22 j 07:25	27° ✕ 32'51	-17°-34'-22
direct	102 Dec 04 j 04:22	18° ✕ 21'41		direct	110 Dec 12 j 08:19	26° ✕ 33'02	
conjunction	103 Mar 12 j 06:26	19° ✕ 52'07	-16°-49'-17	conjunction	111 Mar 20 j 12:48	28° ✕ 01'42	-16°-51'-42
minimum elong	103 Mar 12 j 06:28	19° ✕ 52'07	16°49'19	minimum elong	111 Mar 20 j 12:52	28° ✕ 01'42	16°51'43
max. Earth dist.	103 Mar 14 j 11:49	19° ✕ 55'19	48.33716 AU	max. Earth dist.	111 Mar 22 j 11:17	28° ✕ 04'26	49.17285 AU
retrograde	103 Jun 23 j 13:04	21° ✕ 26'34		retrograde	111 Jul 01 j 13:34	29° ✕ 34'14	
min. Earth dist.	103 Sep 13 j 08:55	20° ✕ 27'04	46.48561 AU	min. Earth dist.	111 Sep 21 j 18:26	28° ✕ 35'14	47.30779 AU
opposition	103 Sep 15 j 10:32	20° ✕ 24'39	-17°-32'-51	opposition	111 Sep 23 j 13:21	28° ✕ 33'11	-17°-33'-20
direct	103 Dec 05 j 10:40	19° ✕ 24'10		direct	111 Dec 13 j 17:16	27° ✕ 33'28	
conjunction	104 Mar 12 j 13:35	20° ✕ 54'20	-16°-50'-41	conjunction	112 Mar 20 j 19:14	29° ✕ 01'57	-16°-50'-39
minimum elong	104 Mar 12 j 13:37	20° ✕ 54'20	16°50'41	minimum elong	112 Mar 20 j 19:20	29° ✕ 01'57	16°50'40
max. Earth dist.	104 Mar 14 j 17:30	20° ✕ 57'27	48.45330 AU	max. Earth dist.	112 Mar 22 j 15:29	29° ✕ 04'33	49.26165 AU
retrograde	104 Jun 23 j 19:20	22° ✕ 28'30		retrograde	112 May 04 j 09:34	0° ∇	
min. Earth dist.	104 Sep 13 j 15:44	21° ✕ 29'05	46.59985 AU	retrograde	112 Jul 01 j 21:29	0° ∇ 34'18	
opposition	104 Sep 15 j 17:18	21° ✕ 26'41	-17°-34'-2	min. Earth dist.	112 Aug 30 j 18:24	30° ℞ ✕	
direct	104 Dec 05 j 17:06	20° ✕ 26'16		opposition	112 Sep 22 j 01:38	29° ✕ 35'21	47.39399 AU
conjunction	105 Mar 13 j 20:39	21° ✕ 56'12	-16°-51'-46	opposition	112 Sep 23 j 19:20	29° ✕ 33'21	-17°-32'-1
minimum elong	105 Mar 13 j 20:41	21° ✕ 56'12	16°51'47	direct	112 Dec 13 j 22:46	28° ✕ 33'43	
max. Earth dist.	105 Mar 15 j 23:29	21° ✕ 59'14	48.56537 AU	direct	113 Mar 20 j 15:08	0° ∇	
retrograde	105 Jun 25 j 00:41	23° ✕ 30'06		conjunction	113 Mar 22 j 01:53	0° ∇ 02'02	-16°-49'-21
min. Earth dist.	105 Sep 15 j 00:10	22° ✕ 30'41	46.71042 AU	minimum elong	113 Mar 22 j 01:58	0° ∇ 02'02	16°49'21
opposition	105 Sep 16 j 23:55	22° ✕ 28'22	-17°-34'-54	max. Earth dist.	113 Mar 23 j 21:34	0° ∇ 04'35	49.34539 AU
direct	105 Dec 07 j 00:48	21° ✕ 28'03		retrograde	113 Jul 03 j 04:36	1° ∇ 34'11	
conjunction	106 Mar 15 j 03:40	22° ✕ 57'44	-16°-52'-32	min. Earth dist.	113 Sep 23 j 09:27	0° ∇ 35'13	47.47476 AU
minimum elong	106 Mar 15 j 03:43	22° ✕ 57'44	16°52'33	opposition	113 Sep 25 j 01:08	0° ∇ 33'19	-17°-30'-27
max. Earth dist.	106 Mar 17 j 06:24	23° ✕ 00'45	48.67415 AU	opposition	113 Oct 25 j 19:09	30° ℞ ✕	
retrograde	106 Jun 26 j 04:57	24° ✕ 31'23		direct	113 Dec 15 j 04:48	29° ✕ 33'46	
min. Earth dist.	106 Sep 16 j 06:58	23° ✕ 32'03	46.81768 AU	direct	114 Feb 02 j 11:59	0° ∇	
opposition	106 Sep 18 j 06:23	23° ✕ 29'45	-17°-35'-27	conjunction	114 Mar 23 j 08:22	1° ∇ 01'54	-16°-47'-48
direct	106 Dec 08 j 10:16	22° ✕ 29'31		minimum elong	114 Mar 23 j 08:28	1° ∇ 01'54	16°47'49
conjunction	107 Mar 16 j 10:15	23° ✕ 58'58	-16°-53'00	max. Earth dist.	114 Mar 25 j 02:03	1° ∇ 04'19	49.42380 AU
minimum elong	107 Mar 16 j 10:17	23° ✕ 58'58	16°53'01	retrograde	114 Jul 04 j 12:13	2° ∇ 33'50	
max. Earth dist.	107 Mar 18 j 11:13	24° ✕ 01'53	48.77989 AU	min. Earth dist.	114 Sep 24 j 15:40	1° ∇ 34'55	47.55011 AU
retrograde	107 Jun 27 j 13:57	25° ✕ 32'23		opposition	114 Sep 26 j 06:53	1° ∇ 33'02	-17°-28'-38
min. Earth dist.	107 Sep 17 j 14:00	24° ✕ 33'07	46.92212 AU	direct	114 Dec 16 j 08:36	0° ∇ 33'32	
opposition	107 Sep 19 j 12:53	24° ✕ 30'51	-17°-35'-39	conjunction	115 Mar 24 j 14:32	2° ∇ 01'29	-16°-45'-59
direct	107 Dec 09 j 15:47	23° ✕ 30'43		minimum elong	115 Mar 24 j 14:37	2° ∇ 01'29	16°46'00
conjunction	108 Mar 16 j 17:02	24° ✕ 59'57	-16°-53'-8	max. Earth dist.	115 Mar 26 j 06:48	2° ∇ 03'50	49.49677 AU
				retrograde	115 Jul 05 j 17:49	3° ∇ 33'13	
				min. Earth dist.	115 Sep 25 j 23:39	2° ∇ 34'14	47.62027 AU

opposition	115 Sep 27 j 12:41	2°V32'28	-17°-26'-34	conjunction	124 Apr 01 j 19:41	10°V47'45	-16°-17'-41
direct	115 Dec 17 j 14:06	1°V33'01		minimum elong	124 Apr 01 j 19:48	10°V47'46	16°17'41
				max. Earth dist.	124 Apr 03 j 02:45	10°V49'32	49.98348 AU
conjunction	116 Mar 24 j 20:51	3°V00'46	-16°-43'-56	retrograde	124 Jul 13 j 20:25	12°V18'07	
minimum elong	116 Mar 24 j 20:57	3°V00'47	16°43'57	min. Earth dist.	124 Oct 04 j 06:20	11°V19'24	48.08543 AU
max. Earth dist.	116 Mar 26 j 12:33	3°V03'05	49.56494 AU	opposition	124 Oct 05 j 11:04	11°V18'02	-16°-55'-27
retrograde	116 Jul 05 j 20:32	4°V32'17		direct	124 Dec 25 j 14:51	10°V19'07	
min. Earth dist.	116 Sep 26 j 05:38	3°V33'20	47.68573 AU				
opposition	116 Sep 27 j 18:04	3°V31'36	-17°-24'-14	conjunction	125 Apr 03 j 01:31	11°V45'48	-16°-13'-13
direct	116 Dec 17 j 22:44	2°V32'11		minimum elong	125 Apr 03 j 01:40	11°V45'49	16°13'15
				max. Earth dist.	125 Apr 04 j 07:04	11°V47'29	50.01890 AU
conjunction	117 Mar 26 j 02:56	3°V59'46	-16°-41'-37	retrograde	125 Jul 15 j 02:50	13°V16'03	
minimum elong	117 Mar 26 j 03:03	3°V59'46	16°41'37	opposition	125 Oct 06 j 16:04	12°V16'02	-16°-50'-41
max. Earth dist.	117 Mar 27 j 16:29	4°V01'56	49.62876 AU	min. Earth dist.	125 Oct 05 j 13:41	12°V17'17	48.11754 AU
retrograde	117 Jul 07 j 02:39	5°V31'05		direct	125 Dec 26 j 18:21	11°V17'10	
opposition	117 Sep 28 j 23:32	4°V30'27	-17°-21'-37				
min. Earth dist.	117 Sep 27 j 12:11	4°V32'08	47.74725 AU	conjunction	126 Apr 04 j 07:16	12°V43'46	-16°-8'-33
direct	117 Dec 19 j 04:54	3°V31'04		minimum elong	126 Apr 04 j 07:25	12°V43'46	16°08'33
				max. Earth dist.	126 Apr 05 j 11:54	12°V45'24	50.04915 AU
conjunction	118 Mar 27 j 08:57	4°V58'29	-16°-39'-1	retrograde	126 Jul 16 j 05:02	14°V13'53	
minimum elong	118 Mar 27 j 09:03	4°V58'29	16°39'02	opposition	126 Oct 07 j 20:50	13°V13'56	-16°-45'-40
max. Earth dist.	118 Mar 28 j 22:34	5°V00'39	49.68882 AU	min. Earth dist.	126 Oct 06 j 19:02	13°V15'09	48.14422 AU
retrograde	118 Jul 08 j 09:21	6°V29'37		direct	126 Dec 28 j 01:56	12°V15'05	
min. Earth dist.	118 Sep 28 j 18:58	5°V30'39	47.80515 AU				
opposition	118 Sep 30 j 04:50	5°V29'02	-17°-18'-44	conjunction	127 Apr 05 j 12:54	13°V41'35	-16°-3'-38
direct	118 Dec 20 j 10:01	4°V29'43		minimum elong	127 Apr 05 j 13:03	13°V41'35	16°03'40
				max. Earth dist.	127 Apr 06 j 15:07	13°V43'05	50.07414 AU
conjunction	119 Mar 28 j 14:50	5°V56'58	-16°-36'-9	retrograde	127 Jul 17 j 09:16	15°V11'35	
minimum elong	119 Mar 28 j 14:58	5°V56'59	16°36'09	min. Earth dist.	127 Oct 08 j 01:26	14°V12'48	48.16592 AU
max. Earth dist.	119 Mar 30 j 02:57	5°V59'03	49.74576 AU	opposition	127 Oct 09 j 01:38	14°V11'40	-16°-40'-26
retrograde	119 Jul 09 j 16:49	7°V27'56		direct	127 Dec 29 j 08:33	13°V12'50	
min. Earth dist.	119 Sep 29 j 23:58	6°V29'03	47.86005 AU				
opposition	119 Oct 01 j 10:00	6°V27'26	-17°-15'-33	conjunction	128 Apr 05 j 18:34	14°V39'13	-15°-58'-30
direct	119 Dec 21 j 12:47	5°V28'09		minimum elong	128 Apr 05 j 18:44	14°V39'14	15°58'31
				max. Earth dist.	128 Apr 06 j 20:29	14°V40'42	50.09429 AU
conjunction	120 Mar 28 j 20:37	6°V55'17	-16°-33'00	retrograde	128 Jul 17 j 14:50	16°V09'07	
minimum elong	120 Mar 28 j 20:43	6°V55'17	16°33'01	min. Earth dist.	128 Oct 08 j 07:43	15°V10'16	48.18289 AU
max. Earth dist.	120 Mar 30 j 07:47	6°V57'19	49.79967 AU	opposition	128 Oct 09 j 06:20	15°V09'12	-16°-34'-57
retrograde	120 Jul 09 j 21:07	8°V26'06		direct	128 Dec 29 j 14:35	14°V10'22	
min. Earth dist.	120 Sep 30 j 07:03	7°V27'12	47.91198 AU				
opposition	120 Oct 01 j 15:16	7°V25'40	-17°-12'-5	conjunction	129 Apr 07 j 00:09	15°V36'40	-15°-53'-8
direct	120 Dec 21 j 18:45	6°V26'27		minimum elong	129 Apr 07 j 00:18	15°V36'41	15°53'09
				max. Earth dist.	129 Apr 08 j 00:12	15°V38'02	50.11016 AU
conjunction	121 Mar 30 j 02:32	7°V53'28	-16°-29'-34	retrograde	129 Jul 18 j 22:51	17°V06'25	
minimum elong	121 Mar 30 j 02:41	7°V53'29	16°29'35	opposition	129 Oct 10 j 10:46	16°V06'32	-16°-29'-13
max. Earth dist.	121 Mar 31 j 13:31	7°V55'29	49.85075 AU	min. Earth dist.	129 Oct 09 j 12:25	16°V07'35	48.19589 AU
retrograde	121 Jul 10 j 23:24	9°V24'09		direct	129 Dec 30 j 16:39	15°V07'42	
opposition	121 Oct 02 j 20:10	8°V23'48	-17°-8'-20				
min. Earth dist.	121 Oct 01 j 12:14	8°V25'19	47.96083 AU	conjunction	130 Apr 08 j 05:36	16°V33'55	-15°-47'-30
direct	121 Dec 23 j 02:32	7°V24'40		minimum elong	130 Apr 08 j 05:46	16°V33'56	15°47'30
				max. Earth dist.	130 Apr 09 j 04:35	16°V35'13	50.12223 AU
conjunction	122 Mar 31 j 08:13	8°V51'35	-16°-25'-52	retrograde	130 Jul 20 j 03:37	18°V03'33	
minimum elong	122 Mar 31 j 08:20	8°V51'36	16°25'53	opposition	130 Oct 11 j 15:25	17°V03'41	-16°-23'-14
max. Earth dist.	122 Apr 01 j 17:10	8°V53'29	49.89869 AU	min. Earth dist.	130 Oct 10 j 18:58	17°V04'39	48.20541 AU
retrograde	122 Jul 12 j 06:06	10°V22'10		direct	130 Dec 31 j 20:44	16°V04'51	
min. Earth dist.	122 Oct 02 j 18:23	9°V23'22	48.00647 AU				
opposition	122 Oct 04 j 01:15	9°V21'54	-17°-4'-18	conjunction	131 Apr 09 j 10:58	17°V30'59	-15°-41'-37
direct	122 Dec 24 j 07:31	8°V22'51		minimum elong	131 Apr 09 j 11:07	17°V31'00	15°41'38
				max. Earth dist.	131 Apr 10 j 09:43	17°V32'17	50.13118 AU
conjunction	123 Apr 01 j 13:53	9°V49'41	-16°-21'-54	retrograde	131 Jul 21 j 05:28	19°V00'31	
minimum elong	123 Apr 01 j 14:02	9°V49'41	16°21'55	opposition	131 Oct 12 j 19:53	18°V00'39	-16°-16'-59
max. Earth dist.	123 Apr 02 j 22:48	9°V51'34	49.94313 AU	min. Earth dist.	131 Oct 11 j 23:35	18°V01'37	48.21181 AU
retrograde	123 Jul 13 j 12:22	11°V20'09		direct	132 Jan 02 j 03:35	17°V01'50	
min. Earth dist.	123 Oct 04 j 01:00	10°V21'22	48.04817 AU				
opposition	123 Oct 05 j 06:16	10°V19'59	-17°00'00	conjunction	132 Apr 09 j 16:20	18°V27'55	-15°-35'-29
direct	123 Dec 25 j 12:55	9°V21'00		minimum elong	132 Apr 09 j 16:31	18°V27'56	15°35'30
				max. Earth dist.	132 Apr 10 j 13:06	18°V29'06	50.13716 AU

retrograde	132 Jul	21 j 09:59	19° Υ 57'21		direct	141 Jan	09 j 18:09	25° Υ 34'01	
min. Earth dist.	132 Oct	12 j 05:06	18° Υ 58'26	48.21540 AU					
opposition	132 Oct	13 j 00:19	18° Υ 57'32	-16°-10'-27	conjunction	141 Apr	18 j 17:39	27° Υ 00'02	-14°-29'-25
direct	133 Jan	02 j 09:09	17° Υ 58'43		minimum elong	141 Apr	18 j 17:51	27° Υ 00'03	14°29'26
					max. Earth dist.	141 Apr	19 j 03:36	27° Υ 00'36	50.01734 AU
conjunction	133 Apr	10 j 21:51	19° Υ 24'45	-15°-29'-5	retrograde	141 Jul	30 j 09:32	28° Υ 29'08	
minimum elong	133 Apr	10 j 22:01	19° Υ 24'46	15°29'06	opposition	141 Oct	21 j 15:50	27° Υ 29'35	-15°00'-46
max. Earth dist.	133 Apr	11 j 18:35	19° Υ 25'56	50.14029 AU	min. Earth dist.	141 Oct	21 j 07:31	27° Υ 29'58	48.06508 AU
retrograde	133 Jul	22 j 14:30	20° Υ 54'08		direct	142 Jan	11 j 01:02	26° Υ 30'50	
min. Earth dist.	133 Oct	13 j 10:50	19° Υ 55'12	48.21596 AU					
opposition	133 Oct	14 j 04:48	19° Υ 54'21	-16°-3'-40	conjunction	142 Apr	19 j 22:54	27° Υ 56'53	-14°-20'-57
direct	134 Jan	03 j 15:02	18° Υ 55'34		minimum elong	142 Apr	19 j 23:04	27° Υ 56'53	14°20'58
					max. Earth dist.	142 Apr	20 j 06:36	27° Υ 57'19	49.98085 AU
conjunction	134 Apr	12 j 03:06	20° Υ 21'34	-15°-22'-26	retrograde	142 Jul	31 j 13:08	29° Υ 25'58	
minimum elong	134 Apr	12 j 03:18	20° Υ 21'34	15°22'27	opposition	142 Oct	22 j 20:10	28° Υ 26'24	-14°-51'-52
max. Earth dist.	134 Apr	12 j 22:22	20° Υ 22'39	50.14049 AU	min. Earth dist.	142 Oct	22 j 13:14	28° Υ 26'43	48.02556 AU
retrograde	134 Jul	23 j 21:55	21° Υ 50'53		direct	143 Jan	12 j 07:06	27° Υ 27'37	
opposition	134 Oct	15 j 09:11	20° Υ 51'10	-15°-56'-37					
min. Earth dist.	134 Oct	14 j 15:25	20° Υ 52'00	48.21339 AU	conjunction	143 Apr	21 j 04:23	28° Υ 53'41	-14°-12'-15
direct	135 Jan	04 j 17:17	19° Υ 52'24		minimum elong	143 Apr	21 j 04:35	28° Υ 53'42	14°12'15
					max. Earth dist.	143 Apr	21 j 12:04	28° Υ 54'07	49.94088 AU
conjunction	135 Apr	13 j 08:29	21° Υ 18'24	-15°-15'-32		143 Jun	15 j 04:11	0° \mathcal{E}	
minimum elong	135 Apr	13 j 08:39	21° Υ 18'24	15°15'33	retrograde	143 Aug	01 j 17:03	0° \mathcal{E} 22'46	
max. Earth dist.	135 Apr	14 j 02:31	21° Υ 19'25	50.13720 AU		143 Sep	18 j 21:53	30° $\mathcal{R}\Upsilon$	
retrograde	135 Jul	25 j 04:49	22° Υ 47'41		opposition	143 Oct	24 j 00:25	29° Υ 23'12	-14°-42'-42
opposition	135 Oct	16 j 13:39	21° Υ 48'00	-15°-49'-19	min. Earth dist.	143 Oct	23 j 18:39	29° Υ 23'28	47.98265 AU
min. Earth dist.	135 Oct	15 j 22:00	21° Υ 48'45	48.20709 AU	direct	144 Jan	13 j 13:16	28° Υ 24'24	
direct	136 Jan	05 j 19:53	20° Υ 49'17						
					conjunction	144 Apr	21 j 09:48	29° Υ 50'30	-14°-3'-17
conjunction	136 Apr	13 j 14:02	22° Υ 15'17	-15°-8'-23	minimum elong	144 Apr	21 j 09:59	29° Υ 50'30	14°03'18
minimum elong	136 Apr	13 j 14:13	22° Υ 15'18	15°08'25	max. Earth dist.	144 Apr	21 j 15:51	29° Υ 50'50	49.89785 AU
max. Earth dist.	136 Apr	14 j 07:25	22° Υ 16'16	50.12996 AU		144 Apr	28 j 10:01	0° \mathcal{E}	
retrograde	136 Jul	25 j 08:10	23° Υ 44'32		retrograde	144 Aug	02 j 00:32	1° \mathcal{E} 19'35	
opposition	136 Oct	16 j 18:00	22° Υ 44'55	-15°-41'-47	opposition	144 Oct	24 j 04:40	0° \mathcal{E} 20'01	-14°-33'-18
min. Earth dist.	136 Oct	16 j 02:55	22° Υ 45'37	48.19628 AU	min. Earth dist.	144 Oct	23 j 23:09	0° \mathcal{E} 20'17	47.93674 AU
direct	137 Jan	06 j 01:39	21° Υ 46'13			144 Nov	11 j 04:48	30° $\mathcal{R}\Upsilon$	
					direct	145 Jan	13 j 15:43	29° Υ 21'12	
conjunction	137 Apr	14 j 19:33	23° Υ 12'14	-15°-1'-1		145 Mar	16 j 18:14	0° \mathcal{E}	
minimum elong	137 Apr	14 j 19:43	23° Υ 12'14	15°01'01	conjunction	145 Apr	22 j 15:16	0° \mathcal{E} 47'20	-13°-54'-5
max. Earth dist.	137 Apr	15 j 10:22	23° Υ 13'04	50.11781 AU	minimum elong	145 Apr	22 j 15:28	0° \mathcal{E} 47'21	13°54'06
retrograde	137 Jul	26 j 12:47	24° Υ 41'28		max. Earth dist.	145 Apr	22 j 20:08	0° \mathcal{E} 47'37	49.85168 AU
opposition	137 Oct	17 j 22:24	23° Υ 41'52	-15°-34'-1	retrograde	145 Aug	03 j 08:01	2° \mathcal{E} 16'27	
min. Earth dist.	137 Oct	17 j 09:08	23° Υ 42'30	48.18040 AU	opposition	145 Oct	25 j 08:59	1° \mathcal{E} 16'53	-14°-23'-37
direct	138 Jan	07 j 07:04	22° Υ 43'12		min. Earth dist.	145 Oct	25 j 05:18	1° \mathcal{E} 17'03	47.88773 AU
					direct	146 Jan	14 j 17:39	0° \mathcal{E} 18'03	
conjunction	138 Apr	16 j 01:10	24° Υ 09'13	-14°-53'-27					
minimum elong	138 Apr	16 j 01:21	24° Υ 09'13	14°53'28	conjunction	146 Apr	23 j 20:48	1° \mathcal{E} 44'16	-13°-44'-38
max. Earth dist.	138 Apr	16 j 15:23	24° Υ 10'01	50.10038 AU	minimum elong	146 Apr	23 j 20:58	1° \mathcal{E} 44'16	13°44'39
retrograde	138 Jul	27 j 17:28	25° Υ 38'25		max. Earth dist.	146 Apr	24 j 01:17	1° \mathcal{E} 44'31	49.80258 AU
opposition	138 Oct	19 j 02:53	24° Υ 38'51	-15°-26'-2	retrograde	146 Aug	04 j 12:14	3° \mathcal{E} 13'23	
min. Earth dist.	138 Oct	18 j 15:16	24° Υ 39'24	48.15902 AU	opposition	146 Oct	26 j 13:15	2° \mathcal{E} 13'50	-14°-13'-42
direct	139 Jan	08 j 13:08	23° Υ 40'11		min. Earth dist.	146 Oct	26 j 09:43	2° \mathcal{E} 14'00	47.83551 AU
					direct	147 Jan	15 j 22:06	1° \mathcal{E} 14'59	
conjunction	139 Apr	17 j 06:33	25° Υ 06'11	-14°-45'-39					
minimum elong	139 Apr	17 j 06:43	25° Υ 06'12	14°45'40	conjunction	147 Apr	25 j 02:08	2° \mathcal{E} 41'17	-13°-34'-56
max. Earth dist.	139 Apr	17 j 18:37	25° Υ 06'52	50.07766 AU	minimum elong	147 Apr	25 j 02:21	2° \mathcal{E} 41'18	13°34'57
retrograde	139 Jul	29 j 01:38	26° Υ 35'22		max. Earth dist.	147 Apr	25 j 04:32	2° \mathcal{E} 41'25	49.75003 AU
opposition	139 Oct	20 j 07:17	25° Υ 35'49	-15°-17'-51	retrograde	147 Aug	05 j 16:41	4° \mathcal{E} 10'28	
min. Earth dist.	139 Oct	19 j 20:15	25° Υ 36'20	48.13242 AU	opposition	147 Oct	27 j 17:39	3° \mathcal{E} 10'55	-14°-3'-31
direct	140 Jan	09 j 15:00	24° Υ 37'07		min. Earth dist.	147 Oct	27 j 15:48	3° \mathcal{E} 11'01	47.77965 AU
					direct	148 Jan	17 j 03:26	2° \mathcal{E} 12'03	
conjunction	140 Apr	17 j 12:05	26° Υ 03'08	-14°-37'-39					
minimum elong	140 Apr	17 j 12:16	26° Υ 03'09	14°37'40	conjunction	148 Apr	25 j 07:55	3° \mathcal{E} 38'26	-13°-25'-1
max. Earth dist.	140 Apr	17 j 22:40	26° Υ 03'44	50.04974 AU	minimum elong	148 Apr	25 j 08:06	3° \mathcal{E} 38'27	13°25'01
retrograde	140 Jul	29 j 07:22	27° Υ 32'17		max. Earth dist.	148 Apr	25 j 09:51	3° \mathcal{E} 38'33	49.69339 AU
opposition	140 Oct	20 j 11:36	26° Υ 32'44	-15°-9'-25	retrograde	148 Aug	05 j 19:27	5° \mathcal{E} 07'40	
min. Earth dist.	140 Oct	20 j 02:57	26° Υ 33'08	48.10091 AU					

opposition	148 Oct 27 j 21:57	4°♃08'08	-13°-53'-7	conjunction	157 May 04 j 12:12	12°♃15'08	-11°-45'-33
min. Earth dist.	148 Oct 27 j 21:37	4°♃08'09	47.71926 AU	minimum elong	157 May 04 j 12:23	12°♃15'09	11°45'34
direct	149 Jan 17 j 10:58	3°♃09'14		max. Earth dist.	157 May 04 j 01:08	12°♃14'30	48.97309 AU
				retrograde	157 Aug 14 j 22:15	13°♃44'57	
conjunction	149 Apr 26 j 13:40	4°♃35'42	-13°-14'-51	opposition	157 Nov 05 j 14:21	12°♃45'00	-12°-8'-57
minimum elong	149 Apr 26 j 13:52	4°♃35'43	13°14'53	min. Earth dist.	157 Nov 06 j 00:31	12°♃44'31	46.96728 AU
max. Earth dist.	149 Apr 26 j 13:28	4°♃35'42	49.63206 AU	direct	158 Jan 26 j 03:11	11°♃45'29	
retrograde	149 Aug 07 j 03:17	6°♃05'00					
opposition	149 Oct 29 j 02:21	5°♃05'27	-13°-42'-29	conjunction	158 May 05 j 18:07	13°♃12'57	-11°-33'-17
min. Earth dist.	149 Oct 29 j 02:47	5°♃05'26	47.65388 AU	minimum elong	158 May 05 j 18:20	13°♃12'58	11°33'18
direct	150 Jan 18 j 13:47	4°♃06'31		max. Earth dist.	158 May 05 j 07:02	13°♃12'19	48.87557 AU
				retrograde	158 Aug 16 j 01:04	14°♃42'55	
conjunction	150 Apr 27 j 19:20	5°♃33'04	-13°-4'-29	opposition	158 Nov 06 j 19:03	13°♃42'57	-11°-56'-6
minimum elong	150 Apr 27 j 19:31	5°♃33'05	13°04'30	min. Earth dist.	158 Nov 07 j 06:06	13°♃42'25	46.86675 AU
max. Earth dist.	150 Apr 27 j 17:28	5°♃32'58	49.56535 AU	direct	159 Jan 27 j 10:44	12°♃43'22	
retrograde	150 Aug 08 j 10:42	7°♃02'24		max. Earth dist.	159 May 06 j 11:26	14°♃10'18	48.77514 AU
opposition	150 Oct 30 j 06:57	6°♃02'49	-13°-31'-37				
min. Earth dist.	150 Oct 30 j 09:47	6°♃02'41	47.58306 AU	conjunction	159 May 07 j 00:12	14°♃11'02	-11°-20'-45
direct	151 Jan 19 j 16:10	5°♃03'50		minimum elong	159 May 07 j 00:23	14°♃11'03	11°20'47
					159 Jun 13 j 15:08	15°♃	
conjunction	151 Apr 29 j 01:12	6°♃30'28	-12°-53'-54	retrograde	159 Aug 17 j 08:54	15°♃41'09	
minimum elong	151 Apr 29 j 01:25	6°♃30'28	12°53'56		159 Oct 22 j 07:22	15°♃	
max. Earth dist.	151 Apr 28 j 22:25	6°♃30'18	49.49339 AU	opposition	159 Nov 07 j 23:39	14°♃41'10	-11°-43'00
retrograde	151 Aug 09 j 14:35	7°♃59'50		min. Earth dist.	159 Nov 08 j 11:17	14°♃40'37	46.76306 AU
opposition	151 Oct 31 j 11:18	7°♃00'12	-13°-20'-33	direct	160 Jan 28 j 13:54	13°♃41'32	
min. Earth dist.	151 Oct 31 j 14:41	7°♃00'03	47.50696 AU		160 Apr 30 j 09:40	15°♃	
direct	152 Jan 20 j 22:10	6°♃01'08					
				conjunction	160 May 07 j 06:30	15°♃09'25	-11°-8'00
conjunction	152 Apr 29 j 06:59	7°♃27'51	-12°-43'-6	minimum elong	160 May 07 j 06:42	15°♃09'26	11°08'01
minimum elong	152 Apr 29 j 07:11	7°♃27'52	12°43'07	max. Earth dist.	160 May 06 j 16:22	15°♃08'37	48.67099 AU
max. Earth dist.	152 Apr 29 j 01:35	7°♃27'33	49.41631 AU	retrograde	160 Aug 17 j 18:00	16°♃39'42	
retrograde	152 Aug 09 j 18:40	8°♃57'16		opposition	160 Nov 08 j 04:33	15°♃39'42	-11°-29'-38
opposition	152 Oct 31 j 15:49	7°♃57'35	-13°-9'-14	min. Earth dist.	160 Nov 08 j 18:27	15°♃39'02	46.65532 AU
min. Earth dist.	152 Oct 31 j 20:58	7°♃57'20	47.42606 AU		160 Dec 15 j 22:03	15°♃	
direct	153 Jan 21 j 04:02	6°♃58'26		direct	161 Jan 28 j 15:31	14°♃40'00	
					161 Mar 13 j 04:14	15°♃	
conjunction	153 Apr 30 j 12:53	8°♃25'14	-12°-32'-5				
minimum elong	153 Apr 30 j 13:04	8°♃25'15	12°32'06	conjunction	161 May 08 j 12:57	16°♃08'06	-10°-55'00
max. Earth dist.	153 Apr 30 j 07:08	8°♃24'55	49.33458 AU	minimum elong	161 May 08 j 13:08	16°♃08'07	10°55'00
retrograde	153 Aug 10 j 21:46	9°♃54'42		max. Earth dist.	161 May 07 j 21:55	16°♃07'15	48.56253 AU
opposition	153 Nov 01 j 20:13	8°♃54'57	-12°-57'-42	retrograde	161 Aug 18 j 23:30	17°♃38'33	
min. Earth dist.	153 Nov 02 j 02:43	8°♃54'38	47.34075 AU	opposition	161 Nov 09 j 09:21	16°♃38'30	-11°-16'-2
direct	154 Jan 22 j 11:07	7°♃55'43		min. Earth dist.	161 Nov 09 j 23:42	16°♃37'49	46.54287 AU
				direct	162 Jan 29 j 21:06	15°♃38'44	
conjunction	154 May 01 j 18:37	9°♃22'37	-12°-20'-49				
minimum elong	154 May 01 j 18:50	9°♃22'37	12°20'49	conjunction	162 May 09 j 19:22	17°♃07'04	-10°-41'-46
max. Earth dist.	154 May 01 j 11:08	9°♃22'11	49.24897 AU	minimum elong	162 May 09 j 19:34	17°♃07'04	10°41'47
retrograde	154 Aug 12 j 04:19	10°♃52'08		max. Earth dist.	162 May 09 j 01:42	17°♃06'03	48.44911 AU
opposition	154 Nov 03 j 00:39	9°♃52'20	-12°-45'-54	retrograde	162 Aug 20 j 04:54	18°♃37'40	
min. Earth dist.	154 Nov 03 j 07:31	9°♃52'00	47.25191 AU	opposition	162 Nov 10 j 14:26	17°♃37'34	-11°-2'-12
direct	155 Jan 23 j 14:48	8°♃53'01		min. Earth dist.	162 Nov 11 j 06:45	17°♃36'47	46.42544 AU
				direct	163 Jan 31 j 03:09	16°♃37'42	
conjunction	155 May 03 j 00:20	10°♃20'01	-12°-9'-19	max. Earth dist.	163 May 10 j 07:46	18°♃05'11	48.33060 AU
minimum elong	155 May 03 j 00:31	10°♃20'02	12°09'19				
max. Earth dist.	155 May 02 j 15:38	10°♃19'31	49.15988 AU	conjunction	163 May 11 j 01:58	18°♃06'14	-10°-28'-18
retrograde	155 Aug 13 j 11:28	11°♃49'37		minimum elong	163 May 11 j 02:10	18°♃06'15	10°28'18
opposition	155 Nov 04 j 05:16	10°♃49'46	-12°-33'-51	retrograde	163 Aug 21 j 08:07	19°♃37'00	
min. Earth dist.	155 Nov 04 j 13:58	10°♃49'21	47.15981 AU	opposition	163 Nov 11 j 19:34	18°♃36'49	-10°-48'-7
direct	156 Jan 24 j 17:52	9°♃50'22		min. Earth dist.	163 Nov 12 j 13:15	18°♃35'58	46.30281 AU
				direct	164 Feb 01 j 11:35	17°♃36'51	
conjunction	156 May 03 j 06:18	11°♃17'31	-11°-57'-33				
minimum elong	156 May 03 j 06:31	11°♃17'31	11°57'34	conjunction	164 May 11 j 08:38	19°♃05'35	-10°-14'-36
max. Earth dist.	156 May 02 j 21:18	11°♃17'00	49.06788 AU	minimum elong	164 May 11 j 08:50	19°♃05'35	10°14'38
retrograde	156 Aug 13 j 16:42	12°♃47'12		max. Earth dist.	164 May 10 j 12:13	19°♃04'24	48.20717 AU
opposition	156 Nov 04 j 09:40	11°♃47'18	-12°-21'-32	retrograde	164 Aug 21 j 14:43	20°♃36'31	
min. Earth dist.	156 Nov 04 j 18:23	11°♃46'53	47.06486 AU	opposition	164 Nov 12 j 00:33	19°♃36'14	-10°-33'-48
direct	157 Jan 24 j 22:21	10°♃47'49		min. Earth dist.	164 Nov 12 j 19:06	19°♃35'21	46.17553 AU

direct	165 Feb 01 j 16:38	18°♄36'09		conjunction	173 May 21 j 00:41	28°♄08'43	-7°-59'-59
				minimum elong	173 May 21 j 00:52	28°♄08'44	8°00'00
conjunction	165 May 12 j 15:24	20°♄05'04	-10°00'-41	retrograde	173 Aug 31 j 04:42	29°♄41'39	
minimum elong	165 May 12 j 15:36	20°♄05'05	10°00'41	opposition	173 Nov 21 j 02:51	28°♄40'31	-8°-12'-49
max. Earth dist.	165 May 11 j 17:31	20°♄03'49	48.07913 AU	min. Earth dist.	173 Nov 22 j 07:27	28°♄39'07	44.87981 AU
retrograde	165 Aug 22 j 22:35	21°♄36'10		direct	174 Feb 10 j 19:26	27°♄39'16	
opposition	165 Nov 13 j 05:50	20°♄35'48	-10°-19'-13	max. Earth dist.	174 May 20 j 23:32	29°♄08'49	46.78111 AU
min. Earth dist.	165 Nov 14 j 02:24	20°♄34'48	46.04398 AU				
direct	166 Feb 02 j 20:33	19°♄35'34		conjunction	174 May 22 j 08:24	29°♄10'46	-7°-43'-45
				minimum elong	174 May 22 j 08:34	29°♄10'47	7°43'45
conjunction	166 May 13 j 22:03	21°♄04'43	-9°-46'-30				
minimum elong	166 May 13 j 22:14	21°♄04'43	9°46'31	retrograde	174 Jun 27 j 18:39	0°♄	
max. Earth dist.	166 May 12 j 23:42	21°♄03'25	47.94726 AU				
retrograde	166 Aug 24 j 06:36	22°♄35'58					
opposition	166 Nov 14 j 11:02	21°♄35'29	-10°-4'-23	retrograde	174 Sep 01 j 12:24	0°♄44'00	
min. Earth dist.	166 Nov 15 j 07:45	21°♄34'29	45.90882 AU				
direct	167 Feb 04 j 00:31	20°♄35'07		opposition	174 Nov 07 j 14:38	30°♄	
max. Earth dist.	167 May 14 j 04:19	22°♄03'04	47.81195 AU				
				opposition	174 Nov 22 j 09:08	29°♄42'46	-7°-55'-48
conjunction	167 May 15 j 04:50	22°♄04'30	-9°-32'-4	min. Earth dist.	174 Nov 23 j 14:47	29°♄41'18	44.71736 AU
minimum elong	167 May 15 j 05:02	22°♄04'30	9°32'05	direct	175 Feb 12 j 01:39	28°♄41'21	
retrograde	167 Aug 25 j 13:42	23°♄35'56					
opposition	167 Nov 15 j 16:21	22°♄35'20	-9°-49'-16	max. Earth dist.	175 May 14 j 09:10	0°♄	
min. Earth dist.	167 Nov 16 j 14:43	22°♄34'15	45.77061 AU				
direct	168 Feb 05 j 05:30	21°♄34'49		max. Earth dist.	175 May 22 j 06:07	0°♄11'10	46.61738 AU
max. Earth dist.	168 May 14 j 11:15	23°♄03'01	47.67372 AU				
				conjunction	175 May 23 j 16:33	0°♄13'12	-7°-27'-15
conjunction	168 May 15 j 11:54	23°♄04'27	-9°-17'-23	minimum elong	175 May 23 j 16:43	0°♄13'13	7°27'17
minimum elong	168 May 15 j 12:05	23°♄04'28	9°17'24	retrograde	175 Sep 02 j 20:17	1°♄46'45	
retrograde	168 Aug 25 j 16:31	24°♄36'05		opposition	175 Nov 23 j 15:32	0°♄45'23	-7°-38'-31
opposition	168 Nov 15 j 21:49	23°♄35'23	-9°-33'-53	min. Earth dist.	175 Nov 24 j 23:24	0°♄43'48	44.54980 AU
min. Earth dist.	168 Nov 16 j 20:53	23°♄34'16	45.62952 AU	direct	176 Jan 05 j 15:14	30°♄	
direct	169 Feb 05 j 14:16	22°♄34'44		direct	176 Feb 13 j 07:36	29°♄43'48	
				max. Earth dist.	176 Mar 22 j 16:22	0°♄	
conjunction	169 May 16 j 18:52	24°♄04'37	-9°-2'-26				
minimum elong	169 May 16 j 19:03	24°♄04'38	9°02'27	conjunction	176 May 24 j 00:53	1°♄16'01	-7°-10'-30
max. Earth dist.	169 May 15 j 16:36	24°♄03'05	47.53288 AU	minimum elong	176 May 24 j 01:02	1°♄16'01	7°10'31
retrograde	169 Aug 26 j 22:40	25°♄36'29		retrograde	176 Sep 03 j 06:08	2°♄49'51	
opposition	169 Nov 17 j 03:18	24°♄35'41	-9°-18'-14	opposition	176 Nov 23 j 22:00	1°♄48'21	-7°-20'-59
min. Earth dist.	169 Nov 18 j 02:48	24°♄34'32	45.48597 AU	min. Earth dist.	176 Nov 25 j 06:18	1°♄46'45	44.37751 AU
direct	170 Feb 06 j 20:27	23°♄34'55		direct	177 Feb 13 j 12:42	0°♄46'35	
max. Earth dist.	170 May 16 j 22:45	25°♄03'29	47.38940 AU	max. Earth dist.	177 May 23 j 19:10	2°♄16'54	46.27558 AU
				conjunction	177 May 25 j 09:08	2°♄19'10	-6°-53'-31
conjunction	170 May 18 j 02:02	25°♄05'05	-8°-47'-13	minimum elong	177 May 25 j 09:17	2°♄19'11	6°53'32
minimum elong	170 May 18 j 02:12	25°♄05'05	8°47'14	retrograde	177 Sep 04 j 16:01	3°♄53'19	
retrograde	170 Aug 28 j 07:09	26°♄37'11		opposition	177 Nov 25 j 04:40	2°♄51'40	-7°-3'-10
opposition	170 Nov 18 j 09:03	25°♄36'18	-9°-2'-17	min. Earth dist.	177 Nov 26 j 15:03	2°♄49'57	44.20101 AU
min. Earth dist.	170 Nov 19 j 10:20	25°♄35'04	45.33974 AU	direct	178 Feb 14 j 18:01	1°♄49'42	
direct	171 Feb 08 j 00:20	24°♄35'25		max. Earth dist.	178 May 25 j 03:27	3°♄20'23	46.09843 AU
max. Earth dist.	171 May 18 j 05:31	26°♄04'15	47.24325 AU				
				conjunction	178 May 26 j 17:40	3°♄22'40	-6°-36'-15
conjunction	171 May 19 j 09:19	26°♄05'53	-8°-31'-44	minimum elong	178 May 26 j 17:49	3°♄22'41	6°36'16
minimum elong	171 May 19 j 09:31	26°♄05'54	8°31'45	retrograde	178 Sep 05 j 21:24	4°♄57'08	
retrograde	171 Aug 29 j 15:06	27°♄38'15		opposition	178 Nov 26 j 11:24	3°♄55'19	-6°-45'-4
opposition	171 Nov 19 j 14:48	26°♄37'18	-8°-46'-4	min. Earth dist.	178 Nov 27 j 22:24	3°♄53'35	44.02084 AU
min. Earth dist.	171 Nov 20 j 16:11	26°♄36'03	45.19045 AU	direct	179 Feb 16 j 03:29	2°♄53'10	
direct	172 Feb 09 j 05:12	25°♄36'17		max. Earth dist.	179 May 26 j 10:01	4°♄24'07	45.91796 AU
max. Earth dist.	172 May 18 j 10:43	27°♄05'19	47.09356 AU				
				conjunction	179 May 28 j 02:09	4°♄26'32	-6°-18'-44
conjunction	172 May 19 j 16:50	27°♄07'05	-8°-15'-59	minimum elong	179 May 28 j 02:17	4°♄26'32	6°18'45
minimum elong	172 May 19 j 17:00	27°♄07'06	8°16'00	retrograde	179 Sep 07 j 04:01	6°♄01'20	
retrograde	172 Aug 29 j 23:35	28°♄39'44		opposition	179 Nov 27 j 18:18	4°♄59'21	-6°-26'-41
opposition	172 Nov 19 j 20:41	27°♄38'41	-8°-29'-34	min. Earth dist.	179 Nov 29 j 06:10	4°♄57'33	43.83770 AU
min. Earth dist.	172 Nov 21 j 00:08	27°♄37'21	45.03742 AU	direct	180 Feb 17 j 12:03	3°♄57'00	
direct	173 Feb 09 j 10:37	26°♄37'34		max. Earth dist.	180 May 26 j 18:00	5°♄28'17	45.73449 AU
max. Earth dist.	173 May 19 j 18:10	28°♄06'55	46.93970 AU				
				conjunction	180 May 28 j 11:01	5°♄30'46	-6°00'-56
				minimum elong	180 May 28 j 11:10	5°♄30'47	6°00'56
				retrograde	180 Sep 07 j 12:01	7°♄05'56	
				opposition	180 Nov 28 j 01:23	6°♄03'47	-6°-8'00
				min. Earth dist.	180 Nov 29 j 14:51	6°♄01'54	43.65184 AU
				direct	181 Feb 17 j 18:51	5°♄01'14	

max. Earth dist.	181 May 28 j 02:18	6°II32'54	45.54870 AU	minimum elong	189 Jun 08 j 04:02	15°II32'40	3°08'27
				retrograde	189 Sep 18 j 06:42	17°II11'46	
conjunction	181 May 29 j 19:58	6°II35'26	-5°-42'-52	opposition	189 Dec 08 j 02:33	16°II08'01	-3°-6'-45
minimum elong	181 May 29 j 20:06	6°II35'26	5°42'53	min. Earth dist.	189 Dec 10 j 01:44	16°II05'35	41.84440 AU
retrograde	181 Sep 08 j 22:06	8°II10'58		direct	190 Feb 27 j 18:01	15°II03'27	
opposition	181 Nov 29 j 08:39	7°II08'41	-5°-49'-2	max. Earth dist.	190 Jun 07 j 09:24	16°II38'54	43.73377 AU
min. Earth dist.	181 Nov 30 j 21:55	7°II06'48	43.46379 AU				
direct	182 Feb 19 j 00:05	6°II05'56		conjunction	190 Jun 09 j 14:57	16°II42'18	-2°-47'-56
max. Earth dist.	182 May 29 j 09:26	7°II37'56	45.36062 AU	minimum elong	190 Jun 09 j 15:02	16°II42'18	2°47'57
				retrograde	190 Sep 19 j 15:10	18°II21'53	
conjunction	182 May 31 j 04:54	7°II40'35	-5°-24'-31	opposition	190 Dec 09 j 11:52	17°II17'54	-2°-45'-10
minimum elong	182 May 31 j 05:02	7°II40'35	5°24'32	min. Earth dist.	190 Dec 11 j 12:25	17°II15'22	41.62525 AU
retrograde	182 Sep 10 j 09:19	9°II16'31		direct	191 Mar 01 j 05:24	16°II13'03	
opposition	182 Nov 30 j 16:13	8°II14'05	-5°-29'-46	max. Earth dist.	191 Jun 08 j 19:33	17°II48'59	43.51403 AU
min. Earth dist.	182 Dec 02 j 07:13	8°II12'06	43.27355 AU				
direct	183 Feb 20 j 06:01	7°II11'09		conjunction	191 Jun 11 j 02:16	17°II52'28	-2°-27'-9
max. Earth dist.	183 May 30 j 18:58	8°II43'37	45.17022 AU	minimum elong	191 Jun 11 j 02:20	17°II52'28	2°27'09
				retrograde	191 Sep 21 j 01:54	19°II32'34	
conjunction	183 Jun 01 j 14:22	8°II46'16	-5°-5'-53	opposition	191 Dec 10 j 21:11	18°II28'21	-2°-23'-16
minimum elong	183 Jun 01 j 14:29	8°II46'17	5°05'55	min. Earth dist.	191 Dec 12 j 21:53	18°II25'48	41.40377 AU
retrograde	183 Sep 11 j 17:56	10°II22'37		direct	192 Mar 01 j 14:28	17°II23'12	
opposition	183 Dec 01 j 23:47	9°II20'02	-5°-10'-12	max. Earth dist.	192 Jun 09 j 05:36	18°II59'38	43.29194 AU
min. Earth dist.	183 Dec 03 j 15:19	9°II18'02	43.08073 AU				
direct	184 Feb 21 j 15:30	8°II16'55		conjunction	192 Jun 11 j 13:54	19°II03'14	-2°-6'-5
max. Earth dist.	184 May 31 j 02:23	9°II49'45	44.97701 AU	minimum elong	192 Jun 11 j 13:57	19°II03'14	2°06'06
				retrograde	192 Sep 21 j 14:14	20°II43'53	
conjunction	184 Jun 01 j 23:59	9°II52'33	-4°-46'-59	opposition	192 Dec 11 j 07:03	19°II39'26	-2°-1'-5
minimum elong	184 Jun 02 j 00:06	9°II52'34	4°47'00	min. Earth dist.	192 Dec 13 j 09:29	19°II36'47	41.18036 AU
retrograde	184 Sep 12 j 04:02	11°II29'21		direct	193 Mar 02 j 22:25	18°II34'00	
opposition	184 Dec 02 j 07:39	10°II26'36	-4°-50'-21	max. Earth dist.	193 Jun 10 j 17:36	20°II11'04	43.06818 AU
min. Earth dist.	184 Dec 04 j 00:22	10°II24'32	42.88489 AU				
direct	185 Feb 21 j 23:31	9°II23'17		conjunction	193 Jun 13 j 01:42	20°II14'40	-1°-44'-45
max. Earth dist.	185 Jun 01 j 11:19	10°II56'34	44.78015 AU	minimum elong	193 Jun 13 j 01:45	20°II14'40	1°44'45
				retrograde	193 Sep 23 j 03:17	21°II55'53	
conjunction	185 Jun 03 j 09:52	10°II59'26	-4°-27'-49	opposition	193 Dec 12 j 17:05	20°II51'12	-1°-38'-36
minimum elong	185 Jun 03 j 09:59	10°II59'27	4°27'49	min. Earth dist.	193 Dec 14 j 19:21	20°II48'33	40.95546 AU
retrograde	185 Sep 13 j 10:47	12°II36'41		direct	194 Mar 04 j 08:04	19°II45'30	
opposition	185 Dec 03 j 15:50	11°II33'47	-4°-30'-12	max. Earth dist.	194 Jun 12 j 03:40	21°II23'06	42.84304 AU
min. Earth dist.	185 Dec 05 j 10:20	11°II31'37	42.68513 AU				
direct	186 Feb 23 j 09:09	10°II30'15		conjunction	194 Jun 14 j 13:45	21°II26'51	-1°-23'-8
max. Earth dist.	186 Jun 02 j 20:14	12°II03'57	44.57932 AU	minimum elong	194 Jun 14 j 13:48	21°II26'51	1°23'10
				retrograde	194 Sep 24 j 17:19	23°II08'41	
conjunction	186 Jun 04 j 20:01	12°II06'55	-4°-8'-22	opposition	194 Dec 14 j 03:23	22°II03'46	-1°-15'-49
minimum elong	186 Jun 04 j 20:07	12°II06'56	4°08'24	min. Earth dist.	194 Dec 16 j 06:53	22°II01'03	40.72938 AU
retrograde	186 Sep 14 j 21:21	13°II44'38		direct	195 Mar 05 j 17:15	20°II57'48	
opposition	186 Dec 05 j 00:06	12°II41'33	-4°-9'-47	max. Earth dist.	195 Jun 13 j 16:09	22°II36'05	42.61646 AU
min. Earth dist.	186 Dec 06 j 19:05	12°II39'21	42.48122 AU				
direct	187 Feb 24 j 16:19	11°II37'47		conjunction	195 Jun 16 j 02:20	22°II39'52	-1°-1'-16
max. Earth dist.	187 Jun 04 j 04:12	13°II11'51	44.37401 AU	minimum elong	195 Jun 16 j 02:22	22°II39'52	1°01'16
				retrograde	195 Sep 26 j 03:38	24°II22'21	
conjunction	187 Jun 06 j 06:23	13°II14'58	-3°-48'-40	opposition	195 Dec 15 j 14:06	23°II17'14	0°-52'-44
minimum elong	187 Jun 06 j 06:29	13°II14'59	3°48'40	min. Earth dist.	195 Dec 17 j 18:26	23°II14'27	40.50165 AU
retrograde	187 Sep 16 j 10:14	14°II53'09		direct	196 Mar 06 j 05:42	22°II11'00	
opposition	187 Dec 06 j 08:47	13°II49'51	-3°-49'-3	max. Earth dist.	196 Jun 14 j 03:40	23°II49'55	42.38808 AU
min. Earth dist.	187 Dec 08 j 06:04	13°II47'32	42.27291 AU				
direct	188 Feb 25 j 21:44	12°II45'50		conjunction	196 Jun 16 j 15:10	23°II53'49	0°-39'-7
max. Earth dist.	188 Jun 04 j 14:29	14°II20'24	44.16437 AU	minimum elong	196 Jun 16 j 15:11	23°II53'49	0°39'08
				retrograde	196 Sep 26 j 15:41	25°II36'57	
conjunction	188 Jun 06 j 17:09	14°II23'34	-3°-28'-41	opposition	196 Dec 16 j 00:58	24°II31'38	0°-29'-23
minimum elong	188 Jun 06 j 17:15	14°II23'34	3°28'43	min. Earth dist.	196 Dec 18 j 05:50	24°II28'49	40.27195 AU
retrograde	188 Sep 16 j 19:52	16°II02'11		direct	197 Mar 07 j 16:46	23°II25'09	
opposition	188 Dec 06 j 17:31	14°II58'41	-3°-28'-3	max. Earth dist.	197 Jun 15 j 15:30	25°II04'43	42.15711 AU
min. Earth dist.	188 Dec 08 j 15:18	14°II56'19	42.06040 AU				
direct	189 Feb 26 j 08:05	13°II54'23		conjunction	197 Jun 18 j 04:29	25°II08'44	0°-16'-43
max. Earth dist.	189 Jun 05 j 22:57	15°II29'20	43.95080 AU	minimum elong	197 Jun 18 j 04:30	25°II08'44	0°16'44
				retrograde	197 Sep 28 j 05:04	26°II52'34	
conjunction	189 Jun 08 j 03:57	15°II32'40	-3°-8'-27	opposition	197 Dec 17 j 12:28	25°II47'02	0°-5'-43

min. Earth dist.	197 Dec 19 j 19:21	25°II44'05	40.03950 AU	conjunction	205 Jun 29 j 04:12	5°☾41'51	2°51'31
direct	198 Mar 09 j 01:24	24°II40'16		minimum elong	205 Jun 29 j 04:07	5°☾41'51	2°51'31
asc. node	198 Mar 15 j 19:57	24°II40'49		retrograde	205 Oct 09 j 06:26	7°☾31'41	
max. Earth dist.	198 Jun 17 j 04:31	26°II20'32	41.92317 AU	opposition	205 Dec 27 j 20:50	6°☾23'45	3°13'18
				min. Earth dist.	205 Dec 30 j 10:30	6°☾20'18	38.08064 AU
conjunction	198 Jun 19 j 18:01	26°II24'37	0°06'01	direct	206 Mar 19 j 07:16	5°☾14'07	
minimum elong	198 Jun 19 j 18:02	26°II24'37	0°06'01	max. Earth dist.	206 Jun 27 j 22:02	7°☾00'23	39.95295 AU
behind sun begin	198 Jun 19 j 11:49	26°II24'14					
behind sun end	198 Jun 20 j 00:14	26°II25'00		conjunction	206 Jun 30 j 20:47	7°☾05'20	3°16'04
retrograde	198 Sep 29 j 19:31	28°II09'10		minimum elong	206 Jun 30 j 20:40	7°☾05'20	3°16'04
opposition	198 Dec 19 j 00:12	27°II03'23	0°18'12	retrograde	206 Oct 11 j 01:49	8°☾56'01	
min. Earth dist.	198 Dec 21 j 07:15	27°II00'25	39.80383 AU	opposition	206 Dec 29 j 11:46	7°☾47'46	3°39'17
direct	199 Mar 10 j 12:17	25°II56'19		min. Earth dist.	207 Jan 01 j 02:13	7°☾44'15	37.83012 AU
max. Earth dist.	199 Jun 18 j 16:05	27°II37'12	41.68572 AU	direct	207 Mar 20 j 21:55	6°☾37'46	
				max. Earth dist.	207 Jun 29 j 15:25	8°☾24'59	39.70131 AU
conjunction	199 Jun 21 j 08:05	27°II41'28	0°28'54				
minimum elong	199 Jun 21 j 08:04	27°II41'28	0°28'54	conjunction	207 Jul 02 j 14:11	8°☾29'59	3°40'48
retrograde	199 Oct 01 j 12:24	29°II26'43		minimum elong	207 Jul 02 j 14:04	8°☾29'59	3°40'47
opposition	199 Dec 20 j 12:16	28°II20'41	0°42'25	retrograde	207 Oct 12 j 18:50	10°☾21'34	
min. Earth dist.	199 Dec 22 j 21:19	28°II17'35	39.56479 AU	opposition	207 Dec 31 j 03:08	9°☾13'01	4°05'30
direct	200 Mar 10 j 22:57	27°II13'17		min. Earth dist.	208 Jan 02 j 18:34	9°☾09'25	37.57925 AU
max. Earth dist.	200 Jun 19 j 06:21	28°II54'56	41.44481 AU	direct	208 Mar 21 j 14:12	8°☾02'38	
				max. Earth dist.	208 Jun 30 j 08:20	9°☾50'47	39.44926 AU
conjunction	200 Jun 21 j 22:40	28°II59'15	0°52'04				
minimum elong	200 Jun 21 j 22:39	28°II59'15	0°52'04	conjunction	208 Jul 03 j 07:59	9°☾55'53	4°05'43
	200 Jul 31 j 22:14	0°☾		minimum elong	208 Jul 03 j 07:51	9°☾55'53	4°05'43
retrograde	200 Oct 02 j 02:56	0°☾45'13		retrograde	208 Oct 13 j 12:18	11°☾48'25	
	200 Dec 04 j 14:21	30°RII		opposition	208 Dec 31 j 19:00	10°☾39'33	4°31'55
opposition	200 Dec 21 j 00:49	29°II38'53	1°06'54	min. Earth dist.	209 Jan 03 j 10:30	10°☾35'56	37.32786 AU
min. Earth dist.	200 Dec 23 j 10:43	29°II35'44	39.32242 AU	direct	209 Mar 23 j 05:51	9°☾28'49	
direct	201 Mar 12 j 13:35	28°II31'09		max. Earth dist.	209 Jul 02 j 01:16	11°☾17'53	39.19607 AU
	201 Jun 12 j 10:48	0°☾					
max. Earth dist.	201 Jun 20 j 19:00	0°☾13'28	41.20080 AU	conjunction	209 Jul 05 j 02:14	11°☾23'08	4°30'48
				minimum elong	209 Jul 05 j 02:05	11°☾23'07	4°30'48
conjunction	201 Jun 23 j 13:16	0°☾17'56	1°15'29	retrograde	209 Oct 15 j 05:53	13°☾16'38	
minimum elong	201 Jun 23 j 13:14	0°☾17'56	1°15'29	opposition	210 Jan 02 j 11:33	12°☾07'28	4°58'32
retrograde	201 Oct 03 j 18:08	2°☾04'38		min. Earth dist.	210 Jan 05 j 04:48	12°☾03'43	37.07526 AU
opposition	201 Dec 22 j 13:36	0°☾58'00	1°31'40	direct	210 Mar 24 j 20:18	10°☾56'21	
min. Earth dist.	201 Dec 25 j 00:20	0°☾54'47	39.07736 AU	max. Earth dist.	210 Jul 03 j 20:08	12°☾46'28	38.94145 AU
	202 Feb 13 j 09:04	30°RII					
direct	202 Mar 14 j 02:35	29°II49'54		conjunction	210 Jul 06 j 21:11	12°☾51'45	4°56'03
	202 Apr 11 j 15:08	0°☾		minimum elong	210 Jul 06 j 21:01	12°☾51'45	4°56'03
max. Earth dist.	202 Jun 22 j 09:11	1°☾32'57	40.95408 AU	retrograde	210 Oct 17 j 01:16	14°☾46'15	
				opposition	211 Jan 04 j 04:26	13°☾36'45	5°25'19
conjunction	202 Jun 25 j 04:27	1°☾37'32	1°39'09	min. Earth dist.	211 Jan 06 j 21:42	13°☾32'59	36.82105 AU
minimum elong	202 Jun 25 j 04:24	1°☾37'31	1°39'09	direct	211 Mar 26 j 11:43	12°☾25'14	
retrograde	202 Oct 05 j 05:50	3°☾24'58		max. Earth dist.	211 Jul 05 j 13:25	14°☾16'16	38.68490 AU
opposition	202 Dec 24 j 02:47	2°☾18'01	1°56'42				
min. Earth dist.	202 Dec 26 j 15:07	2°☾14'41	38.83000 AU	conjunction	211 Jul 08 j 16:41	14°☾21'46	5°21'27
direct	203 Mar 15 j 16:44	1°☾09'33		minimum elong	211 Jul 08 j 16:30	14°☾21'45	5°21'26
max. Earth dist.	203 Jun 24 j 00:13	2°☾53'22	40.70545 AU	retrograde	211 Oct 18 j 22:40	16°☾17'16	
				opposition	212 Jan 05 j 22:03	15°☾07'25	5°52'17
conjunction	203 Jun 26 j 19:57	2°☾58'01	2°03'03	min. Earth dist.	212 Jan 08 j 17:03	15°☾03'32	36.56506 AU
minimum elong	203 Jun 26 j 19:54	2°☾58'01	2°03'03	direct	212 Mar 27 j 02:58	13°☾55'29	
retrograde	203 Oct 06 j 20:41	4°☾46'13		max. Earth dist.	212 Jul 06 j 09:30	15°☾47'37	38.42643 AU
opposition	203 Dec 25 j 16:20	3°☾38'57	2°21'59				
min. Earth dist.	203 Dec 28 j 04:33	3°☾35'36	38.58105 AU	conjunction	212 Jul 09 j 12:50	15°☾53'10	5°46'58
direct	204 Mar 16 j 05:24	2°☾30'05		minimum elong	212 Jul 09 j 12:38	15°☾53'09	5°46'59
max. Earth dist.	204 Jun 24 j 14:20	4°☾14'38	40.45523 AU	retrograde	212 Oct 19 j 19:20	17°☾49'42	
				opposition	213 Jan 06 j 16:12	16°☾39'29	6°19'23
conjunction	204 Jun 27 j 11:51	4°☾19'26	2°27'11	min. Earth dist.	213 Jan 09 j 11:45	16°☾35'32	36.30731 AU
minimum elong	204 Jun 27 j 11:46	4°☾19'26	2°27'12	direct	213 Mar 28 j 22:38	15°☾27'07	
retrograde	204 Oct 07 j 13:42	6°☾08'26		max. Earth dist.	213 Jul 08 j 04:22	17°☾20'14	38.16647 AU
opposition	204 Dec 26 j 06:21	5°☾00'50	2°47'31				
min. Earth dist.	204 Dec 28 j 20:15	4°☾57'23	38.33109 AU	conjunction	213 Jul 11 j 09:21	17°☾25'57	6°12'37
direct	205 Mar 17 j 15:56	3°☾51'35		minimum elong	213 Jul 11 j 09:09	17°☾25'57	6°12'36
max. Earth dist.	205 Jun 26 j 07:04	5°☾37'03	40.20426 AU	retrograde	213 Oct 21 j 18:09	19°☾23'31	

opposition	214 Jan 08 j 10:50	18°♄12'56	6°46'38	opposition	222 Jan 21 j 14:48	1°♂35'36	10°25'18
min. Earth dist.	214 Jan 11 j 06:55	18°♄08'56	36.04852 AU	min. Earth dist.	222 Jan 24 j 13:49	1°♂31'12	34.00832 AU
direct	214 Mar 30 j 17:42	17°♄00'07		direct	222 Apr 12 j 15:00	0°♂19'07	
max. Earth dist.	214 Jul 10 j 01:00	18°♄54'20	37.90539 AU	max. Earth dist.	222 Jul 23 j 22:28	2°♂23'21	35.85252 AU
conjunction	214 Jul 13 j 06:28	19°♄00'09	6°38'20	conjunction	222 Jul 27 j 05:24	2°♂29'45	10°03'33
minimum elong	214 Jul 13 j 06:14	19°♄00'08	6°38'21	minimum elong	222 Jul 27 j 05:04	2°♂29'43	10°03'34
retrograde	214 Oct 23 j 14:06	20°♄58'47		retrograde	222 Nov 06 j 18:34	4°♂38'01	
opposition	215 Jan 10 j 06:09	19°♄47'48	7°13'58	opposition	223 Jan 23 j 15:30	3°♂23'53	10°52'11
min. Earth dist.	215 Jan 13 j 03:34	19°♄43'41	35.78900 AU	min. Earth dist.	223 Jan 26 j 13:55	3°♂19'30	33.76130 AU
direct	215 Apr 01 j 13:03	18°♄34'31		direct	223 Apr 14 j 15:20	2°♂06'57	
max. Earth dist.	215 Jul 11 j 22:23	20°♄29'51	37.64400 AU	max. Earth dist.	223 Jul 26 j 00:34	4°♂12'29	35.60323 AU
conjunction	215 Jul 15 j 04:10	20°♄35'44	7°04'08	conjunction	223 Jul 29 j 08:37	4°♂19'02	10°28'37
minimum elong	215 Jul 15 j 03:56	20°♄35'43	7°04'07	minimum elong	223 Jul 29 j 08:17	4°♂19'00	10°28'37
retrograde	215 Oct 25 j 10:38	22°♄35'28		retrograde	223 Nov 08 j 21:54	6°♂28'38	
opposition	216 Jan 12 j 01:49	21°♄24'05	7°41'23	opposition	224 Jan 25 j 17:04	5°♂14'05	11°18'51
min. Earth dist.	216 Jan 14 j 22:53	21°♄19'58	35.52964 AU	min. Earth dist.	224 Jan 28 j 16:51	5°♂09'35	33.51550 AU
direct	216 Apr 02 j 08:34	20°♄10'19		direct	224 Apr 15 j 13:22	3°♂56'40	
max. Earth dist.	216 Jul 12 j 19:27	22°♄06'45	37.38284 AU	max. Earth dist.	224 Jul 27 j 05:17	6°♂03'39	35.35522 AU
conjunction	216 Jul 16 j 02:28	22°♄12'47	7°29'57	conjunction	224 Jul 30 j 12:35	6°♂10'12	10°53'26
minimum elong	216 Jul 16 j 02:12	22°♄12'46	7°29'57	minimum elong	224 Jul 30 j 12:13	6°♂10'10	10°53'25
retrograde	216 Oct 26 j 08:42	24°♄13'38		retrograde	224 Nov 10 j 01:23	8°♂21'08	
opposition	217 Jan 12 j 22:22	23°♄01'51	8°08'50	opposition	225 Jan 26 j 19:28	7°♂06'10	11°45'15
min. Earth dist.	217 Jan 15 j 20:44	22°♄57'37	35.27115 AU	min. Earth dist.	225 Jan 29 j 18:35	7°♂01'40	33.27105 AU
direct	217 Apr 04 j 01:41	21°♄47'37		direct	225 Apr 17 j 15:44	5°♂48'16	
max. Earth dist.	217 Jul 14 j 19:04	23°♄45'19	37.12287 AU	max. Earth dist.	225 Jul 29 j 08:33	7°♂56'32	35.10867 AU
conjunction	217 Jul 18 j 01:10	23°♄51'20	7°55'46	conjunction	225 Aug 01 j 17:03	8°♂03'15	11°17'56
minimum elong	217 Jul 18 j 00:54	23°♄51'19	7°55'46	minimum elong	225 Aug 01 j 16:41	8°♂03'14	11°17'56
retrograde	217 Oct 28 j 07:35	25°♄53'21		retrograde	225 Nov 12 j 07:43	10°♂15'32	
opposition	218 Jan 14 j 19:28	24°♄41'09	8°36'16	opposition	226 Jan 28 j 22:38	9°♂00'07	12°11'19
min. Earth dist.	218 Jan 17 j 17:03	24°♄36'56	35.01421 AU	min. Earth dist.	226 Jan 31 j 22:23	8°♂55'33	33.02846 AU
direct	218 Apr 05 j 21:34	23°♄26'27		direct	226 Apr 19 j 16:35	7°♂41'42	
max. Earth dist.	218 Jul 16 j 17:16	25°♄25'18	36.86468 AU	max. Earth dist.	226 Jul 31 j 15:06	9°♂51'30	34.86407 AU
conjunction	218 Jul 20 j 00:33	25°♄31'28	8°21'33	conjunction	226 Aug 03 j 22:31	9°♂58'11	11°42'05
minimum elong	218 Jul 20 j 00:16	25°♄31'27	8°21'32	minimum elong	226 Aug 03 j 22:08	9°♂58'09	11°42'05
retrograde	218 Oct 30 j 09:33	27°♄34'41		retrograde	226 Nov 14 j 13:01	12°♂11'48	
opposition	219 Jan 16 j 17:08	26°♄22'04	9°03'41	opposition	227 Jan 31 j 02:30	10°♂55'56	12°37'00
min. Earth dist.	219 Jan 19 j 15:23	26°♄17'48	34.75950 AU	min. Earth dist.	227 Feb 03 j 02:11	10°♂51'21	32.78810 AU
direct	219 Apr 07 j 17:29	25°♄06'55		direct	227 Apr 21 j 20:20	9°♂37'01	
max. Earth dist.	219 Jul 18 j 18:23	27°♄07'08	36.60864 AU	max. Earth dist.	227 Aug 02 j 20:38	11°♂48'10	34.62215 AU
conjunction	219 Jul 22 j 00:49	27°♄13'18	8°47'15	conjunction	227 Aug 06 j 04:37	11°♂54'58	12°05'49
minimum elong	219 Jul 22 j 00:32	27°♄13'16	8°47'14	minimum elong	227 Aug 06 j 04:15	11°♂54'56	12°05'49
retrograde	219 Nov 01 j 11:12	29°♄17'43		retrograde	227 Nov 16 j 21:34	14°♂09'57	
opposition	220 Jan 18 j 15:39	28°♄04'44	9°31'01	opposition	228 Feb 02 j 07:12	12°♂53'37	13°02'14
min. Earth dist.	220 Jan 21 j 13:56	28°♄00'26	34.50700 AU	min. Earth dist.	228 Feb 05 j 06:26	12°♂49'02	32.55089 AU
direct	220 Apr 08 j 17:05	26°♄49'08		direct	228 Apr 23 j 00:27	11°♂34'11	
max. Earth dist.	220 Jul 19 j 18:23	28°♄50'37	36.35485 AU	max. Earth dist.	228 Aug 04 j 04:19	13°♂46'51	34.38352 AU
conjunction	220 Jul 23 j 01:32	28°♄56'54	9°12'50	conjunction	228 Aug 07 j 11:28	13°♂53'39	12°29'04
minimum elong	220 Jul 23 j 01:13	28°♄56'52	9°12'50	minimum elong	228 Aug 07 j 11:04	13°♂53'37	12°29'04
retrograde	220 Aug 26 j 15:32	0°♂		retrograde	228 Sep 09 j 23:05	15°♂	
retrograde	220 Nov 02 j 14:37	1°♂02'36		retrograde	228 Nov 18 j 04:57	16°♂09'59	
opposition	221 Jan 12 j 07:04	30°♂♄		retrograde	229 Jan 30 j 04:15	15°♂♄	
opposition	221 Jan 19 j 14:47	29°♄49'13	9°58'14	opposition	229 Feb 03 j 12:53	14°♂53'13	13°26'55
min. Earth dist.	221 Jan 22 j 12:49	29°♄44'55	34.25677 AU	min. Earth dist.	229 Feb 06 j 12:20	14°♂48'35	32.31747 AU
direct	221 Apr 10 j 15:47	28°♄33'10		direct	229 Apr 25 j 06:18	13°♂33'17	
max. Earth dist.	221 Jul 02 j 16:30	0°♂		max. Earth dist.	229 Jul 14 j 00:48	15°♂	
max. Earth dist.	221 Jul 21 j 20:04	0°♂36'02	36.10287 AU	max. Earth dist.	229 Aug 06 j 12:36	15°♂47'27	34.14933 AU
conjunction	221 Jul 25 j 03:10	0°♂42'22	9°38'17	conjunction	229 Aug 09 j 18:58	15°♂54'15	12°51'45
minimum elong	221 Jul 25 j 02:51	0°♂42'21	9°38'17	minimum elong	229 Aug 09 j 18:35	15°♂54'13	12°51'45
retrograde	221 Nov 04 j 15:33	2°♂49'21		retrograde	229 Nov 20 j 14:42	18°♂11'58	

opposition	230 Feb 05 j 19:12	16° Ω 54'45	13°50'59	opposition	238 Feb 23 j 07:25	4° Υ 24'36	16°31'52
min. Earth dist.	230 Feb 08 j 17:04	16° Ω 50'11	32.08892 AU	min. Earth dist.	238 Feb 25 j 23:22	4° Υ 20'15	30.46550 AU
direct	230 Apr 27 j 12:39	15° Ω 34'20		direct	238 May 14 j 12:59	3° Υ 01'01	
max. Earth dist.	230 Aug 08 j 21:22	17° Ω 50'00	33.92020 AU	max. Earth dist.	238 Aug 27 j 06:49	5° Υ 29'06	32.29677 AU
conjunction	230 Aug 12 j 03:18	17° Ω 56'50	13°13'48	conjunction	238 Aug 30 j 03:19	5° Υ 35'34	15°38'42
minimum elong	230 Aug 12 j 02:53	17° Ω 56'48	13°13'48	minimum elong	238 Aug 30 j 02:58	5° Υ 35'32	15°38'42
retrograde	230 Nov 22 j 22:28	20° Ω 15'58		retrograde	238 Dec 11 j 09:39	8° Υ 05'47	
opposition	231 Feb 08 j 02:37	18° Ω 58'20	14°14'21	opposition	239 Feb 25 j 21:56	6° Υ 45'17	16°46'54
min. Earth dist.	231 Feb 11 j 00:43	18° Ω 53'43	31.86580 AU	min. Earth dist.	239 Feb 28 j 11:42	6° Υ 41'03	30.28815 AU
direct	231 Apr 29 j 17:36	17° Ω 37'27		direct	239 May 17 j 04:12	5° Υ 21'20	
max. Earth dist.	231 Aug 11 j 08:25	19° Ω 54'45	33.69690 AU	max. Earth dist.	239 Aug 29 j 23:37	7° Υ 50'47	32.12032 AU
conjunction	231 Aug 14 j 12:29	20° Ω 01'30	13°35'08	conjunction	239 Sep 01 j 18:49	7° Υ 57'11	15°51'50
minimum elong	231 Aug 14 j 12:06	20° Ω 01'28	13°35'07	minimum elong	239 Sep 01 j 18:32	7° Υ 57'09	15°51'50
retrograde	231 Nov 25 j 07:51	22° Ω 22'02		retrograde	239 Dec 14 j 00:55	10° Υ 28'38	
opposition	232 Feb 10 j 10:44	21° Ω 04'01	14°36'56	opposition	240 Feb 28 j 13:23	9° Υ 07'46	17°00'32
min. Earth dist.	232 Feb 13 j 07:03	20° Ω 59'30	31.64857 AU	min. Earth dist.	240 Mar 02 j 02:52	9° Υ 03'32	30.11744 AU
direct	232 May 01 j 00:54	19° Ω 42'43		direct	240 May 18 j 17:46	7° Υ 43'27	
max. Earth dist.	232 Aug 12 j 18:24	22° Ω 01'31	33.47964 AU	max. Earth dist.	240 Aug 31 j 18:11	10° Υ 14'20	31.95126 AU
conjunction	232 Aug 15 j 22:26	22° Ω 08'19	13°55'40	conjunction	240 Sep 03 j 10:55	10° Υ 20'33	16°03'36
minimum elong	232 Aug 15 j 22:02	22° Ω 08'17	13°55'40	minimum elong	240 Sep 03 j 10:38	10° Υ 20'31	16°03'36
retrograde	232 Nov 26 j 19:11	24° Ω 30'18		retrograde	240 Dec 15 j 18:24	12° Υ 53'09	
opposition	233 Feb 11 j 19:55	23° Ω 11'55	14°58'39	opposition	241 Mar 02 j 05:34	11° Υ 31'56	17°12'38
min. Earth dist.	233 Feb 14 j 16:05	23° Ω 07'23	31.43749 AU	min. Earth dist.	241 Mar 04 j 16:29	11° Υ 27'51	29.95421 AU
direct	233 May 03 j 05:58	21° Ω 50'13		direct	241 May 21 j 10:11	10° Υ 07'16	
max. Earth dist.	233 Aug 15 j 07:24	24° Ω 10'43	33.26846 AU	max. Earth dist.	241 Sep 03 j 12:01	12° Υ 39'24	31.79023 AU
conjunction	233 Aug 18 j 09:09	24° Ω 17'23	14°15'21	conjunction	241 Sep 06 j 03:26	12° Υ 45'32	16°13'54
minimum elong	233 Aug 18 j 08:47	24° Ω 17'21	14°15'21	minimum elong	241 Sep 06 j 03:12	12° Υ 45'31	16°13'54
retrograde	233 Nov 29 j 06:16	26° Ω 40'48		retrograde	241 Dec 18 j 11:40	15° Υ 19'15	
opposition	234 Feb 14 j 05:58	25° Ω 22'05	15°19'26	opposition	242 Mar 04 j 22:32	13° Υ 57'42	17°23'09
min. Earth dist.	234 Feb 17 j 00:48	25° Ω 17'36	31.23214 AU	min. Earth dist.	242 Mar 07 j 08:22	13° Υ 53'40	29.79937 AU
direct	234 May 05 j 14:58	24° Ω 00'00		direct	242 May 24 j 00:25	12° Υ 32'41	
max. Earth dist.	234 Aug 17 j 18:55	26° Ω 21'59	33.06301 AU	max. Earth dist.	242 Sep 06 j 08:34	15° Υ 06'13	31.63826 AU
conjunction	234 Aug 20 j 20:42	26° Ω 28'42	14°34'07	conjunction	242 Sep 08 j 20:42	15° Υ 12'04	16°22'39
minimum elong	234 Aug 20 j 20:19	26° Ω 28'40	14°34'07	minimum elong	242 Sep 08 j 20:28	15° Υ 12'03	16°22'39
retrograde	234 Dec 01 j 20:25	28° Ω 53'34		retrograde	242 Dec 21 j 04:00	17° Υ 46'50	
opposition	235 Feb 16 j 16:46	27° Ω 34'29	15°39'13	opposition	243 Mar 07 j 16:07	16° Υ 24'59	17°31'57
min. Earth dist.	235 Feb 19 j 10:59	27° Ω 30'02	31.03243 AU	min. Earth dist.	243 Mar 09 j 23:18	16° Υ 21'07	29.65359 AU
direct	235 May 08 j 00:19	26° Ω 12'01		direct	243 May 26 j 18:26	14° Υ 59'41	
max. Earth dist.	235 Aug 20 j 09:34	28° Ω 35'40	32.86301 AU	max. Earth dist.	243 Sep 09 j 03:45	17° Υ 34'22	31.49608 AU
conjunction	235 Aug 23 j 09:19	28° Ω 42'16	14°51'55	conjunction	243 Sep 11 j 14:27	17° Υ 40'07	16°29'47
minimum elong	235 Aug 23 j 08:58	28° Ω 42'14	14°51'55	minimum elong	243 Sep 11 j 14:16	17° Υ 40'06	16°29'46
retrograde	235 Sep 29 j 08:49	0° Υ		retrograde	243 Dec 23 j 22:45	20° Υ 15'53	
retrograde	235 Dec 04 j 09:14	1° Υ 08'32		opposition	244 Mar 09 j 10:34	18° Υ 53'45	17°38'57
opposition	236 Feb 12 j 10:53	30° Υ		min. Earth dist.	244 Mar 11 j 15:37	18° Υ 50'02	29.51775 AU
opposition	236 Feb 19 j 04:51	29° Ω 49'06	15°57'57	direct	244 May 28 j 10:26	17° Υ 28'12	
min. Earth dist.	236 Feb 21 j 22:32	29° Ω 44'40	30.83793 AU	max. Earth dist.	244 Sep 11 j 01:50	20° Υ 04'12	31.36426 AU
direct	236 May 09 j 11:28	28° Ω 26'16					
max. Earth dist.	236 Jul 29 j 04:58	0° Υ		conjunction	244 Sep 13 j 08:42	20° Υ 09'37	16°35'12
	236 Aug 21 j 23:08	0° Υ 51'22	32.66852 AU	minimum elong	244 Sep 13 j 08:33	20° Υ 09'36	16°35'12
conjunction	236 Aug 24 j 22:26	0° Υ 57'59	15°08'39	retrograde	244 Dec 25 j 16:56	22° Υ 46'20	
minimum elong	236 Aug 24 j 22:04	0° Υ 57'57	15°08'39	opposition	245 Mar 12 j 05:44	21° Υ 23'58	17°44'06
retrograde	236 Dec 06 j 01:21	3° Υ 25'38		min. Earth dist.	245 Mar 14 j 08:31	21° Υ 20'24	29.39195 AU
opposition	237 Feb 20 j 17:39	2° Υ 05'50	16°15'31	direct	245 May 31 j 04:14	19° Υ 58'14	
min. Earth dist.	237 Feb 23 j 09:49	2° Υ 01'29	30.64892 AU	max. Earth dist.	245 Sep 13 j 22:18	22° Υ 35'17	31.24295 AU
direct	237 May 11 j 23:32	0° Υ 42'38					
max. Earth dist.	237 Aug 24 j 14:50	3° Υ 09'16	32.47958 AU	conjunction	245 Sep 16 j 03:24	22° Υ 40'33	16°38'51
conjunction	237 Aug 27 j 12:34	3° Υ 15'47	15°24'17	minimum elong	245 Sep 16 j 03:18	22° Υ 40'32	16°38'51
minimum elong	237 Aug 27 j 12:15	3° Υ 15'46	15°24'16	retrograde	245 Dec 28 j 13:17	25° Υ 18'09	
retrograde	237 Dec 08 j 16:37	5° Υ 44'45		opposition	246 Mar 15 j 01:17	23° Υ 55'36	17°47'19
				min. Earth dist.	246 Mar 17 j 01:20	23° Υ 52'13	29.27636 AU
				direct	246 Jun 02 j 22:47	22° Υ 29'42	

max. Earth dist.	246 Sep 16 j 21:12	25° \mathring{M} 07'55	31.13188 AU	conjunction	254 Oct 09 j 16:50	16° \mathring{L} 00'34	15°48'21
				minimum elong	254 Oct 09 j 17:04	16° \mathring{L} 00'35	15°48'22
conjunction	246 Sep 18 j 22:45	25° \mathring{M} 12'51	16°40'42	max. Earth dist.	254 Oct 08 j 13:56	15° \mathring{L} 57'50	30.60290 AU
minimum elong	246 Sep 18 j 22:40	25° \mathring{M} 12'51	16°40'43	retrograde	255 Jan 21 j 08:54	18° \mathring{L} 41'43	
retrograde	246 Dec 31 j 08:30	27° \mathring{M} 51'16		opposition	255 Apr 08 j 06:14	17° \mathring{L} 18'12	16°46'02
opposition	247 Mar 17 j 21:43	26° \mathring{M} 28'32	17°48'36	min. Earth dist.	255 Apr 09 j 06:27	17° \mathring{L} 16'29	28.67269 AU
min. Earth dist.	247 Mar 19 j 20:07	26° \mathring{M} 25'16	29.17048 AU	direct	255 Jun 27 j 03:03	15° \mathring{L} 51'59	
direct	247 Jun 05 j 18:47	25° \mathring{M} 02'32					
max. Earth dist.	247 Sep 19 j 18:46	27° \mathring{M} 41'38	31.03085 AU	conjunction	255 Oct 12 j 12:58	18° \mathring{L} 37'14	15°33'18
				minimum elong	255 Oct 12 j 13:13	18° \mathring{L} 37'15	15°33'18
conjunction	247 Sep 21 j 18:17	27° \mathring{M} 46'23	16°40'44	max. Earth dist.	255 Oct 11 j 14:47	18° \mathring{L} 34'58	30.58580 AU
minimum elong	247 Sep 21 j 18:15	27° \mathring{M} 46'23	16°40'44	retrograde	256 Jan 24 j 04:18	21° \mathring{L} 18'15	
	247 Nov 26 j 10:36	0° \mathring{L}		opposition	256 Apr 10 j 04:57	19° \mathring{L} 54'44	16°29'01
retrograde	248 Jan 03 j 06:14	0° \mathring{L} 25'31		min. Earth dist.	256 Apr 11 j 01:48	19° \mathring{L} 53'16	28.65908 AU
	248 Feb 11 j 08:37	30° \mathring{R} \mathring{M}		direct	256 Jun 29 j 01:49	18° \mathring{L} 28'38	
opposition	248 Mar 19 j 18:34	29° \mathring{M} 02'39	17°47'54				
min. Earth dist.	248 Mar 21 j 13:40	28° \mathring{M} 59'37	29.07420 AU	conjunction	256 Oct 14 j 08:48	21° \mathring{L} 13'30	15°16'24
direct	248 Jun 07 j 15:23	27° \mathring{M} 36'33		minimum elong	256 Oct 14 j 09:05	21° \mathring{L} 13'32	15°16'25
	248 Sep 14 j 20:29	0° \mathring{L}		max. Earth dist.	256 Oct 13 j 13:15	21° \mathring{L} 11'31	30.58131 AU
max. Earth dist.	248 Sep 21 j 17:58	0° \mathring{L} 16'34	30.93954 AU	retrograde	257 Jan 26 j 00:38	23° \mathring{L} 54'18	
				opposition	257 Apr 13 j 03:25	22° \mathring{L} 30'50	16°10'00
conjunction	248 Sep 23 j 14:22	0° \mathring{L} 21'01	16°38'55	min. Earth dist.	257 Apr 13 j 20:19	22° \mathring{L} 29'38	28.65806 AU
minimum elong	248 Sep 23 j 14:21	0° \mathring{L} 21'01	16°38'56	direct	257 Jul 01 j 23:34	21° \mathring{L} 04'52	
retrograde	249 Jan 05 j 02:44	3° \mathring{L} 00'47					
opposition	249 Mar 22 j 16:06	1° \mathring{L} 37'46	17°45'11	conjunction	257 Oct 17 j 04:28	23° \mathring{L} 49'18	14°57'41
min. Earth dist.	249 Mar 24 j 09:47	1° \mathring{L} 34'50	28.98735 AU	minimum elong	257 Oct 17 j 04:46	23° \mathring{L} 49'20	14°57'41
direct	249 Jun 10 j 11:55	0° \mathring{L} 11'36		max. Earth dist.	257 Oct 16 j 13:39	23° \mathring{L} 47'48	30.58953 AU
max. Earth dist.	249 Sep 24 j 16:41	2° \mathring{L} 52'21	30.85809 AU	retrograde	258 Jan 28 j 18:27	26° \mathring{L} 29'48	
				opposition	258 Apr 16 j 01:50	25° \mathring{L} 06'25	15°49'05
conjunction	249 Sep 26 j 10:30	2° \mathring{L} 56'34	16°35'13	min. Earth dist.	258 Apr 16 j 15:52	25° \mathring{L} 05'26	28.66924 AU
minimum elong	249 Sep 26 j 10:32	2° \mathring{L} 56'34	16°35'13	direct	258 Jul 04 j 22:05	23° \mathring{L} 40'39	
retrograde	250 Jan 08 j 01:08	5° \mathring{L} 36'50					
opposition	250 Mar 25 j 13:51	4° \mathring{L} 13'42	17°40'26	conjunction	258 Oct 19 j 23:42	26° \mathring{L} 24'32	14°37'15
min. Earth dist.	250 Mar 27 j 04:01	4° \mathring{L} 11'00	28.90985 AU	minimum elong	258 Oct 20 j 00:03	26° \mathring{L} 24'34	14°37'15
direct	250 Jun 13 j 11:04	2° \mathring{L} 47'29		max. Earth dist.	258 Oct 19 j 11:28	26° \mathring{L} 23'17	30.61012 AU
max. Earth dist.	250 Sep 27 j 15:53	5° \mathring{L} 28'51	30.78623 AU	retrograde	259 Jan 31 j 15:14	29° \mathring{L} 04'38	
				opposition	259 Apr 18 j 23:52	27° \mathring{L} 41'22	15°26'20
conjunction	250 Sep 29 j 07:02	5° \mathring{L} 32'48	16°29'39	min. Earth dist.	259 Apr 19 j 09:39	27° \mathring{L} 40'41	28.69241 AU
minimum elong	250 Sep 29 j 07:06	5° \mathring{L} 32'49	16°29'39	direct	259 Jul 07 j 19:25	26° \mathring{L} 15'50	
retrograde	251 Jan 10 j 21:29	8° \mathring{L} 13'29					
opposition	251 Mar 28 j 12:00	6° \mathring{L} 50'14	17°33'40	conjunction	259 Oct 22 j 18:46	28° \mathring{L} 59'04	14°15'09
min. Earth dist.	251 Mar 30 j 00:41	6° \mathring{L} 47'39	28.84183 AU	minimum elong	259 Oct 22 j 19:07	28° \mathring{L} 59'06	14°15'08
direct	251 Jun 16 j 08:10	5° \mathring{L} 23'59		max. Earth dist.	259 Oct 22 j 10:50	28° \mathring{L} 58'16	30.64253 AU
max. Earth dist.	251 Sep 30 j 15:45	8° \mathring{L} 05'55	30.72444 AU	retrograde	259 Nov 17 j 13:51	0° \mathring{M}	
				opposition	260 Feb 03 j 08:58	1° \mathring{M} 38'43	
conjunction	251 Oct 02 j 03:37	8° \mathring{L} 09'33	16°22'10	min. Earth dist.	260 Apr 20 j 21:57	0° \mathring{M} 15'36	15°01'49
minimum elong	251 Oct 02 j 03:44	8° \mathring{L} 09'34	16°22'10		260 Apr 21 j 05:25	0° \mathring{M} 15'04	28.72699 AU
retrograde	252 Jan 13 j 19:08	10° \mathring{L} 50'30		direct	260 Apr 30 j 06:50	30° \mathring{R} \mathring{L}	
opposition	252 Mar 30 j 10:24	9° \mathring{L} 27'10	17°24'50		260 Jul 09 j 16:59	28° \mathring{L} 50'19	
min. Earth dist.	252 Mar 31 j 19:25	9° \mathring{L} 24'50	28.78354 AU		260 Sep 13 j 13:06	0° \mathring{M}	
direct	252 Jun 18 j 07:50	8° \mathring{L} 00'54					
max. Earth dist.	252 Oct 02 j 14:40	10° \mathring{L} 43'10	30.67284 AU	conjunction	260 Oct 24 j 13:13	1° \mathring{M} 32'48	13°51'29
				minimum elong	260 Oct 24 j 13:36	1° \mathring{M} 32'50	13°51'29
conjunction	252 Oct 04 j 00:02	10° \mathring{L} 46'34	16°12'48	max. Earth dist.	260 Oct 24 j 08:04	1° \mathring{M} 32'17	30.68632 AU
minimum elong	252 Oct 04 j 00:12	10° \mathring{L} 46'34	16°12'49	retrograde	261 Feb 05 j 04:40	4° \mathring{M} 11'53	
retrograde	253 Jan 15 j 16:51	13° \mathring{L} 27'42		opposition	261 Apr 23 j 19:31	2° \mathring{M} 48'55	14°35'41
opposition	253 Apr 02 j 09:03	12° \mathring{L} 04'16	17°13'57	min. Earth dist.	261 Apr 23 j 22:48	2° \mathring{M} 48'41	28.77247 AU
min. Earth dist.	253 Apr 03 j 15:52	12° \mathring{L} 02'06	28.73555 AU	direct	261 Jul 12 j 16:12	1° \mathring{M} 23'54	
direct	253 Jun 21 j 05:27	10° \mathring{L} 38'00					
				conjunction	261 Oct 27 j 07:29	4° \mathring{M} 05'33	13°26'21
conjunction	253 Oct 06 j 20:33	13° \mathring{L} 23'38	16°01'32	minimum elong	261 Oct 27 j 07:51	4° \mathring{M} 05'35	13°26'20
minimum elong	253 Oct 06 j 20:45	13° \mathring{L} 23'39	16°01'31	max. Earth dist.	261 Oct 27 j 05:57	4° \mathring{M} 05'24	30.74075 AU
max. Earth dist.	253 Oct 05 j 15:12	13° \mathring{L} 20'39	30.63217 AU	retrograde	262 Feb 07 j 22:16	6° \mathring{M} 43'59	
retrograde	254 Jan 18 j 12:14	16° \mathring{L} 04'49		opposition	262 Apr 26 j 16:43	5° \mathring{M} 21'11	14°08'00
opposition	254 Apr 05 j 07:32	14° \mathring{L} 41'20	17°01'01	min. Earth dist.	262 Apr 26 j 17:55	5° \mathring{M} 21'06	28.82835 AU
min. Earth dist.	254 Apr 06 j 10:50	14° \mathring{L} 39'25	28.69831 AU	direct	262 Jul 15 j 12:43	3° \mathring{M} 56'27	
direct	254 Jun 24 j 05:23	13° \mathring{L} 15'05					

conjunction	262 Oct 30 j 01:15	6°M.37'10	12°59'51	conjunction	270 Nov 17 j 23:34	25°M.54'47	8°49'33
minimum elong	262 Oct 30 j 01:39	6°M.37'13	12°59'51	minimum elong	270 Nov 17 j 23:55	25°M.54'49	8°49'33
max. Earth dist.	262 Oct 30 j 02:42	6°M.37'19	30.80551 AU	max. Earth dist.	270 Nov 19 j 02:26	25°M.57'21	31.67988 AU
retrograde	263 Feb 10 j 16:45	9°M.14'52		retrograde	271 Mar 01 j 11:08	28°M.24'35	
opposition	263 Apr 29 j 13:31	7°M.52'15	13°38'53	min. Earth dist.	271 May 18 j 11:16	27°M.05'38	29.77882 AU
min. Earth dist.	263 Apr 29 j 10:46	7°M.52'26	28.89412 AU	opposition	271 May 19 j 14:21	27°M.03'50	9°06'40
direct	263 Jul 18 j 11:37	6°M.27'48		direct	271 Aug 07 j 17:28	25°M.42'09	
conjunction	263 Nov 01 j 18:21	9°M.07'31	12°32'03	conjunction	271 Nov 20 j 11:05	28°M.11'57	8°14'54
minimum elong	263 Nov 01 j 18:44	9°M.07'33	12°32'03	minimum elong	271 Nov 20 j 11:24	28°M.11'59	8°14'54
max. Earth dist.	263 Nov 01 j 22:41	9°M.07'56	30.88000 AU	max. Earth dist.	271 Nov 21 j 16:19	28°M.14'43	31.83436 AU
retrograde	264 Feb 13 j 10:45	11°M.44'24			272 Jan 12 j 19:08	0°Z	
opposition	264 May 01 j 09:59	10°M.21'57	13°08'26	retrograde	272 Mar 02 j 23:25	0°Z40'40	
min. Earth dist.	264 May 01 j 04:47	10°M.22'18	28.96966 AU		272 Apr 24 j 23:05	30°R.M.	
direct	264 Jul 20 j 08:34	8°M.57'48		min. Earth dist.	272 May 19 j 22:22	29°M.22'18	29.93449 AU
conjunction	264 Nov 03 j 11:00	11°M.36'25	12°03'05	opposition	272 May 21 j 05:23	29°M.20'15	8°29'18
minimum elong	264 Nov 03 j 11:24	11°M.36'28	12°03'06	direct	272 Aug 09 j 09:51	27°M.59'00	
max. Earth dist.	264 Nov 03 j 18:48	11°M.37'11	30.96427 AU		272 Nov 09 j 15:30	0°Z	
retrograde	265 Feb 15 j 02:41	14°M.12'25		conjunction	272 Nov 21 j 22:05	0°Z27'29	7°39'50
opposition	265 May 04 j 05:40	12°M.50'09	12°36'46	minimum elong	272 Nov 21 j 22:23	0°Z27'31	7°39'50
min. Earth dist.	265 May 03 j 21:05	12°M.50'44	29.05473 AU	max. Earth dist.	272 Nov 23 j 06:23	0°Z30'31	31.99739 AU
direct	265 Jul 23 j 06:45	11°M.26'17		retrograde	273 Mar 05 j 11:08	2°Z55'05	
conjunction	265 Nov 06 j 02:50	14°M.03'45	11°33'02	min. Earth dist.	273 May 22 j 10:49	1°Z37'10	30.09867 AU
minimum elong	265 Nov 06 j 03:13	14°M.03'47	11°33'01	opposition	273 May 23 j 19:43	1°Z35'00	7°51'33
max. Earth dist.	265 Nov 06 j 12:58	14°M.04'45	31.05809 AU	direct	273 Aug 11 j 23:09	0°Z14'13	
retrograde	265 Nov 30 j 12:13	15°M.		conjunction	273 Nov 24 j 08:25	2°Z41'21	7°04'26
opposition	266 Feb 17 j 18:40	16°M.38'47		minimum elong	273 Nov 24 j 08:41	2°Z41'23	7°04'26
min. Earth dist.	266 May 07 j 00:47	15°M.16'43	12°03'58	max. Earth dist.	273 Nov 25 j 19:11	2°Z44'36	32.16832 AU
	266 May 17 j 08:11	15°R.M.		retrograde	274 Mar 07 j 21:28	5°Z07'49	
direct	266 Jul 26 j 01:50	13°M.53'09		min. Earth dist.	274 May 24 j 21:24	3°Z50'26	30.27030 AU
	266 Sep 29 j 02:01	15°M.		opposition	274 May 26 j 09:17	3°Z48'06	7°13'32
conjunction	266 Nov 08 j 18:02	16°M.29'24	11°01'58	direct	274 Aug 14 j 13:57	2°Z27'45	
minimum elong	266 Nov 08 j 18:26	16°M.29'27	11°01'58	conjunction	274 Nov 26 j 17:56	4°Z53'32	6°28'50
max. Earth dist.	266 Nov 09 j 08:17	16°M.30'48	31.16177 AU	minimum elong	274 Nov 26 j 18:12	4°Z53'34	6°28'49
retrograde	267 Feb 20 j 08:29	19°M.03'26		max. Earth dist.	274 Nov 28 j 06:37	4°Z56'55	32.34605 AU
opposition	267 May 09 j 19:15	17°M.41'34	11°30'09	retrograde	275 Mar 10 j 08:21	7°Z18'51	
min. Earth dist.	267 May 09 j 04:46	17°M.42'33	29.25443 AU	min. Earth dist.	275 May 27 j 08:13	6°Z01'56	30.44882 AU
direct	267 Jul 28 j 22:43	16°M.18'20		opposition	275 May 28 j 22:16	5°Z59'28	6°35'20
conjunction	267 Nov 11 j 08:24	18°M.53'19	10°30'00	direct	275 Aug 17 j 03:18	4°Z39'33	
minimum elong	267 Nov 11 j 08:47	18°M.53'22	10°29'59	conjunction	275 Nov 29 j 02:59	7°Z03'59	5°53'04
max. Earth dist.	267 Nov 12 j 00:54	18°M.54'56	31.27563 AU	minimum elong	275 Nov 29 j 03:13	7°Z04'00	5°53'04
retrograde	268 Feb 22 j 23:33	21°M.26'20		max. Earth dist.	275 Nov 30 j 18:33	7°Z07'37	32.53013 AU
opposition	268 May 11 j 13:06	20°M.04'41	10°55'25	retrograde	276 Mar 11 j 17:20	9°Z28'07	
min. Earth dist.	268 May 10 j 18:37	20°M.05'56	29.36989 AU	min. Earth dist.	276 May 28 j 18:28	8°Z11'39	30.63341 AU
direct	268 Jul 30 j 16:34	18°M.41'47		opposition	276 May 30 j 10:29	8°Z09'04	5°57'03
conjunction	268 Nov 12 j 22:08	21°M.15'30	9°57'12	direct	276 Aug 18 j 18:28	6°Z49'34	
minimum elong	268 Nov 12 j 22:31	21°M.15'32	9°57'12	conjunction	276 Nov 30 j 11:08	9°Z12'37	5°17'15
max. Earth dist.	268 Nov 13 j 18:58	21°M.17'31	31.40003 AU	minimum elong	276 Nov 30 j 11:21	9°Z12'39	5°17'15
retrograde	269 Feb 24 j 10:42	23°M.47'27		max. Earth dist.	276 Dec 02 j 03:50	9°Z16'19	32.71980 AU
min. Earth dist.	269 May 13 j 09:20	22°M.27'29	29.49589 AU	retrograde	277 Mar 14 j 02:05	11°Z35'35	
opposition	269 May 14 j 06:17	22°M.26'05	10°19'50	min. Earth dist.	277 May 31 j 03:08	10°Z19'34	30.82372 AU
direct	269 Aug 02 j 10:46	21°M.03'34		opposition	277 Jun 01 j 21:55	10°Z16'50	5°18'46
conjunction	269 Nov 15 j 11:08	23°M.35'59	9°23'41	direct	277 Aug 21 j 05:56	8°Z57'44	
minimum elong	269 Nov 15 j 11:29	23°M.36'01	9°23'41	conjunction	277 Dec 02 j 18:46	11°Z19'24	4°41'27
max. Earth dist.	269 Nov 16 j 10:03	23°M.38'11	31.53493 AU	minimum elong	277 Dec 02 j 18:57	11°Z19'25	4°41'27
retrograde	270 Feb 26 j 23:58	26°M.06'51		max. Earth dist.	277 Dec 04 j 14:26	11°Z23'20	32.91474 AU
opposition	270 May 16 j 22:29	24°M.45'47	9°43'33	retrograde	278 Mar 16 j 06:40	13°Z41'09	
min. Earth dist.	270 May 15 j 21:23	24°M.47'27	29.63238 AU	min. Earth dist.	278 Jun 02 j 12:34	12°Z25'30	31.01938 AU
direct	270 Aug 05 j 02:43	23°M.23'40		opposition	278 Jun 04 j 08:29	12°Z22'42	4°40'33
				direct	278 Aug 23 j 19:04	11°Z03'59	

conjunction	278 Dec 05 j 01:29	13° 2 24'15	4°05'43	conjunction	286 Dec 20 j 06:41	28° 2 58'58	0°-31'-3
minimum elong	278 Dec 05 j 01:39	13° 2 24'16	4°05'43	minimum elong	286 Dec 20 j 06:39	28° 2 58'58	0°31'04
max. Earth dist.	278 Dec 06 j 22:08	13° 2 28'15	33.11498 AU	max. Earth dist.	286 Dec 22 j 19:16	29° 2 04'04	34.91291 AU
retrograde	279 Mar 18 j 13:08	15° 2 44'47			287 Jan 20 j 18:33	0° 3	
min. Earth dist.	279 Jun 04 j 19:16	14° 2 29'37	31.22073 AU	retrograde	287 Apr 02 j 16:05	1° 3 10'34	
opposition	279 Jun 06 j 18:20	14° 2 26'38	4°02'28		287 Jun 19 j 13:59	30° R	
direct	279 Aug 26 j 05:49	13° 2 08'17		min. Earth dist.	287 Jun 20 j 09:55	29° 2 58'48	33.03309 AU
				opposition	287 Jun 22 j 22:57	29° 2 55'06	0°-50'-29
conjunction	279 Dec 07 j 07:25	15° 2 27'10	3°30'07	direct	287 Sep 11 j 14:24	28° 2 40'02	
minimum elong	279 Dec 07 j 07:33	15° 2 27'11	3°30'07		287 Nov 27 j 06:21	0° 3	
max. Earth dist.	279 Dec 09 j 07:06	15° 2 31'24	33.32069 AU				
retrograde	280 Mar 19 j 17:18	17° 2 46'31		conjunction	287 Dec 22 j 07:36	0° 3 48'51	-1°-3'-50
min. Earth dist.	280 Jun 06 j 03:21	16° 2 31'41	31.42804 AU	minimum elong	287 Dec 22 j 07:33	0° 3 48'51	1°03'51
opposition	280 Jun 08 j 03:34	16° 2 28'39	3°24'35	max. Earth dist.	287 Dec 24 j 20:34	0° 3 53'56	35.15550 AU
direct	280 Aug 27 j 15:25	15° 2 10'40		retrograde	288 Apr 03 j 16:46	2° 3 59'25	
				min. Earth dist.	288 Jun 21 j 11:24	1° 3 48'06	33.27689 AU
conjunction	280 Dec 08 j 12:43	17° 2 28'10	2°54'42	opposition	288 Jun 24 j 02:32	1° 3 44'18	-1°-24'-58
minimum elong	280 Dec 08 j 12:50	17° 2 28'11	2°54'42	direct	288 Sep 12 j 18:17	0° 3 29'37	
max. Earth dist.	280 Dec 10 j 14:01	17° 2 32'31	33.53235 AU				
retrograde	281 Mar 21 j 21:56	19° 2 46'20		conjunction	288 Dec 23 j 08:06	2° 3 37'17	-1°-36'-6
min. Earth dist.	281 Jun 08 j 08:20	18° 2 32'00	31.64151 AU	minimum elong	288 Dec 23 j 08:03	2° 3 37'17	1°36'07
opposition	281 Jun 10 j 11:39	18° 2 28'47	2°46'58	max. Earth dist.	288 Dec 25 j 22:30	2° 3 42'27	35.39957 AU
direct	281 Aug 30 j 00:21	17° 2 11'11		retrograde	289 Apr 05 j 17:21	4° 3 46'50	
				min. Earth dist.	289 Jun 23 j 14:05	3° 3 35'50	33.52227 AU
conjunction	281 Dec 10 j 17:17	19° 2 27'22	2°19'32	opposition	289 Jun 26 j 05:28	3° 3 32'02	-1°-58'-51
minimum elong	281 Dec 10 j 17:22	19° 2 27'22	2°19'32	direct	289 Sep 14 j 19:53	2° 3 17'45	
max. Earth dist.	281 Dec 12 j 20:50	19° 2 31'52	33.74989 AU				
retrograde	282 Mar 24 j 03:15	21° 2 44'22		conjunction	289 Dec 25 j 08:05	4° 3 24'16	-2°-7'-50
min. Earth dist.	282 Jun 10 j 14:20	20° 2 30'25	31.86121 AU	minimum elong	289 Dec 25 j 08:01	4° 3 24'15	2°07'52
opposition	282 Jun 12 j 19:17	20° 2 27'08	2°09'39	max. Earth dist.	289 Dec 27 j 23:28	4° 3 29'28	35.64493 AU
direct	282 Sep 01 j 06:26	19° 2 09'56		retrograde	290 Apr 07 j 17:08	6° 3 32'47	
				min. Earth dist.	290 Jun 25 j 15:00	5° 3 22'09	33.76876 AU
conjunction	282 Dec 12 j 21:11	21° 2 24'49	1°44'39	opposition	290 Jun 28 j 07:45	5° 3 18'18	-2°-32'-8
minimum elong	282 Dec 12 j 21:15	21° 2 24'49	1°44'39	direct	290 Sep 16 j 23:28	4° 3 04'21	
max. Earth dist.	282 Dec 15 j 02:58	21° 2 29'29	33.97334 AU				
retrograde	283 Mar 26 j 06:43	23° 2 40'42		conjunction	290 Dec 27 j 07:11	6° 3 09'45	-2°-39'-1
min. Earth dist.	283 Jun 12 j 18:55	22° 2 27'13	32.08660 AU	minimum elong	290 Dec 27 j 07:05	6° 3 09'44	2°39'02
opposition	283 Jun 15 j 02:07	22° 2 23'48	1°32'42	max. Earth dist.	290 Dec 29 j 23:02	6° 3 14'56	35.89126 AU
direct	283 Sep 03 j 14:17	21° 2 07'01		retrograde	291 Apr 09 j 18:49	8° 3 17'15	
				min. Earth dist.	291 Jun 27 j 15:36	7° 3 06'57	34.01674 AU
conjunction	283 Dec 15 j 00:22	23° 2 20'38	1°10'06	opposition	291 Jun 30 j 09:32	7° 3 03'03	-3°-4'-47
minimum elong	283 Dec 15 j 00:25	23° 2 20'38	1°10'07	direct	291 Sep 18 j 23:51	5° 3 49'27	
max. Earth dist.	283 Dec 17 j 07:26	23° 2 25'22	34.20204 AU				
retrograde	284 Mar 27 j 11:37	25° 2 35'25		conjunction	291 Dec 29 j 05:56	7° 3 53'43	-3°-9'-38
min. Earth dist.	284 Jun 13 j 22:59	24° 2 22'23	32.31740 AU	minimum elong	291 Dec 29 j 05:50	7° 3 53'43	3°09'39
opposition	284 Jun 16 j 08:19	24° 2 18'52	0°56'10	max. Earth dist.	291 Dec 31 j 23:45	7° 3 59'02	36.13909 AU
direct	284 Sep 04 j 20:12	23° 2 02'31		retrograde	292 Apr 10 j 16:49	10° 3 00'13	
				min. Earth dist.	292 Jun 28 j 16:08	8° 3 50'12	34.26644 AU
conjunction	284 Dec 16 j 03:04	25° 2 14'54	0°35'57	opposition	292 Jul 01 j 10:32	8° 3 46'18	-3°-36'-48
minimum elong	284 Dec 16 j 03:06	25° 2 14'54	0°35'58	direct	292 Sep 20 j 02:09	7° 3 33'01	
max. Earth dist.	284 Dec 18 j 12:50	25° 2 19'49	34.43548 AU				
retrograde	285 Mar 29 j 13:40	27° 2 28'35		conjunction	292 Dec 30 j 03:56	9° 3 36'12	-3°-39'-39
min. Earth dist.	285 Jun 16 j 03:28	26° 2 15'58	32.55254 AU	minimum elong	292 Dec 30 j 03:49	9° 3 36'12	3°39'40
opposition	285 Jun 18 j 13:50	26° 2 12'24	0°20'06	max. Earth dist.	293 Jan 01 j 21:55	9° 3 41'29	36.38874 AU
direct	285 Sep 07 j 03:58	24° 2 56'29		retrograde	293 Apr 12 j 14:48	11° 3 41'43	
				min. Earth dist.	293 Jun 30 j 14:22	10° 3 32'05	34.51840 AU
conjunction	285 Dec 18 j 05:05	27° 2 07'40	0°02'17	opposition	293 Jul 03 j 10:54	10° 3 28'05	-4°-8'-9
minimum elong	285 Dec 18 j 05:05	27° 2 07'40	0°02'16	direct	293 Sep 22 j 03:08	9° 3 15'08	
behind sun begin	285 Dec 17 j 22:43	27° 2 07'09					
behind sun end	285 Dec 18 j 11:26	27° 2 08'10		conjunction	294 Jan 01 j 01:30	11° 3 17'16	-4°-9'-3
max. Earth dist.	285 Dec 20 j 15:20	27° 2 12'35	34.67267 AU	minimum elong	294 Jan 01 j 01:22	11° 3 17'15	4°09'05
desc. node	286 Jan 11 j 11:37	27° 2 55'50		max. Earth dist.	294 Jan 03 j 21:42	11° 3 22'41	36.64056 AU
retrograde	286 Mar 31 j 16:53	29° 2 20'18		retrograde	294 Apr 14 j 09:38	13° 3 21'50	
min. Earth dist.	286 Jun 18 j 05:46	28° 2 08'10	32.79138 AU	min. Earth dist.	294 Jul 02 j 14:00	12° 3 12'29	34.77272 AU
opposition	286 Jun 20 j 18:34	28° 2 04'28	0°-15'-27	opposition	294 Jul 05 j 10:43	12° 3 08'28	-4°-38'-50
direct	286 Sep 09 j 08:42	26° 2 48'59		direct	294 Sep 24 j 05:43	10° 3 55'53	

conjunction	295 Jan 02 j 22:33	12°☾56'59	-4°-37'-50	retrograde	303 Apr 28 j 15:59	27°☾30'11	
minimum elong	295 Jan 02 j 22:24	12°☾56'58	4°37'51	min. Earth dist.	303 Jul 17 j 08:02	26°☾23'36	37.10330 AU
max. Earth dist.	295 Jan 05 j 19:07	13°☾02'24	36.89480 AU	opposition	303 Jul 20 j 10:09	26°☾19'28	-8°-43'-48
retrograde	295 Apr 16 j 05:57	15°☾00'37		direct	303 Oct 09 j 06:23	25°☾09'51	
min. Earth dist.	295 Jul 04 j 11:04	13°☾51'41	35.02944 AU				
opposition	295 Jul 07 j 09:57	13°☾47'34	-5°-8'-49	conjunction	304 Jan 17 j 00:48	27°☾02'46	-8°-28'-24
direct	295 Sep 26 j 05:48	12°☾35'20		minimum elong	304 Jan 17 j 00:35	27°☾02'45	8°28'26
				max. Earth dist.	304 Jan 20 j 02:50	27°☾08'15	39.20829 AU
conjunction	296 Jan 04 j 19:01	14°☾35'25	-5°-6'00	retrograde	304 Apr 29 j 09:38	28°☾58'57	
minimum elong	296 Jan 04 j 18:52	14°☾35'25	5°06'01	min. Earth dist.	304 Jul 18 j 02:44	27°☾52'37	37.35788 AU
max. Earth dist.	296 Jan 07 j 17:02	14°☾40'55	37.15108 AU	opposition	304 Jul 21 j 05:02	27°☾48'29	-9°-7'-37
retrograde	296 Apr 17 j 02:35	16°☾38'11		direct	304 Oct 10 j 01:05	26°☾39'08	
min. Earth dist.	296 Jul 05 j 09:37	15°☾29'33	35.28825 AU				
opposition	296 Jul 08 j 08:47	15°☾25'26	-5°-38'-6	conjunction	305 Jan 17 j 17:37	28°☾31'13	-8°-50'-53
direct	296 Sep 27 j 04:00	14°☾13'34		minimum elong	305 Jan 17 j 17:25	28°☾31'12	8°50'54
				max. Earth dist.	305 Jan 20 j 19:11	28°☾36'38	39.46037 AU
conjunction	297 Jan 05 j 15:14	16°☾12'41	-5°-33'-31		305 Mar 16 j 03:25	0°≈	
minimum elong	297 Jan 05 j 15:04	16°☾12'40	5°33'31	retrograde	305 May 01 j 04:17	0°≈26'39	
max. Earth dist.	297 Jan 08 j 14:22	16°☾18'13	37.40913 AU		305 Jun 17 j 13:53	30°R☾	
retrograde	297 Apr 18 j 23:10	18°☾14'34		min. Earth dist.	305 Jul 19 j 20:07	29°☾20'35	37.61188 AU
min. Earth dist.	297 Jul 07 j 06:31	17°☾06'17	35.54841 AU	opposition	305 Jul 22 j 23:20	29°☾16'25	-9°-30'-46
opposition	297 Jul 10 j 06:45	17°☾02'08	-6°-6'-42	direct	305 Oct 11 j 17:41	28°☾07'20	
direct	297 Sep 29 j 01:49	15°☾50'37					
				conjunction	306 Jan 19 j 10:10	29°☾58'38	-9°-12'-44
conjunction	298 Jan 07 j 10:52	17°☾48'48	-6°00'-23	minimum elong	306 Jan 19 j 09:56	29°☾58'37	9°12'45
minimum elong	298 Jan 07 j 10:41	17°☾48'48	6°00'25		306 Jan 20 j 04:49	0°≈	
max. Earth dist.	298 Jan 10 j 10:10	17°☾54'19	37.66810 AU	max. Earth dist.	306 Jan 22 j 13:11	0°≈04'07	39.71200 AU
retrograde	298 Apr 20 j 21:46	19°☾49'51		retrograde	306 May 02 j 19:14	1°≈53'19	
min. Earth dist.	298 Jul 09 j 03:17	18°☾41'55	35.80948 AU	min. Earth dist.	306 Jul 21 j 14:39	0°≈47'27	37.86552 AU
opposition	298 Jul 12 j 04:30	18°☾37'44	-6°-34'-35	opposition	306 Jul 24 j 17:22	0°≈43'20	-9°-53'-14
direct	298 Sep 30 j 20:43	17°☾26'34			306 Aug 29 j 00:57	30°R☾	
				direct	306 Oct 13 j 13:18	29°☾34'33	
conjunction	299 Jan 09 j 06:06	19°☾23'50	-6°-26'-38		306 Nov 26 j 13:56	0°≈	
minimum elong	299 Jan 09 j 05:55	19°☾23'50	6°26'38	conjunction	307 Jan 21 j 02:07	1°≈25'04	-9°-33'-57
max. Earth dist.	299 Jan 12 j 06:58	19°☾29'26	37.92748 AU	minimum elong	307 Jan 21 j 01:54	1°≈25'03	9°33'58
retrograde	299 Apr 22 j 16:19	21°☾24'03		max. Earth dist.	307 Jan 24 j 04:41	1°≈30'30	39.96349 AU
min. Earth dist.	299 Jul 11 j 00:48	20°☾16'24	36.07053 AU	retrograde	307 May 04 j 10:28	3°≈19'03	
opposition	299 Jul 14 j 01:47	20°☾12'15	-7°-1'-48	min. Earth dist.	307 Jul 23 j 06:46	2°≈13'31	38.11906 AU
direct	299 Oct 02 j 19:09	19°☾01'26		opposition	307 Jul 26 j 10:57	2°≈09'19	-10°-15'-1
				direct	307 Oct 15 j 07:57	1°≈00'49	
conjunction	300 Jan 11 j 01:01	20°☾57'48	-6°-52'-14				
minimum elong	300 Jan 11 j 00:49	20°☾57'47	6°52'16	conjunction	308 Jan 22 j 17:52	2°≈50'37	-9°-54'-33
max. Earth dist.	300 Jan 14 j 01:16	21°☾03'19	38.18647 AU	minimum elong	308 Jan 22 j 17:39	2°≈50'36	9°54'33
retrograde	300 Apr 23 j 11:37	22°☾57'11		max. Earth dist.	308 Jan 25 j 21:29	2°≈56'05	40.21472 AU
min. Earth dist.	300 Jul 11 j 20:15	21°☾49'53	36.33099 AU	retrograde	308 May 05 j 01:23	4°≈43'55	
opposition	300 Jul 14 j 22:28	21°☾45'41	-7°-28'-19	min. Earth dist.	308 Jul 24 j 00:34	3°≈38'36	38.37234 AU
direct	300 Oct 03 j 16:26	20°☾35'11		opposition	308 Jul 27 j 04:08	3°≈34'28	-10°-36'-8
				direct	308 Oct 16 j 01:53	2°≈26'16	
conjunction	301 Jan 11 j 19:37	22°☾30'42	-7°-17'-13				
minimum elong	301 Jan 11 j 19:25	22°☾30'41	7°17'14	conjunction	309 Jan 23 j 09:21	4°≈15'20	-10°-14'-31
max. Earth dist.	301 Jan 14 j 21:03	22°☾36'16	38.44433 AU	minimum elong	309 Jan 23 j 09:09	4°≈15'19	10°14'32
retrograde	301 Apr 25 j 04:51	24°☾29'16		max. Earth dist.	309 Jan 26 j 13:14	4°≈20'48	40.46559 AU
min. Earth dist.	301 Jul 13 j 17:27	23°☾22'11	36.59009 AU	retrograde	309 May 06 j 16:16	6°≈07'59	
opposition	301 Jul 16 j 18:52	23°☾18'03	-7°-54'-9	min. Earth dist.	309 Jul 25 j 16:30	5°≈02'59	38.62483 AU
direct	301 Oct 05 j 14:25	22°☾07'52		opposition	309 Jul 28 j 20:51	4°≈58'49	-10°-56'-35
				direct	309 Oct 17 j 19:19	3°≈50'55	
conjunction	302 Jan 13 j 13:46	24°☾02'30	-7°-41'-34				
minimum elong	302 Jan 13 j 13:34	24°☾02'29	7°41'36	conjunction	310 Jan 25 j 00:19	5°≈39'18	-10°-33'-53
max. Earth dist.	302 Jan 16 j 14:48	24°☾08'00	38.70063 AU	minimum elong	310 Jan 25 j 00:06	5°≈39'17	10°33'54
retrograde	302 Apr 26 j 21:47	26°☾00'16		max. Earth dist.	310 Jan 28 j 03:52	5°≈44'42	40.71537 AU
min. Earth dist.	302 Jul 15 j 12:12	24°☾53'30	36.84743 AU	retrograde	310 May 08 j 10:19	7°≈31'19	
opposition	302 Jul 18 j 14:38	24°☾49'19	-8°-19'-19	min. Earth dist.	310 Jul 27 j 08:59	6°≈26'34	38.87621 AU
direct	302 Oct 07 j 11:26	23°☾39'26		opposition	310 Jul 30 j 13:22	6°≈22'25	-11°-16'-24
				direct	310 Oct 19 j 09:17	5°≈14'49	
conjunction	303 Jan 15 j 07:29	25°☾33'12	-8°-5'-18				
minimum elong	303 Jan 15 j 07:17	25°☾33'11	8°05'19	conjunction	311 Jan 26 j 15:15	7°≈02'32	-10°-52'-39
max. Earth dist.	303 Jan 18 j 08:41	25°☾38'40	38.95513 AU				

minimum elong	311 Jan 26 j 15:03	7°02'32	10°52'40	conjunction	319 Feb 06 j 03:59	17°40'42	-13°-2'-50
max. Earth dist.	311 Jan 29 j 19:47	7°07'59	40.96376 AU	minimum elong	319 Feb 06 j 03:48	17°40'41	13°02'52
retrograde	311 May 10 j 02:21	8°53'56		max. Earth dist.	319 Feb 09 j 05:44	17°45'42	42.84661 AU
min. Earth dist.	311 Jul 29 j 01:47	7°49'24	39.12569 AU	retrograde	319 May 20 j 12:59	19°27'15	
opposition	311 Aug 01 j 05:29	7°45'19	-11°-35'-36	min. Earth dist.	319 Aug 08 j 23:58	18°24'11	41.01424 AU
direct	311 Oct 21 j 00:14	6°38'00		opposition	319 Aug 12 j 01:58	18°20'18	-13°-48'-8
				direct	319 Oct 31 j 23:12	17°14'45	
conjunction	312 Jan 28 j 05:46	8°25'05	-11°-10'-50	conjunction	320 Feb 07 j 16:13	18°56'50	-13°-16'-41
minimum elong	312 Jan 28 j 05:33	8°25'04	11°10'51	minimum elong	320 Feb 07 j 16:03	18°56'49	13°16'41
max. Earth dist.	312 Jan 31 j 09:10	8°30'24	41.20994 AU	max. Earth dist.	320 Feb 10 j 18:15	19°01'51	43.07115 AU
retrograde	312 May 10 j 18:26	10°15'51		retrograde	320 May 20 j 23:45	20°42'51	
min. Earth dist.	312 Jul 29 j 16:57	9°11'36	39.37270 AU	min. Earth dist.	320 Aug 09 j 14:07	19°39'55	41.23993 AU
opposition	312 Aug 01 j 21:16	9°07'30	-11°-54'-11	opposition	320 Aug 12 j 15:10	19°36'06	-14°-2'-8
direct	312 Oct 21 j 14:45	8°00'28		direct	320 Nov 01 j 13:55	18°30'47	
conjunction	313 Jan 28 j 20:13	9°46'54	-11°-28'-28	conjunction	321 Feb 08 j 04:21	20°12'19	-13°-30'00
minimum elong	313 Jan 28 j 20:01	9°46'53	11°28'29	minimum elong	321 Feb 08 j 04:11	20°12'18	13°30'01
max. Earth dist.	313 Feb 01 j 00:10	9°52'14	41.45317 AU	max. Earth dist.	321 Feb 11 j 06:25	20°17'18	43.29408 AU
retrograde	313 May 12 j 06:28	11°37'03		retrograde	321 May 22 j 10:41	21°57'48	
min. Earth dist.	313 Jul 31 j 09:51	10°32'57	39.61646 AU	min. Earth dist.	321 Aug 11 j 02:36	20°55'05	41.46368 AU
opposition	313 Aug 03 j 12:38	10°28'57	-12°-12'-10	opposition	321 Aug 14 j 03:46	20°51'16	-14°-15'-36
direct	313 Oct 23 j 08:30	9°22'10		direct	321 Nov 03 j 03:55	19°46'11	
conjunction	314 Jan 30 j 10:22	11°07'57	-11°-45'-32	conjunction	322 Feb 09 j 16:04	21°27'11	-13°-42'-48
minimum elong	314 Jan 30 j 10:09	11°07'56	11°45'32	minimum elong	322 Feb 09 j 15:55	21°27'11	13°42'48
max. Earth dist.	314 Feb 02 j 13:16	11°13'12	41.69310 AU	max. Earth dist.	322 Feb 12 j 17:15	21°32'05	43.51499 AU
retrograde	314 May 13 j 18:36	12°57'30		retrograde	322 May 24 j 00:37	23°12'12	
min. Earth dist.	314 Aug 02 j 00:29	11°53'38	39.85663 AU	min. Earth dist.	322 Aug 12 j 15:24	22°09'40	41.68537 AU
opposition	314 Aug 05 j 03:42	11°49'37	-12°-29'-35	opposition	322 Aug 15 j 16:25	22°05'53	-14°-28'-31
direct	314 Oct 25 j 01:22	10°43'04		direct	322 Nov 04 j 14:45	21°01'01	
conjunction	315 Feb 01 j 00:01	12°28'12	-12°-2'-4	conjunction	323 Feb 11 j 03:38	22°41'32	-13°-55'-5
minimum elong	315 Jan 31 j 23:49	12°28'11	12°02'05	minimum elong	323 Feb 11 j 03:28	22°41'31	13°55'07
max. Earth dist.	315 Feb 04 j 02:33	12°33'23	41.92935 AU	max. Earth dist.	323 Feb 14 j 05:37	22°46'27	43.73356 AU
retrograde	315 May 15 j 08:27	14°17'09		retrograde	323 May 25 j 13:01	24°26'03	
min. Earth dist.	315 Aug 03 j 16:25	13°13'24	40.09335 AU	min. Earth dist.	323 Aug 14 j 04:52	23°23'41	41.90426 AU
opposition	315 Aug 06 j 18:36	13°09'27	-12°-46'-26	opposition	323 Aug 17 j 04:45	23°19'58	-14°-40'-55
direct	315 Oct 26 j 16:38	12°03'07		direct	323 Nov 06 j 02:20	22°15'20	
conjunction	316 Feb 02 j 13:35	13°47'36	-12°-18'-4	conjunction	324 Feb 12 j 15:05	23°55'22	-14°-6'-54
minimum elong	316 Feb 02 j 13:23	13°47'35	12°18'04	minimum elong	324 Feb 12 j 14:57	23°55'21	14°06'55
max. Earth dist.	316 Feb 05 j 16:23	13°52'46	42.16237 AU	max. Earth dist.	324 Feb 15 j 15:32	24°00'10	43.94917 AU
retrograde	316 Mar 21 j 11:08	15°		retrograde	324 May 26 j 02:07	25°39'25	
min. Earth dist.	316 May 15 j 21:24	15°35'56		min. Earth dist.	324 Aug 14 j 16:31	24°37'16	42.11989 AU
opposition	316 Jul 12 j 12:22	15°R		opposition	324 Aug 17 j 16:38	24°33'33	-14°-52'-49
direct	316 Aug 04 j 06:58	14°32'20	40.32686 AU	direct	324 Nov 06 j 12:32	23°29'08	
	316 Aug 07 j 08:50	14°28'25	-13°-2'-43				
	316 Oct 27 j 07:51	13°22'17					
	317 Jan 30 j 09:19	15°		conjunction	325 Feb 13 j 02:25	25°08'42	-14°-18'-15
conjunction	317 Feb 03 j 02:39	15°06'08	-12°-33'-32	minimum elong	325 Feb 13 j 02:15	25°08'42	14°18'16
minimum elong	317 Feb 03 j 02:28	15°06'07	12°33'34	max. Earth dist.	325 Feb 16 j 02:48	25°13'29	44.16108 AU
max. Earth dist.	317 Feb 06 j 04:15	15°11'11	42.39251 AU	retrograde	325 May 27 j 11:56	26°52'18	
retrograde	317 May 17 j 13:21	16°53'51		min. Earth dist.	325 Aug 16 j 06:17	25°50'15	42.33153 AU
min. Earth dist.	317 Aug 05 j 20:47	15°50'26	40.55793 AU	opposition	325 Aug 19 j 04:31	25°46'38	-15°-4'-14
opposition	317 Aug 08 j 22:52	15°46'31	-13°-18'-26	direct	325 Nov 08 j 01:18	24°42'27	
direct	317 Sep 18 j 12:35	15°R		conjunction	326 Feb 14 j 13:29	26°21'32	-14°-29'-9
	317 Oct 28 j 19:10	14°40'34		minimum elong	326 Feb 14 j 13:21	26°21'32	14°29'10
	317 Dec 07 j 03:03	15°		max. Earth dist.	326 Feb 17 j 13:04	26°26'15	44.36892 AU
conjunction	318 Feb 04 j 15:26	16°23'49	-12°-48'-27	retrograde	326 May 28 j 20:31	28°04'41	
minimum elong	318 Feb 04 j 15:15	16°23'48	12°48'28	min. Earth dist.	326 Aug 17 j 17:50	27°02'49	42.53875 AU
max. Earth dist.	318 Feb 07 j 18:00	16°28'54	42.62041 AU	opposition	326 Aug 20 j 16:04	26°59'12	-15°-15'-12
retrograde	318 May 19 j 02:01	18°10'56		direct	326 Nov 09 j 15:30	25°55'12	
min. Earth dist.	318 Aug 07 j 11:34	17°07'38	40.78689 AU	conjunction	327 Feb 16 j 00:19	27°33'49	-14°-39'-36
opposition	318 Aug 10 j 12:37	17°03'48	-13°-33'-34	minimum elong	327 Feb 16 j 00:10	27°33'49	14°39'37
direct	318 Oct 30 j 09:00	15°58'03		max. Earth dist.	327 Feb 18 j 22:33	27°38'25	44.57234 AU

retrograde	327 May 30 j 08:55	29°≈16'30		minimum elong	335 Feb 25 j 07:10	6°✕51'41	15°47'28
min. Earth dist.	327 Aug 19 j 06:17	28°≈14'44	42.74174 AU	max. Earth dist.	335 Feb 28 j 02:30	6°✕55'56	46.08811 AU
opposition	327 Aug 22 j 03:28	28°≈11'12	-15°-25'-43	retrograde	335 Jun 08 j 17:10	8°✕30'59	
direct	327 Nov 11 j 02:26	27°≈07'23		min. Earth dist.	335 Aug 28 j 20:35	7°✕30'13	44.25710 AU
				opposition	335 Aug 31 j 12:47	7°✕27'00	-16°-33'-16
conjunction	328 Feb 17 j 11:02	28°≈45'31	-14°-49'-37	direct	335 Nov 20 j 10:16	6°✕24'32	
minimum elong	328 Feb 17 j 10:55	28°≈45'31	14°49'39				
max. Earth dist.	328 Feb 20 j 09:29	28°≈50'06	44.77169 AU	conjunction	336 Feb 26 j 16:25	7°✕59'21	-15°-54'-1
	328 Apr 10 j 23:05	0°✕		minimum elong	336 Feb 26 j 16:20	7°✕59'20	15°54'02
retrograde	328 May 30 j 19:30	0°✕27'44		max. Earth dist.	336 Feb 29 j 10:26	8°✕03'30	46.26559 AU
	328 Jul 21 j 00:30	30°R≈		retrograde	336 Jun 09 j 00:40	9°✕38'16	
min. Earth dist.	328 Aug 19 j 18:24	29°≈26'04	42.94061 AU	min. Earth dist.	336 Aug 29 j 05:46	8°✕37'41	44.43366 AU
opposition	328 Aug 22 j 14:28	29°≈22'36	-15°-35'-46	opposition	336 Aug 31 j 22:00	8°✕34'28	-16°-39'-44
direct	328 Nov 11 j 13:47	28°≈18'56		direct	336 Nov 20 j 20:08	7°✕32'10	
conjunction	329 Feb 17 j 21:22	29°≈56'36	-14°-59'-12	conjunction	337 Feb 27 j 01:26	9°✕06'38	-16°00'-12
minimum elong	329 Feb 17 j 21:14	29°≈56'36	14°59'13	minimum elong	337 Feb 27 j 01:23	9°✕06'38	16°00'13
	329 Feb 20 j 01:50	0°✕		max. Earth dist.	337 Mar 01 j 18:25	9°✕10'43	46.43891 AU
max. Earth dist.	329 Feb 20 j 18:12	0°✕01'04	44.96733 AU	retrograde	337 Jun 10 j 08:18	10°✕45'12	
retrograde	329 Jun 01 j 07:31	1°✕38'21		min. Earth dist.	337 Aug 30 j 16:38	9°✕44'41	44.60588 AU
min. Earth dist.	329 Aug 21 j 04:51	0°✕36'50	43.13619 AU	opposition	337 Sep 02 j 07:08	9°✕41'34	-16°-45'-50
opposition	329 Aug 24 j 01:05	0°✕33'22	-15°-45'-21	direct	337 Nov 22 j 06:32	8°✕39'26	
	329 Sep 21 j 17:39	30°R≈					
direct	329 Nov 12 j 22:23	29°≈29'52		conjunction	338 Feb 28 j 10:29	10°✕13'33	-16°-6'-1
	330 Jan 02 j 14:53	0°✕		minimum elong	338 Feb 28 j 10:25	10°✕13'32	16°06'02
				max. Earth dist.	338 Mar 03 j 03:00	10°✕17'35	46.60777 AU
conjunction	330 Feb 19 j 07:31	1°✕07'05	-15°-8'-21	retrograde	338 Jun 11 j 15:42	11°✕51'45	
minimum elong	330 Feb 19 j 07:25	1°✕07'04	15°08'23	min. Earth dist.	338 Sep 01 j 02:27	10°✕51'20	44.77318 AU
max. Earth dist.	330 Feb 22 j 04:49	1°✕11'33	45.15994 AU	opposition	338 Sep 03 j 16:05	10°✕48'16	-16°-51'-33
retrograde	330 Jun 02 j 16:27	2°✕48'22		direct	338 Nov 23 j 17:27	9°✕46'17	
min. Earth dist.	330 Aug 22 j 16:50	1°✕46'56	43.32899 AU				
opposition	330 Aug 25 j 11:39	1°✕43'32	-15°-54'-29	conjunction	339 Mar 01 j 19:08	11°✕20'01	-16°-11'-30
direct	330 Nov 14 j 09:24	0°✕40'12		minimum elong	339 Mar 01 j 19:06	11°✕20'01	16°11'30
				max. Earth dist.	339 Mar 04 j 09:39	11°✕23'55	46.77171 AU
conjunction	331 Feb 20 j 17:21	2°✕16'58	-15°-17'-3	retrograde	339 Jun 13 j 02:25	12°✕57'52	
minimum elong	331 Feb 20 j 17:15	2°✕16'58	15°17'03	min. Earth dist.	339 Sep 02 j 12:06	11°✕57'32	44.93562 AU
max. Earth dist.	331 Feb 23 j 13:54	2°✕21'23	45.35019 AU	opposition	339 Sep 05 j 00:57	11°✕54'31	-16°-56'-55
retrograde	331 Jun 04 j 00:02	3°✕57'50		direct	339 Nov 25 j 01:05	10°✕52'40	
min. Earth dist.	331 Aug 24 j 02:30	2°✕56'34	43.51940 AU				
opposition	331 Aug 26 j 21:50	2°✕53'09	-16°-3'-8	conjunction	340 Mar 02 j 03:52	12°✕26'03	-16°-16'-37
direct	331 Nov 15 j 20:40	1°✕49'58		minimum elong	340 Mar 02 j 03:48	12°✕26'02	16°16'38
				max. Earth dist.	340 Mar 04 j 18:20	12°✕29'55	46.93082 AU
conjunction	332 Feb 22 j 03:05	3°✕26'20	-15°-25'-18	retrograde	340 Jun 13 j 11:31	14°✕03'31	
minimum elong	332 Feb 22 j 02:59	3°✕26'19	15°25'19	min. Earth dist.	340 Sep 02 j 22:25	13°✕03'13	45.09329 AU
max. Earth dist.	332 Feb 24 j 23:02	3°✕30'41	45.53813 AU	opposition	340 Sep 05 j 09:25	13°✕00'18	-17°-1'-56
retrograde	332 Jun 04 j 09:15	5°✕06'47		direct	340 Nov 25 j 09:02	11°✕58'33	
min. Earth dist.	332 Aug 24 j 13:34	4°✕05'37	43.70766 AU				
opposition	332 Aug 27 j 07:50	4°✕02'16	-16°-11'-20	conjunction	341 Mar 03 j 12:18	13°✕31'35	-16°-21'-23
direct	332 Nov 16 j 07:59	2°✕59'16		minimum elong	341 Mar 03 j 12:17	13°✕31'35	16°21'25
				max. Earth dist.	341 Mar 06 j 01:09	13°✕35'21	47.08564 AU
conjunction	333 Feb 22 j 12:44	4°✕35'12	-15°-33'-6	retrograde	341 Jun 14 j 20:10	15°✕08'41	
minimum elong	333 Feb 22 j 12:39	4°✕35'12	15°33'06	min. Earth dist.	341 Sep 04 j 06:36	14°✕08'30	45.24691 AU
max. Earth dist.	333 Feb 25 j 09:05	4°✕39'34	45.72398 AU	opposition	341 Sep 06 j 17:43	14°✕05'35	-17°-6'-34
retrograde	333 Jun 05 j 18:26	6°✕15'16		direct	341 Nov 26 j 16:08	13°✕03'57	
min. Earth dist.	333 Aug 25 j 23:44	5°✕14'14	43.89350 AU				
opposition	333 Aug 28 j 17:36	5°✕10'55	-16°-19'-5	conjunction	342 Mar 04 j 20:21	14°✕36'39	-16°-25'-48
direct	333 Nov 17 j 19:04	4°✕08'05		minimum elong	342 Mar 04 j 20:18	14°✕36'39	16°25'49
				max. Earth dist.	342 Mar 07 j 08:36	14°✕40'21	47.23663 AU
conjunction	334 Feb 23 j 21:56	5°✕43'38	-15°-40'-29	retrograde	342 Jun 16 j 02:27	16°✕13'25	
minimum elong	334 Feb 23 j 21:50	5°✕43'38	15°40'30	min. Earth dist.	342 Sep 05 j 16:33	15°✕13'15	45.39708 AU
max. Earth dist.	334 Feb 26 j 16:47	5°✕47'53	45.90741 AU	opposition	342 Sep 08 j 02:02	15°✕10'25	-17°-10'-50
retrograde	334 Jun 07 j 07:18	7°✕23'19		direct	342 Nov 28 j 01:55	14°✕08'55	
min. Earth dist.	334 Aug 27 j 09:24	6°✕22'27	44.07685 AU				
opposition	334 Aug 30 j 03:18	6°✕19'09	-16°-26'-23	conjunction	343 Mar 06 j 04:31	15°✕41'17	-16°-29'-51
direct	334 Nov 19 j 01:30	5°✕16'30		minimum elong	343 Mar 06 j 04:30	15°✕41'17	16°29'53
				max. Earth dist.	343 Mar 08 j 16:43	15°✕44'58	47.38457 AU
conjunction	335 Feb 25 j 07:14	6°✕51'41	-15°-47'-27	retrograde	343 Jun 17 j 07:54	17°✕17'43	

min. Earth dist.	343 Sep 07 j 00:37	16° \mathring{K} 17'41	45.54417 AU	conjunction	352 Mar 15 j 00:21	25° \mathring{K} 10'10	-16°-50'-54
opposition	343 Sep 09 j 09:54	16° \mathring{K} 14'51	-17°-14'-43	minimum elong	352 Mar 15 j 00:24	25° \mathring{K} 10'10	16°50'55
direct	343 Nov 29 j 12:38	15° \mathring{K} 13'28		max. Earth dist.	352 Mar 17 j 03:23	25° \mathring{K} 13'13	48.56470 AU
				retrograde	352 Jun 26 j 07:27	26° \mathring{K} 44'08	
conjunction	344 Mar 06 j 12:24	16° \mathring{K} 45'32	-16°-33'-32	min. Earth dist.	352 Sep 16 j 03:56	25° \mathring{K} 44'46	46.70959 AU
minimum elong	344 Mar 06 j 12:22	16° \mathring{K} 45'32	16°33'33	opposition	352 Sep 18 j 03:31	25° \mathring{K} 42'28	-17°-34'-2
max. Earth dist.	344 Mar 08 j 22:55	16° \mathring{K} 49'07	47.52963 AU	direct	352 Dec 08 j 02:15	24° \mathring{K} 42'12	
retrograde	344 Jun 17 j 18:15	18° \mathring{K} 21'40					
min. Earth dist.	344 Sep 07 j 09:00	17° \mathring{K} 21'43	45.68854 AU	conjunction	353 Mar 16 j 07:23	26° \mathring{K} 11'56	-16°-51'-43
opposition	344 Sep 09 j 17:47	17° \mathring{K} 18'56	-17°-18'-14	minimum elong	353 Mar 16 j 07:25	26° \mathring{K} 11'56	16°51'44
direct	344 Nov 29 j 19:04	16° \mathring{K} 17'41		max. Earth dist.	353 Mar 18 j 09:39	26° \mathring{K} 14'55	48.67316 AU
				retrograde	353 Jun 27 j 10:01	27° \mathring{K} 45'36	
conjunction	345 Mar 07 j 20:14	17° \mathring{K} 49'27	-16°-36'-52	min. Earth dist.	353 Sep 17 j 10:43	26° \mathring{K} 46'18	46.81593 AU
minimum elong	345 Mar 07 j 20:14	17° \mathring{K} 49'27	16°36'53	opposition	353 Sep 19 j 09:59	26° \mathring{K} 44'01	-17°-34'-38
max. Earth dist.	345 Mar 10 j 07:10	17° \mathring{K} 53'03	47.67195 AU	direct	353 Dec 09 j 12:19	25° \mathring{K} 43'49	
retrograde	345 Jun 19 j 02:50	19° \mathring{K} 25'18					
min. Earth dist.	345 Sep 08 j 18:00	18° \mathring{K} 25'26	45.82999 AU	conjunction	354 Mar 17 j 14:10	27° \mathring{K} 13'17	-16°-52'-15
opposition	345 Sep 11 j 01:23	18° \mathring{K} 22'43	-17°-21'-22	minimum elong	354 Mar 17 j 14:14	27° \mathring{K} 13'17	16°52'16
direct	345 Dec 01 j 02:18	17° \mathring{K} 21'37		max. Earth dist.	354 Mar 19 j 14:37	27° \mathring{K} 16'10	48.77746 AU
				retrograde	354 Jun 28 j 16:13	28° \mathring{K} 46'41	
conjunction	346 Mar 09 j 03:52	18° \mathring{K} 53'06	-16°-39'-50	min. Earth dist.	354 Sep 18 j 18:20	27° \mathring{K} 47'24	46.91857 AU
minimum elong	346 Mar 09 j 03:52	18° \mathring{K} 53'06	16°39'50	opposition	354 Sep 20 j 16:30	27° \mathring{K} 45'10	-17°-34'-55
max. Earth dist.	346 Mar 11 j 13:23	18° \mathring{K} 56'36	47.81157 AU	direct	354 Dec 10 j 20:10	26° \mathring{K} 45'02	
retrograde	346 Jun 20 j 11:00	20° \mathring{K} 28'40					
min. Earth dist.	346 Sep 10 j 01:14	19° \mathring{K} 28'58	45.96857 AU	conjunction	355 Mar 18 j 20:55	28° \mathring{K} 14'15	-16°-52'-28
opposition	346 Sep 12 j 08:53	19° \mathring{K} 26'15	-17°-24'-9	minimum elong	355 Mar 18 j 20:58	28° \mathring{K} 14'15	16°52'29
direct	346 Dec 02 j 07:48	18° \mathring{K} 25'17		max. Earth dist.	355 Mar 20 j 21:36	28° \mathring{K} 17'08	48.87830 AU
				retrograde	355 Jun 29 j 22:27	29° \mathring{K} 47'24	
conjunction	347 Mar 10 j 11:22	19° \mathring{K} 56'32	-16°-42'-27	min. Earth dist.	355 Sep 20 j 01:52	28° \mathring{K} 48'07	47.01778 AU
minimum elong	347 Mar 10 j 11:22	19° \mathring{K} 56'32	16°42'29	opposition	355 Sep 21 j 22:49	28° \mathring{K} 45'57	-17°-34'-54
max. Earth dist.	347 Mar 12 j 20:20	19° \mathring{K} 59'59	47.94801 AU	direct	355 Dec 12 j 03:48	27° \mathring{K} 45'53	
retrograde	347 Jun 21 j 17:19	21° \mathring{K} 31'49					
min. Earth dist.	347 Sep 11 j 10:35	20° \mathring{K} 32'10	46.10374 AU	conjunction	356 Mar 19 j 03:34	29° \mathring{K} 14'52	-16°-52'-23
opposition	347 Sep 13 j 16:23	20° \mathring{K} 29'33	-17°-26'-35	minimum elong	356 Mar 19 j 03:38	29° \mathring{K} 14'52	16°52'24
direct	347 Dec 03 j 15:48	19° \mathring{K} 28'45		max. Earth dist.	356 Mar 21 j 02:37	29° \mathring{K} 17'38	48.97610 AU
				retrograde	356 Apr 21 j 09:45	0° \mathring{V}	
conjunction	348 Mar 10 j 19:00	20° \mathring{K} 59'44	-16°-44'-45	retrograde	356 Jun 30 j 06:51	0° \mathring{V} 47'46	
minimum elong	348 Mar 10 j 19:01	20° \mathring{K} 59'44	16°44'45		356 Sep 10 j 07:44	30° \mathring{R} \mathring{K}	
max. Earth dist.	348 Mar 13 j 03:23	21° \mathring{K} 03'09	48.08092 AU	min. Earth dist.	356 Sep 20 j 07:54	29° \mathring{K} 48'34	47.11410 AU
retrograde	348 Jun 21 j 22:14	22° \mathring{K} 34'46		opposition	356 Sep 22 j 04:50	29° \mathring{K} 46'24	-17°-34'-33
min. Earth dist.	348 Sep 11 j 18:09	21° \mathring{K} 35'15	46.23486 AU	direct	356 Dec 12 j 07:48	28° \mathring{K} 46'24	
opposition	348 Sep 13 j 23:26	21° \mathring{K} 32'39	-17°-28'-40		357 Mar 09 j 15:17	0° \mathring{V}	
direct	348 Dec 04 j 01:20	20° \mathring{K} 31'59					
conjunction	349 Mar 12 j 02:26	22° \mathring{K} 02'44	-16°-46'-43	conjunction	357 Mar 20 j 10:05	0° \mathring{V} 15'10	-16°-51'-59
minimum elong	349 Mar 12 j 02:26	22° \mathring{K} 02'44	16°46'44	minimum elong	357 Mar 20 j 10:09	0° \mathring{V} 15'11	16°51'59
max. Earth dist.	349 Mar 14 j 08:49	22° \mathring{K} 06'01	48.20944 AU	max. Earth dist.	357 Mar 22 j 08:40	0° \mathring{V} 17'55	49.07099 AU
retrograde	349 Jun 23 j 06:46	23° \mathring{K} 37'32		retrograde	357 Jul 01 j 13:25	1° \mathring{V} 47'50	
min. Earth dist.	349 Sep 13 j 02:45	22° \mathring{K} 38'05	46.36142 AU	min. Earth dist.	357 Sep 21 j 15:44	0° \mathring{V} 48'39	47.20755 AU
opposition	349 Sep 15 j 06:41	22° \mathring{K} 35'33	-17°-30'-27	opposition	357 Sep 23 j 11:01	0° \mathring{V} 46'34	-17°-33'-53
direct	349 Dec 05 j 08:31	21° \mathring{K} 35'01			357 Nov 08 j 13:50	30° \mathring{R} \mathring{K}	
				direct	357 Dec 13 j 13:05	29° \mathring{K} 46'40	
conjunction	350 Mar 13 j 09:47	23° \mathring{K} 05'31	-16°-48'-24		358 Jan 17 j 04:19	0° \mathring{V}	
minimum elong	350 Mar 13 j 09:50	23° \mathring{K} 05'31	16°48'25	conjunction	358 Mar 21 j 16:25	1° \mathring{V} 15'14	-16°-51'-16
max. Earth dist.	350 Mar 15 j 16:01	23° \mathring{K} 08'46	48.33309 AU	minimum elong	358 Mar 21 j 16:30	1° \mathring{V} 15'14	16°51'17
retrograde	350 Jun 24 j 15:15	24° \mathring{K} 40'03		max. Earth dist.	358 Mar 23 j 14:34	1° \mathring{V} 17'57	49.16321 AU
min. Earth dist.	350 Sep 14 j 11:33	23° \mathring{K} 40'38	46.48269 AU	retrograde	358 Jul 02 j 17:20	2° \mathring{V} 47'41	
opposition	350 Sep 16 j 13:49	23° \mathring{K} 38'12	-17°-31'-56	min. Earth dist.	358 Sep 22 j 21:41	1° \mathring{V} 48'36	47.29806 AU
direct	350 Dec 06 j 15:34	22° \mathring{K} 37'46		opposition	358 Sep 24 j 16:59	1° \mathring{V} 46'31	-17°-32'-54
				direct	358 Dec 14 j 20:08	0° \mathring{V} 46'43	
conjunction	351 Mar 14 j 17:08	24° \mathring{K} 08'01	-16°-49'-48				
minimum elong	351 Mar 14 j 17:09	24° \mathring{K} 08'01	16°49'49	conjunction	359 Mar 22 j 22:45	2° \mathring{V} 15'06	-16°-50'-15
max. Earth dist.	351 Mar 16 j 21:06	24° \mathring{K} 11'08	48.45154 AU	minimum elong	359 Mar 22 j 22:49	2° \mathring{V} 15'07	16°50'16
retrograde	351 Jun 26 j 01:26	25° \mathring{K} 42'16		max. Earth dist.	359 Mar 24 j 19:15	2° \mathring{V} 17'43	49.25237 AU
min. Earth dist.	351 Sep 15 j 18:50	24° \mathring{K} 42'55	46.59870 AU	retrograde	359 Jul 03 j 23:45	3° \mathring{V} 47'22	
opposition	351 Sep 17 j 20:39	24° \mathring{K} 40'31	-17°-33'-8	min. Earth dist.	359 Sep 24 j 04:54	2° \mathring{V} 48'20	47.38543 AU
direct	351 Dec 07 j 19:25	23° \mathring{K} 40'11		opposition	359 Sep 25 j 22:53	2° \mathring{V} 46'19	-17°-31'-37

direct	359 Dec 16 j 02:37	1°♃46'37		minimum elong	368 Mar 31 j 06:01	11°♃07'07	16°29'14
				max. Earth dist.	368 Apr 01 j 16:36	11°♃09'06	49.85857 AU
conjunction	360 Mar 23 j 05:12	3°♃14'50	-16°-48'-57	retrograde	368 Jul 12 j 05:04	12°♃37'47	
minimum elong	360 Mar 23 j 05:17	3°♃14'51	16°48'59	opposition	368 Oct 03 j 23:44	11°♃37'27	-17°-8'00
max. Earth dist.	360 Mar 25 j 01:44	3°♃17'27	49.33811 AU	min. Earth dist.	368 Oct 02 j 15:36	11°♃38'58	47.96844 AU
retrograde	360 Jul 04 j 05:43	4°♃46'56		direct	368 Dec 24 j 03:35	10°♃38'20	
min. Earth dist.	360 Sep 24 j 12:01	3°♃47'56	47.46888 AU				
opposition	360 Sep 26 j 04:39	3°♃45'59	-17°-30'-2	conjunction	369 Apr 01 j 11:28	12°♃05'14	-16°-25'-35
direct	360 Dec 16 j 09:47	2°♃46'24		minimum elong	369 Apr 01 j 11:36	12°♃05'14	16°25'36
				max. Earth dist.	369 Apr 02 j 20:35	12°♃07'08	49.90622 AU
conjunction	361 Mar 24 j 11:26	4°♃14'28	-16°-47'-22	retrograde	369 Jul 13 j 09:42	13°♃35'46	
minimum elong	361 Mar 24 j 11:32	4°♃14'28	16°47'23	min. Earth dist.	369 Oct 03 j 22:03	12°♃36'57	48.01410 AU
max. Earth dist.	361 Mar 26 j 05:51	4°♃16'57	49.41974 AU	opposition	369 Oct 05 j 04:49	12°♃35'30	-17°-4'-1
retrograde	361 Jul 05 j 14:58	5°♃46'23		direct	369 Dec 25 j 09:46	11°♃36'26	
min. Earth dist.	361 Sep 25 j 18:09	4°♃47'29	47.54792 AU				
opposition	361 Sep 27 j 10:19	4°♃45'34	-17°-28'-11	conjunction	370 Apr 02 j 17:13	13°♃03'13	-16°-21'-39
direct	361 Dec 17 j 12:34	3°♃46'04		minimum elong	370 Apr 02 j 17:21	13°♃03'13	16°21'40
				max. Earth dist.	370 Apr 04 j 02:27	13°♃05'07	49.95110 AU
conjunction	362 Mar 25 j 17:45	5°♃13'59	-16°-45'-32	retrograde	370 Jul 14 j 13:00	14°♃33'38	
minimum elong	362 Mar 25 j 17:51	5°♃14'00	16°45'34	min. Earth dist.	370 Oct 05 j 03:47	13°♃34'51	48.05675 AU
max. Earth dist.	362 Mar 27 j 11:16	5°♃16'24	49.49657 AU	opposition	370 Oct 06 j 09:44	13°♃33'26	-16°-59'-45
retrograde	362 Jul 06 j 22:06	6°♃45'44		direct	370 Dec 26 j 17:40	12°♃34'26	
min. Earth dist.	362 Sep 27 j 02:16	5°♃46'49	47.62192 AU				
opposition	362 Sep 28 j 16:03	5°♃45'01	-17°-26'-5	conjunction	371 Apr 03 j 22:47	14°♃01'06	-16°-17'-27
direct	362 Dec 18 j 16:42	4°♃45'36		minimum elong	371 Apr 03 j 22:55	14°♃01'07	16°17'29
				max. Earth dist.	371 Apr 05 j 06:09	14°♃02'54	49.99302 AU
conjunction	363 Mar 27 j 00:02	6°♃13'22	-16°-43'-27	retrograde	371 Jul 15 j 21:30	15°♃31'24	
minimum elong	363 Mar 27 j 00:09	6°♃13'23	16°43'28	min. Earth dist.	371 Oct 06 j 09:07	14°♃32'41	48.09622 AU
max. Earth dist.	363 Mar 28 j 16:23	6°♃15'43	49.56838 AU	opposition	371 Oct 07 j 14:38	14°♃31'17	-16°-55'-13
retrograde	363 Jul 08 j 01:04	7°♃44'56		direct	371 Dec 27 j 20:41	13°♃32'21	
min. Earth dist.	363 Sep 28 j 08:13	6°♃46'05	47.69060 AU				
opposition	363 Sep 29 j 21:34	6°♃44'18	-17°-23'-44	conjunction	372 Apr 04 j 04:30	14°♃58'56	-16°-13'00
direct	363 Dec 20 j 00:42	5°♃44'57		minimum elong	372 Apr 04 j 04:39	14°♃58'57	16°13'00
				max. Earth dist.	372 Apr 05 j 11:14	15°♃00'42	50.03134 AU
conjunction	364 Mar 27 j 06:13	7°♃12'34	-16°-41'-7	retrograde	372 Jul 16 j 05:36	16°♃29'08	
minimum elong	364 Mar 27 j 06:18	7°♃12'34	16°41'08	opposition	372 Oct 07 j 19:27	15°♃29'05	-16°-50'-25
max. Earth dist.	364 Mar 28 j 20:15	7°♃14'47	49.63487 AU	min. Earth dist.	372 Oct 06 j 16:05	15°♃30'23	48.13181 AU
retrograde	364 Jul 08 j 05:41	8°♃43'57		direct	372 Dec 27 j 23:09	14°♃30'13	
min. Earth dist.	364 Sep 28 j 15:25	7°♃45'04	47.75423 AU				
opposition	364 Sep 30 j 02:59	7°♃43'23	-17°-21'-7	conjunction	373 Apr 05 j 10:13	15°♃56'44	-16°-8'-17
direct	364 Dec 20 j 08:00	6°♃44'05		minimum elong	373 Apr 05 j 10:21	15°♃56'44	16°08'19
				max. Earth dist.	373 Apr 06 j 15:53	15°♃58'25	50.06565 AU
conjunction	365 Mar 28 j 12:21	8°♃11'33	-16°-38'-33	retrograde	373 Jul 17 j 09:26	17°♃26'48	
minimum elong	365 Mar 28 j 12:29	8°♃11'33	16°38'34	min. Earth dist.	373 Oct 07 j 21:12	16°♃28'07	48.16291 AU
max. Earth dist.	365 Mar 30 j 02:17	8°♃13'45	49.69658 AU	opposition	373 Oct 09 j 00:13	16°♃26'51	-16°-45'-22
retrograde	365 Jul 09 j 10:44	9°♃42'45		direct	373 Dec 29 j 04:26	15°♃28'01	
min. Earth dist.	365 Sep 29 j 22:02	8°♃43'52	47.81319 AU				
opposition	365 Oct 01 j 08:20	8°♃42'14	-17°-18'-15	conjunction	374 Apr 06 j 15:43	16°♃54'27	-16°-3'-21
direct	365 Dec 21 j 15:14	7°♃42'59		minimum elong	374 Apr 06 j 15:53	16°♃54'28	16°03'21
				max. Earth dist.	374 Apr 07 j 19:10	16°♃56'02	50.09507 AU
conjunction	366 Mar 29 j 18:06	9°♃10'17	-16°-35'-43	retrograde	374 Jul 18 j 13:21	18°♃24'26	
minimum elong	366 Mar 29 j 18:12	9°♃10'17	16°35'43	min. Earth dist.	374 Oct 09 j 04:06	17°♃25'42	48.18893 AU
max. Earth dist.	366 Mar 31 j 06:06	9°♃12'22	49.75410 AU	opposition	374 Oct 10 j 05:10	17°♃24'31	-16°-40'-6
retrograde	366 Jul 10 j 18:46	10°♃41'19		direct	374 Dec 30 j 10:38	16°♃25'44	
min. Earth dist.	366 Oct 01 j 03:39	9°♃42'28	47.86831 AU				
opposition	366 Oct 02 j 13:36	9°♃40'51	-17°-15'-7	conjunction	375 Apr 07 j 21:34	17°♃52'06	-15°-58'-11
direct	366 Dec 22 j 18:45	8°♃41'39		minimum elong	375 Apr 07 j 21:42	17°♃52'06	15°58'12
				max. Earth dist.	375 Apr 09 j 00:32	17°♃53'38	50.11920 AU
conjunction	367 Mar 31 j 00:01	10°♃08'48	-16°-32'-36	retrograde	375 Jul 19 j 16:39	19°♃21'58	
minimum elong	367 Mar 31 j 00:09	10°♃08'48	16°32'38	min. Earth dist.	375 Oct 10 j 10:16	18°♃23'12	48.20936 AU
max. Earth dist.	367 Apr 01 j 11:27	10°♃10'50	49.80788 AU	opposition	375 Oct 11 j 09:50	18°♃22'06	-16°-34'-36
retrograde	367 Jul 12 j 01:14	11°♃39'39		direct	375 Dec 31 j 18:16	17°♃23'20	
min. Earth dist.	367 Oct 02 j 10:39	10°♃40'46	47.91993 AU				
opposition	367 Oct 03 j 18:44	10°♃39'15	-17°-11'-42	conjunction	376 Apr 08 j 03:13	18°♃49'36	-15°-52'-49
direct	367 Dec 23 j 22:28	9°♃40'05		minimum elong	376 Apr 08 j 03:23	18°♃49'37	15°52'49
				max. Earth dist.	376 Apr 09 j 03:43	18°♃51'00	50.13791 AU
conjunction	368 Mar 31 j 05:54	11°♃07'06	-16°-29'-14	retrograde	376 Jul 19 j 23:35	20°♃19'21	

opposition	376 Oct 11 j 14:34	19°♆19'31	-16°-28'-53	conjunction	385 Apr 17 j 03:55	27°♆22'12	-14°-53'-36
min. Earth dist.	376 Oct 10 j 15:49	19°♆20'35	48.22452 AU	minimum elong	385 Apr 17 j 04:07	27°♆22'13	14°53'37
direct	376 Dec 31 j 22:12	18°♆20'46		max. Earth dist.	385 Apr 17 j 19:10	27°♆23'04	50.12618 AU
				retrograde	385 Jul 28 j 19:01	28°♆51'23	
conjunction	377 Apr 09 j 08:42	19°♆46'56	-15°-47'-13	opposition	385 Oct 20 j 06:32	27°♆51'52	-15°-26'-11
minimum elong	377 Apr 09 j 08:50	19°♆46'57	15°47'14	min. Earth dist.	385 Oct 19 j 17:55	27°♆52'28	48.18617 AU
max. Earth dist.	377 Apr 10 j 08:12	19°♆48'17	50.15139 AU	direct	386 Jan 09 j 17:18	26°♆53'15	
retrograde	377 Jul 21 j 05:46	21°♆16'35					
opposition	377 Oct 12 j 19:14	20°♆16'46	-16°-22'-55	conjunction	386 Apr 18 j 09:22	28°♆19'14	-14°-45'-49
min. Earth dist.	377 Oct 11 j 22:37	20°♆17'44	48.23470 AU	minimum elong	386 Apr 18 j 09:32	28°♆19'14	14°45'51
direct	378 Jan 02 j 02:02	19°♆18'01		max. Earth dist.	386 Apr 18 j 22:09	28°♆19'57	50.10619 AU
				retrograde	386 Jul 30 j 01:54	29°♆48'24	
conjunction	378 Apr 10 j 14:13	20°♆44'07	-15°-41'-22	opposition	386 Oct 21 j 10:52	28°♆48'55	-15°-18'00
minimum elong	378 Apr 10 j 14:24	20°♆44'07	15°41'24	min. Earth dist.	386 Oct 20 j 23:16	28°♆49'28	48.16241 AU
max. Earth dist.	378 Apr 11 j 12:47	20°♆45'23	50.16043 AU	direct	387 Jan 10 j 20:55	27°♆50'18	
retrograde	378 Jul 22 j 10:20	22°♆13'37					
opposition	378 Oct 13 j 23:40	21°♆13'50	-16°-16'-44	conjunction	387 Apr 19 j 14:57	29°♆16'17	-14°-37'-49
min. Earth dist.	378 Oct 13 j 03:16	21°♆14'47	48.24063 AU	minimum elong	387 Apr 19 j 15:09	29°♆16'18	14°37'50
direct	379 Jan 03 j 06:16	20°♆15'04		max. Earth dist.	387 Apr 20 j 02:32	29°♆16'57	50.08090 AU
					387 May 23 j 05:25	0°♆	
conjunction	379 Apr 11 j 19:36	21°♆41'07	-15°-35'-18	retrograde	387 Jul 31 j 08:47	0°♆45'27	
minimum elong	379 Apr 11 j 19:45	21°♆41'08	15°35'19		387 Oct 10 j 02:05	30°R♆	
max. Earth dist.	379 Apr 12 j 16:14	21°♆42'17	50.16540 AU	opposition	387 Oct 22 j 15:21	29°♆45'58	-15°-9'-35
retrograde	379 Jul 23 j 14:48	23°♆10'32		min. Earth dist.	387 Oct 22 j 06:01	29°♆46'24	48.13315 AU
min. Earth dist.	379 Oct 14 j 09:33	22°♆11'39	48.24283 AU	direct	388 Jan 12 j 00:19	28°♆47'20	
opposition	379 Oct 15 j 04:13	22°♆10'46	-16°-10'-17		388 Apr 09 j 23:56	0°♆	
direct	380 Jan 04 j 11:32	21°♆12'01					
				conjunction	388 Apr 19 j 20:32	0°♆13'20	-14°-29'-36
conjunction	380 Apr 12 j 01:08	22°♆38'00	-15°-28'-59	minimum elong	388 Apr 19 j 20:42	0°♆13'21	14°29'37
minimum elong	380 Apr 12 j 01:19	22°♆38'01	15°29'00	max. Earth dist.	388 Apr 20 j 06:47	0°♆13'55	50.05029 AU
max. Earth dist.	380 Apr 12 j 21:42	22°♆39'10	50.16685 AU	retrograde	388 Jul 31 j 14:44	1°♆42'26	
retrograde	380 Jul 23 j 17:10	24°♆07'21		opposition	388 Oct 22 j 19:33	0°♆42'58	-15°00'-57
opposition	380 Oct 15 j 08:32	23°♆07'36	-16°-3'-35	min. Earth dist.	388 Oct 22 j 10:44	0°♆43'22	48.09858 AU
min. Earth dist.	380 Oct 14 j 14:39	23°♆08'27	48.24156 AU		388 Dec 04 j 10:11	30°R♆	
direct	381 Jan 04 j 18:55	22°♆08'51		direct	389 Jan 12 j 03:24	29°♆44'18	
					389 Feb 19 j 15:25	0°♆	
conjunction	381 Apr 13 j 06:27	23°♆34'48	-15°-22'-24	conjunction	389 Apr 21 j 01:56	1°♆10'18	-14°-21'-11
minimum elong	381 Apr 13 j 06:37	23°♆34'49	15°22'25	minimum elong	389 Apr 21 j 02:08	1°♆10'19	14°21'12
max. Earth dist.	381 Apr 14 j 01:07	23°♆35'52	50.16519 AU	max. Earth dist.	389 Apr 21 j 09:56	1°♆10'45	50.01453 AU
retrograde	381 Jul 25 j 00:23	25°♆04'06		retrograde	389 Aug 01 j 19:21	2°♆39'22	
opposition	381 Oct 16 j 12:58	24°♆04'23	-15°-56'-36	opposition	389 Oct 23 j 23:58	1°♆39'52	-14°-52'-6
min. Earth dist.	381 Oct 15 j 19:29	24°♆05'12	48.23733 AU	min. Earth dist.	389 Oct 23 j 17:06	1°♆40'11	48.05925 AU
direct	382 Jan 05 j 22:10	23°♆05'40		direct	390 Jan 13 j 07:49	0°♆41'10	
conjunction	382 Apr 14 j 11:41	24°♆31'35	-15°-15'-35	conjunction	390 Apr 22 j 07:20	2°♆07'10	-14°-12'-32
minimum elong	382 Apr 14 j 11:52	24°♆31'36	15°15'36	minimum elong	390 Apr 22 j 07:30	2°♆07'11	14°12'33
max. Earth dist.	382 Apr 15 j 05:55	24°♆32'37	50.16047 AU	max. Earth dist.	390 Apr 22 j 15:05	2°♆07'36	49.97430 AU
retrograde	382 Jul 26 j 08:21	26°♆00'50		retrograde	390 Aug 02 j 20:49	3°♆36'13	
opposition	382 Oct 17 j 17:30	25°♆01'10	-15°-49'-23	opposition	390 Oct 25 j 04:14	2°♆36'40	-14°-43'-1
min. Earth dist.	382 Oct 17 j 01:49	25°♆01'54	48.22997 AU	min. Earth dist.	390 Oct 24 j 22:16	2°♆36'57	48.01557 AU
direct	383 Jan 07 j 00:10	24°♆02'28		direct	391 Jan 14 j 15:35	1°♆37'55	
conjunction	383 Apr 15 j 17:08	25°♆28'24	-15°-8'-30	conjunction	391 Apr 23 j 12:44	3°♆03'56	-14°-3'-39
minimum elong	383 Apr 15 j 17:19	25°♆28'24	15°08'30	minimum elong	391 Apr 23 j 12:56	3°♆03'56	14°03'40
max. Earth dist.	383 Apr 16 j 10:29	25°♆29'22	50.15276 AU	max. Earth dist.	391 Apr 23 j 18:28	3°♆04'15	49.93012 AU
retrograde	383 Jul 27 j 12:53	26°♆57'36		retrograde	391 Aug 04 j 01:49	4°♆32'57	
opposition	383 Oct 18 j 21:43	25°♆57'59	-15°-41'-53	opposition	391 Oct 26 j 08:23	3°♆33'23	-14°-33'-41
min. Earth dist.	383 Oct 18 j 06:04	25°♆58'43	48.21936 AU	min. Earth dist.	391 Oct 26 j 03:10	3°♆33'38	47.96831 AU
direct	384 Jan 08 j 03:52	24°♆59'19		direct	392 Jan 15 j 20:50	2°♆34'35	
conjunction	384 Apr 15 j 22:31	26°♆25'15	-15°-1'-10	conjunction	392 Apr 23 j 18:12	4°♆00'36	-13°-54'-32
minimum elong	384 Apr 15 j 22:41	26°♆25'16	15°01'12	minimum elong	392 Apr 23 j 18:23	4°♆00'37	13°54'32
max. Earth dist.	384 Apr 16 j 13:54	26°♆26'08	50.14149 AU	max. Earth dist.	392 Apr 23 j 23:14	4°♆00'53	49.88244 AU
retrograde	384 Jul 27 j 16:36	27°♆54'27		retrograde	392 Aug 04 j 08:53	5°♆29'37	
opposition	384 Oct 19 j 02:10	26°♆54'53	-15°-34'-9	opposition	392 Oct 26 j 12:42	4°♆30'02	-14°-24'-6
min. Earth dist.	384 Oct 18 j 12:26	26°♆55'32	48.20502 AU	min. Earth dist.	392 Oct 26 j 09:13	4°♆30'12	47.91775 AU
direct	385 Jan 08 j 09:36	25°♆56'15					

direct	393 Jan 16 j 00:03	3°♃31'11		minimum elong	401 May 02 j 20:50	12°♃33'51	12°21'33
				max. Earth dist.	401 May 02 j 13:45	12°♃33'26	49.29891 AU
conjunction	393 Apr 24 j 23:28	4°♃57'14 -13°-45'-9		retrograde	401 Aug 13 j 06:34	14°♃03'22	
minimum elong	393 Apr 24 j 23:40	4°♃57'15 13°45'11		opposition	401 Nov 04 j 04:03	13°♃03'40	-12°-46'-38
max. Earth dist.	393 Apr 25 j 03:47	4°♃57'29 49.83184 AU		min. Earth dist.	401 Nov 04 j 10:27	13°♃03'22	47.30284 AU
retrograde	393 Aug 05 j 14:43	6°♃26'15		direct	402 Jan 24 j 18:03	12°♃04'29	
opposition	393 Oct 27 j 16:55	5°♃26'38 -14°-14'-15					
min. Earth dist.	393 Oct 27 j 13:14	5°♃26'49 47.86432 AU		conjunction	402 May 04 j 02:34	13°♃31'28	-12°-10'-4
direct	394 Jan 17 j 02:41	4°♃27'45		minimum elong	402 May 04 j 02:47	13°♃31'29	12°10'05
				max. Earth dist.	402 May 03 j 18:41	13°♃31'01	49.21133 AU
conjunction	394 Apr 26 j 04:50	5°♃53'52 -13°-35'-32			402 Aug 04 j 12:33	15°♃	
minimum elong	394 Apr 26 j 05:01	5°♃53'53 13°35'32		retrograde	402 Aug 14 j 13:38	15°♃01'05	
max. Earth dist.	394 Apr 26 j 07:23	5°♃54'01 49.77841 AU			402 Aug 24 j 14:53	15°♃	
retrograde	394 Aug 06 j 19:16	7°♃22'54		opposition	402 Nov 05 j 08:34	14°♃01'20	-12°-34'-38
opposition	394 Oct 28 j 21:13	6°♃23'17 -14°-4'-9		min. Earth dist.	402 Nov 05 j 16:55	14°♃00'56	47.21168 AU
min. Earth dist.	394 Oct 28 j 19:12	6°♃23'22 47.80819 AU		direct	403 Jan 25 j 21:47	13°♃02'04	
direct	395 Jan 18 j 07:23	5°♃24'22					
				conjunction	403 May 05 j 08:31	14°♃29'10	-11°-58'-22
conjunction	395 Apr 27 j 10:23	6°♃50'33 -13°-25'-39		minimum elong	403 May 05 j 08:42	14°♃29'11	11°58'23
minimum elong	395 Apr 27 j 10:35	6°♃50'34 13°25'41		max. Earth dist.	403 May 04 j 23:35	14°♃28'40	49.11980 AU
max. Earth dist.	395 Apr 27 j 13:00	6°♃50'42 49.72223 AU			403 May 28 j 08:23	15°♃	
retrograde	395 Aug 07 j 21:17	8°♃19'38		retrograde	403 Aug 15 j 21:26	15°♃58'52	
opposition	395 Oct 30 j 01:30	7°♃20'01 -13°-53'-47			403 Nov 05 j 17:28	15°♃	
min. Earth dist.	395 Oct 30 j 00:12	7°♃20'04 47.74898 AU		opposition	403 Nov 06 j 13:03	14°♃59'04	-12°-22'-23
direct	396 Jan 19 j 14:44	6°♃21'04		min. Earth dist.	403 Nov 06 j 21:29	14°♃58'40	47.11676 AU
				direct	404 Jan 26 j 23:41	13°♃59'43	
conjunction	396 Apr 27 j 15:52	7°♃47'22 -13°-15'-32			404 Apr 15 j 13:45	15°♃	
minimum elong	396 Apr 27 j 16:04	7°♃47'22 13°15'32					
max. Earth dist.	396 Apr 27 j 16:24	7°♃47'23 49.66289 AU		conjunction	404 May 05 j 14:23	15°♃26'58	-11°-46'-25
retrograde	396 Aug 08 j 03:27	9°♃16'30		minimum elong	404 May 05 j 14:35	15°♃26'58	11°46'26
opposition	396 Oct 30 j 05:42	8°♃16'53 -13°-43'-10		max. Earth dist.	404 May 05 j 03:33	15°♃26'21	49.02460 AU
min. Earth dist.	396 Oct 30 j 05:11	8°♃16'55 47.68644 AU		retrograde	404 Aug 16 j 02:37	16°♃56'45	
direct	397 Jan 19 j 18:37	7°♃17'56		opposition	404 Nov 06 j 17:39	15°♃56'54	-12°-9'-52
				min. Earth dist.	404 Nov 07 j 03:56	15°♃56'24	47.01854 AU
conjunction	397 Apr 28 j 21:30	8°♃44'20 -13°-5'-11			405 Jan 12 j 00:41	15°♃	
minimum elong	397 Apr 28 j 21:42	8°♃44'20 13°05'12		direct	405 Jan 27 j 04:36	14°♃57'28	
max. Earth dist.	397 Apr 28 j 21:10	8°♃44'19 49.59976 AU			405 Feb 11 j 12:19	15°♃	
retrograde	397 Aug 09 j 10:04	10°♃13'33					
opposition	397 Oct 31 j 10:08	9°♃13'57 -13°-32'-19		conjunction	405 May 06 j 20:25	16°♃24'51	-11°-34'-14
min. Earth dist.	397 Oct 31 j 11:42	9°♃13'53 47.61975 AU		minimum elong	405 May 06 j 20:36	16°♃24'52	11°34'14
direct	398 Jan 20 j 22:15	8°♃14'59		max. Earth dist.	405 May 06 j 09:35	16°♃24'14	48.92638 AU
				retrograde	405 Aug 17 j 04:23	17°♃54'45	
conjunction	398 Apr 30 j 03:10	9°♃41'29 -12°-54'-36		opposition	405 Nov 07 j 22:16	16°♃54'50	-11°-57'-6
minimum elong	398 Apr 30 j 03:23	9°♃41'30 12°54'36		min. Earth dist.	405 Nov 08 j 09:00	16°♃54'20	46.91735 AU
max. Earth dist.	398 Apr 30 j 01:42	9°♃41'24 49.53230 AU		direct	406 Jan 28 j 12:46	15°♃55'20	
retrograde	398 Aug 10 j 16:47	11°♃10'47					
opposition	398 Nov 01 j 14:32	10°♃11'11 -13°-21'-14		conjunction	406 May 08 j 02:17	17°♃22'54	-11°-21'-47
min. Earth dist.	398 Nov 01 j 16:33	10°♃11'06 47.54829 AU		minimum elong	406 May 08 j 02:29	17°♃22'54	11°21'49
direct	399 Jan 22 j 01:19	9°♃12'11		max. Earth dist.	406 May 07 j 13:30	17°♃22'10	48.82539 AU
				retrograde	406 Aug 18 j 09:50	18°♃52'55	
conjunction	399 May 01 j 09:00	10°♃38'49 -12°-43'-47		opposition	406 Nov 09 j 03:00	17°♃52'57	-11°-44'-4
minimum elong	399 May 01 j 09:11	10°♃38'50 12°43'48		min. Earth dist.	406 Nov 09 j 14:25	17°♃52'25	46.81346 AU
max. Earth dist.	399 May 01 j 04:59	10°♃38'36 49.45968 AU		direct	407 Jan 29 j 18:15	16°♃53'22	
retrograde	399 Aug 11 j 22:41	12°♃08'11					
opposition	399 Nov 02 j 19:00	11°♃08'35 -13°-9'-55		conjunction	407 May 09 j 08:30	18°♃21'07	-11°-9'-6
min. Earth dist.	399 Nov 02 j 23:18	11°♃08'22 47.47162 AU		minimum elong	407 May 09 j 08:42	18°♃21'07	11°09'06
direct	400 Jan 23 j 05:20	10°♃09'32		max. Earth dist.	407 May 08 j 19:05	18°♃20'21	48.72149 AU
				retrograde	407 Aug 19 j 16:09	19°♃51'17	
conjunction	400 May 01 j 15:00	11°♃36'17 -12°-32'-46		opposition	407 Nov 10 j 07:45	18°♃51'17	-11°-30'-47
minimum elong	400 May 01 j 15:12	11°♃36'18 12°32'47		min. Earth dist.	407 Nov 10 j 20:53	18°♃50'40	46.70654 AU
max. Earth dist.	400 May 01 j 10:25	11°♃36'01 49.38183 AU		direct	408 Jan 30 j 23:06	17°♃51'39	
retrograde	400 Aug 12 j 01:29	13°♃05'44					
opposition	400 Nov 02 j 23:32	12°♃06'05 -12°-58'-23		conjunction	408 May 09 j 14:47	19°♃19'34	-10°-56'-8
min. Earth dist.	400 Nov 03 j 04:50	12°♃05'50 47.38961 AU		minimum elong	408 May 09 j 14:58	19°♃19'35	10°56'10
direct	401 Jan 23 j 12:37	11°♃06'58		max. Earth dist.	408 May 09 j 00:28	19°♃18'45	48.61460 AU
				retrograde	408 Aug 20 j 00:09	20°♃49'54	
conjunction	401 May 02 j 20:39	12°♃33'50 -12°-21'-32		opposition	408 Nov 10 j 12:35	19°♃49'52	-11°-17'-13

min. Earth dist.	408 Nov 11 j 01:55	19°♃49'14	46.59632 AU	conjunction	417 May 19 j 03:45	28°♃15'40	-8°-48'-53
direct	409 Jan 31 j 01:53	18°♃50'09		minimum elong	417 May 19 j 03:56	28°♃15'41	8°48'55
				retrograde	417 Aug 29 j 07:17	29°♃47'39	
conjunction	409 May 10 j 20:56	20°♃18'18	-10°-42'-57	opposition	417 Nov 19 j 12:12	28°♃46'48	-9°-4'-3
minimum elong	409 May 10 j 21:08	20°♃18'18	10°42'57	min. Earth dist.	417 Nov 20 j 13:37	28°♃45'34	45.39812 AU
max. Earth dist.	409 May 10 j 04:32	20°♃17'21	48.50393 AU	direct	418 Feb 09 j 05:42	27°♃45'58	
retrograde	409 Aug 21 j 08:35	21°♃48'47		max. Earth dist.	418 May 19 j 06:55	29°♃14'37	47.30031 AU
opposition	409 Nov 11 j 17:36	20°♃48'43	-11°-3'-25				
min. Earth dist.	409 Nov 12 j 09:01	20°♃47'59	46.48209 AU	conjunction	418 May 20 j 11:00	29°♃16'15	-8°-33'-31
direct	410 Feb 01 j 04:45	19°♃48'55		minimum elong	418 May 20 j 11:10	29°♃16'16	8°33'31
max. Earth dist.	410 May 11 j 10:43	21°♃16'20	48.38891 AU		418 Jun 21 j 19:20	0°♂	
				retrograde	418 Aug 30 j 15:45	0°♂48'30	
conjunction	410 May 12 j 03:33	21°♃17'18	-10°-29'-31		418 Nov 10 j 01:28	30°♂	
minimum elong	410 May 12 j 03:44	21°♃17'18	10°29'32	opposition	418 Nov 20 j 17:47	29°♃47'33	-8°-47'-56
retrograde	410 Aug 22 j 12:52	22°♃47'57		min. Earth dist.	418 Nov 21 j 19:12	29°♃46'18	45.24675 AU
opposition	410 Nov 12 j 22:34	21°♃47'49	-10°-49'-22	direct	419 Feb 10 j 09:44	28°♃46'34	
min. Earth dist.	410 Nov 13 j 14:59	21°♃47'02	46.36305 AU		419 May 09 j 11:54	0°♂	
direct	411 Feb 02 j 11:57	20°♃47'56		conjunction	419 May 21 j 18:24	0°♂17'12	-8°-17'-52
				minimum elong	419 May 21 j 18:34	0°♂17'12	8°17'54
conjunction	411 May 13 j 10:13	22°♃16'32	-10°-15'-51	max. Earth dist.	419 May 20 j 12:27	0°♂15'26	47.14902 AU
minimum elong	411 May 13 j 10:25	22°♃16'32	10°15'51	retrograde	419 Sep 01 j 01:43	1°♂49'42	
max. Earth dist.	411 May 12 j 14:48	22°♃15'24	48.26887 AU	opposition	419 Nov 21 j 23:45	0°♂48'40	-8°-31'-33
retrograde	411 Aug 23 j 17:54	23°♃47'22		min. Earth dist.	419 Nov 23 j 02:58	0°♂47'20	45.09279 AU
opposition	411 Nov 14 j 03:44	22°♃47'10	-10°-35'-4		420 Jan 08 j 20:00	30°♂	
min. Earth dist.	411 Nov 14 j 21:34	22°♃46'18	46.23885 AU	direct	420 Feb 11 j 13:11	29°♃47'34	
direct	412 Feb 03 j 18:14	21°♃47'10			420 Mar 16 j 06:04	0°♂	
				max. Earth dist.	420 May 20 j 20:03	1°♂16'47	46.99507 AU
conjunction	412 May 13 j 17:00	23°♃15'58	-10°-1'-57	conjunction	420 May 22 j 01:58	1°♂18'33	-8°-1'-57
minimum elong	412 May 13 j 17:11	23°♃15'59	10°01'58	minimum elong	420 May 22 j 02:08	1°♂18'33	8°01'57
max. Earth dist.	412 May 12 j 20:16	23°♃14'46	48.14339 AU	retrograde	420 Sep 01 j 08:12	2°♂51'21	
retrograde	412 Aug 23 j 23:30	24°♃46'59		opposition	420 Nov 22 j 05:41	1°♂50'13	-8°-14'-52
opposition	412 Nov 14 j 09:00	23°♃46'41	-10°-20'-32	min. Earth dist.	420 Nov 23 j 09:17	1°♂48'52	44.93588 AU
min. Earth dist.	412 Nov 15 j 04:52	23°♃45'43	46.10923 AU	direct	421 Feb 11 j 20:30	0°♂49'00	
direct	413 Feb 04 j 00:38	22°♃46'34		max. Earth dist.	421 May 22 j 01:29	2°♂18'27	46.83797 AU
				conjunction	421 May 23 j 09:35	2°♂20'21	-7°-45'-46
conjunction	413 May 14 j 23:50	24°♃15'35	-9°-47'-50	minimum elong	421 May 23 j 09:44	2°♂20'21	7°45'48
minimum elong	413 May 15 j 00:02	24°♃15'35	9°47'51	retrograde	421 Sep 02 j 15:11	3°♂53'27	
max. Earth dist.	413 May 14 j 01:46	24°♃14'18	48.01288 AU	opposition	421 Nov 23 j 11:46	2°♂52'15	-7°-57'-55
retrograde	413 Aug 25 j 07:54	25°♃46'46		min. Earth dist.	421 Nov 24 j 16:45	2°♂50'49	44.77564 AU
opposition	413 Nov 15 j 14:13	24°♃46'22	-10°-5'-46	direct	422 Feb 13 j 02:50	1°♂50'55	
min. Earth dist.	413 Nov 16 j 10:27	24°♃45'23	45.97476 AU	max. Earth dist.	422 May 23 j 08:32	3°♂20'40	46.67694 AU
direct	414 Feb 05 j 04:03	23°♃46'06		conjunction	422 May 24 j 17:32	3°♂22'37	-7°-29'-20
max. Earth dist.	414 May 15 j 06:21	25°♃13'56	47.87759 AU	minimum elong	422 May 24 j 17:42	3°♂22'38	7°29'20
				retrograde	422 Sep 03 j 20:38	4°♂56'03	
conjunction	414 May 16 j 06:37	25°♃15'20	-9°-33'-28	opposition	422 Nov 24 j 18:10	3°♂54'45	-7°-40'-42
minimum elong	414 May 16 j 06:48	25°♃15'21	9°33'29	min. Earth dist.	422 Nov 26 j 00:53	3°♂53'14	44.61107 AU
retrograde	414 Aug 26 j 15:21	26°♃46'42		direct	423 Feb 14 j 11:15	2°♂53'16	
opposition	414 Nov 16 j 19:39	25°♃46'11	-9°-50'-44	max. Earth dist.	423 May 24 j 15:10	4°♂23'17	46.51146 AU
min. Earth dist.	414 Nov 17 j 18:06	25°♃45'06	45.83586 AU	conjunction	423 May 26 j 01:43	4°♂25'21	-7°-12'-39
direct	415 Feb 06 j 08:29	24°♃45'46		minimum elong	423 May 26 j 01:52	4°♂25'21	7°12'39
				retrograde	423 Sep 05 j 06:19	5°♂59'06	
conjunction	415 May 17 j 13:44	26°♃15'15	-9°-18'-52	opposition	423 Nov 26 j 00:30	4°♂57'41	-7°-23'-12
minimum elong	415 May 17 j 13:55	26°♃15'16	9°18'53	min. Earth dist.	423 Nov 27 j 07:48	4°♂56'08	44.44184 AU
max. Earth dist.	415 May 16 j 13:09	26°♃13'50	47.73814 AU	direct	424 Feb 15 j 15:43	3°♂56'02	
retrograde	415 Aug 27 j 19:31	27°♃46'48		max. Earth dist.	424 May 24 j 21:14	5°♂26'18	46.34105 AU
opposition	415 Nov 18 j 00:57	26°♃46'10	-9°-35'-27	conjunction	424 May 26 j 10:01	5°♂28'30	-6°-55'-42
min. Earth dist.	415 Nov 18 j 23:59	26°♃45'03	45.69303 AU	minimum elong	424 May 26 j 10:11	5°♂28'30	6°55'43
direct	416 Feb 07 j 16:41	25°♃45'37		retrograde	424 Sep 05 j 16:25	7°♂02'34	
				opposition	424 Nov 26 j 07:15	6°♂01'01	-7°-5'-27
conjunction	416 May 17 j 20:43	27°♃15'21	-9°-4'00	min. Earth dist.	424 Nov 27 j 16:52	5°♂59'21	44.26781 AU
minimum elong	416 May 17 j 20:54	27°♃15'22	9°04'01	direct	425 Feb 15 j 19:32	4°♂59'11	
max. Earth dist.	416 May 16 j 17:59	27°♃13'48	47.59513 AU				
retrograde	416 Aug 28 j 01:23	28°♃47'06		conjunction			
opposition	416 Nov 18 j 06:28	27°♃46'21	-9°-19'-53	minimum elong			
min. Earth dist.	416 Nov 19 j 06:27	27°♃45'11	45.54704 AU	retrograde			
direct	417 Feb 07 j 23:15	26°♃45'39		opposition			
max. Earth dist.	417 May 18 j 00:32	28°♃14'05	47.44899 AU	min. Earth dist.			
				direct			

max. Earth dist.	425 May 26 j 05:05	6°II29'47	46.16598 AU	minimum elong	433 Jun 05 j 19:55	15°II13'44	4°11'20
				retrograde	433 Sep 15 j 21:10	16°II51'12	
conjunction	425 May 27 j 18:22	6°II32'01	-6°-38'-31	opposition	433 Dec 06 j 01:54	15°II48'07	-4°-12'-53
minimum elong	425 May 27 j 18:31	6°II32'01	6°38'32	min. Earth dist.	433 Dec 07 j 19:37	15°II45'59	42.55292 AU
retrograde	425 Sep 06 j 23:59	8°II06'24		direct	434 Feb 25 j 18:39	14°II44'25	
opposition	425 Nov 27 j 14:00	7°II04'41	-6°-47'-26	max. Earth dist.	434 Jun 05 j 05:43	16°II18'20	44.44763 AU
min. Earth dist.	425 Nov 29 j 00:09	7°II02'59	44.08920 AU				
direct	426 Feb 17 j 04:18	6°II02'39		conjunction	434 Jun 07 j 06:08	16°II21'20	-3°-51'-42
max. Earth dist.	426 May 27 j 11:10	7°II33'29	45.98657 AU	minimum elong	434 Jun 07 j 06:14	16°II21'21	3°51'44
				retrograde	434 Sep 17 j 08:23	17°II59'19	
conjunction	426 May 29 j 02:55	7°II35'52	-6°-21'-4	opposition	434 Dec 07 j 10:23	16°II56'05	-3°-52'-15
minimum elong	426 May 29 j 03:04	7°II35'53	6°21'05	min. Earth dist.	434 Dec 09 j 06:24	16°II53'49	42.34879 AU
retrograde	426 Sep 08 j 07:40	9°II10'34		direct	435 Feb 27 j 00:39	15°II52'10	
opposition	426 Nov 28 j 20:47	8°II08'41	-6°-29'-8	max. Earth dist.	435 Jun 06 j 15:42	17°II26'35	44.24230 AU
min. Earth dist.	426 Nov 30 j 08:25	8°II06'54	43.90664 AU				
direct	427 Feb 18 j 12:33	7°II06'26		conjunction	435 Jun 08 j 16:50	17°II29'39	-3°-31'-48
max. Earth dist.	427 May 28 j 19:25	8°II37'37	45.80328 AU	minimum elong	435 Jun 08 j 16:55	17°II29'40	3°31'48
				retrograde	435 Sep 18 j 19:45	19°II08'08	
conjunction	427 May 30 j 11:46	8°II40'03	-6°-3'-21	opposition	435 Dec 08 j 19:07	18°II04'43	-3°-31'-19
minimum elong	427 May 30 j 11:55	8°II40'03	6°03'22	min. Earth dist.	435 Dec 10 j 15:33	18°II02'26	42.14052 AU
retrograde	427 Sep 09 j 13:41	10°II15'05		direct	436 Feb 28 j 09:27	17°II00'34	
opposition	427 Nov 30 j 03:52	9°II13'01	-6°-10'-33	max. Earth dist.	436 Jun 06 j 23:46	18°II35'24	44.03260 AU
min. Earth dist.	427 Dec 01 j 16:55	9°II11'09	43.72048 AU				
direct	428 Feb 19 j 21:51	8°II10'33		conjunction	436 Jun 09 j 03:32	18°II38'39	-3°-11'-38
max. Earth dist.	428 May 29 j 03:00	9°II42'02	45.61682 AU	minimum elong	436 Jun 09 j 03:37	18°II38'39	3°11'39
				retrograde	436 Sep 19 j 08:28	20°II17'38	
conjunction	428 May 30 j 20:33	9°II44'33	-5°-45'-22	opposition	436 Dec 09 j 04:10	19°II14'01	-3°-10'-6
minimum elong	428 May 30 j 20:42	9°II44'34	5°45'23	min. Earth dist.	436 Dec 11 j 02:29	19°II11'38	41.92798 AU
retrograde	428 Sep 09 j 21:42	11°II19'56		direct	437 Feb 28 j 17:48	18°II09'38	
opposition	428 Nov 30 j 10:57	10°II17'41	-5°-51'-41	max. Earth dist.	437 Jun 08 j 10:26	19°II45'00	43.81860 AU
min. Earth dist.	428 Dec 02 j 00:11	10°II15'49	43.53150 AU				
direct	429 Feb 20 j 04:59	9°II15'00		conjunction	437 Jun 10 j 14:42	19°II48'18	-2°-51'-12
max. Earth dist.	429 May 30 j 10:22	10°II46'48	45.42759 AU	minimum elong	437 Jun 10 j 14:47	19°II48'19	2°51'12
				retrograde	437 Sep 20 j 18:01	21°II27'47	
conjunction	429 Jun 01 j 05:34	10°II49'25	-5°-27'-7	opposition	437 Dec 10 j 13:24	20°II23'59	-2°-48'-36
minimum elong	429 Jun 01 j 05:41	10°II49'26	5°27'08	min. Earth dist.	437 Dec 12 j 12:53	20°II21'31	41.71126 AU
retrograde	429 Sep 11 j 08:24	12°II25'11		direct	438 Mar 02 j 05:09	19°II19'19	
opposition	429 Dec 01 j 18:22	11°II22'45	-5°-32'-31	max. Earth dist.	438 Jun 09 j 19:47	20°II55'09	43.60069 AU
min. Earth dist.	429 Dec 03 j 09:21	11°II20'47	43.34013 AU				
direct	430 Feb 21 j 10:05	10°II19'51		conjunction	438 Jun 12 j 01:59	20°II58'35	-2°-30'-29
max. Earth dist.	430 May 31 j 19:43	11°II52'04	45.23623 AU	minimum elong	438 Jun 12 j 02:02	20°II58'36	2°30'31
				retrograde	438 Sep 22 j 04:00	22°II38'36	
conjunction	430 Jun 02 j 14:49	11°II54'42	-5°-8'-35	opposition	438 Dec 11 j 22:50	21°II34'34	-2°-26'-48
minimum elong	430 Jun 02 j 14:57	11°II54'43	5°08'36	min. Earth dist.	438 Dec 13 j 23:08	21°II32'03	41.49092 AU
retrograde	430 Sep 12 j 18:36	13°II30'51		direct	439 Mar 03 j 15:10	20°II29'38	
opposition	430 Dec 03 j 01:55	12°II28'14	-5°-13'-3	max. Earth dist.	439 Jun 11 j 05:56	22°II05'57	43.37910 AU
min. Earth dist.	430 Dec 04 j 16:52	12°II26'16	43.14663 AU				
direct	431 Feb 22 j 17:03	11°II25'07		conjunction	439 Jun 13 j 13:38	22°II09'31	-2°-9'-31
max. Earth dist.	431 Jun 02 j 03:04	12°II57'42	45.04277 AU	minimum elong	439 Jun 13 j 13:41	22°II09'31	2°09'32
				retrograde	439 Sep 23 j 14:23	23°II50'04	
conjunction	431 Jun 04 j 00:15	13°II00'28	-4°-49'-47	opposition	439 Dec 13 j 08:34	22°II45'48	-2°-4'-43
minimum elong	431 Jun 04 j 00:22	13°II00'28	4°49'47	min. Earth dist.	439 Dec 15 j 10:45	22°II43'10	41.26731 AU
retrograde	431 Sep 14 j 04:37	14°II37'01		direct	440 Mar 04 j 00:14	21°II40'35	
opposition	431 Dec 04 j 09:39	13°II34'15	-4°-53'-18	max. Earth dist.	440 Jun 11 j 17:25	23°II17'29	43.15466 AU
min. Earth dist.	431 Dec 06 j 01:55	13°II32'12	42.95120 AU				
direct	432 Feb 24 j 00:11	12°II30'56		conjunction	440 Jun 14 j 01:28	23°II21'05	-1°-48'-17
max. Earth dist.	432 Jun 02 j 12:37	14°II03'59	44.84715 AU	minimum elong	440 Jun 14 j 01:31	23°II21'05	1°48'17
				retrograde	440 Sep 24 j 03:36	25°II02'12	
conjunction	432 Jun 04 j 10:03	14°II06'47	-4°-30'-42	opposition	440 Dec 13 j 18:33	23°II57'41	-1°-42'-20
minimum elong	432 Jun 04 j 10:10	14°II06'47	4°30'43	min. Earth dist.	440 Dec 15 j 20:38	23°II55'02	41.04119 AU
retrograde	432 Sep 14 j 11:24	15°II43'47		direct	441 Mar 05 j 07:58	22°II52'10	
opposition	432 Dec 04 j 17:43	14°II40'51	-4°-33'-14	max. Earth dist.	441 Jun 13 j 03:20	24°II29'34	42.92782 AU
min. Earth dist.	432 Dec 06 j 10:59	14°II38'45	42.75343 AU				
direct	433 Feb 24 j 10:49	13°II37'21		conjunction	441 Jun 15 j 13:21	24°II33'19	-1°-26'-46
max. Earth dist.	433 Jun 03 j 21:05	15°II10'50	44.64909 AU	minimum elong	441 Jun 15 j 13:24	24°II33'19	1°26'47
				retrograde	441 Sep 25 j 17:11	26°II15'01	
conjunction	433 Jun 05 j 19:48	15°II13'43	-4°-11'-20	opposition	441 Dec 15 j 04:53	25°II10'15	-1°-19'-40

min. Earth dist.	441 Dec 17 j 08:39	25°II07'31	40.81310 AU	minimum elong	449 Jun 26 j 02:59	4°☾41'37	1°34'44
direct	442 Mar 06 j 16:19	24°II04'26		retrograde	449 Oct 06 j 06:37	6°☾28'50	
max. Earth dist.	442 Jun 14 j 15:54	25°II42'31	42.69912 AU	opposition	449 Dec 25 j 03:31	5°☾22'00	1°52'00
conjunction	442 Jun 17 j 01:51	25°II46'16	-1°-4'-59	min. Earth dist.	449 Dec 27 j 15:08	5°☾18'43	38.91785 AU
minimum elong	442 Jun 17 j 01:53	25°II46'16	1°05'00	direct	450 Mar 16 j 16:11	4°☾13'40	
retrograde	442 Sep 27 j 04:58	27°II28'34		max. Earth dist.	450 Jun 24 j 22:58	5°☾57'13	40.79339 AU
opposition	442 Dec 16 j 15:24	26°II23'33	0°-56'-42	conjunction	450 Jun 27 j 18:32	6°☾01'51	1°58'33
min. Earth dist.	442 Dec 18 j 19:31	26°II20'47	40.58334 AU	minimum elong	450 Jun 27 j 18:29	6°☾01'51	1°58'34
direct	443 Mar 08 j 05:16	25°II17'27		retrograde	450 Oct 07 j 21:38	7°☾49'49	
max. Earth dist.	443 Jun 16 j 02:57	26°II56'06	42.46897 AU	opposition	450 Dec 26 j 16:52	6°☾42'40	2°17'12
conjunction	443 Jun 18 j 14:34	27°II00'00	0°-42'-57	min. Earth dist.	450 Dec 29 j 04:49	6°☾39'21	38.66856 AU
minimum elong	443 Jun 18 j 14:35	27°II00'00	0°42'58	direct	451 Mar 18 j 05:56	5°☾33'57	
retrograde	443 Sep 28 j 17:53	28°II42'55		max. Earth dist.	451 Jun 26 j 13:16	7°☾18'14	40.54231 AU
opposition	443 Dec 18 j 02:19	27°II37'40	0°-33'-26	conjunction	451 Jun 29 j 10:30	7°☾23'01	2°22'35
min. Earth dist.	443 Dec 20 j 06:59	27°II34'52	40.35233 AU	minimum elong	451 Jun 29 j 10:25	7°☾23'00	2°22'35
direct	444 Mar 08 j 17:16	26°II31'17		retrograde	451 Oct 09 j 12:45	9°☾11'46	
max. Earth dist.	444 Jun 16 j 15:22	28°II10'37	42.23726 AU	opposition	451 Dec 28 j 06:53	8°☾04'17	2°42'38
conjunction	444 Jun 19 j 03:36	28°II14'34	0°-20'-39	min. Earth dist.	451 Dec 30 j 20:46	8°☾00'51	38.41710 AU
minimum elong	444 Jun 19 j 03:37	28°II14'34	0°20'39	direct	452 Mar 18 j 18:03	6°☾55'11	
retrograde	444 Sep 29 j 05:12	29°II58'10		max. Earth dist.	452 Jun 27 j 05:30	8°☾40'19	40.28939 AU
opposition	444 Dec 18 j 13:38	28°II52'41	0°-9'-53	conjunction	452 Jun 30 j 02:39	8°☾45'07	2°46'51
min. Earth dist.	444 Dec 20 j 19:47	28°II49'47	40.11973 AU	minimum elong	452 Jun 30 j 02:34	8°☾45'07	2°46'51
direct	445 Mar 10 j 04:49	27°II46'01		retrograde	452 Oct 10 j 05:10	10°☾34'42	
asc. node	445 May 20 j 11:01	28°II42'19		opposition	452 Dec 28 j 21:10	9°☾26'53	3°08'19
max. Earth dist.	445 Jun 18 j 04:13	29°II26'02	42.00392 AU	min. Earth dist.	452 Dec 31 j 10:53	9°☾23'25	38.16419 AU
conjunction	445 Jun 20 j 17:02	29°II30'03	0°02'00	direct	453 Mar 20 j 08:14	8°☾17'22	
minimum elong	445 Jun 20 j 17:02	29°II30'03	0°01'59	max. Earth dist.	453 Jun 28 j 20:10	10°☾03'17	40.03524 AU
behind sun begin	445 Jun 20 j 10:30	29°II29'39		conjunction	453 Jul 01 j 19:14	10°☾08'15	3°11'18
behind sun end	445 Jun 20 j 23:34	29°II30'27		minimum elong	453 Jul 01 j 19:08	10°☾08'14	3°11'18
retrograde	445 Jul 09 j 19:43	0°☾		retrograde	453 Oct 12 j 00:34	11°☾58'40	
opposition	445 Sep 30 j 18:10	1°☾14'21		opposition	453 Dec 30 j 11:51	10°☾50'30	3°34'14
min. Earth dist.	445 Dec 20 j 01:05	0°☾08'38	0°13'55	min. Earth dist.	454 Jan 02 j 02:49	10°☾46'57	37.91063 AU
direct	445 Dec 22 j 07:19	0°☾05'42	39.88528 AU	direct	454 Mar 21 j 21:12	9°☾40'35	
max. Earth dist.	445 Dec 26 j 17:33	30°RII		max. Earth dist.	454 Jun 30 j 13:39	11°☾27'28	39.78050 AU
conjunction	446 Mar 11 j 15:22	29°II01'40		conjunction	454 Jul 03 j 12:26	11°☾32'27	3°35'58
minimum elong	446 Mar 23 j 02:57	0°☾		minimum elong	454 Jul 03 j 12:19	11°☾32'26	3°35'59
behind sun begin	446 Jun 19 j 15:57	0°☾42'19	41.76814 AU	retrograde	454 Oct 13 j 17:10	13°☾23'45	
behind sun end				opposition	455 Jan 01 j 03:08	12°☾15'14	4°00'22
conjunction	446 Jun 22 j 06:55	0°☾46'30	0°24'47	min. Earth dist.	455 Jan 03 j 18:26	12°☾11'39	37.65676 AU
minimum elong	446 Jun 22 j 06:54	0°☾46'30	0°24'48	direct	455 Mar 23 j 13:08	11°☾04'56	
retrograde	446 Oct 02 j 10:24	2°☾31'31		max. Earth dist.	455 Jul 02 j 06:03	12°☾52'42	39.52574 AU
opposition	446 Dec 21 j 13:08	1°☾25'33	0°38'02	conjunction	455 Jul 05 j 05:55	12°☾57'49	4°00'48
min. Earth dist.	446 Dec 23 j 21:25	1°☾22'30	39.64822 AU	minimum elong	455 Jul 05 j 05:47	12°☾57'48	4°00'48
direct	447 Mar 13 j 00:02	0°☾18'16		retrograde	455 Oct 15 j 11:05	14°☾50'01	
max. Earth dist.	447 Jun 21 j 06:09	1°☾59'42	41.52936 AU	opposition	456 Jan 02 j 18:47	13°☾41'12	4°26'41
conjunction	447 Jun 23 j 21:19	2°☾03'55	0°47'51	min. Earth dist.	456 Jan 05 j 10:13	13°☾37'35	37.40320 AU
minimum elong	447 Jun 23 j 21:18	2°☾03'55	0°47'51	direct	456 Mar 24 j 05:18	12°☾30'31	
retrograde	447 Oct 04 j 01:23	3°☾49'40		max. Earth dist.	456 Jul 02 j 23:33	14°☾19'15	39.27110 AU
opposition	447 Dec 23 j 01:28	2°☾43'25	1°02'25	conjunction	456 Jul 06 j 00:01	14°☾24'27	4°25'49
min. Earth dist.	447 Dec 25 j 10:16	2°☾40'20	39.40794 AU	minimum elong	456 Jul 05 j 23:52	14°☾24'26	4°25'49
direct	448 Mar 13 j 12:16	1°☾35'49		retrograde	456 Oct 16 j 03:57	16°☾17'37	
max. Earth dist.	448 Jun 21 j 18:28	3°☾17'53	41.28728 AU	opposition	457 Jan 03 j 11:05	15°☾08'29	4°53'12
conjunction	448 Jun 24 j 11:58	3°☾22'18	1°11'11	min. Earth dist.	457 Jan 06 j 03:45	15°☾04'46	37.14988 AU
minimum elong	448 Jun 24 j 11:56	3°☾22'18	1°11'11	direct	457 Mar 25 j 20:48	13°☾57'26	
retrograde	448 Oct 04 j 17:28	5°☾08'46		max. Earth dist.	457 Jul 04 j 18:00	15°☾47'13	39.01665 AU
opposition	448 Dec 23 j 14:16	4°☾02'15	1°27'05	conjunction	457 Jul 07 j 18:29	15°☾52'27	4°50'58
min. Earth dist.	448 Dec 26 j 00:29	3°☾59'04	39.16452 AU	minimum elong	457 Jul 07 j 18:20	15°☾52'26	4°50'58
direct	449 Mar 15 j 00:31	2°☾54'17		retrograde	457 Oct 17 j 22:37	17°☾46'37	
max. Earth dist.	449 Jun 23 j 08:45	4°☾37'07	41.04181 AU	opposition	458 Jan 05 j 03:46	16°☾37'11	5°19'54
conjunction	449 Jun 26 j 03:02	4°☾41'37	1°34'45				

min. Earth dist.	458 Jan 07 j 20:04	16°☾33'28	36.89655 AU	direct	466 Apr 08 j 16:02	28°☾04'48	
direct	458 Mar 27 j 11:44	15°☾25'46			466 Jul 17 j 03:37	0°♁	
max. Earth dist.	458 Jul 06 j 11:31	17°☾16'30	38.76166 AU	max. Earth dist.	466 Jul 19 j 14:23	0°♁04'35	36.69186 AU
conjunction	458 Jul 09 j 13:43	17°☾21'54	5°16'17	conjunction	466 Jul 22 j 20:43	0°♁10'43	8°41'33
minimum elong	458 Jul 09 j 13:32	17°☾21'54	5°16'17	minimum elong	466 Jul 22 j 20:25	0°♁10'42	8°41'32
retrograde	458 Oct 19 j 19:07	19°☾17'07		retrograde	466 Nov 02 j 05:52	2°♁14'46	
opposition	459 Jan 06 j 21:02	18°☾07'21	5°46'45	opposition	467 Jan 19 j 13:12	1°♁01'51	9°24'55
min. Earth dist.	459 Jan 09 j 15:08	18°☾03'31	36.64266 AU	min. Earth dist.	467 Jan 22 j 11:17	0°♁57'35	34.58850 AU
direct	459 Mar 29 j 02:22	16°☾55'33		direct	467 Mar 10 j 01:00	30°♁☾	
max. Earth dist.	459 Jul 08 j 07:41	18°☾47'25	38.50574 AU	direct	467 Apr 10 j 13:59	29°☾46'22	
conjunction	459 Jul 11 j 09:38	18°☾52'51	5°41'42	max. Earth dist.	467 May 11 j 21:12	0°♁	
minimum elong	459 Jul 11 j 09:27	18°☾52'51	5°41'42		467 Jul 21 j 14:01	1°♁47'22	36.43592 AU
retrograde	459 Oct 21 j 16:38	20°☾49'07		conjunction	467 Jul 24 j 21:17	1°♁53'38	9°07'08
opposition	460 Jan 08 j 15:00	19°☾39'01	6°13'45	minimum elong	467 Jul 24 j 20:59	1°♁53'36	9°07'08
min. Earth dist.	460 Jan 11 j 09:17	19°☾35'09	36.38765 AU	retrograde	467 Nov 04 j 08:44	3°♁58'54	
direct	460 Mar 29 j 20:00	18°☾26'49		opposition	468 Jan 21 j 12:11	2°♁45'34	9°52'07
max. Earth dist.	460 Jul 09 j 01:56	20°☾19'40	38.24852 AU	min. Earth dist.	468 Jan 24 j 10:17	2°♁41'16	34.33643 AU
conjunction	460 Jul 12 j 05:50	20°☾25'18	6°07'15	direct	468 Apr 11 j 11:15	1°♁29'37	
minimum elong	460 Jul 12 j 05:37	20°☾25'17	6°07'15	max. Earth dist.	468 Jul 22 j 15:55	3°♁31'59	36.18254 AU
retrograde	460 Oct 22 j 15:44	22°☾22'37		conjunction	468 Jul 25 j 22:33	3°♁38'15	9°32'34
opposition	461 Jan 09 j 09:31	21°☾12'10	6°40'53	minimum elong	468 Jul 25 j 22:14	3°♁38'14	9°32'34
min. Earth dist.	461 Jan 12 j 04:49	21°☾08'13	36.13150 AU	retrograde	468 Nov 05 j 10:41	5°♁44'47	
direct	461 Mar 31 j 13:18	19°☾59'32		opposition	469 Jan 22 j 11:59	4°♁31'04	10°19'10
max. Earth dist.	461 Jul 10 j 22:46	21°☾53'31	37.98990 AU	min. Earth dist.	469 Jan 25 j 10:23	4°♁26'43	34.08706 AU
conjunction	461 Jul 14 j 02:55	21°☾59'13	6°32'53	direct	469 Apr 13 j 11:41	3°♁14'40	
minimum elong	461 Jul 14 j 02:43	21°☾59'12	6°32'53	max. Earth dist.	469 Jul 24 j 17:54	5°♁18'23	35.93200 AU
retrograde	461 Oct 24 j 12:08	23°☾57'36		conjunction	469 Jul 28 j 00:33	5°♁24'43	9°57'50
opposition	462 Jan 11 j 04:35	22°☾46'46	7°08'07	minimum elong	469 Jul 28 j 00:13	5°♁24'42	9°57'50
min. Earth dist.	462 Jan 14 j 00:55	22°☾42'44	35.87410 AU	retrograde	469 Nov 07 j 15:07	7°♁32'33	
direct	462 Apr 02 j 09:12	21°☾33'42		opposition	470 Jan 24 j 12:14	6°♁18'27	10°46'02
max. Earth dist.	462 Jul 12 j 19:20	23°☾28'45	37.73029 AU	min. Earth dist.	470 Jan 27 j 09:58	6°♁14'07	33.84049 AU
conjunction	462 Jul 16 j 00:30	23°☾34'35	6°58'36	direct	470 Apr 15 j 11:59	5°♁01'36	
minimum elong	462 Jul 16 j 00:16	23°☾34'34	6°58'35	max. Earth dist.	470 Jul 26 j 20:26	7°♁06'42	35.68376 AU
retrograde	462 Oct 26 j 10:07	25°☾34'03		conjunction	470 Jul 30 j 03:29	7°♁13'08	10°22'52
opposition	463 Jan 13 j 00:12	24°☾22'50	7°35'27	minimum elong	470 Jul 30 j 03:08	7°♁13'07	10°22'51
min. Earth dist.	463 Jan 15 j 20:38	24°☾18'46	35.61601 AU	retrograde	470 Nov 09 j 17:42	9°♁22'18	
direct	463 Apr 04 j 05:57	23°☾09'18		opposition	471 Jan 26 j 13:35	8°♁07'50	11°12'40
max. Earth dist.	463 Jul 14 j 16:27	25°☾05'27	37.46987 AU	min. Earth dist.	471 Jan 29 j 12:30	8°♁03'23	33.59618 AU
conjunction	463 Jul 17 j 22:42	25°☾11'25	7°24'21	direct	471 Apr 17 j 10:52	6°♁50'33	
minimum elong	463 Jul 17 j 22:28	25°☾11'23	7°24'21	max. Earth dist.	471 Jul 29 j 00:43	8°♁57'06	35.43760 AU
retrograde	463 Oct 28 j 07:33	27°☾11'59		conjunction	471 Aug 01 j 07:04	9°♁03'34	10°47'39
opposition	464 Jan 14 j 20:34	26°☾00'21	8°02'49	minimum elong	471 Aug 01 j 06:43	9°♁03'32	10°47'39
min. Earth dist.	464 Jan 17 j 18:32	25°☾56'10	35.35763 AU	retrograde	471 Nov 11 j 21:10	11°♁14'05	
direct	464 Apr 05 j 00:39	24°☾46'20		opposition	472 Jan 28 j 15:38	9°♁59'14	11°39'01
max. Earth dist.	464 Jul 15 j 15:29	26°☾43'41	37.20959 AU	min. Earth dist.	472 Jan 31 j 13:48	9°♁54'48	33.35376 AU
conjunction	464 Jul 18 j 21:26	26°☾49'41	7°50'07	direct	472 Apr 18 j 12:19	8°♁41'30	
minimum elong	464 Jul 18 j 21:10	26°☾49'40	7°50'07	max. Earth dist.	472 Jul 30 j 03:52	10°♁49'24	35.19310 AU
retrograde	464 Oct 29 j 05:18	28°☾51'23		conjunction	472 Aug 02 j 11:27	10°♁56'01	11°12'08
opposition	465 Jan 15 j 17:24	27°☾39'20	8°30'13	minimum elong	472 Aug 02 j 11:05	10°♁55'59	11°12'08
min. Earth dist.	465 Jan 18 j 14:44	27°☾35'09	35.09980 AU	retrograde	472 Nov 13 j 02:45	13°♁07'55	
direct	465 Apr 06 j 21:10	26°☾24'49		opposition	473 Jan 29 j 18:36	11°♁52'40	12°05'04
max. Earth dist.	465 Jul 17 j 13:20	28°☾23'17	36.95000 AU	min. Earth dist.	473 Feb 01 j 17:43	11°♁48'09	33.11315 AU
conjunction	465 Jul 20 j 20:38	28°☾29'26	8°15'52	direct	473 Apr 20 j 11:36	10°♁34'28	
minimum elong	465 Jul 20 j 20:22	28°☾29'25	8°15'52	max. Earth dist.	473 Aug 01 j 10:07	12°♁43'54	34.95030 AU
retrograde	465 Sep 13 j 04:48	0°♁		conjunction	473 Aug 04 j 16:42	12°♁50'30	11°36'16
opposition	465 Oct 31 j 05:30	0°♁32'18		minimum elong	473 Aug 04 j 16:20	12°♁50'28	11°36'17
min. Earth dist.	465 Dec 19 j 07:48	30°♁☾			473 Oct 30 j 21:07	15°♁	
opposition	466 Jan 17 j 15:00	29°☾19'49	8°57'36	retrograde	473 Nov 15 j 08:10	15°♁03'47	
min. Earth dist.	466 Jan 20 j 13:25	29°☾15'32	34.84322 AU		473 Dec 01 j 00:49	15°♁♁	

opposition	474 Jan 31 j 22:25	13° Ω 48'07	12°30'45	retrograde	481 Dec 02 j 13:15	1° \mp 42'45	
min. Earth dist.	474 Feb 03 j 21:10	13° Ω 43'36	32.87418 AU	opposition	482 Feb 17 j 10:56	0° \mp 23'43	15°34'16
direct	474 Apr 22 j 14:25	12° Ω 29'28		min. Earth dist.	482 Feb 20 j 05:30	0° \mp 19'15	31.09589 AU
max. Earth dist.	474 Aug 03 j 15:03	14° Ω 40'15	34.70931 AU		482 Mar 04 j 09:10	30° \mathcal{R} Ω	
				direct	482 May 08 j 18:28	29° Ω 01'21	
conjunction	474 Aug 06 j 22:41	14° Ω 47'00	12°00'02		482 Jul 10 j 12:55	0° \mp	
minimum elong	474 Aug 06 j 22:17	14° Ω 46'58	12°00'01	max. Earth dist.	482 Aug 21 j 02:09	1° \mp 24'27	32.92614 AU
	474 Aug 13 j 07:55	15° Ω					
retrograde	474 Nov 17 j 16:50	17° Ω 01'40		conjunction	482 Aug 24 j 02:04	1° \mp 31'03	14°47'28
opposition	475 Feb 03 j 02:56	15° Ω 45'35	12°56'00	minimum elong	482 Aug 24 j 01:41	1° \mp 31'01	14°47'28
min. Earth dist.	475 Feb 06 j 01:53	15° Ω 41'02	32.63737 AU	retrograde	482 Dec 05 j 01:39	3° \mp 56'52	
	475 Mar 06 j 14:21	15° \mathcal{R} Ω		opposition	483 Feb 19 j 22:31	2° \mp 37'29	15°53'13
direct	475 Apr 24 j 17:58	14° Ω 26'26		min. Earth dist.	483 Feb 22 j 15:55	2° \mp 33'05	30.89948 AU
	475 Jun 11 j 21:34	15° Ω		direct	483 May 11 j 04:23	1° \mp 14'44	
max. Earth dist.	475 Aug 05 j 22:52	16° Ω 38'47	34.47056 AU	max. Earth dist.	483 Aug 23 j 15:28	3° \mp 39'19	32.73021 AU
conjunction	475 Aug 09 j 05:35	16° Ω 45'31	12°23'19	conjunction	483 Aug 26 j 14:59	3° \mp 45'56	15°04'25
minimum elong	475 Aug 09 j 05:13	16° Ω 45'29	12°23'20	minimum elong	483 Aug 26 j 14:38	3° \mp 45'54	15°04'26
retrograde	475 Nov 20 j 00:35	19° Ω 01'34		retrograde	483 Dec 07 j 17:10	6° \mp 13'07	
opposition	476 Feb 05 j 08:30	17° Ω 45'02	13°20'45	opposition	484 Feb 22 j 11:00	4° \mp 53'24	16°11'01
min. Earth dist.	476 Feb 08 j 07:41	17° Ω 40'26	32.40311 AU	min. Earth dist.	484 Feb 25 j 03:11	4° \mp 49'03	30.70945 AU
direct	476 Apr 26 j 00:05	16° Ω 25'25		direct	484 May 12 j 15:52	3° \mp 30'17	
max. Earth dist.	476 Aug 07 j 06:07	18° Ω 39'11	34.23487 AU	max. Earth dist.	484 Aug 25 j 07:18	5° \mp 56'27	32.54047 AU
conjunction	476 Aug 10 j 12:53	18° Ω 46'00	12°46'06	conjunction	484 Aug 28 j 04:44	6° \mp 02'56	15°20'15
minimum elong	476 Aug 10 j 12:29	18° Ω 45'58	12°46'05	minimum elong	484 Aug 28 j 04:23	6° \mp 02'54	15°20'15
retrograde	476 Nov 21 j 10:08	21° Ω 03'26		retrograde	484 Dec 09 j 07:35	8° \mp 31'28	
opposition	477 Feb 06 j 14:41	19° Ω 46'28	13°44'56	opposition	485 Feb 24 j 00:30	7° \mp 11'24	16°27'36
min. Earth dist.	477 Feb 09 j 12:52	19° Ω 41'54	32.17229 AU	min. Earth dist.	485 Feb 26 j 16:13	7° \mp 07'03	30.52536 AU
direct	477 Apr 28 j 06:22	18° Ω 26'21		direct	485 May 15 j 05:04	5° \mp 47'55	
max. Earth dist.	477 Aug 09 j 14:58	20° Ω 41'37	34.00277 AU	max. Earth dist.	485 Aug 27 j 22:40	8° \mp 15'31	32.35700 AU
conjunction	477 Aug 12 j 21:13	20° Ω 48'27	13°08'17	conjunction	485 Aug 30 j 19:15	8° \mp 21'58	15°34'54
minimum elong	477 Aug 12 j 20:50	20° Ω 48'25	13°08'17	minimum elong	485 Aug 30 j 18:57	8° \mp 21'56	15°34'54
retrograde	477 Nov 23 j 18:13	23° Ω 07'17		retrograde	485 Dec 12 j 00:23	10° \mp 51'48	
opposition	478 Feb 08 j 21:45	21° Ω 49'52	14°08'28	opposition	486 Feb 26 j 14:37	9° \mp 31'23	16°42'52
min. Earth dist.	478 Feb 11 j 20:24	21° Ω 45'14	31.94555 AU	min. Earth dist.	486 Mar 01 j 04:26	9° \mp 27'09	30.34740 AU
direct	478 Apr 30 j 12:18	20° Ω 29'16		direct	486 May 17 j 19:10	8° \mp 07'32	
max. Earth dist.	478 Aug 12 j 01:16	22° Ω 46'05	33.77536 AU	max. Earth dist.	486 Aug 30 j 15:33	10° \mp 36'35	32.17974 AU
conjunction	478 Aug 15 j 06:15	22° Ω 52'53	13°29'48	conjunction	486 Sep 02 j 10:40	10° \mp 42'57	15°48'17
minimum elong	478 Aug 15 j 05:51	22° Ω 52'51	13°29'47	minimum elong	486 Sep 02 j 10:21	10° \mp 42'55	15°48'17
retrograde	478 Nov 26 j 04:55	25° Ω 13'05		retrograde	486 Dec 14 j 16:32	13° \mp 14'02	
opposition	479 Feb 11 j 05:41	23° Ω 55'15	14°31'16	opposition	487 Mar 01 j 05:54	11° \mp 53'16	16°56'47
min. Earth dist.	479 Feb 14 j 02:37	23° Ω 50'42	31.72387 AU	min. Earth dist.	487 Mar 03 j 19:25	11° \mp 49'02	30.17566 AU
direct	479 May 02 j 20:07	22° Ω 34'09		direct	487 May 20 j 09:10	10° \mp 29'05	
max. Earth dist.	479 Aug 14 j 11:16	24° Ω 52'28	33.55332 AU	max. Earth dist.	487 Sep 02 j 09:19	12° \mp 59'31	32.00925 AU
conjunction	479 Aug 17 j 15:56	24° Ω 59'18	13°50'33	conjunction	487 Sep 05 j 02:32	13° \mp 05'46	16°00'20
minimum elong	479 Aug 17 j 15:33	24° Ω 59'16	13°50'33	minimum elong	487 Sep 05 j 02:16	13° \mp 05'44	16°00'20
retrograde	479 Nov 28 j 14:39	27° Ω 20'54		retrograde	487 Dec 17 j 10:46	15° \mp 38'02	
opposition	480 Feb 13 j 14:38	26° Ω 02'39	14°53'13	opposition	488 Mar 02 j 21:51	14° \mp 16'55	17°09'13
min. Earth dist.	480 Feb 16 j 11:38	25° Ω 58'04	31.50805 AU	min. Earth dist.	488 Mar 05 j 08:58	14° \mp 12'50	30.01063 AU
direct	480 May 04 j 01:43	24° Ω 41'06		direct	488 May 22 j 01:52	12° \mp 52'23	
max. Earth dist.	480 Aug 16 j 00:03	27° Ω 01'03	33.33763 AU	max. Earth dist.	488 Sep 04 j 03:10	15° \mp 24'07	31.84588 AU
conjunction	480 Aug 19 j 02:31	27° Ω 07'46	14°10'28	conjunction	488 Sep 06 j 19:08	15° \mp 30'17	16°10'58
minimum elong	480 Aug 19 j 02:07	27° Ω 07'44	14°10'27	minimum elong	488 Sep 06 j 18:52	15° \mp 30'16	16°10'58
retrograde	480 Nov 30 j 00:34	29° Ω 30'46		retrograde	488 Dec 19 j 03:14	18° \mp 03'41	
opposition	481 Feb 15 j 00:19	28° Ω 12'07	15°14'15	opposition	489 Mar 05 j 14:31	16° \mp 42'15	17°20'06
min. Earth dist.	481 Feb 17 j 19:25	28° Ω 07'38	31.29864 AU	min. Earth dist.	489 Mar 08 j 01:04	16° \mp 38'11	29.85293 AU
direct	481 May 06 j 11:08	26° Ω 50'09		direct	489 May 24 j 16:31	15° \mp 17'23	
max. Earth dist.	481 Aug 18 j 11:27	29° Ω 11'35	33.12858 AU	max. Earth dist.	489 Sep 06 j 23:11	17° \mp 50'28	31.69047 AU
conjunction	481 Aug 21 j 13:48	29° Ω 18'20	14°29'28	conjunction	489 Sep 09 j 12:19	17° \mp 56'25	16°20'06
minimum elong	481 Aug 21 j 13:26	29° Ω 18'18	14°29'28	minimum elong	489 Sep 09 j 12:06	17° \mp 56'23	16°20'07
	481 Sep 09 j 22:17	0° \mp		retrograde	489 Dec 21 j 20:37	20° \mp 30'52	

opposition	490 Mar 08 j 07:57	19° \mathbb{M} 09'07	17°29'21	opposition	498 Mar 29 j 01:37	9° \mathbb{A} 30'16	17°34'55
min. Earth dist.	490 Mar 10 j 15:55	19° \mathbb{M} 05'12	29.70314 AU	min. Earth dist.	498 Mar 30 j 14:27	9° \mathbb{A} 27'40	28.86630 AU
direct	490 May 27 j 10:28	17° \mathbb{M} 43'56		direct	498 Jun 16 j 20:11	8° \mathbb{A} 04'02	
max. Earth dist.	490 Sep 09 j 18:04	20° \mathbb{M} 18'10	31.54363 AU	max. Earth dist.	498 Oct 01 j 05:17	10° \mathbb{A} 45'50	30.74856 AU
conjunction	490 Sep 12 j 05:55	20° \mathbb{M} 24'01	16°27'40	conjunction	498 Oct 02 j 17:33	10° \mathbb{A} 49'30	16°23'36
minimum elong	490 Sep 12 j 05:42	20° \mathbb{M} 24'00	16°27'40	minimum elong	498 Oct 02 j 17:38	10° \mathbb{A} 49'30	16°23'36
retrograde	490 Dec 24 j 15:14	22° \mathbb{M} 59'29		retrograde	499 Jan 14 j 09:09	13° \mathbb{A} 30'21	
opposition	491 Mar 11 j 02:07	21° \mathbb{M} 37'25	17°36'50	opposition	499 Mar 31 j 23:52	12° \mathbb{A} 07'06	17°26'30
min. Earth dist.	491 Mar 13 j 08:32	21° \mathbb{M} 33'37	29.56229 AU	min. Earth dist.	499 Apr 02 j 09:01	12° \mathbb{A} 04'45	28.80782 AU
direct	491 May 30 j 02:05	20° \mathbb{M} 11'57		direct	499 Jun 19 j 20:08	10° \mathbb{A} 40'53	
max. Earth dist.	491 Sep 12 j 15:56	22° \mathbb{M} 47'30	31.40644 AU	max. Earth dist.	499 Oct 04 j 04:40	13° \mathbb{A} 23'06	30.69659 AU
conjunction	491 Sep 15 j 00:06	22° \mathbb{M} 53'02	16°33'33	conjunction	499 Oct 05 j 14:10	13° \mathbb{A} 26'30	16°14'37
minimum elong	491 Sep 14 j 23:57	22° \mathbb{M} 53'01	16°33'33	minimum elong	499 Oct 05 j 14:20	13° \mathbb{A} 26'31	16°14'37
retrograde	491 Dec 27 j 08:46	25° \mathbb{M} 29'26		retrograde	500 Jan 17 j 06:04	16° \mathbb{A} 07'35	
opposition	492 Mar 12 j 21:01	24° \mathbb{M} 07'06	17°42'31	opposition	500 Apr 02 j 22:26	14° \mathbb{A} 44'15	17°16'03
min. Earth dist.	492 Mar 15 j 00:45	24° \mathbb{M} 03'28	29.43113 AU	min. Earth dist.	500 Apr 04 j 05:45	14° \mathbb{A} 42'02	28.75934 AU
direct	492 May 31 j 20:25	22° \mathbb{M} 41'24		direct	500 Jun 21 j 18:00	13° \mathbb{A} 18'03	
max. Earth dist.	492 Sep 14 j 12:02	25° \mathbb{M} 17'59	31.27971 AU	max. Earth dist.	500 Oct 06 j 04:40	16° \mathbb{A} 00'38	30.65503 AU
conjunction	492 Sep 16 j 18:30	25° \mathbb{M} 23'22	16°37'42	conjunction	500 Oct 07 j 10:43	16° \mathbb{A} 03'41	16°03'46
minimum elong	492 Sep 16 j 18:21	25° \mathbb{M} 23'22	16°37'41	minimum elong	500 Oct 07 j 10:53	16° \mathbb{A} 03'42	16°03'46
retrograde	492 Dec 29 j 04:11	28° \mathbb{M} 00'40		retrograde	501 Jan 19 j 02:49	18° \mathbb{A} 44'52	
opposition	493 Mar 15 j 16:26	26° \mathbb{M} 38'06	17°46'16	opposition	501 Apr 05 j 20:59	17° \mathbb{A} 21'29	17°03'34
min. Earth dist.	493 Mar 17 j 17:37	26° \mathbb{M} 34'39	29.31051 AU	min. Earth dist.	501 Apr 07 j 00:42	17° \mathbb{A} 19'32	28.72079 AU
direct	493 Jun 03 j 14:23	25° \mathbb{M} 12'12		direct	501 Jun 24 j 17:52	15° \mathbb{A} 55'18	
max. Earth dist.	493 Sep 17 j 11:08	27° \mathbb{M} 50'00	31.16395 AU	max. Earth dist.	501 Oct 09 j 03:30	18° \mathbb{A} 38'02	30.62381 AU
conjunction	493 Sep 19 j 13:37	27° \mathbb{M} 55'01	16°40'02	conjunction	501 Oct 10 j 07:11	18° \mathbb{A} 40'50	15°51'02
minimum elong	493 Sep 19 j 13:33	27° \mathbb{M} 55'01	16°40'02	minimum elong	501 Oct 10 j 07:25	18° \mathbb{A} 40'52	15°51'01
retrograde	493 Nov 18 j 15:43	0° \mathbb{A}		retrograde	502 Jan 22 j 00:26	21° \mathbb{A} 22'00	
retrograde	493 Dec 31 j 22:44	0° \mathbb{A} 33'07		opposition	502 Apr 08 j 19:35	19° \mathbb{A} 58'34	16°49'04
opposition	494 Feb 15 j 00:38	30° \mathbb{R} \mathbb{M}		min. Earth dist.	502 Apr 09 j 20:53	19° \mathbb{A} 56'47	28.69267 AU
opposition	494 Mar 18 j 12:26	29° \mathbb{M} 10'22	17°48'03	direct	502 Jun 27 j 15:59	18° \mathbb{A} 32'26	
min. Earth dist.	494 Mar 20 j 11:25	29° \mathbb{M} 07'04	29.20054 AU	max. Earth dist.	502 Oct 12 j 04:01	21° \mathbb{A} 15'21	30.60358 AU
direct	494 Jun 06 j 09:26	27° \mathbb{M} 44'20		conjunction	502 Oct 13 j 03:34	21° \mathbb{A} 17'44	15°36'26
max. Earth dist.	494 Sep 10 j 16:19	0° \mathbb{A}		minimum elong	502 Oct 13 j 03:48	21° \mathbb{A} 17'46	15°36'27
conjunction	494 Sep 20 j 08:31	0° \mathbb{A} 23'03	31.05941 AU	retrograde	503 Jan 24 j 19:47	23° \mathbb{A} 58'45	
conjunction	494 Sep 22 j 08:59	0° \mathbb{A} 27'54	16°40'32	opposition	503 Apr 11 j 18:17	22° \mathbb{A} 35'18	16°32'35
minimum elong	494 Sep 22 j 08:55	0° \mathbb{A} 27'53	16°40'31	min. Earth dist.	503 Apr 12 j 16:12	22° \mathbb{A} 33'46	28.67535 AU
retrograde	495 Jan 03 j 20:08	3° \mathbb{A} 06'45		direct	503 Jun 30 j 15:55	21° \mathbb{A} 09'15	
opposition	495 Mar 21 j 09:00	1° \mathbb{A} 43'51	17°47'50	conjunction	503 Oct 15 j 23:23	23° \mathbb{A} 54'10	15°20'02
min. Earth dist.	495 Mar 23 j 04:42	1° \mathbb{A} 40'46	29.10148 AU	minimum elong	503 Oct 15 j 23:40	23° \mathbb{A} 54'12	15°20'01
direct	495 Jun 09 j 04:31	0° \mathbb{A} 17'44		max. Earth dist.	503 Oct 15 j 02:25	23° \mathbb{A} 52'03	30.59475 AU
max. Earth dist.	495 Sep 23 j 08:02	2° \mathbb{A} 57'27	30.96582 AU	retrograde	504 Jan 27 j 15:44	26° \mathbb{A} 34'58	
conjunction	495 Sep 25 j 04:42	3° \mathbb{A} 01'56	16°39'08	opposition	504 Apr 13 j 16:48	25° \mathbb{A} 11'31	16°14'07
minimum elong	495 Sep 25 j 04:43	3° \mathbb{A} 01'56	16°39'08	min. Earth dist.	504 Apr 14 j 11:19	25° \mathbb{A} 10'13	28.66968 AU
retrograde	496 Jan 06 j 16:01	5° \mathbb{A} 41'28		direct	504 Jul 02 j 13:55	23° \mathbb{A} 45'32	
opposition	496 Mar 23 j 06:13	4° \mathbb{A} 18'26	17°45'34	conjunction	504 Oct 17 j 19:12	26° \mathbb{A} 30'01	15°01'49
min. Earth dist.	496 Mar 25 j 00:06	4° \mathbb{A} 15'29	29.01290 AU	minimum elong	504 Oct 17 j 19:30	26° \mathbb{A} 30'03	15°01'49
direct	496 Jun 11 j 01:39	2° \mathbb{A} 52'16		max. Earth dist.	504 Oct 17 j 02:55	26° \mathbb{A} 28'22	30.59801 AU
max. Earth dist.	496 Sep 25 j 06:22	5° \mathbb{A} 32'45	30.88306 AU	retrograde	505 Jan 29 j 09:59	29° \mathbb{A} 10'29	
conjunction	496 Sep 27 j 00:42	5° \mathbb{A} 37'01	16°35'51	opposition	505 Apr 16 j 15:06	27° \mathbb{A} 47'04	15°53'44
minimum elong	496 Sep 27 j 00:43	5° \mathbb{A} 37'01	16°35'52	min. Earth dist.	505 Apr 17 j 06:33	27° \mathbb{A} 45'59	28.67597 AU
retrograde	497 Jan 08 j 13:55	8° \mathbb{A} 17'05		direct	505 Jul 05 j 12:38	26° \mathbb{A} 21'14	
opposition	497 Mar 26 j 03:33	6° \mathbb{A} 53'58	17°41'16	conjunction	505 Oct 20 j 14:34	29° \mathbb{A} 05'09	14°41'51
min. Earth dist.	497 Mar 27 j 17:54	6° \mathbb{A} 51'16	28.93462 AU	minimum elong	505 Oct 20 j 14:54	29° \mathbb{A} 05'11	14°41'50
direct	497 Jun 13 j 23:35	5° \mathbb{A} 27'45		max. Earth dist.	505 Oct 20 j 00:51	29° \mathbb{A} 03'46	30.61376 AU
max. Earth dist.	497 Sep 28 j 05:58	8° \mathbb{A} 08'59	30.81065 AU	retrograde	505 Nov 12 j 15:43	0° \mathbb{M}	
conjunction	497 Sep 29 j 21:07	8° \mathbb{A} 12'56	16°30'41	retrograde	506 Feb 01 j 06:22	1° \mathbb{M} 45'14	
minimum elong	497 Sep 29 j 21:12	8° \mathbb{A} 12'56	16°30'41	opposition	506 Apr 19 j 13:14	0° \mathbb{M} 21'54	15°31'29
retrograde	498 Jan 11 j 10:33	10° \mathbb{A} 53'28		min. Earth dist.	506 Apr 20 j 00:25	0° \mathbb{M} 21'07	28.69469 AU

	506 May 02 j 17:49	30°R♄		opposition	514 May 10 j 09:23	20°M.24'32	11°37'58
direct	506 Jul 08 j 10:04	28°♄56'16		min. Earth dist.	514 May 09 j 19:51	20°M.25'27	29.24293 AU
	506 Sep 09 j 01:40	0°M.		direct	514 Jul 29 j 11:56	19°M.01'21	
conjunction	506 Oct 23 j 09:37	1°M.39'33	14°20'12	conjunction	514 Nov 12 j 00:43	21°M.36'47	10°37'25
minimum elong	506 Oct 23 j 09:58	1°M.39'35	14°20'13	minimum elong	514 Nov 12 j 01:06	21°M.36'50	10°37'26
max. Earth dist.	506 Oct 23 j 00:34	1°M.38'38	30.64204 AU	max. Earth dist.	514 Nov 12 j 15:53	21°M.38'16	31.26158 AU
retrograde	507 Feb 03 j 23:27	4°M.19'10		retrograde	515 Feb 23 j 16:48	24°M.10'06	
opposition	507 Apr 22 j 11:17	2°M.55'57	15°07'27	min. Earth dist.	515 May 12 j 10:46	22°M.49'42	29.35465 AU
min. Earth dist.	507 Apr 22 j 19:47	2°M.55'22	28.72561 AU	opposition	515 May 13 j 03:31	22°M.48'35	11°03'29
direct	507 Jul 11 j 08:18	1°M.30'34		direct	515 Aug 01 j 06:01	21°M.25'44	
conjunction	507 Oct 26 j 04:13	4°M.13'08	13°56'56	conjunction	515 Nov 14 j 14:53	23°M.59'53	10°04'52
minimum elong	507 Oct 26 j 04:35	4°M.13'10	13°56'56	minimum elong	515 Nov 14 j 15:16	23°M.59'55	10°04'52
max. Earth dist.	507 Oct 25 j 21:50	4°M.12'29	30.68268 AU	max. Earth dist.	515 Nov 15 j 10:04	24°M.01'44	31.38160 AU
retrograde	508 Feb 06 j 19:08	6°M.52'12		retrograde	516 Feb 26 j 04:42	26°M.32'07	
opposition	508 Apr 24 j 08:46	5°M.29'09	14°41'43	opposition	516 May 14 j 20:49	25°M.10'49	10°28'11
min. Earth dist.	508 Apr 24 j 12:52	5°M.28'52	28.76850 AU	min. Earth dist.	516 May 14 j 01:36	25°M.12'07	29.47564 AU
direct	508 Jul 13 j 05:50	4°M.04'02		direct	516 Aug 03 j 01:29	23°M.48'18	
conjunction	508 Oct 27 j 22:28	6°M.45'49	13°32'10	conjunction	516 Nov 16 j 04:06	26°M.21'08	9°31'35
minimum elong	508 Oct 27 j 22:51	6°M.45'51	13°32'11	minimum elong	516 Nov 16 j 04:28	26°M.21'10	9°31'35
max. Earth dist.	508 Oct 27 j 20:15	6°M.45'35	30.73496 AU	max. Earth dist.	516 Nov 17 j 01:13	26°M.23'10	31.51103 AU
retrograde	509 Feb 08 j 12:30	9°M.24'17		retrograde	517 Feb 27 j 18:45	28°M.52'16	
opposition	509 Apr 27 j 06:06	8°M.01'26	14°14'24	opposition	517 May 17 j 13:22	27°M.31'13	9°52'08
min. Earth dist.	509 Apr 27 j 08:03	8°M.01'18	28.82263 AU	min. Earth dist.	517 May 16 j 14:14	27°M.32'46	29.60641 AU
direct	509 Jul 16 j 01:59	6°M.36'37		direct	517 Aug 05 j 18:21	26°M.09'03	
conjunction	509 Oct 30 j 16:12	9°M.17'30	13°05'59	conjunction	517 Nov 18 j 16:41	28°M.40'33	8°57'40
minimum elong	509 Oct 30 j 16:35	9°M.17'33	13°05'58	minimum elong	517 Nov 18 j 17:02	28°M.40'35	8°57'39
max. Earth dist.	509 Oct 30 j 16:49	9°M.17'34	30.79835 AU	max. Earth dist.	517 Nov 19 j 17:51	28°M.42'57	31.65012 AU
retrograde	510 Feb 11 j 07:20	11°M.55'17		retrograde	517 Dec 25 j 06:52	0°♂	
opposition	510 Apr 30 j 02:52	10°M.32'39	13°45'36	retrograde	518 Mar 02 j 04:35	1°♂10'34	
min. Earth dist.	510 Apr 30 j 00:37	10°M.32'48	28.88738 AU		518 May 13 j 18:59	30°R♄	
direct	510 Jul 19 j 00:45	9°M.08'09		min. Earth dist.	518 May 19 j 04:03	29°M.51'28	29.74704 AU
conjunction	510 Nov 02 j 09:31	11°M.48'06	12°38'29	opposition	518 May 20 j 05:20	29°M.49'47	9°15'28
minimum elong	510 Nov 02 j 09:55	11°M.48'08	12°38'29	direct	518 Aug 08 j 11:10	28°M.27'59	
max. Earth dist.	510 Nov 02 j 13:31	11°M.48'30	30.87206 AU		518 Oct 25 j 21:28	0°♂	
retrograde	511 Feb 14 j 00:57	14°M.25'08		conjunction	518 Nov 21 j 04:28	0°♂58'08	8°23'12
opposition	511 May 02 j 23:27	13°M.02'42	13°15'27	minimum elong	518 Nov 21 j 04:48	0°♂58'10	8°23'12
min. Earth dist.	511 May 02 j 18:59	13°M.03'01	28.96230 AU	max. Earth dist.	518 Nov 22 j 07:48	1°♂00'43	31.79909 AU
direct	511 Jul 21 j 21:03	11°M.38'32		retrograde	519 Mar 04 j 16:00	3°♂27'01	
conjunction	511 Nov 05 j 02:12	14°M.17'27	12°09'47	opposition	519 May 22 j 20:27	2°♂06'32	8°38'17
minimum elong	511 Nov 05 j 02:36	14°M.17'30	12°09'46	min. Earth dist.	519 May 21 j 15:01	2°♂08'29	29.89760 AU
max. Earth dist.	511 Nov 05 j 09:19	14°M.18'10	30.95575 AU	direct	519 Aug 11 j 02:29	0°♂45'08	
retrograde	511 Nov 23 j 05:32	15°M.		conjunction	519 Nov 23 j 15:33	3°♂13'56	7°48'16
retrograde	512 Feb 16 j 17:50	16°M.53'40		minimum elong	519 Nov 23 j 15:51	3°♂13'57	7°48'16
opposition	512 May 04 j 19:20	15°M.31'28	12°44'03	max. Earth dist.	519 Nov 24 j 22:30	3°♂16'50	31.95751 AU
min. Earth dist.	512 May 04 j 11:11	15°M.32'01	29.04671 AU	retrograde	520 Mar 06 j 02:11	5°♂41'42	
direct	512 May 24 j 11:25	15°R♄		min. Earth dist.	520 May 23 j 03:34	4°♂23'35	30.05757 AU
	512 Jul 23 j 18:42	14°M.07'38		opposition	520 May 24 j 10:58	4°♂21'31	8°00'40
	512 Sep 18 j 17:48	15°M.		direct	520 Aug 12 j 15:29	3°♂00'32	
conjunction	512 Nov 06 j 18:23	16°M.45'27	11°39'58	conjunction	520 Nov 25 j 01:57	5°♂27'58	7°13'00
minimum elong	512 Nov 06 j 18:47	16°M.45'30	11°39'58	minimum elong	520 Nov 25 j 02:15	5°♂28'00	7°13'00
max. Earth dist.	512 Nov 07 j 03:57	16°M.46'24	31.04866 AU	max. Earth dist.	520 Nov 26 j 11:17	5°♂31'05	32.12488 AU
retrograde	513 Feb 18 j 10:50	19°M.20'45		retrograde	521 Mar 08 j 12:47	7°♂54'36	
opposition	513 May 07 j 14:36	17°M.58'47	12°11'32	min. Earth dist.	521 May 25 j 13:32	6°♂37'02	30.22616 AU
min. Earth dist.	513 May 07 j 04:03	17°M.59'30	29.14039 AU	opposition	521 May 27 j 00:27	6°♂34'45	7°22'44
direct	513 Jul 26 j 14:19	16°M.35'17		direct	521 Aug 15 j 06:33	5°♂14'12	
conjunction	513 Nov 09 j 10:02	19°M.11'57	11°09'09	conjunction	521 Nov 27 j 11:38	7°♂40'17	6°37'27
minimum elong	513 Nov 09 j 10:26	19°M.11'59	11°09'08	minimum elong	521 Nov 27 j 11:54	7°♂40'19	6°37'27
max. Earth dist.	513 Nov 09 j 23:06	19°M.13'13	31.15070 AU	max. Earth dist.	521 Nov 28 j 23:31	7°♂43'36	32.30024 AU
retrograde	514 Feb 21 j 02:15	21°M.46'16		retrograde	522 Mar 10 j 23:41	10°♂05'46	

min. Earth dist.	522 May 28 j 00:36	8° \nearrow 48'39	30.40278 AU	conjunction	530 Dec 15 j 19:41	26° \nearrow 10'54	1°18'33
opposition	522 May 29 j 13:36	8° \nearrow 46'15	6°44'36	minimum elong	530 Dec 15 j 19:44	26° \nearrow 10'54	1°18'33
direct	522 Aug 17 j 19:23	7° \nearrow 26'09		max. Earth dist.	530 Dec 18 j 01:38	26° \nearrow 15'33	34.13989 AU
				retrograde	531 Mar 29 j 05:41	28° \nearrow 25'55	
conjunction	522 Nov 29 j 20:38	9° \nearrow 50'52	6°01'45	min. Earth dist.	531 Jun 15 j 17:32	27° \nearrow 12'42	32.25377 AU
minimum elong	522 Nov 29 j 20:53	9° \nearrow 50'54	6°01'45	opposition	531 Jun 18 j 01:25	27° \nearrow 09'15	1°05'07
max. Earth dist.	522 Dec 01 j 11:19	9° \nearrow 54'25	32.48301 AU	direct	531 Sep 06 j 13:52	25° \nearrow 52'44	
retrograde	523 Mar 13 j 08:51	12° \nearrow 15'12					
min. Earth dist.	523 May 30 j 10:27	10° \nearrow 58'34	30.58641 AU	conjunction	531 Dec 17 j 22:35	28° \nearrow 05'28	0°44'19
opposition	523 Jun 01 j 01:56	10° \nearrow 56'01	6°06'21	minimum elong	531 Dec 17 j 22:36	28° \nearrow 05'28	0°44'19
direct	523 Aug 20 j 09:29	9° \nearrow 36'20		max. Earth dist.	531 Dec 20 j 07:05	28° \nearrow 10'17	34.37043 AU
					532 Feb 23 j 02:48	0° $\bar{\zeta}$	
conjunction	523 Dec 02 j 04:57	11° \nearrow 59'42	5°25'57	retrograde	532 Mar 30 j 08:33	0° $\bar{\zeta}$ 19'22	
minimum elong	523 Dec 02 j 05:10	11° \nearrow 59'44	5°25'56		532 May 06 j 15:41	30° $\text{R}\nearrow$	
max. Earth dist.	523 Dec 03 j 21:09	12° \nearrow 03'22	32.67214 AU	min. Earth dist.	532 Jun 16 j 21:24	29° \nearrow 06'35	32.48647 AU
retrograde	524 Mar 14 j 17:53	14° \nearrow 22'52		opposition	532 Jun 19 j 06:52	29° \nearrow 03'04	0°28'57
min. Earth dist.	524 May 31 j 19:31	13° \nearrow 06'43	30.77649 AU	direct	532 Sep 07 j 20:48	27° \nearrow 46'58	
opposition	524 Jun 02 j 13:24	13° \nearrow 04'02	5°28'03				
direct	524 Aug 21 j 20:43	11° \nearrow 44'46		conjunction	532 Dec 19 j 00:40	29° \nearrow 58'28	0°10'31
				minimum elong	532 Dec 19 j 00:40	29° \nearrow 58'28	0°10'32
conjunction	524 Dec 03 j 12:46	14° \nearrow 06'47	4°50'08	behind sun begin	532 Dec 18 j 19:40	29° \nearrow 58'04	
minimum elong	524 Dec 03 j 12:58	14° \nearrow 06'48	4°50'08	behind sun end	532 Dec 19 j 05:41	29° \nearrow 58'53	
max. Earth dist.	524 Dec 05 j 07:54	14° \nearrow 10'41	32.86705 AU		532 Dec 19 j 18:43	0° $\bar{\zeta}$	
retrograde	525 Mar 17 j 00:23	16° \nearrow 28'45		max. Earth dist.	532 Dec 21 j 10:02	0° $\bar{\zeta}$ 03'20	34.60586 AU
min. Earth dist.	525 Jun 03 j 04:55	15° \nearrow 13'01	30.97204 AU	retrograde	533 Apr 01 j 11:40	2° $\bar{\zeta}$ 11'19	
opposition	525 Jun 05 j 00:16	15° \nearrow 10'15	4°49'49	desc. node	533 Apr 12 j 18:25	2° $\bar{\zeta}$ 09'26	
direct	525 Aug 24 j 10:32	13° \nearrow 51'24		min. Earth dist.	533 Jun 18 j 23:48	0° $\bar{\zeta}$ 59'01	32.72415 AU
				opposition	533 Jun 21 j 11:47	0° $\bar{\zeta}$ 55'22	0°-6'-43
conjunction	525 Dec 05 j 19:39	16° \nearrow 12'04	4°14'23		533 Aug 02 j 20:35	30° $\text{R}\nearrow$	
minimum elong	525 Dec 05 j 19:49	16° \nearrow 12'04	4°14'22	direct	533 Sep 10 j 01:03	29° \nearrow 39'42	
max. Earth dist.	525 Dec 07 j 15:36	16° \nearrow 16'00	33.06698 AU		533 Oct 17 j 03:01	0° $\bar{\zeta}$	
retrograde	526 Mar 19 j 08:16	18° \nearrow 32'51					
min. Earth dist.	526 Jun 05 j 12:06	17° \nearrow 17'36	31.17274 AU	conjunction	533 Dec 21 j 02:11	1° $\bar{\zeta}$ 50'01	0°-22'-54
opposition	526 Jun 07 j 10:22	17° \nearrow 14'40	4°11'43	minimum elong	533 Dec 21 j 02:10	1° $\bar{\zeta}$ 50'01	0°22'55
direct	526 Aug 26 j 21:25	15° \nearrow 56'13		max. Earth dist.	533 Dec 23 j 14:19	1° $\bar{\zeta}$ 55'05	34.84563 AU
				retrograde	534 Apr 03 j 11:08	4° $\bar{\zeta}$ 01'49	
conjunction	526 Dec 08 j 02:02	18° \nearrow 15'30	3°38'45	min. Earth dist.	534 Jun 21 j 03:30	2° $\bar{\zeta}$ 49'55	32.96591 AU
minimum elong	526 Dec 08 j 02:11	18° \nearrow 15'31	3°38'46	opposition	534 Jun 23 j 16:11	2° $\bar{\zeta}$ 46'14	0°-41'-52
max. Earth dist.	526 Dec 10 j 00:49	18° \nearrow 19'40	33.27166 AU	direct	534 Sep 12 j 08:08	1° $\bar{\zeta}$ 31'00	
retrograde	527 Mar 21 j 11:57	20° \nearrow 35'07					
min. Earth dist.	527 Jun 07 j 20:40	19° \nearrow 20'12	31.37834 AU	conjunction	534 Dec 23 j 03:10	3° $\bar{\zeta}$ 40'09	0°-55'-46
opposition	527 Jun 09 j 19:46	19° \nearrow 17'14	3°33'47	minimum elong	534 Dec 23 j 03:08	3° $\bar{\zeta}$ 40'09	0°55'47
direct	527 Aug 29 j 08:08	17° \nearrow 59'10		max. Earth dist.	534 Dec 25 j 15:45	3° $\bar{\zeta}$ 45'13	35.08902 AU
				retrograde	535 Apr 05 j 12:29	5° $\bar{\zeta}$ 50'55	
conjunction	527 Dec 10 j 07:30	20° \nearrow 17'05	3°03'18	min. Earth dist.	535 Jun 23 j 04:40	4° $\bar{\zeta}$ 39'31	33.21113 AU
minimum elong	527 Dec 10 j 07:37	20° \nearrow 17'06	3°03'18	opposition	535 Jun 25 j 19:45	4° $\bar{\zeta}$ 35'42	-1°-16'-28
max. Earth dist.	527 Dec 12 j 07:19	20° \nearrow 21'18	33.48108 AU	direct	535 Sep 14 j 12:25	3° $\bar{\zeta}$ 20'54	
retrograde	528 Mar 22 j 16:40	22° \nearrow 35'31					
min. Earth dist.	528 Jun 09 j 02:09	21° \nearrow 21'04	31.58892 AU	conjunction	535 Dec 25 j 03:37	5° $\bar{\zeta}$ 28'54	-1°-28'-9
opposition	528 Jun 11 j 04:13	21° \nearrow 17'56	2°56'07	minimum elong	535 Dec 25 j 03:34	5° $\bar{\zeta}$ 28'54	1°28'11
direct	528 Aug 30 j 17:17	20° \nearrow 00'14		max. Earth dist.	535 Dec 27 j 18:12	5° $\bar{\zeta}$ 34'05	35.33512 AU
				retrograde	536 Apr 06 j 11:44	7° $\bar{\zeta}$ 38'40	
conjunction	528 Dec 11 j 12:18	22° \nearrow 16'49	2°28'05	min. Earth dist.	536 Jun 24 j 07:37	6° $\bar{\zeta}$ 27'36	33.45889 AU
minimum elong	528 Dec 11 j 12:24	22° \nearrow 16'49	2°28'05	opposition	536 Jun 26 j 22:53	6° $\bar{\zeta}$ 23'48	-1°-50'-29
max. Earth dist.	528 Dec 13 j 14:38	22° \nearrow 21'13	33.69528 AU	direct	536 Sep 15 j 15:41	5° $\bar{\zeta}$ 09'24	
retrograde	529 Mar 24 j 20:39	24° \nearrow 34'05					
min. Earth dist.	529 Jun 11 j 08:45	23° \nearrow 19'59	31.80485 AU	conjunction	536 Dec 26 j 03:37	7° $\bar{\zeta}$ 16'16	-2°00'00
opposition	529 Jun 13 j 11:59	23° \nearrow 16'47	2°18'45	minimum elong	536 Dec 26 j 03:33	7° $\bar{\zeta}$ 16'16	2°00'01
direct	529 Sep 02 j 00:01	21° \nearrow 59'28		max. Earth dist.	536 Dec 28 j 18:55	7° $\bar{\zeta}$ 21'29	35.58321 AU
				retrograde	537 Apr 08 j 11:20	9° $\bar{\zeta}$ 25'02	
conjunction	529 Dec 13 j 16:25	24° \nearrow 14'43	1°53'09	min. Earth dist.	537 Jun 26 j 08:14	8° $\bar{\zeta}$ 14'23	33.70829 AU
minimum elong	529 Dec 13 j 16:30	24° \nearrow 14'44	1°53'08	opposition	537 Jun 29 j 01:13	8° $\bar{\zeta}$ 10'31	-2°-23'-54
max. Earth dist.	529 Dec 15 j 20:38	24° \nearrow 19'15	33.91488 AU	direct	537 Sep 17 j 18:22	6° $\bar{\zeta}$ 56'30	
retrograde	530 Mar 27 j 00:28	26° \nearrow 30'50					
min. Earth dist.	530 Jun 13 j 13:02	25° \nearrow 17'13	32.02639 AU	conjunction	537 Dec 28 j 03:04	9° $\bar{\zeta}$ 02'15	-2°-31'-18
opposition	530 Jun 15 j 19:00	25° \nearrow 13'52	1°41'44	minimum elong	537 Dec 28 j 02:59	9° $\bar{\zeta}$ 02'15	2°31'19
direct	530 Sep 04 j 08:18	23° \nearrow 56'56		max. Earth dist.	537 Dec 30 j 19:10	9° $\bar{\zeta}$ 07'29	35.83244 AU

retrograde	538 Apr 10 j 12:48	11°♁10'01		direct	546 Oct 03 j 16:18	21°♁56'41	
min. Earth dist.	538 Jun 28 j 09:33	9°♁59'43	33.95894 AU				
opposition	538 Jul 01 j 03:15	9°♁55'50	-2°-56'-41	conjunction	547 Jan 11 j 22:17	23°♁53'17	-6°-45'-49
direct	538 Sep 19 j 17:51	8°♁42'11		minimum elong	547 Jan 11 j 22:06	23°♁53'16	6°45'50
				max. Earth dist.	547 Jan 14 j 22:12	23°♁58'46	38.12342 AU
conjunction	538 Dec 30 j 02:02	10°♁46'49	-3°-2'-2	retrograde	547 Apr 25 j 08:24	25°♁52'47	
minimum elong	538 Dec 30 j 01:56	10°♁46'49	3°02'02	min. Earth dist.	547 Jul 13 j 15:54	24°♁45'25	36.26803 AU
max. Earth dist.	539 Jan 01 j 19:30	10°♁52'07	36.08254 AU	opposition	547 Jul 16 j 17:59	24°♁41'13	-7°-21'-39
retrograde	539 Apr 12 j 10:55	12°♁53'35		direct	547 Oct 05 j 12:05	23°♁30'37	
min. Earth dist.	539 Jun 30 j 10:15	11°♁43'35	34.21022 AU				
opposition	539 Jul 03 j 04:33	11°♁39'41	-3°-28'-50	conjunction	548 Jan 13 j 16:58	25°♁26'21	-7°-10'-56
direct	539 Sep 21 j 20:27	10°♁26'23		minimum elong	548 Jan 13 j 16:46	25°♁26'20	7°10'57
				max. Earth dist.	548 Jan 16 j 18:25	25°♁31'55	38.38277 AU
conjunction	540 Jan 01 j 00:23	12°♁29'55	-3°-32'-10	retrograde	548 Apr 26 j 02:32	27°♁25'04	
minimum elong	540 Jan 01 j 00:16	12°♁29'55	3°32'12	min. Earth dist.	548 Jul 14 j 12:58	26°♁17'57	36.52899 AU
max. Earth dist.	540 Jan 03 j 17:45	12°♁35'10	36.33313 AU	opposition	548 Jul 17 j 14:18	26°♁13'49	-7°-47'-37
retrograde	540 Apr 13 j 10:48	14°♁35'41		direct	548 Oct 06 j 09:19	25°♁03'34	
min. Earth dist.	540 Jul 01 j 09:21	13°♁26'02	34.46238 AU				
opposition	540 Jul 04 j 05:04	13°♁22'04	-4°00'-20	conjunction	549 Jan 14 j 11:12	26°♁58'28	-7°-35'-24
direct	540 Sep 22 j 21:02	12°♁09'05		minimum elong	549 Jan 14 j 11:00	26°♁58'27	7°35'25
				max. Earth dist.	549 Jan 17 j 12:08	27°♁03'57	38.64134 AU
conjunction	541 Jan 01 j 22:15	14°♁11'33	-4°-1'-43	retrograde	549 Apr 27 j 19:34	28°♁56'25	
minimum elong	541 Jan 01 j 22:08	14°♁11'32	4°01'44	min. Earth dist.	549 Jul 16 j 07:39	27°♁49'39	36.78884 AU
max. Earth dist.	541 Jan 04 j 17:38	14°♁16'54	36.58453 AU	opposition	549 Jul 19 j 10:15	27°♁45'28	-8°-12'-55
retrograde	541 Apr 15 j 07:23	16°♁16'19		direct	549 Oct 08 j 06:22	26°♁35'32	
min. Earth dist.	541 Jul 03 j 09:26	15°♁06'55	34.71559 AU				
opposition	541 Jul 06 j 05:10	15°♁02'58	-4°-31'-10	conjunction	550 Jan 16 j 04:58	28°♁29'36	-7°-59'-16
direct	541 Sep 24 j 23:24	13°♁50'18		minimum elong	550 Jan 16 j 04:45	28°♁29'35	7°59'16
				max. Earth dist.	550 Jan 19 j 06:30	28°♁35'07	38.89830 AU
conjunction	542 Jan 03 j 19:20	15°♁51'42	-4°-30'-39		550 Mar 14 j 19:53	0°≈	
minimum elong	542 Jan 03 j 19:11	15°♁51'41	4°30'41	retrograde	550 Apr 29 j 12:45	0°≈26'49	
max. Earth dist.	542 Jan 06 j 14:49	15°♁57'02	36.83717 AU		550 Jun 15 j 22:27	30°R♁	
retrograde	542 Apr 17 j 04:19	17°♁55'31		min. Earth dist.	550 Jul 18 j 04:02	29°♁20'17	37.04700 AU
min. Earth dist.	542 Jul 05 j 06:43	16°♁46'29	34.97043 AU	opposition	550 Jul 21 j 05:58	29°♁16'09	-8°-37'-33
opposition	542 Jul 08 j 04:38	16°♁42'26	-5°-1'-19	direct	550 Oct 10 j 02:41	28°♁06'33	
direct	542 Sep 26 j 23:29	15°♁30'05					
				conjunction	551 Jan 17 j 22:35	29°♁59'47	-8°-22'-30
conjunction	543 Jan 05 j 16:05	17°♁30'27	-4°-58'-58	minimum elong	551 Jan 17 j 22:23	29°♁59'46	8°22'30
minimum elong	543 Jan 05 j 15:56	17°♁30'26	4°58'59		551 Jan 18 j 01:32	0°≈	
max. Earth dist.	543 Jan 08 j 13:18	17°♁35'53	37.09141 AU	max. Earth dist.	551 Jan 21 j 00:12	0°≈05'16	39.15337 AU
retrograde	543 Apr 18 j 22:55	19°♁33'21		retrograde	551 May 01 j 06:13	1°≈56'14	
min. Earth dist.	543 Jul 07 j 05:35	18°♁24'35	35.22718 AU	min. Earth dist.	551 Jul 19 j 22:42	0°≈49'58	37.30295 AU
opposition	543 Jul 10 j 03:34	18°♁20'32	-5°-30'-47	opposition	551 Jul 23 j 00:56	0°≈45'50	-9°-1'-30
direct	543 Sep 28 j 23:40	17°♁08'31			551 Aug 29 j 11:00	30°R♁	
				direct	551 Oct 11 j 21:43	29°♁36'31	
conjunction	544 Jan 07 j 12:22	19°♁07'53	-5°-26'-39		551 Nov 22 j 20:04	0°≈	
minimum elong	544 Jan 07 j 12:12	19°♁07'52	5°26'40				
max. Earth dist.	544 Jan 10 j 10:18	19°♁13'21	37.34754 AU	conjunction	552 Jan 19 j 15:39	1°≈28'56	-8°-45'-7
retrograde	544 Apr 19 j 18:34	21°♁09'53		minimum elong	552 Jan 19 j 15:26	1°≈28'55	8°45'08
min. Earth dist.	544 Jul 08 j 02:15	20°♁01'30	35.48563 AU	max. Earth dist.	552 Jan 22 j 16:42	1°≈34'20	39.40614 AU
opposition	544 Jul 11 j 01:49	19°♁57'23	-5°-59'-33	retrograde	552 May 02 j 00:57	3°≈24'37	
direct	544 Sep 29 j 22:26	18°♁45'42		min. Earth dist.	552 Jul 20 j 17:14	2°≈18'35	37.55686 AU
				opposition	552 Jul 23 j 19:37	2°≈14'28	-9°-24'-49
conjunction	545 Jan 08 j 08:03	20°♁44'07	-5°-53'-41	direct	552 Oct 12 j 14:58	1°≈05'25	
minimum elong	545 Jan 08 j 07:52	20°♁44'06	5°53'42				
max. Earth dist.	545 Jan 11 j 06:43	20°♁49'35	37.60510 AU	conjunction	553 Jan 20 j 08:19	2°≈57'02	-9°-7'-8
retrograde	545 Apr 21 j 15:56	22°♁45'16		minimum elong	553 Jan 20 j 08:07	2°≈57'01	9°07'09
min. Earth dist.	545 Jul 09 j 23:19	21°♁37'12	35.74566 AU	max. Earth dist.	553 Jan 23 j 10:31	3°≈02'28	39.65695 AU
opposition	545 Jul 12 j 23:41	21°♁33'04	-6°-27'-37	retrograde	553 May 03 j 17:39	4°≈51'58	
direct	545 Oct 01 j 18:11	20°♁21'44		min. Earth dist.	553 Jul 22 j 11:52	3°≈46'07	37.80893 AU
				opposition	553 Jul 25 j 13:46	3°≈42'02	-9°-47'-27
conjunction	546 Jan 10 j 03:29	22°♁19'13	-6°-20'-4	direct	553 Oct 14 j 09:35	2°≈33'15	
minimum elong	546 Jan 10 j 03:18	22°♁19'12	6°20'06				
max. Earth dist.	546 Jan 13 j 03:41	22°♁24'46	37.86398 AU	conjunction	554 Jan 22 j 00:31	4°≈24'04	-9°-28'-31
retrograde	546 Apr 23 j 11:21	24°♁19'33		minimum elong	554 Jan 22 j 00:18	4°≈24'03	9°28'32
min. Earth dist.	546 Jul 11 j 20:16	23°♁11'48	36.00662 AU	max. Earth dist.	554 Jan 25 j 01:54	4°≈29'25	39.90632 AU
opposition	546 Jul 14 j 21:04	23°♁07'39	-6°-54'-59	retrograde	554 May 05 j 11:20	6°≈18'15	

min. Earth dist.	554 Jul 24 j 04:23	5°≈12'40	38.06000 AU	min. Earth dist.	562 Aug 04 j 13:17	16°≈12'48	40.03343 AU
opposition	554 Jul 27 j 07:31	5°≈08'33	-10°-9'-26	opposition	562 Aug 07 j 15:38	16°≈08'51	-12°-42'-3
direct	554 Oct 16 j 02:40	4°≈00'00		direct	562 Oct 27 j 13:31	15°≈02'25	
conjunction	555 Jan 23 j 16:22	5°≈50'03	-9°-49'-18	conjunction	563 Feb 03 j 12:05	16°≈47'04	-12°-13'-53
minimum elong	555 Jan 23 j 16:10	5°≈50'02	9°49'19	minimum elong	563 Feb 03 j 11:53	16°≈47'03	12°13'54
max. Earth dist.	555 Jan 26 j 19:01	5°≈55'28	40.15478 AU	max. Earth dist.	563 Feb 06 j 14:55	16°≈52'15	42.10446 AU
retrograde	555 May 07 j 01:11	7°≈43'31		retrograde	563 May 17 j 18:50	18°≈35'30	
min. Earth dist.	555 Jul 25 j 22:35	6°≈38'07	38.31035 AU	min. Earth dist.	563 Aug 06 j 03:52	17°≈31'53	40.26962 AU
opposition	555 Jul 29 j 00:54	6°≈34'03	-10°-30'-45	opposition	563 Aug 09 j 06:07	17°≈27'57	-12°-58'-26
direct	555 Oct 17 j 21:19	5°≈25'46		direct	563 Oct 29 j 05:39	16°≈21'45	
conjunction	556 Jan 25 j 07:58	7°≈15'03	-10°-9'-27	conjunction	564 Feb 05 j 01:21	18°≈05'47	-12°-29'-27
minimum elong	556 Jan 25 j 07:44	7°≈15'02	10°09'27	minimum elong	564 Feb 05 j 01:10	18°≈05'46	12°29'27
max. Earth dist.	556 Jan 28 j 10:28	7°≈20'26	40.40275 AU	max. Earth dist.	564 Feb 08 j 02:58	18°≈10'51	42.33676 AU
retrograde	556 May 07 j 14:05	9°≈07'49		retrograde	564 May 18 j 10:17	19°≈53'37	
min. Earth dist.	556 Jul 26 j 14:04	8°≈02'43	38.56017 AU	min. Earth dist.	564 Aug 06 j 18:19	18°≈50'10	40.50230 AU
opposition	556 Jul 29 j 17:34	7°≈58'35	-10°-51'-24	opposition	564 Aug 09 j 20:14	18°≈46'16	-13°-14'-15
direct	556 Oct 18 j 16:33	6°≈50'34		direct	564 Oct 29 j 17:48	17°≈40'17	
conjunction	557 Jan 25 j 23:04	8°≈39'08	-10°-28'-59	conjunction	565 Feb 05 j 14:22	19°≈23'42	-12°-44'-29
minimum elong	557 Jan 25 j 22:52	8°≈39'07	10°29'00	minimum elong	565 Feb 05 j 14:11	19°≈23'41	12°44'30
max. Earth dist.	557 Jan 29 j 01:52	8°≈44'30	40.65014 AU	max. Earth dist.	565 Feb 08 j 16:36	19°≈28'46	42.56575 AU
retrograde	557 May 09 j 05:59	10°≈31'15		retrograde	565 May 19 j 22:48	21°≈10'57	
min. Earth dist.	557 Jul 28 j 06:50	9°≈26'20	38.80955 AU	min. Earth dist.	565 Aug 08 j 09:14	20°≈07'38	40.73172 AU
opposition	557 Jul 31 j 10:12	9°≈22'15	-11°-11'-24	opposition	565 Aug 11 j 10:04	20°≈03'48	-13°-29'-32
direct	557 Oct 20 j 08:45	8°≈14'30		direct	565 Oct 31 j 08:18	18°≈58'01	
conjunction	558 Jan 27 j 13:52	10°≈02'22	-10°-47'-55	conjunction	566 Feb 07 j 02:50	20°≈40'50	-12°-59'00
minimum elong	558 Jan 27 j 13:39	10°≈02'21	10°47'55	minimum elong	566 Feb 07 j 02:40	20°≈40'49	12°59'01
max. Earth dist.	558 Jan 30 j 17:32	10°≈07'45	40.89702 AU	max. Earth dist.	566 Feb 10 j 03:54	20°≈45'48	42.79189 AU
retrograde	558 May 10 j 20:38	11°≈53'49		retrograde	566 May 21 j 11:46	22°≈27'30	
min. Earth dist.	558 Jul 29 j 22:54	10°≈49'09	39.05802 AU	min. Earth dist.	566 Aug 09 j 22:02	21°≈24'23	40.95865 AU
opposition	558 Aug 02 j 02:22	10°≈45'05	-11°-30'-46	opposition	566 Aug 12 j 23:34	21°≈20'32	-13°-44'-15
direct	558 Oct 22 j 01:04	9°≈37'36		direct	566 Nov 01 j 20:59	20°≈14'57	
conjunction	559 Jan 29 j 04:21	11°≈24'47	-11°-6'-15	conjunction	567 Feb 08 j 15:14	21°≈57'11	-13°-12'-59
minimum elong	559 Jan 29 j 04:09	11°≈24'46	11°06'16	minimum elong	567 Feb 08 j 15:02	21°≈57'11	13°13'00
max. Earth dist.	559 Feb 01 j 07:18	11°≈30'05	41.14283 AU	max. Earth dist.	567 Feb 11 j 16:56	22°≈02'11	43.01571 AU
retrograde	559 May 12 j 13:49	13°≈15'37		retrograde	567 May 22 j 22:36	23°≈43'19	
min. Earth dist.	559 Jul 31 j 14:05	12°≈11'13	39.30535 AU	min. Earth dist.	567 Aug 11 j 12:21	22°≈40'19	41.18353 AU
opposition	559 Aug 03 j 18:05	12°≈07'07	-11°-49'-29	opposition	567 Aug 14 j 12:40	22°≈36'32	-13°-58'-24
direct	559 Oct 23 j 14:33	10°≈59'55		direct	567 Nov 03 j 11:19	21°≈31'09	
conjunction	560 Jan 30 j 18:42	12°≈46'27	-11°-24'00	conjunction	568 Feb 10 j 03:21	23°≈12'51	-13°-26'-27
minimum elong	560 Jan 30 j 18:30	12°≈46'26	11°24'00	minimum elong	568 Feb 10 j 03:12	23°≈12'50	13°26'28
max. Earth dist.	560 Feb 02 j 22:44	12°≈51'48	41.38710 AU	max. Earth dist.	568 Feb 13 j 04:42	23°≈17'47	43.23783 AU
retrograde	560 May 13 j 04:09	14°≈36'40		retrograde	568 May 23 j 08:46	24°≈58'27	
min. Earth dist.	560 Aug 01 j 06:39	13°≈32'26	39.55073 AU	min. Earth dist.	568 Aug 12 j 00:26	23°≈55'40	41.40662 AU
opposition	560 Aug 04 j 09:35	13°≈28'25	-12°-7'-36	opposition	568 Aug 15 j 01:25	23°≈51'52	-14°-12'00
direct	560 Oct 24 j 06:09	12°≈21'29		direct	568 Nov 04 j 01:45	22°≈46'42	
conjunction	561 Jan 31 j 08:38	14°≈07'23	-11°-41'-10	conjunction	569 Feb 10 j 15:00	24°≈27'51	-13°-39'-23
minimum elong	561 Jan 31 j 08:26	14°≈07'22	11°41'12	minimum elong	569 Feb 10 j 14:50	24°≈27'50	13°39'24
max. Earth dist.	561 Feb 03 j 11:39	14°≈12'38	41.62921 AU	max. Earth dist.	569 Feb 13 j 15:53	24°≈32'44	43.45822 AU
retrograde	561 Mar 05 j 01:48	15°≈		retrograde	569 May 24 j 21:28	26°≈12'58	
retrograde	561 May 14 j 18:17	15°≈56'59		min. Earth dist.	569 Aug 13 j 13:34	25°≈10'21	41.62814 AU
min. Earth dist.	561 Jul 28 j 09:56	15°≈R≈		opposition	569 Aug 16 j 14:06	25°≈06'35	-14°-25'-4
opposition	561 Aug 02 j 21:01	14°≈53'02	39.79360 AU	direct	569 Nov 05 j 14:14	24°≈01'39	
direct	561 Aug 06 j 00:41	14°≈49'00	-12°-25'-7	conjunction	570 Feb 12 j 02:41	25°≈42'17	-13°-51'-48
retrograde	561 Oct 25 j 21:03	13°≈42'19		minimum elong	570 Feb 12 j 02:33	25°≈42'17	13°51'49
direct	562 Jan 16 j 05:30	15°≈		max. Earth dist.	570 Feb 15 j 04:23	25°≈47'12	43.67707 AU
conjunction	562 Feb 01 j 22:27	15°≈27'36	-11°-57'-48	retrograde	570 May 26 j 10:20	27°≈26'54	
minimum elong	562 Feb 01 j 22:15	15°≈27'35	11°57'48	min. Earth dist.	570 Aug 15 j 02:21	26°≈24'29	41.84780 AU
max. Earth dist.	562 Feb 05 j 01:31	15°≈32'49	41.86844 AU	opposition	570 Aug 18 j 02:23	26°≈20'45	-14°-37'-35
retrograde	562 May 16 j 06:33	17°≈16'37		direct	570 Nov 07 j 01:39	25°≈16'03	

conjunction	571 Feb 13 j 14:00	26° 56 '12	-14°-3'-43	conjunction	579 Feb 23 j 02:35	6° 29 '08	-15°-22'-42
minimum elong	571 Feb 13 j 13:50	26° 56 '11	14°03'44	minimum elong	579 Feb 23 j 02:29	6° 29 '07	15°22'43
max. Earth dist.	571 Feb 16 j 14:25	27° 01 '00	43.89401 AU	max. Earth dist.	579 Feb 25 j 22:14	6° 33 '27	45.50382 AU
retrograde	571 May 28 j 00:57	28° 40 '21		retrograde	579 Jun 06 j 09:26	8° 09 '38	
min. Earth dist.	571 Aug 16 j 13:58	27° 38 '09	42.06537 AU	min. Earth dist.	579 Aug 26 j 12:54	7° 08 '26	43.67238 AU
opposition	571 Aug 19 j 14:28	27° 34 '25	-14°-49'-35	opposition	579 Aug 29 j 06:34	7° 05 '07	-16°-8'-44
direct	571 Nov 08 j 10:36	26° 29 '57		direct	579 Nov 18 j 06:06	6° 02 '05	
conjunction	572 Feb 15 j 01:15	28° 09 '38	-14°-15'-8	conjunction	580 Feb 24 j 12:17	7° 38 '06	-15°-30'-39
minimum elong	572 Feb 15 j 01:07	28° 09 '37	14°15'10	minimum elong	580 Feb 24 j 12:11	7° 38 '05	15°30'40
max. Earth dist.	572 Feb 18 j 02:13	28° 14 '26	44.10850 AU	max. Earth dist.	580 Feb 27 j 07:55	7° 42 '25	45.68847 AU
retrograde	572 May 28 j 10:56	29° 53 '18		retrograde	580 Jun 06 j 16:36	9° 18 '11	
min. Earth dist.	572 Aug 17 j 03:22	28° 51 '15	42.28015 AU	min. Earth dist.	580 Aug 26 j 22:47	8° 17 '07	43.85693 AU
opposition	572 Aug 20 j 02:13	28° 47 '36	-15°-1'-4	opposition	580 Aug 29 j 16:18	8° 13 '48	-16°-16'-38
direct	572 Nov 08 j 22:54	27° 43 '22		direct	580 Nov 18 j 18:26	7° 10 '55	
conjunction	573 Feb 15 j 12:19	29° 22 '35	-14°-26'-5	conjunction	581 Feb 24 j 21:38	8° 46 '31	-15°-38'-10
minimum elong	573 Feb 15 j 12:10	29° 22 '34	14°26'06	minimum elong	581 Feb 24 j 21:34	8° 46 '31	15°38'11
max. Earth dist.	573 Feb 18 j 12:15	29° 27 '19	44.32011 AU	max. Earth dist.	581 Feb 27 j 15:59	8° 50 '44	45.87058 AU
retrograde	573 Mar 11 j 18:34	0° 00 '00		retrograde	581 Jun 08 j 03:54	10° 26 '13	
min. Earth dist.	573 May 29 j 19:54	1° 05 '49		min. Earth dist.	581 Aug 28 j 08:45	9° 25 '16	44.03914 AU
opposition	573 Aug 18 j 14:38	0° 03 '59	42.49162 AU	opposition	581 Aug 31 j 02:05	9° 21 '59	-16°-24'-5
direct	573 Aug 21 j 13:47	0° 00 '20	-15°-12'-5	direct	581 Nov 20 j 02:49	8° 19 '16	
direct	573 Aug 21 j 20:08	30° 00 '00		conjunction	582 Feb 26 j 06:53	9° 54 '28	-15°-45'-16
direct	573 Nov 10 j 12:03	28° 56 '18		minimum elong	582 Feb 26 j 06:47	9° 54 '28	15°45'17
direct	574 Jan 25 j 04:02	0° 00 '00		max. Earth dist.	582 Mar 01 j 01:48	9° 58 '42	46.05033 AU
conjunction	574 Feb 16 j 23:04	0° 35 '04	-14°-36'-35	retrograde	582 Jun 09 j 13:32	11° 33 '47	
minimum elong	574 Feb 16 j 22:56	0° 35 '04	14°36'37	min. Earth dist.	582 Aug 29 j 19:31	10° 32 '56	44.21872 AU
max. Earth dist.	574 Feb 19 j 22:21	0° 39 '45	44.52800 AU	opposition	582 Sep 01 j 11:37	10° 29 '43	-16°-31'-5
retrograde	574 May 31 j 06:18	2° 17 '52		direct	582 Nov 21 j 12:15	9° 27 '10	
min. Earth dist.	574 Aug 20 j 03:37	1° 16 '09	42.69916 AU	conjunction	583 Feb 27 j 16:00	11° 02 '00	-15°-51'-57
opposition	574 Aug 23 j 01:18	1° 12 '35	-15°-22'-37	minimum elong	583 Feb 27 j 15:57	11° 02 '00	15°51'58
direct	574 Nov 12 j 00:31	0° 08 '46		max. Earth dist.	583 Mar 02 j 09:33	11° 06 '08	46.22755 AU
conjunction	575 Feb 18 j 09:58	1° 47 '04	-14°-46'-39	retrograde	583 Jun 10 j 23:30	12° 40 '56	
minimum elong	575 Feb 18 j 09:50	1° 47 '03	14°46'39	min. Earth dist.	583 Aug 31 j 04:23	11° 40 '17	44.39557 AU
max. Earth dist.	575 Feb 21 j 08:58	1° 51 '42	44.73175 AU	opposition	583 Sep 02 j 20:45	11° 37 '04	-16°-37'-40
retrograde	575 Jun 01 j 16:00	3° 29 '25		direct	583 Nov 22 j 19:39	10° 34 '41	
min. Earth dist.	575 Aug 21 j 15:25	2° 27 '49	42.90210 AU	conjunction	584 Feb 29 j 00:59	12° 09 '11	-15°-58'-14
opposition	575 Aug 24 j 12:18	2° 24 '18	-15°-32'-43	minimum elong	584 Feb 29 j 00:55	12° 09 '11	15°58'15
direct	575 Nov 13 j 13:06	1° 20 '40		max. Earth dist.	584 Mar 02 j 18:18	12° 13 '17	46.40175 AU
conjunction	576 Feb 19 j 20:29	2° 58 '30	-14°-56'-18	retrograde	584 Jun 11 j 07:50	13° 47 '46	
minimum elong	576 Feb 19 j 20:21	2° 58 '30	14°56'19	min. Earth dist.	584 Aug 31 j 15:19	12° 47 '11	44.56920 AU
max. Earth dist.	576 Feb 22 j 17:34	3° 02 '59	44.93089 AU	opposition	584 Sep 03 j 05:58	12° 44 '04	-16°-43'-51
retrograde	576 Jun 02 j 05:16	4° 40 '24		direct	584 Nov 23 j 04:49	11° 41 '53	
min. Earth dist.	576 Aug 22 j 02:53	3° 38 '56	43.10053 AU	conjunction	585 Mar 01 j 09:47	13° 16 '02	-16°-4'-7
opposition	576 Aug 24 j 23:16	3° 35 '27	-15°-42'-23	minimum elong	585 Mar 01 j 09:44	13° 16 '02	16°04'09
direct	576 Nov 13 j 22:00	2° 31 '59		max. Earth dist.	585 Mar 04 j 02:36	13° 20 '05	46.57260 AU
conjunction	577 Feb 20 j 06:43	4° 09 '21	-15°-5'-31	retrograde	585 Jun 12 j 14:36	14° 54 '17	
minimum elong	577 Feb 20 j 06:36	4° 09 '21	15°05'32	min. Earth dist.	585 Sep 02 j 00:30	13° 53 '52	44.73897 AU
max. Earth dist.	577 Feb 23 j 04:07	4° 13 '50	45.12558 AU	opposition	585 Sep 04 j 14:55	13° 50 '46	-16°-49'-38
retrograde	577 Jun 03 j 16:30	5° 50 '46		direct	585 Nov 24 j 15:54	12° 48 '45	
min. Earth dist.	577 Aug 23 j 15:15	4° 49 '22	43.29458 AU	conjunction	586 Mar 02 j 18:31	14° 22 '35	-16°-9'-39
opposition	577 Aug 26 j 10:00	4° 45 '59	-15°-51'-37	minimum elong	586 Mar 02 j 18:27	14° 22 '35	16°09'39
direct	577 Nov 15 j 07:50	3° 42 '39		max. Earth dist.	586 Mar 05 j 09:34	14° 26 '31	46.73931 AU
conjunction	578 Feb 21 j 16:46	5° 19 '33	-15°-14'-19	retrograde	586 Jun 14 j 00:42	16° 00 '31	
minimum elong	578 Feb 21 j 16:39	5° 19 '33	15°14'21	min. Earth dist.	586 Sep 03 j 10:35	15° 00 '12	44.90443 AU
max. Earth dist.	578 Feb 24 j 12:49	5° 23 '56	45.31641 AU	opposition	586 Sep 05 j 23:46	14° 57 '10	-16°-55'-3
retrograde	578 Jun 05 j 02:09	7° 00 '31		direct	586 Nov 26 j 00:36	13° 55 '20	
min. Earth dist.	578 Aug 25 j 01:13	5° 59 '15	43.48503 AU	conjunction	587 Mar 04 j 03:20	15° 28 '49	-16°-14'-49
opposition	578 Aug 27 j 20:19	5° 55 '51	-16°00'-24	minimum elong	587 Mar 04 j 03:18	15° 28 '49	16°14'51
direct	578 Nov 16 j 17:31	4° 52 '40		max. Earth dist.	587 Mar 06 j 18:23	15° 32 '44	46.90138 AU

retrograde	587 Jun 15 j 10:43	17° ✕ 06'25		direct	595 Dec 05 j 23:08	23° ✕ 35'58	
min. Earth dist.	587 Sep 04 j 20:55	16° ✕ 06'11	45.06479 AU				
opposition	587 Sep 07 j 08:27	16° ✕ 03'14	-17°00'-7	conjunction	596 Mar 13 j 01:57	25° ✕ 06'41	-16°-45'-53
direct	587 Nov 27 j 08:34	15° ✕ 01'33		minimum elong	596 Mar 13 j 01:59	25° ✕ 06'41	16°45'54
				max. Earth dist.	596 Mar 15 j 08:45	25° ✕ 09'59	48.17761 AU
conjunction	588 Mar 04 j 11:51	16° ✕ 34'43	-16°-19'-39	retrograde	596 Jun 24 j 05:09	26° ✕ 41'25	
minimum elong	588 Mar 04 j 11:48	16° ✕ 34'42	16°19'40	min. Earth dist.	596 Sep 14 j 01:40	25° ✕ 41'53	46.33056 AU
max. Earth dist.	588 Mar 07 j 00:43	16° ✕ 38'28	47.05839 AU	opposition	596 Sep 16 j 06:04	25° ✕ 39'20	-17°-29'-38
retrograde	588 Jun 15 j 21:27	18° ✕ 11'58		direct	596 Dec 06 j 08:04	24° ✕ 38'42	
min. Earth dist.	588 Sep 05 j 05:30	17° ✕ 11'51	45.22008 AU				
opposition	588 Sep 07 j 16:50	17° ✕ 08'55	-17°-4'-50	conjunction	597 Mar 14 j 09:16	26° ✕ 09'09	-16°-47'-37
direct	588 Nov 27 j 14:31	16° ✕ 07'21		minimum elong	597 Mar 14 j 09:16	26° ✕ 09'09	16°47'38
				max. Earth dist.	597 Mar 16 j 16:13	26° ✕ 12'28	48.30393 AU
conjunction	589 Mar 05 j 20:12	17° ✕ 40'11	-16°-24'-9	retrograde	597 Jun 25 j 11:38	27° ✕ 43'38	
minimum elong	589 Mar 05 j 20:10	17° ✕ 40'11	16°24'11	min. Earth dist.	597 Sep 15 j 09:45	26° ✕ 44'11	46.45518 AU
max. Earth dist.	589 Mar 08 j 08:30	17° ✕ 43'54	47.21042 AU	opposition	597 Sep 17 j 13:02	26° ✕ 41'41	-17°-31'-9
retrograde	589 Jun 17 j 03:39	19° ✕ 17'06		direct	597 Dec 07 j 16:54	25° ✕ 41'11	
min. Earth dist.	589 Sep 06 j 15:59	18° ✕ 16'59	45.37058 AU				
opposition	589 Sep 09 j 01:13	18° ✕ 14'10	-17°-9'-12	conjunction	598 Mar 15 j 16:21	27° ✕ 11'24	-16°-49'-1
direct	589 Nov 28 j 23:58	17° ✕ 12'43		minimum elong	598 Mar 15 j 16:24	27° ✕ 11'24	16°49'02
				max. Earth dist.	598 Mar 17 j 21:15	27° ✕ 14'34	48.42626 AU
conjunction	590 Mar 07 j 04:20	18° ✕ 45'13	-16°-28'-19	retrograde	598 Jun 26 j 21:31	28° ✕ 45'38	
minimum elong	590 Mar 07 j 04:19	18° ✕ 45'13	16°28'19	min. Earth dist.	598 Sep 16 j 17:09	27° ✕ 46'16	46.57550 AU
max. Earth dist.	590 Mar 09 j 15:53	18° ✕ 48'53	47.35811 AU	opposition	598 Sep 18 j 19:56	27° ✕ 43'48	-17°-32'-21
retrograde	590 Jun 18 j 08:10	20° ✕ 21'46		direct	598 Dec 08 j 21:46	26° ✕ 43'25	
min. Earth dist.	590 Sep 08 j 00:08	19° ✕ 21'46	45.51687 AU				
opposition	590 Sep 10 j 09:14	19° ✕ 18'57	-17°-13'-12	conjunction	599 Mar 16 j 23:38	28° ✕ 13'24	-16°-50'-9
direct	590 Nov 30 j 10:44	18° ✕ 17'36		minimum elong	599 Mar 16 j 23:40	28° ✕ 13'24	16°50'09
				max. Earth dist.	599 Mar 19 j 03:53	28° ✕ 16'31	48.54385 AU
conjunction	591 Mar 08 j 12:18	19° ✕ 49'47	-16°-32'-8	retrograde	599 Jun 28 j 04:53	29° ✕ 47'22	
minimum elong	591 Mar 08 j 12:16	19° ✕ 49'47	16°32'09	min. Earth dist.	599 Sep 18 j 02:10	28° ✕ 48'01	46.69077 AU
max. Earth dist.	591 Mar 10 j 22:23	19° ✕ 53'20	47.50186 AU	opposition	599 Sep 20 j 02:40	28° ✕ 45'40	-17°-33'-16
retrograde	591 Jun 19 j 16:03	21° ✕ 26'00		direct	599 Dec 10 j 03:50	27° ✕ 45'23	
min. Earth dist.	591 Sep 09 j 09:06	20° ✕ 26'03	45.65967 AU				
opposition	591 Sep 11 j 17:03	20° ✕ 23'18	-17°-16'-51	conjunction	600 Mar 17 j 06:47	29° ✕ 15'08	-16°-50'-59
direct	591 Dec 01 j 19:35	19° ✕ 22'03		minimum elong	600 Mar 17 j 06:50	29° ✕ 15'08	16°51'00
				max. Earth dist.	600 Mar 19 j 09:39	29° ✕ 18'09	48.65645 AU
conjunction	592 Mar 08 j 20:13	20° ✕ 53'54	-16°-35'-35	600 Apr 19 j 00:19		0° ∇	
minimum elong	592 Mar 08 j 20:13	20° ✕ 53'54	16°35'36	retrograde	600 Jun 28 j 10:15	0° ∇ 48'50	
max. Earth dist.	592 Mar 11 j 06:34	20° ✕ 57'28	47.64244 AU				
retrograde	592 Jun 19 j 23:14	22° ✕ 29'48		600 Sep 09 j 07:01		30° R ✕	
min. Earth dist.	592 Sep 09 j 17:39	21° ✕ 29'54	45.79932 AU	min. Earth dist.	600 Sep 18 j 09:08	29° ✕ 49'33	46.80083 AU
opposition	592 Sep 12 j 00:43	21° ✕ 27'12	-17°-20'-9	opposition	600 Sep 20 j 09:17	29° ✕ 47'14	-17°-33'-53
direct	592 Dec 02 j 04:37	20° ✕ 26'05		direct	600 Dec 10 j 11:00	28° ✕ 47'02	
conjunction	593 Mar 10 j 03:41	21° ✕ 57'37	-16°-38'-41				
minimum elong	593 Mar 10 j 03:40	21° ✕ 57'36	16°38'42				
max. Earth dist.	593 Mar 12 j 12:29	22° ✕ 01'04	47.78023 AU				
retrograde	593 Jun 21 j 09:36	23° ✕ 33'12					
min. Earth dist.	593 Sep 11 j 01:07	22° ✕ 33'25	45.93633 AU				
opposition	593 Sep 13 j 08:18	22° ✕ 30'43	-17°-23'-3				
direct	593 Dec 03 j 09:20	21° ✕ 29'42					
conjunction	594 Mar 11 j 11:15	23° ✕ 00'57	-16°-41'-26				
minimum elong	594 Mar 11 j 11:16	23° ✕ 00'57	16°41'27				
max. Earth dist.	594 Mar 13 j 20:08	23° ✕ 04'24	47.91539 AU				
retrograde	594 Jun 22 j 18:24	24° ✕ 36'14					
min. Earth dist.	594 Sep 12 j 10:10	23° ✕ 36'30	46.07068 AU				
opposition	594 Sep 14 j 15:43	23° ✕ 33'53	-17°-25'-36				
direct	594 Dec 04 j 14:58	22° ✕ 32'59					
conjunction	595 Mar 12 j 18:44	24° ✕ 03'58	-16°-43'-50				
minimum elong	595 Mar 12 j 18:44	24° ✕ 03'58	16°43'51				
max. Earth dist.	595 Mar 15 j 02:50	24° ✕ 07'21	48.04802 AU				
retrograde	595 Jun 23 j 23:23	25° ✕ 38'58					
min. Earth dist.	595 Sep 13 j 17:09	24° ✕ 39'21	46.20218 AU				
opposition	595 Sep 15 j 22:54	24° ✕ 36'44	-17°-27'-47				