

superior conj	400 Feb 15 j 20:34	27° \approx 41'38	-1°-25'-21	greatest brilliancy	402 Aug 10 j 03:32	8° \approx 03'43	-4.5m
minimum elong	400 Feb 15 j 18:57	27° \approx 36'36	1°25'21		402 Sep 08 j 14:59	0° Ω	
	400 Feb 17 j 17:01	0° H		morning max el	402 Sep 14 j 12:02	5° Ω 39'58	46°19'21
max. Earth dist.	400 Feb 19 j 18:31	2° H 34'03	1.72170 AU	asc. node	402 Sep 30 j 18:45	22° Ω 35'46	
	400 Mar 12 j 21:03	0° Y			402 Oct 07 j 12:12	0° M	
evening rise	400 Mar 26 j 01:14	16° Y 16'31			402 Nov 02 j 11:04	0° Ω	
	400 Apr 06 j 04:49	0° B			402 Nov 27 j 07:03	0° M	
asc. node	400 Apr 14 j 23:48	10° B 47'32			402 Dec 21 j 15:55	0° Z	
	400 Apr 30 j 16:45	0° II		desc. node	403 Jan 14 j 20:57	0° Z	
	400 May 25 j 09:15	0° E			403 Jan 20 j 08:21	6° Z 47'25	
	400 Jun 19 j 07:36	0° Ω			403 Feb 08 j 01:31	0° \approx	
	400 Jul 14 j 14:45	0° M			403 Mar 04 j 07:02	0° H	
desc. node	400 Aug 04 j 13:06	24° M 18'11		morning set	403 Mar 21 j 12:44	21° H 17'47	
	400 Aug 09 j 12:49	0° Ω			403 Mar 28 j 14:06	0° Y	
	400 Sep 05 j 16:13	0° M			403 Apr 21 j 22:52	0° B	
evening max el	400 Sep 20 j 13:16	15° M 19'41	46°58'53				
	400 Oct 06 j 08:53	0° Z		superior conj	403 Apr 28 j 00:28	7° B 27'28	0°-35'-34
greatest brilliancy	400 Oct 29 j 11:23	15° Z 18'55	-4.7m	minimum elong	403 Apr 28 j 07:23	7° B 48'43	0°35'15
retrograde	400 Nov 09 j 22:29	17° Z 46'12		max. Earth dist.	403 Apr 29 j 02:20	8° B 46'55	1.73503 AU
evening set	400 Nov 24 j 04:56	13° Z 41'37		asc. node	403 May 13 j 11:33	26° B 27'13	
asc. node	400 Nov 25 j 16:17	12° Z 53'05			403 May 16 j 08:52	0° II	
min. Earth dist.	400 Nov 30 j 02:02	10° Z 16'14	0.26378 AU	evening rise	403 Jun 03 j 12:21	22° II 16'17	
inferior conj	400 Nov 30 j 10:27	10° Z 03'25	1°14'04		403 Jun 09 j 19:29	0° E	
minimum elong	400 Nov 30 j 07:39	10° Z 07'41	1°13'09		403 Jul 04 j 06:28	0° Ω	
morning rise	400 Dec 06 j 10:38	6° Z 33'25			403 Jul 28 j 18:32	0° M	
direct	400 Dec 20 j 18:02	2° Z 27'44			403 Aug 22 j 09:14	0° Ω	
greatest brilliancy	401 Jan 01 j 07:37	4° Z 59'01	-4.7m	desc. node	403 Sep 02 j 01:11	12° Ω 55'57	
	401 Feb 03 j 20:39	0° Z			403 Sep 16 j 04:35	0° M	
morning max el	401 Feb 08 j 23:25	5° Z 00'13	46°39'17		403 Oct 11 j 07:54	0° Z	
	401 Mar 04 j 16:16	0° \approx			403 Nov 06 j 03:29	0° Z	
desc. node	401 Mar 17 j 06:08	14° \approx 01'23		evening max el	403 Dec 02 j 22:00	29° Z 07'44	47°18'36
	401 Mar 31 j 06:04	0° H			403 Dec 03 j 18:30	0° \approx	
	401 Apr 25 j 23:38	0° Y		asc. node	403 Dec 24 j 04:13	18° \approx 53'04	
	401 May 21 j 06:41	0° B		greatest brilliancy	404 Jan 09 j 10:36	29° \approx 34'43	-4.7m
	401 Jun 15 j 06:11	0° II			404 Jan 10 j 08:43	0° H	
asc. node	401 Jul 08 j 09:13	28° II 05'53		retrograde	404 Jan 22 j 21:13	2° H 56'13	
	401 Jul 09 j 22:35	0° E			404 Feb 03 j 20:23	30° \approx	
	401 Aug 03 j 08:03	0° Ω		evening set	404 Feb 09 j 14:37	26° \approx 48'40	
morning set	401 Aug 07 j 03:42	4° Ω 43'30		min. Earth dist.	404 Feb 12 j 03:23	25° \approx 13'48	0.27899 AU
	401 Aug 27 j 11:42	0° M		inferior conj	404 Feb 12 j 21:13	24° \approx 45'36	8°39'13
max. Earth dist.	401 Sep 10 j 04:54	17° M 08'07	1.71839 AU	minimum elong	404 Feb 12 j 18:57	24° \approx 49'10	8°39'08
				morning rise	404 Feb 15 j 23:32	22° \approx 49'37	
superior conj	401 Sep 13 j 08:04	21° M 03'13	1°20'32	direct	404 Mar 04 j 17:59	16° \approx 46'50	
minimum elong	401 Sep 13 j 13:58	21° M 21'42	1°20'27	greatest brilliancy	404 Mar 15 j 12:49	18° \approx 54'45	-4.6m
	401 Sep 20 j 11:30	0° Ω			404 Apr 03 j 03:18	0° H	
	401 Oct 14 j 09:36	0° M		desc. node	404 Apr 13 j 17:43	8° H 49'01	
evening rise	401 Oct 22 j 18:13	10° M 29'19		morning max el	404 Apr 22 j 19:39	17° H 14'40	45°57'20
desc. node	401 Oct 27 j 22:53	17° M 00'24			404 May 05 j 13:54	0° Y	
	401 Nov 07 j 07:33	0° Z			404 Jun 02 j 08:13	0° B	
	401 Dec 01 j 06:27	0° Z			404 Jun 28 j 14:14	0° II	
	401 Dec 25 j 07:45	0° \approx			404 Jul 23 j 23:56	0° E	
	402 Jan 18 j 14:12	0° H		asc. node	404 Aug 04 j 21:07	14° E 17'57	
	402 Feb 12 j 06:29	0° Y			404 Aug 17 j 18:52	0° Ω	
asc. node	402 Feb 18 j 02:01	6° Y 57'33		greatest brilliancy	404 Sep 07 j 23:29	26° Ω 06'33	-3.9m
	402 Mar 09 j 16:25	0° B			404 Sep 11 j 02:43	0° M	
	402 Apr 05 j 11:27	0° II			404 Oct 05 j 03:11	0° Ω	
evening max el	402 Apr 26 j 07:51	21° II 19'36	45°20'53	morning set	404 Oct 17 j 12:55	15° Ω 34'53	
	402 May 05 j 18:08	0° E			404 Oct 28 j 23:54	0° M	
greatest brilliancy	402 May 31 j 01:50	17° E 36'37	-4.5m	desc. node	404 Nov 21 j 19:35	0° Z	
desc. node	402 Jun 09 j 15:29	20° E 32'49			404 Nov 24 j 10:40	3° Z 18'37	
retrograde	402 Jun 13 j 18:38	20° E 51'58					
evening set	402 Jun 29 j 09:45	16° E 13'18		superior conj	404 Nov 27 j 06:13	6° Z 51'17	0°-6'-43
inferior conj	402 Jul 05 j 04:54	12° E 44'42	-5°-32'-18	minimum elong	404 Nov 27 j 04:25	6° Z 45'34	0°06'38
minimum elong	402 Jul 04 j 19:10	12° E 59'52	5°30'07	behind sun begin	404 Nov 26 j 03:49	5° Z 28'09	
min. Earth dist.	402 Jul 05 j 06:55	12° E 41'34	0.28846 AU	behind sun end	404 Nov 28 j 05:01	8° Z 03'00	
morning rise	402 Jul 10 j 04:22	9° E 43'29		max. Earth dist.	404 Nov 28 j 12:03	8° Z 25'07	1.71028 AU
direct	402 Jul 26 j 20:53	4° E 29'11			404 Dec 15 j 15:49	0° Z	

evening rise	405 Jan 08 j 00:04	29°♁17'29			407 May 31 j 20:17	0°♁	
	405 Jan 08 j 13:39	0°♁		morning max el	407 Jul 03 j 14:46	25°♁21'59	45°46'13
	405 Feb 01 j 14:23	0°♁			407 Jul 08 j 09:24	0°♁	
	405 Feb 25 j 19:59	0°♁			407 Aug 05 j 19:05	0°♁	
asc. node	405 Mar 17 j 13:55	24°♁10'41			407 Aug 31 j 22:51	0°♁	
	405 Mar 22 j 08:52	0°♁		asc. node	407 Sep 02 j 09:02	1°♁40'41	
	405 Apr 16 j 07:59	0°♁			407 Sep 25 j 23:21	0°♁	
	405 May 11 j 21:55	0°♁			407 Oct 20 j 08:15	0°♁	
	405 Jun 07 j 12:59	0°♁			407 Nov 13 j 09:04	0°♁	
	405 Jul 06 j 12:42	0°♁			407 Dec 07 j 06:46	0°♁	
evening max el	405 Jul 06 j 15:19	0°♁06'15	45°43'18	desc. node	407 Dec 22 j 22:32	19°♁39'52	
desc. node	405 Jul 07 j 03:22	0°♁35'01			407 Dec 31 j 04:13	0°♁	
greatest brilliancy	405 Aug 13 j 22:26	28°♁05'03	-4.5m	morning set	408 Jan 03 j 03:46	3°♁44'21	
	405 Aug 21 j 19:13	0°♁			408 Jan 24 j 02:54	0°♁	
retrograde	405 Aug 24 j 15:32	0°♁09'20					
	405 Aug 27 j 10:58	30°♁		superior conj	408 Feb 13 j 09:06	25°♁17'35	-1°-25'-1
evening set	405 Sep 11 j 08:31	24°♁19'49		minimum elong	408 Feb 13 j 06:30	25°♁09'28	1°25'01
inferior conj	405 Sep 14 j 14:58	22°♁21'46	-8°-22'-37		408 Feb 17 j 03:47	0°♁	
minimum elong	405 Sep 14 j 21:31	22°♁11'45	8°21'59	max. Earth dist.	408 Feb 17 j 08:49	0°♁15'39	1.72112 AU
min. Earth dist.	405 Sep 15 j 11:32	21°♁50'21	0.27589 AU		408 Mar 12 j 07:45	0°♁	
morning rise	405 Sep 18 j 10:12	20°♁04'12		evening rise	408 Mar 23 j 16:28	14°♁02'34	
direct	405 Oct 05 j 14:15	14°♁24'37			408 Apr 05 j 15:33	0°♁	
greatest brilliancy	405 Oct 19 j 16:59	18°♁01'49	-4.6m	asc. node	408 Apr 14 j 01:48	10°♁20'38	
asc. node	405 Oct 28 j 06:25	23°♁03'08			408 Apr 30 j 03:38	0°♁	
	405 Nov 06 j 09:06	0°♁			408 May 24 j 20:30	0°♁	
morning max el	405 Nov 25 j 08:32	17°♁48'10	46°54'51		408 Jun 18 j 19:29	0°♁	
	405 Dec 06 j 21:35	0°♁			408 Jul 14 j 03:43	0°♁	
	406 Jan 02 j 09:30	0°♁		desc. node	408 Aug 03 j 15:14	23°♁43'01	
	406 Jan 27 j 17:44	0°♁			408 Aug 09 j 03:44	0°♁	
desc. node	406 Feb 16 j 20:16	24°♁11'39			408 Sep 05 j 11:24	0°♁	
	406 Feb 21 j 15:32	0°♁		evening max el	408 Sep 18 j 03:36	12°♁58'26	46°56'34
	406 Mar 18 j 09:07	0°♁			408 Oct 06 j 20:10	0°♁	
	406 Apr 12 j 00:55	0°♁		greatest brilliancy	408 Oct 27 j 01:13	12°♁51'07	-4.7m
	406 May 06 j 15:39	0°♁		retrograde	408 Nov 07 j 10:54	15°♁16'03	
morning set	406 May 29 j 02:26	27°♁25'47		evening set	408 Nov 21 j 17:16	11°♁11'58	
	406 May 31 j 04:49	0°♁		asc. node	408 Nov 24 j 18:25	9°♁28'40	
asc. node	406 Jun 09 j 23:29	11°♁59'02		inferior conj	408 Nov 27 j 22:25	7°♁34'01	0°49'23
	406 Jun 24 j 15:28	0°♁		minimum elong	408 Nov 27 j 20:32	7°♁36'53	0°48'47
max. Earth dist.	406 Jul 01 j 10:59	8°♁23'26	1.73342 AU	min. Earth dist.	408 Nov 27 j 15:21	7°♁44'47	0.26365 AU
				morning rise	408 Dec 04 j 00:06	4°♁02'04	
superior conj	406 Jul 04 j 09:24	12°♁00'27	0°53'32		408 Dec 17 j 06:12	30°♁	
minimum elong	406 Jul 04 j 00:54	11°♁34'15	0°53'13	direct	408 Dec 18 j 06:36	29°♁58'44	
	406 Jul 18 j 23:05	0°♁			408 Dec 19 j 07:06	0°♁	
evening rise	406 Aug 09 j 08:00	26°♁28'34		greatest brilliancy	408 Dec 29 j 20:50	2°♁30'52	-4.7m
	406 Aug 12 j 04:11	0°♁			409 Feb 03 j 21:30	0°♁	
	406 Sep 05 j 08:08	0°♁		morning max el	409 Feb 06 j 12:31	2°♁35'47	46°40'39
	406 Sep 29 j 12:23	0°♁			409 Mar 04 j 09:02	0°♁	
desc. node	406 Sep 29 j 13:00	0°♁01'56		desc. node	409 Mar 16 j 08:03	13°♁24'00	
	406 Oct 23 j 18:04	0°♁			409 Mar 30 j 19:56	0°♁	
	406 Nov 17 j 02:44	0°♁			409 Apr 25 j 12:02	0°♁	
	406 Dec 11 j 18:11	0°♁			409 May 20 j 18:14	0°♁	
	407 Jan 06 j 01:22	0°♁			409 Jun 14 j 17:14	0°♁	
asc. node	407 Jan 20 j 16:09	16°♁39'01		asc. node	409 Jul 07 j 11:21	27°♁39'22	
	407 Feb 01 j 22:10	0°♁			409 Jul 09 j 09:22	0°♁	
evening max el	407 Feb 12 j 04:45	10°♁34'34	46°15'18		409 Aug 02 j 18:45	0°♁	
	407 Mar 05 j 23:44	0°♁		morning set	409 Aug 04 j 20:38	2°♁34'17	
greatest brilliancy	407 Mar 19 j 02:07	8°♁17'57	-4.5m		409 Aug 26 j 22:24	0°♁	
retrograde	407 Apr 02 j 21:09	12°♁11'11		max. Earth dist.	409 Sep 07 j 15:09	14°♁36'31	1.71892 AU
evening set	407 Apr 18 j 18:38	7°♁15'28					
inferior conj	407 Apr 24 j 06:34	3°♁54'11	4°03'01	superior conj	409 Sep 10 j 23:12	18°♁46'50	1°21'32
minimum elong	407 Apr 24 j 14:27	3°♁41'46	4°00'58	minimum elong	409 Sep 11 j 04:24	19°♁03'03	1°21'28
min. Earth dist.	407 Apr 24 j 10:39	3°♁47'44	0.28917 AU		409 Sep 19 j 22:17	0°♁	
morning rise	407 Apr 30 j 10:25	0°♁10'35			409 Oct 13 j 20:29	0°♁	
	407 Apr 30 j 18:05	30°♁		evening rise	409 Oct 20 j 05:31	7°♁59'53	
desc. node	407 May 12 j 05:32	25°♁51'21		desc. node	409 Oct 27 j 00:57	16°♁32'25	
direct	407 May 15 j 19:08	25°♁36'13			409 Nov 06 j 18:35	0°♁	
greatest brilliancy	407 May 28 j 21:59	28°♁37'33	-4.5m		409 Nov 30 j 17:41	0°♁	

	409 Dec 24 j 19:13	0°≈			412 Jul 23 j 11:39	0°☉	
	410 Jan 18 j 01:59	0°✠		asc. node	412 Aug 03 j 23:11	13°☉49'35	
	410 Feb 11 j 18:52	0°☿			412 Aug 17 j 06:08	0°♁	
asc. node	410 Feb 17 j 04:01	6°☿25'57			412 Sep 10 j 13:45	0°♃	
	410 Mar 09 j 06:02	0°♃		greatest brilliancy	412 Sep 16 j 15:10	7°♃32'27	-3.9m
	410 Apr 05 j 04:04	0°♁			412 Oct 04 j 14:09	0°♂	
evening max el	410 Apr 23 j 23:07	19°♁08'26	45°21'34	morning set	412 Oct 15 j 01:48	13°♂09'56	
	410 May 05 j 21:50	0°☉			412 Oct 28 j 10:53	0°♆	
greatest brilliancy	410 May 28 j 16:31	15°☉26'47	-4.5m		412 Nov 21 j 06:37	0°♄	
desc. node	410 Jun 08 j 17:35	18°☉35'30		desc. node	412 Nov 23 j 12:52	2°♄50'46	
retrograde	410 Jun 11 j 10:04	18°☉43'40					
evening set	410 Jun 26 j 23:42	14°☉07'52		superior conj	412 Nov 24 j 15:50	4°♄15'41	0°-2'-41
inferior conj	410 Jul 02 j 21:08	10°☉36'06	-5°-16'-38	minimum elong	412 Nov 24 j 15:06	4°♄13'23	0°02'41
minimum elong	410 Jul 02 j 11:35	10°☉50'57	5°14'26	behind sun begin	412 Nov 23 j 12:47	2°♄50'30	
min. Earth dist.	410 Jul 02 j 23:16	10°☉32'46	0.28865 AU	behind sun end	412 Nov 25 j 17:26	5°♄36'15	
morning rise	410 Jul 07 j 23:12	7°☉30'46		max. Earth dist.	412 Nov 25 j 16:24	5°♄33'00	1.71027 AU
direct	410 Jul 24 j 12:56	2°☉20'13			412 Dec 15 j 02:53	0°♃	
greatest brilliancy	410 Aug 07 j 19:04	5°☉53'08	-4.5m	evening rise	413 Jan 05 j 10:06	26°♃43'58	
	410 Sep 08 j 14:47	0°♁			413 Jan 08 j 00:43	0°≈	
morning max el	410 Sep 12 j 02:03	3°♁22'22	46°17'45		413 Feb 01 j 01:30	0°✠	
asc. node	410 Sep 29 j 20:45	21°♁54'11			413 Feb 25 j 07:15	0°☿	
	410 Oct 07 j 04:23	0°♃		asc. node	413 Mar 16 j 15:58	23°☿41'52	
	410 Nov 02 j 00:49	0°♂			413 Mar 21 j 20:29	0°♃	
	410 Nov 26 j 19:40	0°♆			413 Apr 15 j 20:12	0°♁	
	410 Dec 21 j 03:52	0°♄			413 May 11 j 11:20	0°☉	
	411 Jan 14 j 08:30	0°♃			413 Jun 07 j 04:59	0°♁	
desc. node	411 Jan 19 j 10:27	6°♃18'24		evening max el	413 Jul 04 j 05:30	27°♁50'18	45°41'29
	411 Feb 07 j 12:45	0°≈		desc. node	413 Jul 06 j 05:29	29°♁44'06	
	411 Mar 03 j 18:01	0°✠			413 Jul 06 j 12:15	0°♃	
morning set	411 Mar 19 j 03:50	19°✠02'48		greatest brilliancy	413 Aug 11 j 08:40	25°♃43'10	-4.5m
	411 Mar 28 j 00:53	0°☿		retrograde	413 Aug 22 j 05:27	27°♃50'26	
	411 Apr 21 j 09:30	0°♃		evening set	413 Sep 09 j 00:00	21°♃57'23	
				inferior conj	413 Sep 12 j 04:46	20°♃01'46	-8°-28'-45
superior conj	411 Apr 25 j 17:50	5°♃20'41	0°-38'-29	minimum elong	413 Sep 12 j 10:36	19°♃52'51	8°28'16
minimum elong	411 Apr 26 j 01:13	5°♃43'22	0°38'10	min. Earth dist.	413 Sep 13 j 00:39	19°♃31'25	0.27658 AU
max. Earth dist.	411 Apr 26 j 21:59	6°♃47'11	1.73472 AU	morning rise	413 Sep 15 j 20:56	17°♃48'50	
asc. node	411 May 12 j 13:45	26°♃01'23		direct	413 Oct 03 j 05:10	12°♃03'35	
	411 May 15 j 19:28	0°♁		greatest brilliancy	413 Oct 17 j 09:02	15°♃42'34	-4.6m
evening rise	411 Jun 01 j 07:26	20°♁14'54		asc. node	413 Oct 27 j 08:38	21°♃43'32	
	411 Jun 09 j 06:09	0°☉			413 Nov 06 j 18:25	0°♂	
	411 Jul 03 j 17:22	0°♁		morning max el	413 Nov 22 j 23:58	15°♂27'52	46°54'11
	411 Jul 28 j 05:49	0°♃			413 Dec 06 j 16:26	0°♆	
	411 Aug 21 j 21:05	0°♂			414 Jan 02 j 00:39	0°♄	
desc. node	411 Sep 01 j 03:08	12°♂24'58			414 Jan 27 j 07:11	0°♃	
	411 Sep 15 j 17:18	0°♆		desc. node	414 Feb 15 j 22:16	23°♃39'33	
	411 Oct 10 j 21:57	0°♄			414 Feb 21 j 03:59	0°≈	
	411 Nov 05 j 19:59	0°♃			414 Mar 17 j 20:54	0°✠	
evening max el	411 Nov 30 j 11:25	26°♃42'36	47°19'38		414 Apr 11 j 12:16	0°☿	
	411 Dec 03 j 17:27	0°≈			414 May 06 j 02:41	0°♃	
asc. node	411 Dec 23 j 06:22	17°≈42'19		morning set	414 May 26 j 20:46	25°♃21'44	
greatest brilliancy	412 Jan 07 j 03:29	27°≈16'23	-4.7m		414 May 30 j 15:40	0°♁	
	412 Jan 14 j 23:45	0°✠		asc. node	414 Jun 09 j 01:35	11°♁32'20	
retrograde	412 Jan 20 j 11:51	0°✠36'09			414 Jun 24 j 02:15	0°☉	
	412 Jan 25 j 21:03	30°≈		max. Earth dist.	414 Jun 29 j 09:27	6°☉31'34	1.73372 AU
evening set	412 Feb 07 j 03:29	24°≈31'59					
min. Earth dist.	412 Feb 09 j 17:33	22°≈55'20	0.27838 AU	superior conj	414 Jul 02 j 03:57	9°☉56'27	0°51'05
inferior conj	412 Feb 10 j 11:54	22°≈26'21	8°36'51	minimum elong	414 Jul 01 j 19:37	9°☉30'46	0°50'45
minimum elong	412 Feb 10 j 08:50	22°≈31'13	8°36'43		414 Jul 18 j 09:52	0°♁	
morning rise	412 Feb 13 j 14:23	20°≈30'13		evening rise	414 Aug 07 j 01:42	24°♁20'47	
direct	412 Mar 02 j 07:21	14°≈28'25			414 Aug 11 j 15:06	0°♃	
greatest brilliancy	412 Mar 13 j 02:48	16°≈36'39	-4.6m		414 Sep 04 j 19:17	0°♂	
	412 Apr 03 j 15:11	0°✠		desc. node	414 Sep 28 j 15:08	29°♂33'00	
desc. node	412 Apr 12 j 19:50	7°✠52'59			414 Sep 28 j 23:51	0°♆	
morning max el	412 Apr 20 j 09:41	14°✠57'54	45°58'36		414 Oct 23 j 05:56	0°♄	
	412 May 05 j 08:25	0°☿			414 Nov 16 j 15:10	0°♃	
	412 Jun 01 j 22:38	0°♃			414 Dec 11 j 07:29	0°≈	
	412 Jun 28 j 02:53	0°♁			415 Jan 05 j 16:20	0°✠	

asc. node	415 Jan 19 j 18:08	15°♄58'18		asc. node	417 Jul 06 j 13:21	27°♃11'17	
	415 Feb 01 j 17:12	0°♃			417 Jul 08 j 20:32	0°♄	
evening max el	415 Feb 09 j 21:02	8°♃21'29	46°17'57		417 Aug 02 j 05:48	0°♃	
	415 Mar 06 j 15:49	0°♄		morning set	417 Aug 02 j 13:29	0°♃23'46	
greatest brilliancy	415 Mar 16 j 19:36	6°♄08'46	-4.5m		417 Aug 26 j 09:27	0°♄	
retrograde	415 Mar 31 j 14:16	10°♄01'00		max. Earth dist.	417 Sep 05 j 02:52	12°♄08'36	1.71947 AU
evening set	415 Apr 16 j 13:28	5°♄01'57					
inferior conj	415 Apr 21 j 22:56	1°♄43'47	4°20'20	superior conj	417 Sep 08 j 14:32	16°♄30'04	1°22'24
minimum elong	415 Apr 22 j 07:13	1°♄30'44	4°18'14	minimum elong	417 Sep 08 j 18:59	16°♄43'58	1°22'21
min. Earth dist.	415 Apr 22 j 02:25	1°♄38'17	0.28903 AU		417 Sep 19 j 09:24	0°♄	
	415 Apr 24 j 17:22	30°♃			417 Oct 13 j 07:43	0°♃	
morning rise	415 Apr 28 j 01:15	28°♃02'27		evening rise	417 Oct 17 j 17:13	5°♃30'44	
desc. node	415 May 11 j 07:42	23°♃31'48		desc. node	417 Oct 26 j 03:07	16°♃03'43	
direct	415 May 13 j 11:44	23°♃26'14			417 Nov 06 j 05:57	0°♄	
greatest brilliancy	415 May 26 j 11:36	26°♃25'01	-4.5m		417 Nov 30 j 05:12	0°♄	
	415 Jun 02 j 10:38	0°♄			417 Dec 24 j 06:58	0°♃	
morning max el	415 Jul 01 j 07:25	23°♄13'40	45°45'46		418 Jan 17 j 14:05	0°♄	
	415 Jul 08 j 05:48	0°♃			418 Feb 11 j 07:38	0°♃	
	415 Aug 05 j 10:12	0°♄		asc. node	418 Feb 16 j 06:04	5°♃53'24	
	415 Aug 31 j 11:59	0°♃			418 Mar 08 j 20:11	0°♄	
asc. node	415 Sep 01 j 11:00	1°♃07'57			418 Apr 04 j 21:34	0°♃	
	415 Sep 25 j 11:32	0°♄		evening max el	418 Apr 21 j 13:53	16°♃54'26	45°22'13
	415 Oct 19 j 19:58	0°♄			418 May 06 j 04:20	0°♄	
	415 Nov 12 j 20:32	0°♃		greatest brilliancy	418 May 26 j 06:15	13°♄13'53	-4.5m
	415 Dec 06 j 18:06	0°♄		desc. node	418 Jun 07 j 19:39	16°♄31'48	
desc. node	415 Dec 22 j 00:37	19°♄11'01		retrograde	418 Jun 09 j 01:35	16°♄33'35	
	415 Dec 30 j 15:27	0°♄		evening set	418 Jun 24 j 13:35	12°♄00'11	
morning set	415 Dec 31 j 13:39	1°♄09'39		inferior conj	418 Jun 30 j 13:12	8°♄25'37	-5°00'-26
	416 Jan 23 j 14:04	0°♃		minimum elong	418 Jun 30 j 03:54	8°♄40'06	4°58'14
				min. Earth dist.	418 Jun 30 j 15:33	8°♄21'56	0.28881 AU
superior conj	416 Feb 10 j 21:11	22°♄50'58	-1°-24'-30	morning rise	418 Jul 05 j 17:51	5°♄16'26	
minimum elong	416 Feb 10 j 17:37	22°♄39'52	1°24'30	direct	418 Jul 22 j 04:31	0°♄09'18	
max. Earth dist.	416 Feb 14 j 23:16	27°♄56'36	1.72060 AU	greatest brilliancy	418 Aug 05 j 11:22	3°♄42'08	-4.5m
	416 Feb 16 j 14:54	0°♄			418 Sep 08 j 14:03	0°♃	
	416 Mar 11 j 18:50	0°♃		morning max el	418 Sep 09 j 16:26	1°♃04'38	46°16'19
evening rise	416 Mar 21 j 07:03	11°♃45'15		asc. node	418 Sep 28 j 23:00	21°♃12'45	
	416 Apr 05 j 02:39	0°♄			418 Oct 06 j 20:40	0°♄	
asc. node	416 Apr 13 j 03:57	9°♄53'02			418 Nov 01 j 14:45	0°♄	
	416 Apr 29 j 14:54	0°♃			418 Nov 26 j 08:30	0°♃	
	416 May 24 j 08:07	0°♄			418 Dec 20 j 16:05	0°♄	
	416 Jun 18 j 07:46	0°♃			419 Jan 13 j 20:18	0°♄	
	416 Jul 13 j 17:08	0°♄		desc. node	419 Jan 18 j 12:26	5°♄48'12	
desc. node	416 Aug 02 j 17:12	23°♄06'15			419 Feb 07 j 00:14	0°♃	
	416 Aug 08 j 19:11	0°♄			419 Mar 03 j 05:14	0°♄	
	416 Sep 05 j 07:24	0°♃		morning set	419 Mar 16 j 18:57	16°♄46'56	
evening max el	416 Sep 15 j 17:41	10°♃36'03	46°54'17		419 Mar 27 j 11:56	0°♃	
	416 Oct 07 j 11:20	0°♄			419 Apr 20 j 20:28	0°♄	
greatest brilliancy	416 Oct 24 j 16:07	10°♄24'41	-4.7m				
retrograde	416 Nov 04 j 23:03	12°♄46'22		superior conj	419 Apr 23 j 11:09	3°♄12'41	0°-41'-20
evening set	416 Nov 19 j 06:08	8°♄42'32		minimum elong	419 Apr 23 j 18:58	3°♄36'42	0°41'01
asc. node	416 Nov 23 j 20:28	6°♄03'31		max. Earth dist.	419 Apr 24 j 16:23	4°♄42'34	1.73448 AU
inferior conj	416 Nov 25 j 10:44	5°♄05'15	0°24'56	asc. node	419 May 11 j 15:50	25°♄34'04	
minimum elong	416 Nov 25 j 09:47	5°♄06'43	0°24'37		419 May 15 j 06:27	0°♃	
min. Earth dist.	416 Nov 25 j 05:17	5°♄13'35	0.26355 AU	evening rise	419 May 30 j 02:18	18°♃11'43	
morning rise	416 Dec 01 j 13:40	1°♄31'26			419 Jun 08 j 17:15	0°♄	
	416 Dec 04 j 16:57	30°♃			419 Jul 03 j 04:40	0°♃	
direct	416 Dec 15 j 19:00	27°♃30'14			419 Jul 27 j 17:29	0°♄	
	416 Dec 27 j 07:20	0°♄			419 Aug 21 j 09:20	0°♄	
greatest brilliancy	416 Dec 27 j 10:47	0°♄03'34	-4.7m	desc. node	419 Aug 31 j 05:15	11°♄53'25	
	417 Feb 03 j 21:24	0°♄			419 Sep 15 j 06:25	0°♃	
morning max el	417 Feb 04 j 00:57	0°♄08'53	46°41'46		419 Oct 10 j 12:28	0°♄	
	417 Mar 04 j 01:49	0°♃			419 Nov 05 j 13:06	0°♄	
desc. node	417 Mar 15 j 10:11	12°♄46'32		evening max el	419 Nov 28 j 01:22	24°♄18'03	47°20'38
	417 Mar 30 j 10:05	0°♄			419 Dec 03 j 17:46	0°♃	
	417 Apr 25 j 00:49	0°♃		asc. node	419 Dec 22 j 08:25	16°♄28'29	
	417 May 20 j 06:13	0°♄		greatest brilliancy	420 Jan 04 j 19:28	24°♄55'54	-4.7m
	417 Jun 14 j 04:42	0°♃		retrograde	420 Jan 18 j 02:56	28°♄15'16	

evening set	420 Feb 04 j 15:56	22°≈14'45		superior conj	422 Jun 29 j 22:35	7°☾52'38	0°48'34
min. Earth dist.	420 Feb 07 j 07:28	20°≈36'12	0.27776 AU	minimum elong	422 Jun 29 j 14:28	7°☾27'39	0°48'14
inferior conj	420 Feb 08 j 02:33	20°≈06'08	8°33'35		422 Jul 17 j 20:44	0°♁	
minimum elong	420 Feb 07 j 22:39	20°≈12'16	8°33'22	evening rise	422 Aug 04 j 19:21	22°♁12'40	
morning rise	420 Feb 11 j 05:36	18°≈09'24			422 Aug 11 j 02:08	0°♃	
direct	420 Feb 28 j 20:48	12°≈09'01			422 Sep 04 j 06:35	0°♄	
greatest brilliancy	420 Mar 10 j 16:27	14°≈17'34	-4.6m	desc. node	422 Sep 27 j 17:15	29°♄03'39	
	420 Apr 04 j 00:12	0°♃			422 Sep 28 j 11:27	0°♃	
desc. node	420 Apr 11 j 21:59	6°♃57'44			422 Oct 22 j 17:56	0°♃	
morning max el	420 Apr 18 j 00:29	12°♃42'23	45°59'51		422 Nov 16 j 03:42	0°♃	
	420 May 05 j 02:41	0°♃			422 Dec 10 j 20:55	0°≈	
	420 Jun 01 j 13:08	0°♃			423 Jan 05 j 07:28	0°♃	
	420 Jun 27 j 15:45	0°♃		asc. node	423 Jan 18 j 20:13	15°♃17'30	
	420 Jul 22 j 23:42	0°☾			423 Feb 01 j 12:44	0°♃	
asc. node	420 Aug 03 j 01:13	13°☾20'08		evening max el	423 Feb 07 j 13:12	6°♃08'00	46°20'33
	420 Aug 16 j 17:42	0°♁			423 Mar 07 j 13:26	0°♃	
	420 Sep 10 j 01:04	0°♃		greatest brilliancy	423 Mar 14 j 13:58	4°♃00'49	-4.5m
greatest brilliancy	420 Sep 20 j 23:12	13°♃36'43	-3.9m	retrograde	423 Mar 29 j 07:02	7°♃50'53	
	420 Oct 04 j 01:22	0°♄		evening set	423 Apr 14 j 08:26	2°♃48'42	
morning set	420 Oct 12 j 14:41	10°♄44'25			423 Apr 18 j 22:45	30°♃	
	420 Oct 27 j 22:06	0°♃		inferior conj	423 Apr 19 j 15:23	29°♃33'44	4°37'17
	420 Nov 20 j 17:52	0°♃		minimum elong	423 Apr 20 j 00:00	29°♃20'08	4°35'10
				min. Earth dist.	423 Apr 19 j 18:28	29°♃28'52	0.28886 AU
superior conj	420 Nov 22 j 01:25	1°♃39'21	0°01'21	morning rise	423 Apr 25 j 15:53	25°♃54'41	
minimum elong	420 Nov 22 j 01:46	1°♃40'28	0°01'20	desc. node	423 May 10 j 09:41	21°♃17'26	
behind sun begin	420 Nov 20 j 23:19	0°♃17'11		direct	423 May 11 j 04:13	21°♃16'44	
behind sun end	420 Nov 23 j 04:13	3°♃03'45		greatest brilliancy	423 May 24 j 00:26	24°♃11'50	-4.5m
desc. node	420 Nov 22 j 14:51	2°♃21'40			423 Jun 03 j 13:17	0°♃	
max. Earth dist.	420 Nov 23 j 00:25	2°♃51'47	1.71028 AU	morning max el	423 Jun 28 j 23:15	21°♃03'48	45°45'21
	420 Dec 14 j 14:09	0°♃			423 Jul 08 j 01:25	0°♃	
evening rise	421 Jan 02 j 20:11	24°♃09'54			423 Aug 05 j 00:59	0°☾	
	421 Jan 07 j 12:00	0°≈			423 Aug 31 j 00:56	0°♁	
	421 Jan 31 j 12:50	0°♃		asc. node	423 Aug 31 j 13:15	0°♁36'22	
	421 Feb 24 j 18:43	0°♃			423 Sep 24 j 23:40	0°♃	
asc. node	421 Mar 15 j 18:10	23°♃13'02			423 Oct 19 j 07:41	0°♄	
	421 Mar 21 j 08:15	0°♃			423 Nov 12 j 08:01	0°♃	
	421 Apr 15 j 08:37	0°♃			423 Dec 06 j 05:23	0°♃	
	421 May 11 j 01:02	0°☾		desc. node	423 Dec 21 j 02:39	18°♃42'12	
	421 Jun 06 j 21:30	0°♁		morning set	423 Dec 28 j 23:14	28°♃34'09	
evening max el	421 Jul 01 j 20:27	25°♁35'28	45°39'29		423 Dec 30 j 02:36	0°♃	
desc. node	421 Jul 05 j 07:27	28°♁51'00			424 Jan 23 j 01:07	0°≈	
	421 Jul 06 j 13:19	0°♃					
greatest brilliancy	421 Aug 08 j 19:08	23°♃20'34	-4.5m	superior conj	424 Feb 08 j 09:05	20°≈24'11	-1°-23'-51
retrograde	421 Aug 19 j 19:04	25°♃30'07		minimum elong	424 Feb 08 j 04:35	20°≈10'06	1°23'49
evening set	421 Sep 06 j 15:03	19°♃34'20		max. Earth dist.	424 Feb 12 j 14:10	25°≈39'18	1.72002 AU
inferior conj	421 Sep 09 j 18:24	17°♃40'37	-8°-34'-1		424 Feb 16 j 01:52	0°♃	
minimum elong	421 Sep 09 j 23:28	17°♃32'54	8°33'41		424 Mar 11 j 05:46	0°♃	
min. Earth dist.	421 Sep 10 j 13:29	17°♃11'29	0.27722 AU	evening rise	424 Mar 18 j 21:33	9°♃28'06	
morning rise	421 Sep 13 j 07:38	15°♃31'57			424 Apr 04 j 13:37	0°♃	
direct	421 Sep 30 j 20:11	9°♃41'39		asc. node	424 Apr 12 j 06:02	9°♃25'42	
greatest brilliancy	421 Oct 14 j 23:50	13°♃20'51	-4.6m		424 Apr 29 j 02:01	0°♃	
asc. node	421 Oct 26 j 10:39	20°♃25'19			424 May 23 j 19:35	0°☾	
	421 Nov 07 j 01:30	0°♄			424 Jun 17 j 19:53	0°♁	
morning max el	421 Nov 20 j 14:59	13°♄06'08	46°53'32		424 Jul 13 j 06:24	0°♃	
	421 Dec 06 j 10:57	0°♃		desc. node	424 Aug 01 j 19:21	22°♃30'28	
	422 Jan 01 j 15:41	0°♃			424 Aug 08 j 10:37	0°♄	
	422 Jan 26 j 20:35	0°♃			424 Sep 05 j 03:51	0°♃	
desc. node	422 Feb 15 j 00:21	23°♃07'42		evening max el	424 Sep 13 j 06:32	8°♃11'01	46°51'40
	422 Feb 20 j 16:26	0°≈			424 Oct 08 j 07:35	0°♃	
	422 Mar 17 j 08:43	0°♃		greatest brilliancy	424 Oct 22 j 07:11	7°♃58'03	-4.7m
	422 Apr 10 j 23:38	0°♃		retrograde	424 Nov 02 j 10:28	10°♃16'05	
	422 May 05 j 13:45	0°♃		evening set	424 Nov 16 j 18:53	6°♃11'55	
morning set	422 May 24 j 15:17	23°♃18'15		inferior conj	424 Nov 22 j 22:46	2°♃35'53	0°00'10
	422 May 30 j 02:33	0°♃		minimum elong	424 Nov 22 j 22:46	2°♃35'54	0°00'10
asc. node	422 Jun 08 j 03:36	11°♃05'17		transit begin	424 Nov 22 j 18:42	2°♃42'07	
	422 Jun 23 j 13:03	0°☾		transit end	424 Nov 23 j 02:50	2°♃29'41	
max. Earth dist.	422 Jun 27 j 07:26	4°☾38'10	1.73404 AU	min. Earth dist.	424 Nov 22 j 19:23	2°♃41'05	0.26353 AU

asc. node	424 Nov 22 j 22:31	2°♁36'18		asc. node	427 May 10 j 17:48	25°♁07'32	
	424 Nov 27 j 07:21	30°♁			427 May 14 j 17:04	0°♁	
morning rise	424 Nov 29 j 02:43	29°♁00'22		evening rise	427 May 27 j 21:06	16°♁09'31	
direct	424 Dec 13 j 06:38	25°♁00'44			427 Jun 08 j 03:58	0°♁	
greatest brilliancy	424 Dec 25 j 01:40	27°♁36'49	-4.7m		427 Jul 02 j 15:37	0°♁	
	424 Dec 29 j 23:06	0°♁			427 Jul 27 j 04:49	0°♁	
morning max el	425 Feb 01 j 12:56	27°♁40'45	46°43'07		427 Aug 20 j 21:14	0°♁	
	425 Feb 03 j 20:14	0°♁		desc. node	427 Aug 30 j 07:24	11°♁23'03	
	425 Mar 03 j 18:07	0°♁			427 Sep 14 j 19:12	0°♁	
desc. node	425 Mar 14 j 12:22	12°♁10'05			427 Oct 10 j 02:40	0°♁	
	425 Mar 29 j 23:50	0°♁			427 Nov 05 j 06:04	0°♁	
	425 Apr 24 j 13:15	0°♁		evening max el	427 Nov 25 j 16:12	21°♁57'03	47°21'23
	425 May 19 j 17:50	0°♁			427 Dec 03 j 18:46	0°♁	
	425 Jun 13 j 15:50	0°♁		asc. node	427 Dec 21 j 10:28	15°♁13'24	
asc. node	425 Jul 05 j 15:29	26°♁44'33		greatest brilliancy	428 Jan 02 j 10:27	22°♁34'48	-4.7m
	425 Jul 08 j 07:24	0°♁		retrograde	428 Jan 15 j 18:13	25°♁54'31	
morning set	425 Jul 31 j 06:42	28°♁15'24		evening set	428 Feb 02 j 03:50	19°♁58'02	
	425 Aug 01 j 16:32	0°♁		min. Earth dist.	428 Feb 04 j 20:55	18°♁17'23	0.27718 AU
	425 Aug 25 j 20:11	0°♁		inferior conj	428 Feb 05 j 16:57	17°♁45'55	8°29'24
max. Earth dist.	425 Sep 02 j 17:49	9°♁51'45	1.72004 AU	minimum elong	428 Feb 05 j 12:17	17°♁53'14	8°29'04
				morning rise	428 Feb 08 j 20:59	15°♁48'01	
superior conj	425 Sep 06 j 06:16	14°♁15'35	1°23'06	direct	428 Feb 26 j 10:35	9°♁49'39	
minimum elong	425 Sep 06 j 09:58	14°♁27'11	1°23'05	greatest brilliancy	428 Mar 08 j 05:26	11°♁57'59	-4.6m
	425 Sep 18 j 20:13	0°♁			428 Apr 04 j 06:31	0°♁	
	425 Oct 12 j 18:40	0°♁		desc. node	428 Apr 10 j 23:57	6°♁03'44	
evening rise	425 Oct 15 j 05:14	3°♁03'32		morning max el	428 Apr 15 j 16:01	10°♁29'14	46°01'08
desc. node	425 Oct 25 j 05:07	15°♁35'20			428 May 04 j 20:16	0°♁	
	425 Nov 05 j 17:05	0°♁			428 Jun 01 j 03:11	0°♁	
	425 Nov 29 j 16:33	0°♁			428 Jun 27 j 04:12	0°♁	
	425 Dec 23 j 18:33	0°♁			428 Jul 22 j 11:18	0°♁	
	426 Jan 17 j 02:01	0°♁		asc. node	428 Aug 02 j 03:22	12°♁52'13	
	426 Feb 10 j 20:14	0°♁			428 Aug 16 j 04:51	0°♁	
asc. node	426 Feb 15 j 08:15	5°♁21'51			428 Sep 09 j 12:00	0°♁	
	426 Mar 08 j 10:12	0°♁		greatest brilliancy	428 Sep 23 j 21:20	17°♁56'50	-3.9m
	426 Apr 04 j 15:05	0°♁			428 Oct 03 j 12:13	0°♁	
evening max el	426 Apr 19 j 04:44	14°♁41'47	45°23'10	morning set	428 Oct 10 j 04:03	8°♁21'32	
	426 May 06 j 12:41	0°♁			428 Oct 27 j 08:57	0°♁	
greatest brilliancy	426 May 23 j 19:13	11°♁01'27	-4.5m				
retrograde	426 Jun 06 j 17:41	14°♁25'13		superior conj	428 Nov 19 j 11:30	29°♁05'47	0°05'20
desc. node	426 Jun 06 j 21:42	14°♁25'11		minimum elong	428 Nov 19 j 12:55	29°♁10'16	0°05'16
evening set	426 Jun 22 j 03:48	9°♁53'42		behind sun begin	428 Nov 18 j 11:37	27°♁50'36	
inferior conj	426 Jun 28 j 05:23	6°♁16'40	-4°-43'-56	behind sun end	428 Nov 20 j 14:13	0°♁29'56	
minimum elong	426 Jun 27 j 20:23	6°♁30'40	4°41'44		428 Nov 20 j 04:43	0°♁	
min. Earth dist.	426 Jun 28 j 07:47	6°♁12'57	0.28896 AU	max. Earth dist.	428 Nov 20 j 10:16	0°♁17'30	1.71026 AU
morning rise	426 Jul 03 j 12:36	3°♁03'55		desc. node	428 Nov 21 j 16:55	1°♁53'58	
	426 Jul 09 j 18:33	30°♁			428 Dec 14 j 01:01	0°♁	
direct	426 Jul 19 j 20:20	27°♁59'50		evening rise	428 Dec 31 j 06:34	21°♁37'53	
	426 Jul 30 j 10:12	0°♁			429 Jan 06 j 22:54	0°♁	
greatest brilliancy	426 Aug 03 j 04:22	1°♁33'37	-4.5m		429 Jan 30 j 23:49	0°♁	
morning max el	426 Sep 07 j 07:56	28°♁51'13	46°14'58		429 Feb 24 j 05:54	0°♁	
	426 Sep 08 j 11:50	0°♁		asc. node	429 Mar 14 j 20:09	22°♁44'21	
asc. node	426 Sep 28 j 00:59	20°♁32'25			429 Mar 20 j 19:46	0°♁	
	426 Oct 06 j 12:12	0°♁			429 Apr 14 j 20:48	0°♁	
	426 Nov 01 j 04:09	0°♁			429 May 10 j 14:33	0°♁	
	426 Nov 25 j 20:54	0°♁			429 Jun 06 j 14:00	0°♁	
	426 Dec 20 j 03:56	0°♁		evening max el	429 Jun 29 j 11:41	23°♁22'24	45°37'40
	427 Jan 13 j 07:48	0°♁		desc. node	429 Jul 04 j 09:37	27°♁58'25	
desc. node	427 Jan 17 j 14:35	5°♁19'22			429 Jul 06 j 15:16	0°♁	
	427 Feb 06 j 11:27	0°♁		greatest brilliancy	429 Aug 06 j 06:32	21°♁00'39	-4.5m
	427 Mar 02 j 16:12	0°♁		retrograde	429 Aug 17 j 08:28	23°♁11'34	
morning set	427 Mar 14 j 09:30	14°♁30'02		evening set	429 Sep 04 j 06:03	17°♁13'43	
	427 Mar 26 j 22:41	0°♁		inferior conj	429 Sep 07 j 08:17	15°♁21'21	-8°-38'-28
	427 Apr 20 j 07:06	0°♁		minimum elong	429 Sep 07 j 12:31	15°♁14'51	8°38'14
				min. Earth dist.	429 Sep 08 j 02:36	14°♁53'19	0.27784 AU
superior conj	427 Apr 21 j 04:06	1°♁04'33	0°-44'-10	morning rise	429 Sep 10 j 18:48	13°♁16'27	
minimum elong	427 Apr 21 j 12:19	1°♁29'50	0°43'50	direct	429 Sep 28 j 11:21	7°♁21'40	
max. Earth dist.	427 Apr 22 j 11:21	2°♁40'39	1.73419 AU	greatest brilliancy	429 Oct 12 j 14:11	10°♁59'52	-4.6m

asc. node	429 Oct 25 j 12:41	19°♄10'38		432 Apr 28 j 13:04	0°♁	
	429 Nov 07 j 06:02	0°♁		432 May 23 j 07:04	0°♁	
morning max el	429 Nov 18 j 05:27	10°♁44'06	46°52'52	432 Jun 17 j 08:04	0°♁	
	429 Dec 06 j 04:40	0°♁		432 Jul 12 j 19:48	0°♁	
	430 Jan 01 j 06:11	0°♁		desc. node	432 Jul 31 j 21:26	21°♄54'06
	430 Jan 26 j 09:33	0°♁			432 Aug 08 j 02:19	0°♁
desc. node	430 Feb 14 j 02:29	22°♁37'03			432 Sep 05 j 01:00	0°♁
	430 Feb 20 j 04:30	0°♁		evening max el	432 Sep 10 j 18:38	5°♁44'20 46°49'13
	430 Mar 16 j 20:13	0°♁			432 Oct 09 j 11:00	0°♁
	430 Apr 10 j 10:45	0°♁		greatest brilliancy	432 Oct 19 j 21:39	5°♁30'53 -4.7m
	430 May 05 j 00:35	0°♁		retrograde	432 Oct 30 j 21:52	7°♁46'17
morning set	430 May 22 j 09:39	21°♁14'51		evening set	432 Nov 14 j 07:50	3°♁40'57
	430 May 29 j 13:12	0°♁		inferior conj	432 Nov 20 j 10:51	0°♁06'40 0°-24'-35
asc. node	430 Jun 07 j 05:44	10°♁39'13		minimum elong	432 Nov 20 j 11:47	0°♁05'14 0°24'17
	430 Jun 22 j 23:38	0°♁		min. Earth dist.	432 Nov 20 j 09:31	0°♁08'42 0.26358 AU
max. Earth dist.	430 Jun 25 j 03:35	2°♁39'50	1.73431 AU		432 Nov 20 j 15:13	30°♁
				asc. node	432 Nov 22 j 00:39	29°♁09'11
superior conj	430 Jun 27 j 17:05	5°♁49'10	0°45'59	morning rise	432 Nov 26 j 15:37	26°♁29'53
minimum elong	430 Jun 27 j 09:14	5°♁24'58	0°45'39	direct	432 Dec 10 j 18:16	22°♁30'58
	430 Jul 17 j 07:22	0°♁		greatest brilliancy	432 Dec 22 j 17:27	25°♁11'04 -4.7m
evening rise	430 Aug 02 j 13:00	20°♁05'19			432 Dec 31 j 15:04	0°♁
	430 Aug 10 j 12:56	0°♁		morning max el	433 Jan 30 j 01:33	25°♁13'45 46°44'27
	430 Sep 03 j 17:39	0°♁			433 Feb 03 j 18:17	0°♁
desc. node	430 Sep 26 j 19:13	28°♁34'26			433 Mar 03 j 10:15	0°♁
	430 Sep 27 j 22:52	0°♁		desc. node	433 Mar 13 j 14:16	11°♁32'49
	430 Oct 22 j 05:47	0°♁			433 Mar 29 j 13:33	0°♁
	430 Nov 15 j 16:07	0°♁			433 Apr 24 j 01:41	0°♁
	430 Dec 10 j 10:14	0°♁			433 May 19 j 05:30	0°♁
asc. node	431 Jan 04 j 22:34	0°♁			433 Jun 13 j 03:03	0°♁
	431 Jan 17 j 22:24	14°♁37'22		asc. node	433 Jul 04 j 17:34	26°♁17'19
	431 Feb 01 j 08:32	0°♁			433 Jul 07 j 18:23	0°♁
evening max el	431 Feb 05 j 04:36	3°♁53'13	46°23'07	morning set	433 Jul 28 j 23:52	26°♁06'25
	431 Mar 08 j 18:55	0°♁			433 Aug 01 j 03:26	0°♁
greatest brilliancy	431 Mar 12 j 08:16	1°♁53'23	-4.5m		433 Aug 25 j 07:05	0°♁
retrograde	431 Mar 26 j 23:18	5°♁41'28		max. Earth dist.	433 Aug 31 j 09:51	7°♁37'49 1.72060 AU
evening set	431 Apr 12 j 03:29	0°♁35'59				
	431 Apr 13 j 03:53	30°♁		superior conj	433 Sep 03 j 21:53	12°♁00'17 1°23'42
inferior conj	431 Apr 17 j 07:54	27°♁24'25	4°53'52	minimum elong	433 Sep 04 j 00:51	12°♁09'31 1°23'40
minimum elong	431 Apr 17 j 16:48	27°♁10'20	4°51'44		433 Sep 18 j 07:11	0°♁
min. Earth dist.	431 Apr 17 j 10:51	27°♁19'44	0.28870 AU		433 Oct 12 j 05:47	0°♁
morning rise	431 Apr 23 j 06:24	23°♁47'44		evening rise	433 Oct 12 j 17:14	0°♁35'53
direct	431 May 08 j 20:25	19°♁07'49		desc. node	433 Oct 24 j 07:10	15°♁06'39
desc. node	431 May 09 j 11:46	19°♁08'18			433 Nov 05 j 04:23	0°♁
greatest brilliancy	431 May 21 j 13:56	21°♁59'47	-4.5m		433 Nov 29 j 04:03	0°♁
	431 Jun 04 j 08:33	0°♁			433 Dec 23 j 06:19	0°♁
morning max el	431 Jun 26 j 14:30	18°♁52'41	45°44'59		434 Jan 16 j 14:11	0°♁
	431 Jul 07 j 20:22	0°♁			434 Feb 10 j 09:07	0°♁
	431 Aug 04 j 15:29	0°♁		asc. node	434 Feb 14 j 10:13	4°♁48'54
	431 Aug 30 j 13:42	0°♁			434 Mar 08 j 00:36	0°♁
asc. node	431 Aug 30 j 15:15	0°♁04'35			434 Apr 04 j 09:16	0°♁
	431 Sep 24 j 11:37	0°♁		evening max el	434 Apr 16 j 20:15	12°♁30'15 45°24'17
	431 Oct 18 j 19:13	0°♁			434 May 07 j 00:21	0°♁
	431 Nov 11 j 19:19	0°♁		greatest brilliancy	434 May 21 j 07:59	8°♁48'24 -4.5m
	431 Dec 05 j 16:34	0°♁		retrograde	434 Jun 04 j 10:10	12°♁16'22
desc. node	431 Dec 20 j 04:46	18°♁13'52		desc. node	434 Jun 05 j 23:48	12°♁13'29
morning set	431 Dec 26 j 08:48	25°♁58'44		evening set	434 Jun 19 j 18:13	7°♁46'32
	431 Dec 29 j 13:41	0°♁		inferior conj	434 Jun 25 j 21:34	4°♁07'07 -4°-27'00
	432 Jan 22 j 12:06	0°♁		minimum elong	434 Jun 25 j 12:55	4°♁20'33 4°24'50
				min. Earth dist.	434 Jun 25 j 23:40	4°♁03'51 0.28912 AU
superior conj	432 Feb 05 j 21:01	17°♁57'38	-1°-23'-1	morning rise	434 Jul 01 j 07:19	0°♁51'01
minimum elong	432 Feb 05 j 15:34	17°♁40'36	1°22'58		434 Jul 02 j 20:15	30°♁
max. Earth dist.	432 Feb 10 j 02:57	23°♁15'30	1.71942 AU	direct	434 Jul 17 j 12:46	25°♁49'52
	432 Feb 15 j 12:46	0°♁		greatest brilliancy	434 Jul 31 j 21:12	29°♁24'27 -4.5m
	432 Mar 10 j 16:36	0°♁			434 Aug 02 j 02:43	0°♁
evening rise	432 Mar 16 j 12:00	7°♁10'59		morning max el	434 Sep 05 j 00:09	26°♁38'57 46°13'27
	432 Apr 04 j 00:29	0°♁			434 Sep 08 j 09:10	0°♁
asc. node	432 Apr 11 j 08:02	8°♁58'21		asc. node	434 Sep 27 j 03:01	19°♁51'37

	434 Oct 06 j 03:52	0°♍			437 Apr 14 j 09:29	0°♁		
	434 Oct 31 j 17:47	0°♌			437 May 10 j 04:39	0°♁		
	434 Nov 25 j 09:33	0°♍			437 Jun 06 j 07:16	0°♁		
	434 Dec 19 j 16:03	0°♎		evening max el	437 Jun 27 j 02:19	21°♁06'47	45°35'54	
	435 Jan 12 j 19:32	0°♏		desc. node	437 Jul 03 j 11:42	27°♁03'28		
desc. node	435 Jan 16 j 16:39	4°♏49'30			437 Jul 06 j 19:15	0°♍		
	435 Feb 05 j 22:54	0°♎		greatest brilliancy	437 Aug 03 j 18:55	18°♍41'07	-4.5m	
	435 Mar 02 j 03:26	0°♏		retrograde	437 Aug 14 j 21:34	20°♍52'32		
morning set	435 Mar 11 j 23:48	12°♏11'20		evening set	437 Sep 01 j 20:48	14°♍53'21		
	435 Mar 26 j 09:45	0°♎		inferior conj	437 Sep 04 j 22:19	13°♍01'48	-8°-41'-58	
				minimum elong	437 Sep 05 j 01:43	12°♍56'34	8°41'48	
superior conj	435 Apr 18 j 20:54	28°♎54'52	0°-46'-58	min. Earth dist.	437 Sep 05 j 16:06	12°♍34'29	0.27844 AU	
minimum elong	435 Apr 19 j 05:29	29°♎21'17	0°46'37	morning rise	437 Sep 08 j 06:26	11°♍00'06		
	435 Apr 19 j 18:04	0°♏		direct	437 Sep 26 j 02:05	5°♍01'23		
max. Earth dist.	435 Apr 20 j 07:18	0°♏40'40	1.73388 AU	greatest brilliancy	437 Oct 10 j 04:37	8°♍38'28	-4.6m	
asc. node	435 May 09 j 19:59	24°♏40'37		asc. node	437 Oct 24 j 14:52	17°♍57'39		
	435 May 14 j 04:01	0°♁			437 Nov 07 j 09:13	0°♌		
evening rise	435 May 25 j 15:54	14°♁06'22		morning max el	437 Nov 15 j 18:48	8°♌18'10	46°51'58	
	435 Jun 07 j 15:00	0°♁			437 Dec 05 j 22:24	0°♍		
	435 Jul 02 j 02:52	0°♁			437 Dec 31 j 20:58	0°♎		
	435 Jul 26 j 16:29	0°♍			438 Jan 25 j 22:53	0°♏		
	435 Aug 20 j 09:33	0°♌		desc. node	438 Feb 13 j 04:27	22°♏04'34		
desc. node	435 Aug 29 j 09:20	10°♌50'54			438 Feb 19 j 16:58	0°♎		
	435 Sep 14 j 08:29	0°♍			438 Mar 16 j 08:06	0°♏		
	435 Oct 09 j 17:30	0°♎			438 Apr 09 j 22:13	0°♎		
	435 Nov 04 j 23:55	0°♏			438 May 04 j 11:46	0°♏		
evening max el	435 Nov 23 j 07:49	19°♏36'36	47°22'06	morning set	438 May 20 j 03:46	19°♏09'39		
	435 Dec 03 j 21:46	0°♎			438 May 29 j 00:13	0°♁		
asc. node	435 Dec 20 j 12:36	13°♎54'37		asc. node	438 Jun 06 j 07:48	10°♁11'50		
greatest brilliancy	435 Dec 31 j 01:41	20°♎12'26	-4.7m		438 Jun 22 j 10:35	0°♁		
retrograde	436 Jan 13 j 09:31	23°♎31'46		max. Earth dist.	438 Jun 22 j 22:13	0°♁35'47	1.73458 AU	
evening set	436 Jan 30 j 15:19	17°♎39'54						
min. Earth dist.	436 Feb 02 j 10:01	15°♎56'58	0.27654 AU	superior conj	438 Jun 25 j 11:36	3°♁44'39	0°43'19	
inferior conj	436 Feb 03 j 07:10	15°♎23'48	8°24'15	minimum elong	438 Jun 25 j 04:02	3°♁21'22	0°43'00	
minimum elong	436 Feb 03 j 01:46	15°♎32'16	8°23'48		438 Jul 16 j 18:22	0°♁		
morning rise	436 Feb 06 j 12:30	13°♎24'12		evening rise	438 Jul 31 j 06:51	17°♁57'38		
direct	436 Feb 24 j 00:37	7°♎28'40			438 Aug 10 j 00:06	0°♍		
greatest brilliancy	436 Mar 05 j 17:21	9°♎35'40	-4.6m		438 Sep 03 j 05:02	0°♌		
	436 Apr 04 j 11:20	0°♏		desc. node	438 Sep 25 j 21:22	28°♌04'56		
desc. node	436 Apr 10 j 02:05	5°♏10'03			438 Sep 27 j 10:35	0°♍		
morning max el	436 Apr 13 j 07:26	8°♏14'35	46°02'21		438 Oct 21 j 17:55	0°♎		
	436 May 04 j 13:54	0°♎			438 Nov 15 j 04:53	0°♏		
	436 May 31 j 17:28	0°♁			438 Dec 10 j 00:00	0°♎		
	436 Jun 26 j 16:57	0°♁			439 Jan 04 j 14:17	0°♏		
	436 Jul 21 j 23:13	0°♁		asc. node	439 Jan 17 j 00:21	13°♏54'48		
asc. node	436 Aug 01 j 05:23	12°♁22'54			439 Feb 01 j 05:32	0°♎		
	436 Aug 15 j 16:19	0°♁		evening max el	439 Feb 02 j 19:03	1°♎34'28	46°25'41	
	436 Sep 08 j 23:16	0°♍		greatest brilliancy	439 Mar 10 j 02:09	29°♎43'38	-4.6m	
greatest brilliancy	436 Sep 25 j 22:34	21°♍10'50	-3.9m		439 Mar 10 j 15:49	0°♏		
	436 Oct 02 j 23:26	0°♌		retrograde	439 Mar 24 j 15:18	3°♏30'26		
morning set	436 Oct 07 j 17:26	5°♌57'41			439 Apr 06 j 22:19	30°♎		
	436 Oct 26 j 20:12	0°♍		evening set	439 Apr 09 j 22:28	28°♎21'21		
				inferior conj	439 Apr 15 j 00:18	25°♎13'30	5°10'03	
superior conj	436 Nov 16 j 21:24	26°♍30'18	0°09'18	minimum elong	439 Apr 15 j 09:26	24°♎59'01	5°07'54	
minimum elong	436 Nov 16 j 23:52	26°♍38'04	0°09'11	min. Earth dist.	439 Apr 15 j 03:18	25°♎08'45	0.28852 AU	
behind sun begin	436 Nov 16 j 01:44	25°♍28'25		morning rise	439 Apr 20 j 20:39	21°♎39'29		
behind sun end	436 Nov 17 j 21:59	27°♍47'42		direct	439 May 06 j 11:57	16°♎57'14		
max. Earth dist.	436 Nov 17 j 16:55	27°♍31'48	1.71029 AU	desc. node	439 May 08 j 13:54	17°♎02'12		
	436 Nov 19 j 16:01	0°♎		greatest brilliancy	439 May 19 j 04:09	19°♎47'13	-4.5m	
desc. node	436 Nov 20 j 19:05	1°♎25'13			439 Jun 04 j 23:28	0°♏		
	436 Dec 13 j 12:20	0°♏		morning max el	439 Jun 24 j 05:23	16°♏39'40	45°44'43	
evening rise	436 Dec 28 j 16:20	19°♏02'31			439 Jul 07 j 15:10	0°♁		
	437 Jan 06 j 10:15	0°♎			439 Aug 04 j 06:08	0°♁		
	437 Jan 30 j 11:15	0°♏		asc. node	439 Aug 29 j 17:14	29°♁32'01		
	437 Feb 23 j 17:30	0°♎			439 Aug 30 j 02:40	0°♁		
asc. node	437 Mar 13 j 22:12	22°♎14'37			439 Sep 23 j 23:46	0°♍		
	437 Mar 20 j 07:44	0°♏			439 Oct 18 j 06:56	0°♌		

	439 Nov 11 j 06:47	0°♍		greatest brilliancy	442 May 18 j 22:01	6°♌37'13	-4.5m
	439 Dec 05 j 03:53	0°♊		retrograde	442 Jun 02 j 02:54	10°♌07'45	
desc. node	439 Dec 19 j 06:50	17°♊44'57		desc. node	442 Jun 05 j 01:51	9°♌57'26	
morning set	439 Dec 23 j 18:35	23°♊23'25		evening set	442 Jun 17 j 08:55	5°♌39'43	
	439 Dec 29 j 00:54	0°♌		inferior conj	442 Jun 23 j 13:48	1°♌57'53	-4°-9'-39
	440 Jan 21 j 23:16	0°♍		minimum elong	442 Jun 23 j 05:33	2°♌10'42	4°07'33
				min. Earth dist.	442 Jun 23 j 15:23	1°♌55'25	0.28926 AU
superior conj	440 Feb 03 j 08:47	15°♍29'51	-1°-22'-1		442 Jun 26 j 18:24	30°♌	
minimum elong	440 Feb 03 j 02:25	15°♍10'00	1°21'57	morning rise	442 Jun 29 j 01:59	28°♌38'35	
max. Earth dist.	440 Feb 07 j 12:46	20°♍41'50	1.71887 AU	direct	442 Jul 15 j 05:39	23°♌40'31	
	440 Feb 14 j 23:52	0°♋		greatest brilliancy	442 Jul 29 j 13:15	27°♌14'49	-4.5m
	440 Mar 10 j 03:41	0°♋			442 Aug 03 j 18:14	0°♌	
evening rise	440 Mar 14 j 02:01	4°♋51'42		morning max el	442 Sep 02 j 16:30	24°♌27'39	46°11'52
	440 Apr 03 j 11:36	0°♋			442 Sep 08 j 05:35	0°♌	
asc. node	440 Apr 10 j 10:11	8°♋30'45		asc. node	442 Sep 26 j 05:15	19°♌12'18	
	440 Apr 28 j 00:23	0°♌			442 Oct 05 j 19:07	0°♌	
	440 May 22 j 18:47	0°♌			442 Oct 31 j 07:08	0°♌	
	440 Jun 16 j 20:31	0°♌			442 Nov 24 j 22:00	0°♌	
	440 Jul 12 j 09:31	0°♌			442 Dec 19 j 03:57	0°♌	
desc. node	440 Jul 30 j 23:25	21°♌16'33		desc. node	443 Jan 12 j 07:04	0°♌	
	440 Aug 07 j 18:28	0°♌			443 Jan 15 j 18:40	4°♌20'03	
	440 Sep 04 j 23:08	0°♌			443 Feb 05 j 10:06	0°♌	
evening max el	440 Sep 08 j 06:55	3°♌17'56	46°46'49		443 Mar 01 j 14:22	0°♌	
	440 Oct 11 j 01:58	0°♌		morning set	443 Mar 09 j 14:21	9°♌54'12	
greatest brilliancy	440 Oct 17 j 11:18	3°♌02'48	-4.7m		443 Mar 25 j 20:32	0°♌	
retrograde	440 Oct 28 j 09:46	5°♌16'53					
evening set	440 Nov 11 j 21:05	1°♌09'48		superior conj	443 Apr 16 j 13:50	26°♌46'21	0°-49'-39
	440 Nov 13 j 23:29	30°♌		minimum elong	443 Apr 16 j 22:44	27°♌13'45	0°49'20
inferior conj	440 Nov 17 j 22:59	27°♌37'36	0°-49'-13	max. Earth dist.	443 Apr 18 j 05:13	28°♌47'33	1.73359 AU
minimum elong	440 Nov 18 j 00:52	27°♌34'44	0°48'37		443 Apr 19 j 04:46	0°♌	
min. Earth dist.	440 Nov 17 j 23:25	27°♌36'57	0.26363 AU	asc. node	443 May 08 j 22:03	24°♌14'09	
asc. node	440 Nov 21 j 02:41	25°♌43'45			443 May 13 j 14:44	0°♌	
morning rise	440 Nov 24 j 04:26	24°♌00'11		evening rise	443 May 23 j 10:43	12°♌04'01	
direct	440 Dec 08 j 06:18	20°♌01'23			443 Jun 07 j 01:48	0°♌	
greatest brilliancy	440 Dec 20 j 09:01	22°♌45'31	-4.7m		443 Jul 01 j 13:55	0°♌	
	441 Jan 01 j 18:52	0°♌			443 Jul 26 j 03:57	0°♌	
morning max el	441 Jan 27 j 15:04	22°♌49'12	46°45'42		443 Aug 19 j 21:40	0°♌	
	441 Feb 03 j 15:27	0°♌		desc. node	443 Aug 28 j 11:28	10°♌20'01	
	441 Mar 03 j 02:06	0°♌			443 Sep 13 j 21:36	0°♌	
desc. node	441 Mar 12 j 16:26	10°♌56'36			443 Oct 09 j 08:13	0°♌	
	441 Mar 29 j 03:11	0°♌			443 Nov 04 j 17:52	0°♌	
	441 Apr 23 j 14:07	0°♌		evening max el	443 Nov 20 j 23:49	17°♌17'49	47°22'36
	441 May 18 j 17:12	0°♌			443 Dec 04 j 02:05	0°♌	
	441 Jun 12 j 14:18	0°♌		asc. node	443 Dec 19 j 14:37	12°♌33'51	
asc. node	441 Jul 03 j 19:35	25°♌49'45		greatest brilliancy	443 Dec 28 j 18:00	17°♌52'09	-4.7m
	441 Jul 07 j 05:22	0°♌		retrograde	444 Jan 11 j 00:41	21°♌09'31	
morning set	441 Jul 26 j 17:00	23°♌57'29		evening set	444 Jan 28 j 02:36	15°♌23'03	
	441 Jul 31 j 14:19	0°♌		min. Earth dist.	444 Jan 30 j 23:16	13°♌37'10	0.27584 AU
	441 Aug 24 j 18:00	0°♌		inferior conj	444 Jan 31 j 21:22	13°♌02'31	8°18'14
max. Earth dist.	441 Aug 29 j 02:26	5°♌25'42	1.72116 AU	minimum elong	444 Jan 31 j 15:16	13°♌12'05	8°17'40
				morning rise	444 Feb 04 j 04:15	11°♌00'42	
superior conj	441 Sep 01 j 13:36	9°♌45'15	1°24'08	direct	444 Feb 21 j 14:49	5°♌08'48	
minimum elong	441 Sep 01 j 15:46	9°♌52'02	1°24'07	greatest brilliancy	444 Mar 03 j 04:55	7°♌13'52	-4.6m
	441 Sep 17 j 18:11	0°♌			444 Apr 04 j 13:54	0°♌	
evening rise	441 Oct 10 j 05:28	28°♌08'55		desc. node	444 Apr 09 j 04:13	4°♌18'39	
	441 Oct 11 j 16:55	0°♌		morning max el	444 Apr 10 j 22:00	5°♌59'02	46°03'38
desc. node	441 Oct 23 j 09:20	14°♌38'17			444 May 04 j 06:41	0°♌	
	441 Nov 04 j 15:41	0°♌			444 May 31 j 07:12	0°♌	
	441 Nov 28 j 15:32	0°♌			444 Jun 26 j 05:15	0°♌	
	441 Dec 22 j 17:59	0°♌			444 Jul 21 j 10:46	0°♌	
	442 Jan 16 j 02:13	0°♌		asc. node	444 Jul 31 j 07:28	11°♌54'44	
	442 Feb 09 j 21:55	0°♌			444 Aug 15 j 03:28	0°♌	
asc. node	442 Feb 13 j 12:17	4°♌16'37			444 Sep 08 j 10:13	0°♌	
	442 Mar 07 j 15:00	0°♌		greatest brilliancy	444 Sep 27 j 16:11	24°♌02'10	-3.9m
	442 Apr 04 j 03:47	0°♌			444 Oct 02 j 10:20	0°♌	
evening max el	442 Apr 14 j 12:42	10°♌21'15	45°25'20	morning set	444 Oct 05 j 06:56	3°♌35'15	
	442 May 07 j 15:55	0°♌			444 Oct 26 j 07:06	0°♌	

superior conj	444 Nov 14 j 07:28	23°♌56'33	0°13'14	minimum elong	447 Apr 13 j 02:01	22°♍48'43	5°23'39
minimum elong	444 Nov 14 j 10:57	24°♌07'29	0°13'03	min. Earth dist.	447 Apr 12 j 19:44	22°♍58'41	0.28834 AU
behind sun begin	444 Nov 13 j 18:54	23°♌16'59		morning rise	447 Apr 18 j 10:45	19°♍32'33	
behind sun end	444 Nov 15 j 02:59	24°♌57'58		direct	447 May 04 j 03:18	14°♍47'22	
max. Earth dist.	444 Nov 14 j 21:15	24°♌39'53	1.71035 AU	desc. node	447 May 07 j 15:54	15°♍01'29	
	444 Nov 19 j 02:57	0°♌		greatest brilliancy	447 May 16 j 19:20	17°♍36'48	-4.5m
desc. node	444 Nov 19 j 21:04	0°♌57'01			447 Jun 05 j 10:04	0°♌	
	444 Dec 12 j 23:19	0°♌		morning max el	447 Jun 21 j 20:46	14°♌29'02	45°44'43
evening rise	444 Dec 26 j 02:06	16°♌28'02			447 Jul 07 j 09:01	0°♌	
	445 Jan 05 j 21:17	0°♌			447 Aug 03 j 20:10	0°♌	
	445 Jan 29 j 22:22	0°♌		asc. node	447 Aug 28 j 19:28	29°♌01'30	
	445 Feb 23 j 04:46	0°♌			447 Aug 29 j 15:10	0°♌	
asc. node	445 Mar 13 j 00:23	21°♌46'26			447 Sep 23 j 11:32	0°♌	
	445 Mar 19 j 19:20	0°♌			447 Oct 17 j 18:21	0°♌	
	445 Apr 13 j 21:46	0°♌			447 Nov 10 j 18:01	0°♌	
	445 May 09 j 18:24	0°♌			447 Dec 04 j 14:59	0°♌	
	445 Jun 06 j 00:25	0°♌		desc. node	447 Dec 18 j 08:53	17°♌16'38	
evening max el	445 Jun 24 j 16:09	18°♌50'34	45°34'02	morning set	447 Dec 21 j 04:02	20°♌47'38	
desc. node	445 Jul 02 j 13:41	26°♌08'20			447 Dec 28 j 11:55	0°♌	
	445 Jul 07 j 00:33	0°♌			448 Jan 21 j 10:11	0°♌	
greatest brilliancy	445 Aug 01 j 07:39	16°♌23'15	-4.5m				
retrograde	445 Aug 12 j 10:30	18°♌35'10		superior conj	448 Jan 31 j 20:07	13°♌01'25	-1°-20'-51
evening set	445 Aug 30 j 11:12	12°♌35'09		minimum elong	448 Jan 31 j 12:54	12°♌38'52	1°20'45
inferior conj	445 Sep 02 j 12:29	10°♌43'52	-8°-44'-24	max. Earth dist.	448 Feb 04 j 21:10	18°♌04'24	1.71833 AU
minimum elong	445 Sep 02 j 15:02	10°♌39'58	8°44'20		448 Feb 14 j 10:43	0°♌	
min. Earth dist.	445 Sep 03 j 06:02	10°♌16'52	0.27905 AU		448 Mar 09 j 14:30	0°♌	
morning rise	445 Sep 05 j 18:38	8°♌44'52		evening rise	448 Mar 11 j 15:50	2°♌32'33	
direct	445 Sep 23 j 16:31	2°♌42'28			448 Apr 02 j 22:30	0°♌	
greatest brilliancy	445 Oct 07 j 20:18	6°♌19'57	-4.6m	asc. node	448 Apr 09 j 12:14	8°♌03'32	
asc. node	445 Oct 23 j 16:53	16°♌47'27			448 Apr 27 j 11:29	0°♌	
	445 Nov 07 j 10:32	0°♌			448 May 22 j 06:17	0°♌	
morning max el	445 Nov 13 j 07:38	5°♌51'59	46°51'08		448 Jun 16 j 08:43	0°♌	
	445 Dec 05 j 15:24	0°♌			448 Jul 11 j 23:01	0°♌	
	445 Dec 31 j 11:12	0°♌		desc. node	448 Jul 30 j 01:36	20°♌40'21	
	446 Jan 25 j 11:45	0°♌			448 Aug 07 j 10:30	0°♌	
desc. node	446 Feb 12 j 06:35	21°♌33'50			448 Sep 04 j 21:44	0°♌	
	446 Feb 19 j 05:01	0°♌		evening max el	448 Sep 05 j 19:44	0°♌54'05	46°44'17
	446 Mar 15 j 19:36	0°♌			448 Oct 13 j 14:13	0°♌	
	446 Apr 09 j 09:18	0°♌		greatest brilliancy	448 Oct 14 j 23:52	0°♌34'19	-4.6m
	446 May 03 j 22:33	0°♌		retrograde	448 Oct 25 j 22:03	2°♌47'59	
morning set	446 May 17 j 22:11	17°♌06'33			448 Nov 06 j 17:05	30°♌	
	446 May 28 j 10:48	0°♌		evening set	448 Nov 09 j 10:28	28°♌38'45	
asc. node	446 Jun 05 j 09:49	9°♌45'37		inferior conj	448 Nov 15 j 11:00	25°♌08'40	-1°-13'-47
max. Earth dist.	446 Jun 20 j 18:09	28°♌37'06	1.73485 AU	minimum elong	448 Nov 15 j 13:49	25°♌04'23	1°12'54
	446 Jun 21 j 21:07	0°♌		min. Earth dist.	448 Nov 15 j 12:52	25°♌05'50	0.26379 AU
				asc. node	448 Nov 20 j 04:44	22°♌20'28	
superior conj	446 Jun 23 j 06:29	1°♌42'41	0°40'38	morning rise	448 Nov 21 j 16:58	21°♌31'03	
minimum elong	446 Jun 22 j 23:15	1°♌20'24	0°40'20	direct	448 Dec 05 j 18:54	17°♌31'57	
	446 Jul 16 j 04:59	0°♌		greatest brilliancy	448 Dec 18 j 00:07	20°♌19'29	-4.7m
evening rise	446 Jul 29 j 01:08	15°♌52'35			449 Jan 02 j 15:10	0°♌	
	446 Aug 09 j 10:53	0°♌		morning max el	449 Jan 25 j 05:19	20°♌26'33	46°46'52
	446 Sep 02 j 16:06	0°♌			449 Feb 03 j 11:53	0°♌	
desc. node	446 Sep 24 j 23:28	27°♌36'18			449 Mar 02 j 17:36	0°♌	
	446 Sep 26 j 22:00	0°♌		desc. node	449 Mar 11 j 18:35	10°♌20'50	
	446 Oct 21 j 05:47	0°♌			449 Mar 28 j 16:35	0°♌	
	446 Nov 14 j 17:23	0°♌			449 Apr 23 j 02:20	0°♌	
	446 Dec 09 j 13:32	0°♌			449 May 18 j 04:44	0°♌	
	447 Jan 04 j 05:53	0°♌			449 Jun 12 j 01:24	0°♌	
asc. node	447 Jan 16 j 02:27	13°♌13'10		asc. node	449 Jul 02 j 21:42	25°♌22'55	
evening max el	447 Jan 31 j 08:50	29°♌14'52	46°28'16		449 Jul 06 j 16:14	0°♌	
	447 Feb 01 j 02:53	0°♌		morning set	449 Jul 24 j 10:32	21°♌50'16	
greatest brilliancy	447 Mar 07 j 19:10	27°♌33'31	-4.6m		449 Jul 31 j 01:04	0°♌	
	447 Mar 13 j 21:20	0°♌			449 Aug 24 j 04:43	0°♌	
retrograde	447 Mar 22 j 07:30	1°♌20'27		max. Earth dist.	449 Aug 26 j 18:49	3°♌13'34	1.72166 AU
	447 Mar 30 j 10:56	30°♌					
evening set	447 Apr 07 j 17:27	26°♌07'21		superior conj	449 Aug 30 j 05:48	7°♌32'26	1°24'26
inferior conj	447 Apr 12 j 16:42	23°♌03'30	5°25'46	minimum elong	449 Aug 30 j 07:13	7°♌36'50	1°24'26

evening rise	449 Sep 17 j 05:00	0°♌			452 Apr 04 j 15:26	0°♋		
	449 Oct 07 j 18:09	25°♌43'59		morning max el	452 Apr 08 j 11:40	3°♋40'06	46°04'50	
	449 Oct 11 j 03:53	0°♍		desc. node	452 Apr 08 j 06:11	3°♋26'51		
desc. node	449 Oct 22 j 11:19	14°♍09'53			452 May 03 j 23:30	0°♎		
	449 Nov 04 j 02:52	0°♏			452 May 30 j 21:06	0°♏		
	449 Nov 28 j 02:56	0°♐			452 Jun 25 j 17:46	0°♐		
	449 Dec 22 j 05:41	0°♑			452 Jul 20 j 22:32	0°♑		
	450 Jan 15 j 14:21	0°♒		asc. node	452 Jul 30 j 09:36	11°♑26'04		
	450 Feb 09 j 10:51	0°♓			452 Aug 14 j 14:50	0°♒		
asc. node	450 Feb 12 j 14:28	3°♓44'20			452 Sep 07 j 21:23	0°♓		
	450 Mar 07 j 05:38	0°♈		greatest brilliancy	452 Sep 29 j 04:45	26°♓37'07	-3.9m	
	450 Apr 03 j 22:53	0°♉			452 Oct 01 j 21:27	0°♈		
evening max el	450 Apr 12 j 05:17	8°♉12'19	45°26'29	morning set	452 Oct 02 j 20:34	1°♈12'31		
	450 May 08 j 13:07	0°♊			452 Oct 25 j 18:13	0°♉		
greatest brilliancy	450 May 16 j 13:08	4°♊27'07	-4.5m					
retrograde	450 May 30 j 19:22	7°♊58'33		superior conj	452 Nov 11 j 18:01	21°♊23'44	0°17'06	
desc. node	450 Jun 04 j 03:55	7°♊36'04		minimum elong	452 Nov 11 j 22:27	21°♊37'41	0°16'53	
evening set	450 Jun 14 j 23:43	3°♋32'26		max. Earth dist.	452 Nov 12 j 00:05	21°♊42'49	1.71038 AU	
	450 Jun 20 j 22:22	30°♋			452 Nov 18 j 14:04	0°♏		
inferior conj	450 Jun 21 j 05:54	29°♋48'17	-3°-51'-59	desc. node	452 Nov 18 j 23:10	0°♏28'37		
minimum elong	450 Jun 20 j 22:06	0°♌00'25	3°49'57		452 Dec 12 j 10:27	0°♐		
min. Earth dist.	450 Jun 21 j 07:06	29°♋46'25	0.28934 AU	evening rise	452 Dec 23 j 12:14	13°♐54'14		
morning rise	450 Jun 26 j 20:23	26°♋25'41			453 Jan 05 j 08:28	0°♑		
direct	450 Jul 12 j 22:27	21°♋30'56			453 Jan 29 j 09:40	0°♋		
greatest brilliancy	450 Jul 27 j 04:02	25°♋03'20	-4.5m		453 Feb 22 j 16:16	0°♎		
	450 Aug 04 j 21:50	0°♌		asc. node	453 Mar 12 j 02:21	21°♎16'44		
morning max el	450 Aug 31 j 08:18	22°♌15'11	46°10'29		453 Mar 19 j 07:15	0°♏		
	450 Sep 08 j 01:22	0°♍			453 Apr 13 j 10:28	0°♐		
asc. node	450 Sep 25 j 07:13	18°♍32'45			453 May 09 j 08:41	0°♑		
	450 Oct 05 j 10:07	0°♎			453 Jun 05 j 18:24	0°♒		
	450 Oct 30 j 20:20	0°♏		evening max el	453 Jun 22 j 05:13	16°♒31'28	45°32'23	
	450 Nov 24 j 10:20	0°♐		desc. node	453 Jul 01 j 15:52	25°♒11'14		
	450 Dec 18 j 15:49	0°♑			453 Jul 07 j 08:41	0°♓		
	451 Jan 11 j 18:36	0°♒		greatest brilliancy	453 Jul 29 j 19:40	14°♓03'30	-4.5m	
desc. node	451 Jan 14 j 20:49	3°♓50'57		retrograde	453 Aug 09 j 23:36	16°♓16'57		
	451 Feb 04 j 21:24	0°♔		evening set	453 Aug 28 j 01:07	10°♓16'22		
	451 Mar 01 j 01:27	0°♕		inferior conj	453 Aug 31 j 02:36	8°♓24'51	-8°-46'-1	
morning set	451 Mar 07 j 04:19	7°♕34'43		minimum elong	453 Aug 31 j 04:14	8°♓22'20	8°46'01	
	451 Mar 25 j 07:28	0°♖		min. Earth dist.	453 Aug 31 j 19:55	7°♓58'13	0.27966 AU	
				morning rise	453 Sep 03 j 07:08	6°♓28'11		
superior conj	451 Apr 14 j 06:13	24°♖35'39	0°-52'-20	direct	453 Sep 21 j 06:41	0°♔22'16		
minimum elong	451 Apr 14 j 15:24	25°♖03'53	0°52'00	greatest brilliancy	453 Oct 05 j 12:51	4°♔01'38	-4.6m	
max. Earth dist.	451 Apr 16 j 03:28	26°♖54'56	1.73324 AU	asc. node	453 Oct 22 j 18:57	15°♔38'10		
	451 Apr 18 j 15:37	0°♗			453 Nov 07 j 11:01	0°♕		
asc. node	451 May 08 j 00:02	23°♗47'02		morning max el	453 Nov 10 j 21:03	3°♕26'24	46°50'29	
	451 May 13 j 01:34	0°♘			453 Dec 05 j 08:21	0°♖		
evening rise	451 May 21 j 05:08	9°♘59'58			453 Dec 31 j 01:31	0°♗		
	451 Jun 06 j 12:46	0°♙			454 Jan 25 j 00:45	0°♘		
	451 Jul 01 j 01:09	0°♚		desc. node	454 Feb 11 j 08:43	21°♘02'32		
	451 Jul 25 j 15:36	0°♛			454 Feb 18 j 17:13	0°♙		
	451 Aug 19 j 09:59	0°♜			454 Mar 15 j 07:17	0°♚		
desc. node	451 Aug 27 j 13:36	9°♜48'37			454 Apr 08 j 20:38	0°♛		
	451 Sep 13 j 10:53	0°♝			454 May 03 j 09:38	0°♜		
	451 Oct 08 j 23:08	0°♞		morning set	454 May 15 j 16:19	15°♜01'29		
	451 Nov 04 j 12:12	0°♟			454 May 27 j 21:44	0°♝		
evening max el	451 Nov 18 j 15:08	14°♟57'16	47°22'55	asc. node	454 Jun 04 j 11:59	9°♞18'45		
	451 Dec 04 j 08:21	0°♠		max. Earth dist.	454 Jun 18 j 14:47	26°♞39'25	1.73512 AU	
asc. node	451 Dec 18 j 16:42	11°♠10'22						
greatest brilliancy	451 Dec 26 j 10:54	15°♠32'20	-4.7m	superior conj	454 Jun 21 j 01:01	29°♞38'31	0°37'53	
retrograde	452 Jan 08 j 15:19	18°♠46'40		minimum elong	454 Jun 20 j 18:09	29°♞17'21	0°37'34	
evening set	452 Jan 25 j 13:42	13°♠06'02			454 Jun 21 j 08:01	0°♟		
min. Earth dist.	452 Jan 28 j 12:51	11°♠16'20	0.27520 AU		454 Jul 15 j 15:57	0°♠		
inferior conj	452 Jan 29 j 11:34	10°♠40'41	8°11'20	evening rise	454 Jul 26 j 19:09	13°♠45'45		
minimum elong	452 Jan 29 j 04:47	10°♠51'19	8°10'36		454 Aug 08 j 22:02	0°♑		
morning rise	452 Feb 01 j 20:16	8°♠36'06			454 Sep 02 j 03:32	0°♒		
direct	452 Feb 19 j 04:43	2°♠48'17		desc. node	454 Sep 24 j 01:26	27°♠06'02		
greatest brilliancy	452 Feb 29 j 17:14	4°♠51'50	-4.6m		454 Sep 26 j 09:47	0°♓		

	454 Oct 20 j 18:03	0°♁			457 May 17 j 16:24	0°♄		
	454 Nov 14 j 06:18	0°♁			457 Jun 11 j 12:40	0°♄		
	454 Dec 09 j 03:31	0°♁		asc. node	457 Jul 01 j 23:50	24°♄55'33		
	455 Jan 03 j 22:00	0°♁			457 Jul 06 j 03:18	0°♄		
asc. node	455 Jan 15 j 04:38	12°♁30'33		morning set	457 Jul 22 j 04:10	19°♄42'48		
evening max el	455 Jan 28 j 23:01	26°♁55'41	46°31'03		457 Jul 30 j 12:03	0°♄		
	455 Feb 01 j 01:17	0°♁			457 Aug 23 j 15:44	0°♄		
greatest brilliancy	455 Mar 05 j 11:10	25°♁21'40	-4.6m	max. Earth dist.	457 Aug 24 j 08:45	0°♄53'01	1.72222 AU	
retrograde	455 Mar 20 j 00:11	29°♁10'11						
evening set	455 Apr 05 j 12:33	23°♁52'43		superior conj	457 Aug 27 j 22:01	5°♄18'49	1°24'36	
inferior conj	455 Apr 10 j 09:11	20°♁52'55	5°40'58	minimum elong	457 Aug 27 j 22:40	5°♄20'51	1°24'36	
minimum elong	455 Apr 10 j 18:38	20°♁37'57	5°38'54		457 Sep 16 j 16:06	0°♄		
min. Earth dist.	455 Apr 10 j 11:53	20°♁48'38	0.28819 AU	evening rise	457 Oct 05 j 06:38	23°♄17'33		
morning rise	455 Apr 16 j 00:52	17°♁25'30			457 Oct 10 j 15:10	0°♄		
direct	455 May 01 j 18:59	12°♁36'52		desc. node	457 Oct 21 j 13:25	13°♄40'56		
desc. node	455 May 06 j 18:01	13°♁04'37			457 Nov 03 j 14:19	0°♁		
greatest brilliancy	455 May 14 j 10:56	15°♁26'18	-4.5m		457 Nov 27 j 14:36	0°♁		
	455 Jun 05 j 18:14	0°♄			457 Dec 21 j 17:37	0°♁		
morning max el	455 Jun 19 j 13:07	12°♄19'41	45°44'34		458 Jan 15 j 02:44	0°♁		
	455 Jul 07 j 02:54	0°♄			458 Feb 09 j 00:05	0°♁		
	455 Aug 03 j 10:30	0°♄		asc. node	458 Feb 11 j 16:26	3°♁10'37		
asc. node	455 Aug 27 j 21:28	28°♄29'10			458 Mar 06 j 20:39	0°♄		
	455 Aug 29 j 04:01	0°♄			458 Apr 03 j 18:40	0°♄		
	455 Sep 22 j 23:39	0°♄		evening max el	458 Apr 09 j 21:56	6°♄03'17	45°27'46	
	455 Oct 17 j 06:05	0°♄			458 May 09 j 18:17	0°♄		
	455 Nov 10 j 05:32	0°♄		greatest brilliancy	458 May 14 j 05:11	2°♄18'28	-4.5m	
	455 Dec 04 j 02:23	0°♁		retrograde	458 May 28 j 11:40	5°♄50'03		
desc. node	455 Dec 17 j 11:00	16°♁47'38		desc. node	458 Jun 03 j 06:01	5°♄10'46		
morning set	455 Dec 18 j 13:30	18°♁10'55		evening set	458 Jun 12 j 15:03	1°♄25'45		
	455 Dec 27 j 23:14	0°♁			458 Jun 15 j 02:57	30°♄		
	456 Jan 20 j 21:25	0°♁		inferior conj	458 Jun 18 j 22:21	27°♄39'37	-3°-34'-14	
				minimum elong	458 Jun 18 j 15:03	27°♄51'00	3°32'17	
superior conj	456 Jan 29 j 07:26	10°♁31'56	-1°-19'-31	min. Earth dist.	458 Jun 18 j 23:25	27°♄37'57	0.28941 AU	
minimum elong	456 Jan 28 j 23:23	10°♁06'45	1°19'23	morning rise	458 Jun 24 j 14:58	24°♄13'41		
max. Earth dist.	456 Feb 02 j 05:28	15°♁25'38	1.71777 AU	direct	458 Jul 10 j 15:19	19°♄22'21		
	456 Feb 13 j 21:51	0°♁		greatest brilliancy	458 Jul 24 j 18:19	22°♄51'38	-4.5m	
evening rise	456 Mar 09 j 05:51	0°♁13'12			458 Aug 05 j 17:49	0°♄		
	456 Mar 09 j 01:35	0°♁		morning max el	458 Aug 28 j 23:24	20°♄00'53	46°08'50	
	456 Apr 02 j 09:38	0°♄			458 Sep 07 j 20:40	0°♄		
asc. node	456 Apr 08 j 14:17	7°♄35'37		asc. node	458 Sep 24 j 09:18	17°♄53'25		
	456 Apr 26 j 22:50	0°♄			458 Oct 05 j 01:06	0°♄		
	456 May 21 j 18:05	0°♄			458 Oct 30 j 09:40	0°♄		
	456 Jun 15 j 21:19	0°♄			458 Nov 23 j 22:51	0°♄		
	456 Jul 11 j 13:00	0°♄			458 Dec 18 j 03:50	0°♁		
desc. node	456 Jul 29 j 03:39	20°♄02'15			459 Jan 11 j 06:15	0°♁		
	456 Aug 07 j 03:15	0°♄		desc. node	459 Jan 13 j 22:54	3°♁21'15		
evening max el	456 Sep 03 j 09:29	28°♄31'35	46°41'48		459 Feb 04 j 08:46	0°♁		
	456 Sep 04 j 21:49	0°♄			459 Feb 28 j 12:37	0°♁		
greatest brilliancy	456 Oct 12 j 12:11	28°♄04'42	-4.6m	morning set	459 Mar 04 j 18:09	5°♁14'31		
	456 Oct 19 j 13:10	0°♁			459 Mar 24 j 18:28	0°♁		
retrograde	456 Oct 23 j 10:36	0°♁17'55						
	456 Oct 27 j 06:17	30°♄		superior conj	459 Apr 11 j 22:44	22°♁25'02	0°-54'-56	
evening set	456 Nov 07 j 00:04	26°♄06'34		minimum elong	459 Apr 12 j 08:06	22°♁53'55	0°54'35	
inferior conj	456 Nov 12 j 22:58	22°♄38'35	-1°-38'-13	max. Earth dist.	459 Apr 14 j 00:50	24°♁59'18	1.73283 AU	
minimum elong	456 Nov 13 j 02:41	22°♄32'56	1°37'03		459 Apr 18 j 02:32	0°♄		
min. Earth dist.	456 Nov 13 j 02:00	22°♄34'00	0.26395 AU	asc. node	459 May 07 j 02:14	23°♄20'24		
morning rise	456 Nov 19 j 05:10	19°♄01'04			459 May 12 j 12:27	0°♄		
asc. node	456 Nov 19 j 06:53	18°♄58'48		evening rise	459 May 18 j 23:43	7°♄56'17		
direct	456 Dec 03 j 07:47	15°♄01'38			459 Jun 05 j 23:44	0°♄		
greatest brilliancy	456 Dec 15 j 14:08	17°♄51'08	-4.7m		459 Jun 30 j 12:21	0°♄		
	457 Jan 03 j 06:45	0°♁			459 Jul 25 j 03:16	0°♄		
morning max el	457 Jan 22 j 19:41	18°♁03'16	46°47'57		459 Aug 18 j 22:21	0°♄		
	457 Feb 03 j 07:59	0°♁		desc. node	459 Aug 26 j 15:32	9°♄16'30		
	457 Mar 02 j 09:09	0°♁			459 Sep 13 j 00:21	0°♄		
desc. node	457 Mar 10 j 20:30	9°♁43'56			459 Oct 08 j 14:25	0°♁		
	457 Mar 28 j 06:05	0°♁			459 Nov 04 j 07:15	0°♁		
	457 Apr 22 j 14:42	0°♁		evening max el	459 Nov 16 j 05:27	12°♁33'20	47°23'03	

	459 Dec 04 j 17:25	0°♊			462 May 27 j 08:27	0°♈	
asc. node	459 Dec 17 j 18:50	9°♊43'09		asc. node	462 Jun 03 j 14:02	8°♈52'14	
greatest brilliancy	459 Dec 24 j 04:21	13°♊11'58	-4.7m	max. Earth dist.	462 Jun 16 j 13:01	24°♈47'21	1.73535 AU
retrograde	460 Jan 06 j 05:22	16°♊22'31					
evening set	460 Jan 23 j 00:23	10°♊48'07		superior conj	462 Jun 18 j 19:35	27°♈35'08	0°35'04
min. Earth dist.	460 Jan 26 j 02:39	8°♊53'47	0.27452 AU	minimum elong	462 Jun 18 j 13:05	27°♈15'11	0°34'46
inferior conj	460 Jan 27 j 01:32	8°♊17'51	8°03'29		462 Jun 20 j 18:41	0°♉	
minimum elong	460 Jan 26 j 18:08	8°♊29'28	8°02'35		462 Jul 15 j 02:41	0°♉	
morning rise	460 Jan 30 j 12:16	6°♊10'07		evening rise	462 Jul 24 j 13:32	11°♉40'53	
direct	460 Feb 16 j 17:45	0°♊26'41			462 Aug 08 j 08:56	0°♊	
greatest brilliancy	460 Feb 27 j 06:11	2°♊29'43	-4.6m		462 Sep 01 j 14:39	0°♊	
	460 Apr 04 j 15:46	0°♋		desc. node	462 Sep 23 j 03:35	26°♊37'26	
morning max el	460 Apr 06 j 00:31	1°♋18'56	46°06'13		462 Sep 25 j 21:15	0°♋	
desc. node	460 Apr 07 j 08:21	2°♋36'24			462 Oct 20 j 06:00	0°♋	
	460 May 03 j 15:58	0°♌			462 Nov 13 j 18:59	0°♌	
	460 May 30 j 10:49	0°♌			462 Dec 08 j 17:21	0°♌	
	460 Jun 25 j 06:07	0°♌			463 Jan 03 j 14:12	0°♌	
asc. node	460 Jul 20 j 10:08	0°♍		asc. node	463 Jan 14 j 06:35	11°♌47'03	
	460 Jul 29 j 11:37	10°♍57'30		evening max el	463 Jan 26 j 14:07	24°♌38'53	46°33'39
	460 Aug 14 j 02:01	0°♍			463 Feb 01 j 00:34	0°♍	
greatest brilliancy	460 Sep 07 j 08:25	0°♍		greatest brilliancy	463 Mar 03 j 03:13	23°♍09'33	-4.6m
morning set	460 Sep 30 j 02:46	28°♍26'54	-3.9m	retrograde	463 Mar 17 j 17:10	26°♍59'10	
	460 Sep 30 j 10:28	28°♍51'02		evening set	463 Apr 03 j 07:26	21°♍37'22	
	460 Oct 01 j 08:27	0°♎		inferior conj	463 Apr 08 j 01:20	18°♍41'37	5°55'52
	460 Oct 25 j 05:16	0°♎		minimum elong	463 Apr 08 j 10:53	18°♍26'32	5°53'50
				min. Earth dist.	463 Apr 08 j 03:25	18°♍38'21	0.28800 AU
superior conj	460 Nov 09 j 04:29	18°♎50'45	0°20'55	morning rise	463 Apr 13 j 14:32	15°♍18'07	
minimum elong	460 Nov 09 j 09:51	19°♎07'36	0°20'40	direct	463 Apr 29 j 10:43	10°♍25'53	
max. Earth dist.	460 Nov 09 j 03:07	18°♎46'26	1.71056 AU	desc. node	463 May 05 j 20:07	11°♍11'41	
	460 Nov 18 j 01:10	0°♏		greatest brilliancy	463 May 12 j 01:24	13°♍14'33	-4.5m
desc. node	460 Nov 18 j 01:19	0°♏00'28			463 Jun 05 j 23:52	0°♏	
	460 Dec 11 j 21:36	0°♏		morning max el	463 Jun 17 j 05:55	10°♏12'11	45°44'34
evening rise	460 Dec 20 j 21:51	11°♏18'43			463 Jul 06 j 20:05	0°♏	
	461 Jan 04 j 19:41	0°♐			463 Aug 03 j 00:21	0°♏	
	461 Jan 28 j 20:58	0°♐		asc. node	463 Aug 26 j 23:29	27°♏58'01	
	461 Feb 22 j 03:45	0°♐			463 Aug 28 j 16:26	0°♏	
asc. node	461 Mar 11 j 04:26	20°♐47'31			463 Sep 22 j 11:21	0°♐	
	461 Mar 18 j 19:07	0°♑			463 Oct 16 j 17:23	0°♑	
	461 Apr 12 j 23:08	0°♑			463 Nov 09 j 16:38	0°♑	
	461 May 08 j 22:58	0°♑			463 Dec 03 j 13:22	0°♑	
	461 Jun 05 j 12:35	0°♑		morning set	463 Dec 15 j 23:30	15°♑37'07	
evening max el	461 Jun 19 j 18:48	14°♑14'34	45°31'02	desc. node	463 Dec 16 j 13:02	16°♑19'37	
desc. node	461 Jun 30 j 17:55	24°♑13'31			463 Dec 27 j 10:10	0°♑	
	461 Jul 07 j 19:08	0°♒			464 Jan 20 j 08:17	0°♑	
greatest brilliancy	461 Jul 27 j 06:51	11°♒44'35	-4.5m				
retrograde	461 Aug 07 j 13:36	14°♒01'01		superior conj	464 Jan 26 j 18:37	8°♒02'50	-1°-18'00
evening set	461 Aug 25 j 14:58	8°♒00'15		minimum elong	464 Jan 26 j 09:47	7°♒35'15	1°17'51
inferior conj	461 Aug 28 j 17:04	6°♒07'57	-8°-46'-44	max. Earth dist.	464 Jan 30 j 15:25	12°♒52'56	1.71733 AU
minimum elong	461 Aug 28 j 17:51	6°♒06'46	8°46'44		464 Feb 13 j 08:41	0°♒	
min. Earth dist.	461 Aug 29 j 09:54	5°♒42'07	0.28026 AU	evening rise	464 Mar 06 j 19:25	27°♒53'09	
morning rise	461 Aug 31 j 20:29	4°♒13'04			464 Mar 08 j 12:24	0°♒	
	461 Sep 09 j 02:46	30°♒			464 Apr 01 j 20:33	0°♒	
direct	461 Sep 18 j 21:23	28°♒04'16		asc. node	464 Apr 07 j 16:26	7°♒08'42	
	461 Sep 29 j 01:59	0°♓			464 Apr 26 j 09:58	0°♓	
greatest brilliancy	461 Oct 03 j 05:51	1°♓45'59	-4.6m		464 May 21 j 05:39	0°♓	
asc. node	461 Oct 21 j 21:07	14°♓32'16			464 Jun 15 j 09:40	0°♓	
	461 Nov 07 j 09:59	0°♓			464 Jul 11 j 02:47	0°♓	
morning max el	461 Nov 08 j 11:33	1°♓04'48	46°49'30	desc. node	464 Jul 28 j 05:38	19°♓24'36	
	461 Dec 05 j 00:44	0°♓			464 Aug 06 j 19:56	0°♓	
	461 Dec 30 j 15:33	0°♓		evening max el	464 Aug 31 j 23:56	26°♓12'08	46°39'18
	462 Jan 24 j 13:35	0°♓			464 Sep 04 j 22:34	0°♓	
desc. node	462 Feb 10 j 10:40	20°♓31'02		greatest brilliancy	464 Oct 10 j 01:12	25°♓37'39	-4.6m
	462 Feb 18 j 05:19	0°♓		retrograde	464 Oct 20 j 23:09	27°♓49'30	
	462 Mar 14 j 18:50	0°♓		evening set	464 Nov 04 j 14:02	23°♓36'12	
	462 Apr 08 j 07:47	0°♓		inferior conj	464 Nov 10 j 11:04	20°♓10'25	-2°-2'-24
	462 May 02 j 20:30	0°♓		minimum elong	464 Nov 10 j 15:41	20°♓03'26	2°00'56
morning set	462 May 13 j 10:17	12°♓56'28		min. Earth dist.	464 Nov 10 j 15:17	20°♓04'02	0.26411 AU

morning rise	464 Nov 16 j 17:12	16°♌33'04		467 May 11 j 23:06	0°♈	
asc. node	464 Nov 18 j 08:54	15°♌42'59		evening rise	467 May 16 j 18:06	5°♈52'42
direct	464 Nov 30 j 20:47	12°♌33'26		467 Jun 05 j 10:31	0°♉	
greatest brilliancy	464 Dec 13 j 03:26	15°♌23'33	-4.7m	467 Jun 29 j 23:26	0°♊	
	465 Jan 03 j 17:43	0°♋		467 Jul 24 j 14:49	0°♋	
morning max el	465 Jan 20 j 09:29	15°♋39'57	46°48'52	467 Aug 18 j 10:37	0°♌	
	465 Feb 03 j 02:58	0°♌		desc. node	467 Aug 25 j 17:42	8°♌45'23
	465 Mar 02 j 00:03	0°♍		467 Sep 12 j 13:43	0°♍	
desc. node	465 Mar 09 j 22:40	9°♍09'09		467 Oct 08 j 05:39	0°♎	
	465 Mar 27 j 19:08	0°♏		467 Nov 04 j 02:35	0°♏	
	465 Apr 22 j 02:43	0°♐		evening max el	467 Nov 13 j 18:58	10°♏07'56 47°23'08
	465 May 17 j 03:48	0°♑		467 Dec 05 j 05:16	0°♐	
	465 Jun 10 j 23:40	0°♒		asc. node	467 Dec 16 j 20:51	8°♐13'10
asc. node	465 Jul 01 j 01:49	24°♒28'37		greatest brilliancy	467 Dec 21 j 21:18	10°♐51'14 -4.7m
	465 Jul 05 j 14:03	0°♓		retrograde	468 Jan 03 j 19:10	13°♐58'52
morning set	465 Jul 19 j 21:32	17°♓35'32		evening set	468 Jan 20 j 10:50	8°♐30'35
	465 Jul 29 j 22:42	0°♈		min. Earth dist.	468 Jan 23 j 16:38	6°♐31'14 0.27384 AU
max. Earth dist.	465 Aug 21 j 21:32	28°♈30'08	1.72276 AU	inferior conj	468 Jan 24 j 15:27	5°♐55'26 7°54'37
	465 Aug 23 j 02:24	0°♉		minimum elong	468 Jan 24 j 07:29	6°♐07'57 7°53'33
				morning rise	468 Jan 28 j 04:28	3°♐44'18
superior conj	465 Aug 25 j 14:13	3°♉06'23	1°24'39	468 Feb 04 j 13:28	30°♑	
minimum elong	465 Aug 25 j 14:06	3°♉06'01	1°24'38	direct	468 Feb 14 j 06:23	28°♑05'13
	465 Sep 16 j 02:53	0°♊		468 Feb 24 j 10:12	0°♊	
evening rise	465 Oct 02 j 19:19	20°♊52'47		greatest brilliancy	468 Feb 24 j 19:58	0°♊08'57 -4.6m
	465 Oct 10 j 02:07	0°♋		morning max el	468 Apr 03 j 13:32	28°♊58'43 46°07'45
desc. node	465 Oct 20 j 15:32	13°♋13'06		468 Apr 04 j 14:44	0°♋	
	465 Nov 03 j 01:27	0°♌		desc. node	468 Apr 06 j 10:26	1°♋47'18
	465 Nov 27 j 01:55	0°♍		468 May 03 j 07:54	0°♌	
	465 Dec 21 j 05:11	0°♎		468 May 30 j 00:12	0°♍	
	466 Jan 14 j 14:45	0°♏		468 Jun 24 j 18:16	0°♎	
	466 Feb 08 j 12:59	0°♐		468 Jul 19 j 21:37	0°♏	
asc. node	466 Feb 10 j 18:32	2°♐38'22		asc. node	468 Jul 28 j 13:42	10°♏29'20
	466 Mar 06 j 11:27	0°♑		468 Aug 13 j 13:10	0°♐	
	466 Apr 03 j 14:45	0°♒		468 Sep 06 j 19:25	0°♑	
evening max el	466 Apr 07 j 13:47	3°♒52'55	45°28'52	morning set	468 Sep 28 j 00:18	26°♑29'33
	466 May 11 j 12:44	0°♓		468 Sep 30 j 19:24	0°♒	
greatest brilliancy	466 May 11 j 21:09	0°♓09'52	-4.5m	468 Oct 24 j 16:13	0°♓	
retrograde	466 May 26 j 03:19	3°♓41'36				
desc. node	466 Jun 02 j 08:03	2°♓40'32		superior conj	468 Nov 06 j 14:56	16°♓17'59 0°24'43
	466 Jun 08 j 23:09	30°♈		minimum elong	468 Nov 06 j 21:09	16°♓37'34 0°24'25
evening set	466 Jun 10 j 06:19	29°♈18'47		max. Earth dist.	468 Nov 06 j 09:49	16°♓01'53 1.71072 AU
inferior conj	466 Jun 16 j 14:38	25°♈31'04	-3°-15'-56	desc. node	468 Nov 17 j 03:17	29°♓32'04
minimum elong	466 Jun 16 j 07:52	25°♈41'39	3°14'06	468 Nov 17 j 12:10	0°♉	
min. Earth dist.	466 Jun 16 j 15:59	25°♈28'57	0.28948 AU	468 Dec 11 j 08:40	0°♊	
morning rise	466 Jun 22 j 09:16	22°♈01'51		evening rise	468 Dec 18 j 07:33	8°♊43'50
direct	466 Jul 08 j 07:31	17°♈13'45		469 Jan 04 j 06:49	0°♋	
greatest brilliancy	466 Jul 22 j 08:50	20°♈40'24	-4.5m	469 Jan 28 j 08:12	0°♌	
	466 Aug 06 j 08:30	0°♉		469 Feb 21 j 15:11	0°♍	
morning max el	466 Aug 26 j 13:43	17°♉45'20	46°07'23	asc. node	469 Mar 10 j 06:36	20°♍18'43
	466 Sep 07 j 15:12	0°♊		469 Mar 18 j 06:56	0°♎	
asc. node	466 Sep 23 j 11:29	17°♊15'33		469 Apr 12 j 11:46	0°♏	
	466 Oct 04 j 15:37	0°♋		469 May 08 j 13:20	0°♐	
	466 Oct 29 j 22:35	0°♌		469 Jun 05 j 07:13	0°♑	
	466 Nov 23 j 10:59	0°♍		evening max el	469 Jun 17 j 09:02	11°♑59'24 45°29'35
	466 Dec 17 j 15:30	0°♎		desc. node	469 Jun 29 j 19:54	23°♑14'04
	467 Jan 10 j 17:35	0°♏		469 Jul 08 j 09:20	0°♒	
desc. node	467 Jan 13 j 00:51	2°♏52'10		greatest brilliancy	469 Jul 24 j 16:47	9°♒23'56 -4.5m
	467 Feb 03 j 19:49	0°♐		retrograde	469 Aug 05 j 03:47	11°♒44'19
	467 Feb 27 j 23:28	0°♑		evening set	469 Aug 23 j 04:10	5°♒43'57
morning set	467 Mar 02 j 08:01	2°♑55'18		inferior conj	469 Aug 26 j 07:20	3°♒50'10 -8°-46'-28
	467 Mar 24 j 05:10	0°♒		minimum elong	469 Aug 26 j 07:15	3°♒50'18 8°46'29
				min. Earth dist.	469 Aug 26 j 23:22	3°♒25'34 0.28088 AU
superior conj	467 Apr 09 j 15:15	20°♒15'21	0°-57'-25	morning rise	469 Aug 29 j 10:05	1°♒56'23
minimum elong	467 Apr 10 j 00:46	20°♒44'42	0°57'06	469 Sep 01 j 19:35	30°♓	
max. Earth dist.	467 Apr 11 j 21:02	23°♒01'01	1.73245 AU	direct	469 Sep 16 j 12:27	25°♓45'26
	467 Apr 17 j 13:09	0°♑		greatest brilliancy	469 Sep 30 j 22:36	29°♓29'24 -4.6m
asc. node	467 May 06 j 04:16	22°♑54'01		469 Oct 01 j 23:10	0°♒	

asc. node	469 Oct 20 j 23:06	13°♎27'00		472 Jun 14 j 22:21	0°♌	
morning max el	469 Nov 06 j 02:48	28°♎44'50	46°48'37	472 Jul 10 j 16:58	0°♎	
	469 Nov 07 j 08:14	0°♌		desc. node	472 Jul 27 j 07:50	18°♎46'31
	469 Dec 04 j 16:57	0°♍		472 Aug 06 j 13:14	0°♌	
	469 Dec 30 j 05:30	0°♎		evening max el	472 Aug 29 j 13:54	23°♌50'43 46°36'30
	470 Jan 24 j 02:22	0°♏		472 Sep 05 j 01:01	0°♍	
desc. node	470 Feb 09 j 12:50	20°♏00'11		greatest brilliancy	472 Oct 07 j 14:42	23°♍10'02 -4.6m
	470 Feb 17 j 17:23	0°♎		retrograde	472 Oct 18 j 10:51	25°♍19'29
	470 Mar 14 j 06:25	0°♏		evening set	472 Nov 02 j 04:03	21°♍04'05
	470 Apr 07 j 18:59	0°♐		inferior conj	472 Nov 07 j 23:03	17°♍40'48 -2°-26'-18
	470 May 02 j 07:26	0°♑		minimum elong	472 Nov 08 j 04:30	17°♍32'31 2°24'36
morning set	470 May 11 j 04:24	10°♑51'45		min. Earth dist.	472 Nov 08 j 04:48	17°♍32'04 0.26435 AU
	470 May 26 j 19:13	0°♒		morning rise	472 Nov 14 j 04:48	14°♍03'36
asc. node	470 Jun 02 j 16:03	8°♒25'28		asc. node	472 Nov 17 j 10:58	12°♍29'29
max. Earth dist.	470 Jun 14 j 12:58	23°♒00'23	1.73556 AU	direct	472 Nov 28 j 09:27	10°♍03'31
				greatest brilliancy	472 Dec 10 j 17:21	12°♍54'47 -4.7m
superior conj	470 Jun 16 j 14:15	25°♒31'54	0°32'12	473 Jan 04 j 02:31	0°♑	
minimum elong	470 Jun 16 j 08:11	25°♒13'16	0°31'57	morning max el	473 Jan 17 j 22:17	13°♑12'18 46°49'48
	470 Jun 20 j 05:25	0°♓		473 Feb 02 j 22:01	0°♏	
	470 Jul 14 j 13:31	0°♌		473 Mar 01 j 15:14	0°♎	
evening rise	470 Jul 22 j 08:03	9°♌36'10		desc. node	473 Mar 09 j 00:48	8°♎33'11
	470 Aug 07 j 19:58	0°♎		473 Mar 27 j 08:29	0°♏	
	470 Sep 01 j 01:59	0°♌		473 Apr 21 j 15:03	0°♐	
desc. node	470 Sep 22 j 05:41	26°♌07'49		473 May 16 j 15:30	0°♑	
	470 Sep 25 j 08:59	0°♍		473 Jun 10 j 10:59	0°♒	
	470 Oct 19 j 18:15	0°♎		asc. node	473 Jun 30 j 03:57	24°♒01'13
	470 Nov 13 j 07:57	0°♏		473 Jul 05 j 01:08	0°♓	
	470 Dec 08 j 07:31	0°♎		morning set	473 Jul 17 j 15:15	15°♓28'21
	471 Jan 03 j 06:51	0°♏		473 Jul 29 j 09:40	0°♌	
asc. node	471 Jan 13 j 08:42	11°♏02'57		max. Earth dist.	473 Aug 19 j 11:26	26°♌09'47 1.72331 AU
evening max el	471 Jan 24 j 06:02	22°♏23'40	46°36'21	473 Aug 22 j 13:22	0°♎	
	471 Feb 01 j 01:06	0°♐				
greatest brilliancy	471 Feb 28 j 19:57	20°♐57'55	-4.6m	superior conj	473 Aug 23 j 06:59	0°♎54'51 1°24'32
retrograde	471 Mar 15 j 10:14	24°♐47'30		minimum elong	473 Aug 23 j 06:07	0°♎52'09 1°24'33
evening set	471 Apr 01 j 02:25	19°♐21'31		473 Sep 15 j 13:59	0°♌	
inferior conj	471 Apr 05 j 17:31	16°♐29'45	6°10'14	evening rise	473 Sep 30 j 08:34	18°♌29'00
minimum elong	471 Apr 06 j 03:06	16°♐14'35	6°08'17	473 Oct 09 j 13:23	0°♍	
min. Earth dist.	471 Apr 05 j 18:43	16°♐27'50	0.28777 AU	desc. node	473 Oct 19 j 17:32	12°♍43'51
morning rise	471 Apr 11 j 04:03	13°♐10'16		473 Nov 02 j 12:56	0°♎	
direct	471 Apr 27 j 02:50	8°♐14'29		473 Nov 26 j 13:39	0°♏	
desc. node	471 May 04 j 22:08	9°♐22'15		473 Dec 20 j 17:14	0°♎	
greatest brilliancy	471 May 09 j 14:49	11°♐01'04	-4.5m	474 Jan 14 j 03:18	0°♏	
	471 Jun 06 j 03:49	0°♑		474 Feb 08 j 02:27	0°♐	
morning max el	471 Jun 14 j 22:50	8°♑04'30	45°44'35	asc. node	474 Feb 09 j 20:40	2°♐04'37
	471 Jul 06 j 13:05	0°♒		474 Mar 06 j 02:57	0°♑	
	471 Aug 02 j 14:15	0°♓		474 Apr 03 j 12:01	0°♒	
asc. node	471 Aug 26 j 01:42	27°♓27'04		evening max el	474 Apr 05 j 04:48	1°♒39'16 45°30'16
	471 Aug 28 j 04:59	0°♌		greatest brilliancy	474 May 09 j 12:28	27°♒59'33 -4.5m
	471 Sep 21 j 23:16	0°♎		474 May 14 j 13:47	0°♓	
	471 Oct 16 j 04:59	0°♌		retrograde	474 May 23 j 19:07	1°♓32'47
	471 Nov 09 j 04:04	0°♍		desc. node	474 Jun 01 j 10:07	0°♓05'09
	471 Dec 03 j 00:43	0°♎		474 Jun 01 j 16:09	30°♒	
morning set	471 Dec 13 j 09:11	13°♎01'09		evening set	474 Jun 07 j 21:53	27°♒10'50
desc. node	471 Dec 15 j 15:06	15°♎50'38		inferior conj	474 Jun 14 j 07:05	23°♒22'02 -2°-57'-30
	471 Dec 26 j 21:26	0°♏		minimum elong	474 Jun 14 j 00:52	23°♒31'45 2°55'48
	472 Jan 19 j 19:28	0°♎		min. Earth dist.	474 Jun 14 j 08:56	23°♒19'09 0.28954 AU
				morning rise	474 Jun 20 j 03:37	19°♒49'46
superior conj	472 Jan 24 j 05:20	5°♎31'20	-1°-16'-19	direct	474 Jul 05 j 23:28	15°♒04'27
minimum elong	472 Jan 23 j 19:49	5°♎01'35	1°16'08	greatest brilliancy	474 Jul 20 j 00:23	18°♒29'45 -4.5m
max. Earth dist.	472 Jan 28 j 03:30	10°♎25'50	1.71681 AU	474 Aug 06 j 19:50	0°♓	
	472 Feb 12 j 19:47	0°♏		morning max el	474 Aug 24 j 04:16	15°♓29'35 46°06'07
evening rise	472 Mar 04 j 08:44	25°♏31'27		474 Sep 07 j 09:35	0°♌	
	472 Mar 07 j 23:30	0°♐		asc. node	474 Sep 22 j 13:26	16°♌36'29
	472 Apr 01 j 07:44	0°♑		474 Oct 04 j 06:15	0°♎	
asc. node	472 Apr 06 j 18:27	6°♑40'32		474 Oct 29 j 11:44	0°♌	
	472 Apr 25 j 21:23	0°♒		474 Nov 22 j 23:23	0°♍	
	472 May 20 j 17:31	0°♓		474 Dec 17 j 03:27	0°♎	

	475 Jan 10 j 05:14	0°☾			477 Jul 09 j 04:34	0°♍	
desc. node	475 Jan 12 j 03:02	2°☾22'42		greatest brilliancy	477 Jul 22 j 02:57	7°♍03'41	-4.5m
	475 Feb 03 j 07:16	0°≈		retrograde	477 Aug 02 j 18:18	9°♍27'49	
	475 Feb 27 j 10:43	0°☿		evening set	477 Aug 20 j 17:11	3°♍28'37	
morning set	475 Feb 27 j 21:19	0°☿32'53		inferior conj	477 Aug 23 j 21:45	1°♍32'39	-8°-45'-23
	475 Mar 23 j 16:17	0°♁		minimum elong	477 Aug 23 j 20:48	1°♍34'06	8°45'24
				min. Earth dist.	477 Aug 24 j 12:37	1°♍09'51	0.28145 AU
superior conj	475 Apr 07 j 07:22	18°♁03'10	0°-59'-52		477 Aug 26 j 10:28	30°♌	
minimum elong	475 Apr 07 j 17:00	18°♁32'51	0°59'33	morning rise	477 Aug 27 j 00:14	29°♌39'21	
max. Earth dist.	475 Apr 09 j 15:03	20°♁54'44	1.73202 AU	direct	477 Sep 14 j 04:06	23°♌27'10	
	475 Apr 17 j 00:10	0°♂		greatest brilliancy	477 Sep 28 j 14:25	27°♌11'52	-4.6m
asc. node	475 May 05 j 06:16	22°♂26'25			477 Oct 03 j 16:57	0°♍	
	475 May 11 j 10:07	0°♁		asc. node	477 Oct 20 j 01:11	12°♍23'25	
evening rise	475 May 14 j 12:14	3°♁47'19		morning max el	477 Nov 03 j 18:29	26°♍26'00	46°47'34
	475 Jun 04 j 21:40	0°☾			477 Nov 07 j 05:44	0°♎	
	475 Jun 29 j 10:52	0°♌			477 Dec 04 j 08:58	0°♎	
	475 Jul 24 j 02:44	0°♍			477 Dec 29 j 19:23	0°♏	
	475 Aug 17 j 23:16	0°♎			478 Jan 23 j 15:07	0°☾	
desc. node	475 Aug 24 j 19:47	8°♎13'00		desc. node	478 Feb 08 j 14:54	19°☾29'08	
	475 Sep 12 j 03:28	0°♏			478 Feb 17 j 05:26	0°≈	
	475 Oct 07 j 21:21	0°♏			478 Mar 13 j 17:58	0°☿	
	475 Nov 03 j 22:41	0°☾			478 Apr 07 j 06:11	0°♁	
evening max el	475 Nov 11 j 08:22	7°☾41'52	47°23'10		478 May 01 j 18:24	0°♂	
	475 Dec 05 j 21:22	0°≈		morning set	478 May 08 j 22:28	8°♂46'41	
asc. node	475 Dec 15 j 22:56	6°≈39'30			478 May 26 j 06:03	0°♁	
greatest brilliancy	475 Dec 19 j 13:02	8°≈28'16	-4.7m	asc. node	478 Jun 01 j 18:13	7°♁58'55	
retrograde	476 Jan 01 j 09:11	11°≈34'39		max. Earth dist.	478 Jun 12 j 12:08	21°♁10'49	1.73573 AU
evening set	476 Jan 17 j 21:11	6°≈12'09					
min. Earth dist.	476 Jan 21 j 06:31	4°≈07'57	0.27323 AU	superior conj	478 Jun 14 j 08:46	23°♁28'01	0°29'18
inferior conj	476 Jan 22 j 05:23	3°≈32'09	7°44'51	minimum elong	478 Jun 14 j 03:11	23°♁10'51	0°29'03
minimum elong	476 Jan 21 j 20:52	3°≈45'30	7°43'36		478 Jun 19 j 16:13	0°☾	
morning rise	476 Jan 25 j 20:53	1°≈17'32			478 Jul 14 j 00:24	0°♌	
	476 Jan 28 j 02:57	30°☾		evening rise	478 Jul 20 j 02:30	7°♌31'08	
direct	476 Feb 11 j 19:04	25°☾42'39			478 Aug 07 j 07:01	0°♍	
greatest brilliancy	476 Feb 22 j 10:14	27°☾47'45	-4.6m		478 Aug 31 j 13:19	0°♎	
	476 Feb 27 j 09:21	0°≈		desc. node	478 Sep 21 j 07:39	25°♎37'53	
morning max el	476 Apr 01 j 03:37	26°≈39'48	46°09'13		478 Sep 24 j 20:43	0°♏	
	476 Apr 04 j 13:13	0°☿			478 Oct 19 j 06:32	0°♏	
desc. node	476 Apr 05 j 12:25	0°☿57'44			478 Nov 12 j 20:59	0°☾	
	476 May 02 j 23:57	0°♁			478 Dec 07 j 21:47	0°≈	
	476 May 29 j 13:48	0°♂			479 Jan 02 j 23:45	0°☿	
	476 Jun 24 j 06:38	0°♁		asc. node	479 Jan 12 j 10:52	10°☿18'40	
	476 Jul 19 j 09:19	0°☾		evening max el	479 Jan 21 j 22:27	20°☿09'52	46°38'59
asc. node	476 Jul 27 j 15:49	10°☾00'44			479 Feb 01 j 02:45	0°♁	
	476 Aug 13 j 00:30	0°♌		greatest brilliancy	479 Feb 26 j 13:41	18°♁48'03	-4.6m
	476 Sep 06 j 06:36	0°♍		retrograde	479 Mar 13 j 03:05	22°♁36'11	
morning set	476 Sep 25 j 14:28	24°♍08'35		evening set	479 Mar 29 j 21:30	17°♁06'20	
	476 Sep 30 j 06:33	0°♎		inferior conj	479 Apr 03 j 09:46	14°♁18'26	6°24'02
	476 Oct 24 j 03:22	0°♏		minimum elong	479 Apr 03 j 19:20	14°♁03'19	6°22'10
max. Earth dist.	476 Nov 03 j 18:41	13°♏23'29	1.71087 AU	min. Earth dist.	479 Apr 03 j 10:04	14°♁17'58	0.28753 AU
				morning rise	479 Apr 08 j 17:29	11°♁03'00	
superior conj	476 Nov 04 j 01:50	13°♏46'00	0°28'25	direct	479 Apr 24 j 19:13	6°♁03'50	
minimum elong	476 Nov 04 j 08:51	14°♏08'06	0°28'05	desc. node	479 May 04 j 00:14	7°♁37'19	
desc. node	476 Nov 16 j 05:24	29°♏03'33		greatest brilliancy	479 May 07 j 03:30	8°♁47'05	-4.5m
	476 Nov 16 j 23:20	0°♏			479 Jun 06 j 06:01	0°♂	
	476 Dec 10 j 19:52	0°☾		morning max el	479 Jun 12 j 15:13	5°♂55'49	45°44'30
evening rise	476 Dec 15 j 17:40	6°☾09'47			479 Jul 06 j 05:41	0°♁	
	477 Jan 03 j 18:06	0°≈			479 Aug 02 j 03:58	0°☾	
	477 Jan 27 j 19:35	0°☿		asc. node	479 Aug 25 j 03:40	26°☾55'40	
	477 Feb 21 j 02:47	0°♁			479 Aug 27 j 17:25	0°♌	
asc. node	477 Mar 09 j 08:33	19°♁48'36			479 Sep 21 j 11:01	0°♍	
	477 Mar 17 j 18:59	0°♂			479 Oct 15 j 16:24	0°♎	
	477 Apr 12 j 00:43	0°♁			479 Nov 08 j 15:19	0°♏	
	477 May 08 j 04:08	0°☾			479 Dec 02 j 11:54	0°♏	
	477 Jun 05 j 02:36	0°♌		morning set	479 Dec 10 j 18:53	10°♏25'46	
evening max el	477 Jun 15 j 00:14	9°♌46'07	45°28'21	desc. node	479 Dec 14 j 17:14	15°♏22'21	
desc. node	477 Jun 28 j 22:06	22°♌13'15			479 Dec 26 j 08:32	0°☾	

	480 Jan 19 j 06:29	0°♁		direct	482 Jul 03 j 15:19	12°♁56'07	
				greatest brilliancy	482 Jul 17 j 16:52	16°♁21'31	-4.5m
superior conj	480 Jan 21 j 15:59	2°♁59'59	-1°-14'-30		482 Aug 07 j 03:41	0°♁	
minimum elong	480 Jan 21 j 05:52	2°♁28'19	1°14'15	morning max el	482 Aug 21 j 19:20	13°♁16'13	46°04'47
max. Earth dist.	480 Jan 25 j 15:21	7°♁58'20	1.71630 AU		482 Sep 07 j 03:11	0°♁	
	480 Feb 12 j 06:44	0°♁		asc. node	482 Sep 21 j 15:32	15°♁59'04	
evening rise	480 Mar 01 j 21:59	23°♁09'52			482 Oct 03 j 20:28	0°♁	
	480 Mar 07 j 10:26	0°♁			482 Oct 29 j 00:32	0°♁	
	480 Mar 31 j 18:44	0°♁			482 Nov 22 j 11:29	0°♁	
asc. node	480 Apr 05 j 20:31	6°♁13'08			482 Dec 16 j 15:06	0°♁	
	480 Apr 25 j 08:38	0°♁			483 Jan 09 j 16:33	0°♁	
	480 May 20 j 05:14	0°♁		desc. node	483 Jan 11 j 05:06	1°♁53'55	
	480 Jun 14 j 10:55	0°♁			483 Feb 02 j 18:20	0°♁	
	480 Jul 10 j 07:07	0°♁		morning set	483 Feb 25 j 10:19	28°♁10'27	
desc. node	480 Jul 26 j 09:51	18°♁08'00			483 Feb 26 j 21:37	0°♁	
	480 Aug 06 j 06:44	0°♁			483 Mar 23 j 03:03	0°♁	
evening max el	480 Aug 27 j 03:10	21°♁28'15	46°33'48				
	480 Sep 05 j 04:47	0°♁		superior conj	483 Apr 04 j 23:22	15°♁51'36	-1°-2'-14
greatest brilliancy	480 Oct 05 j 04:55	20°♁44'18	-4.6m	minimum elong	483 Apr 05 j 09:04	16°♁21'28	1°01'55
retrograde	480 Oct 15 j 22:11	22°♁50'58		max. Earth dist.	483 Apr 07 j 07:46	18°♁45'24	1.73161 AU
evening set	480 Oct 30 j 18:23	18°♁33'06			483 Apr 16 j 10:52	0°♁	
inferior conj	480 Nov 05 j 11:15	15°♁12'43	-2°-49'-39	asc. node	483 May 04 j 08:28	22°♁00'24	
minimum elong	480 Nov 05 j 17:30	15°♁03'14	2°47'45		483 May 10 j 20:48	0°♁	
min. Earth dist.	480 Nov 05 j 18:43	15°♁01'21	0.26461 AU	evening rise	483 May 12 j 06:23	1°♁42'58	
morning rise	480 Nov 11 j 16:20	11°♁35'57			483 Jun 04 j 08:28	0°♁	
asc. node	480 Nov 16 j 13:06	9°♁22'22			483 Jun 28 j 21:58	0°♁	
direct	480 Nov 25 j 21:47	7°♁34'58			483 Jul 23 j 14:19	0°♁	
greatest brilliancy	480 Dec 08 j 08:17	10°♁28'28	-4.7m		483 Aug 17 j 11:37	0°♁	
	481 Jan 04 j 08:29	0°♁		desc. node	483 Aug 23 j 21:45	7°♁41'11	
morning max el	481 Jan 15 j 10:29	10°♁43'52	46°50'37		483 Sep 11 j 17:01	0°♁	
	481 Feb 02 j 16:15	0°♁			483 Oct 07 j 13:02	0°♁	
	481 Mar 01 j 05:55	0°♁			483 Nov 03 j 19:12	0°♁	
desc. node	481 Mar 08 j 02:42	7°♁57'41		evening max el	483 Nov 08 j 22:24	5°♁17'59	47°23'08
	481 Mar 26 j 21:27	0°♁			483 Dec 06 j 18:45	0°♁	
	481 Apr 21 j 03:02	0°♁		asc. node	483 Dec 15 j 01:03	5°♁02'44	
	481 May 16 j 02:52	0°♁		greatest brilliancy	483 Dec 17 j 03:51	6°♁04'18	-4.7m
	481 Jun 09 j 21:58	0°♁		retrograde	483 Dec 29 j 23:29	9°♁10'24	
asc. node	481 Jun 29 j 06:03	23°♁34'38		evening set	484 Jan 15 j 07:14	3°♁53'32	
	481 Jul 04 j 11:54	0°♁		min. Earth dist.	484 Jan 18 j 19:55	1°♁44'51	0.27259 AU
morning set	481 Jul 15 j 08:58	13°♁22'05		inferior conj	484 Jan 19 j 19:04	1°♁08'44	7°34'07
	481 Jul 28 j 20:23	0°♁		minimum elong	484 Jan 19 j 10:05	1°♁22'45	7°32'41
max. Earth dist.	481 Aug 17 j 02:49	23°♁54'50	1.72390 AU		484 Jan 21 j 15:19	30°♁	
				morning rise	484 Jan 23 j 13:17	28°♁50'29	
superior conj	481 Aug 20 j 23:43	28°♁43'59	1°24'19	direct	484 Feb 09 j 07:56	23°♁20'01	
minimum elong	481 Aug 20 j 22:08	28°♁39'03	1°24'19	greatest brilliancy	484 Feb 19 j 23:46	25°♁26'10	-4.6m
	481 Aug 22 j 00:08	0°♁			484 Feb 29 j 03:48	0°♁	
	481 Sep 15 j 00:51	0°♁		morning max el	484 Mar 29 j 18:14	24°♁23'05	46°10'40
evening rise	481 Sep 27 j 21:47	16°♁05'55			484 Apr 04 j 10:29	0°♁	
	481 Oct 09 j 00:25	0°♁		desc. node	484 Apr 04 j 14:36	0°♁10'23	
desc. node	481 Oct 18 j 19:39	12°♁15'47			484 May 02 j 15:24	0°♁	
	481 Nov 02 j 00:09	0°♁			484 May 29 j 02:59	0°♁	
	481 Nov 26 j 01:05	0°♁			484 Jun 23 j 18:39	0°♁	
	481 Dec 20 j 05:00	0°♁			484 Jul 18 j 20:40	0°♁	
	482 Jan 13 j 15:36	0°♁		asc. node	484 Jul 26 j 17:50	9°♁32'47	
	482 Feb 07 j 15:44	0°♁			484 Aug 12 j 11:31	0°♁	
asc. node	482 Feb 08 j 22:38	1°♁31'01			484 Sep 05 j 17:28	0°♁	
	482 Mar 05 j 18:22	0°♁		morning set	484 Sep 23 j 04:54	21°♁49'37	
evening max el	482 Apr 02 j 19:29	29°♁25'40	45°31'47		484 Sep 29 j 17:23	0°♁	
	482 Apr 03 j 09:42	0°♁			484 Oct 23 j 14:15	0°♁	
greatest brilliancy	482 May 07 j 02:50	25°♁49'00	-4.5m	max. Earth dist.	484 Nov 01 j 04:08	10°♁47'51	1.71108 AU
retrograde	482 May 21 j 11:15	29°♁25'10					
desc. node	482 May 31 j 12:14	27°♁26'22		superior conj	484 Nov 01 j 12:44	11°♁14'53	0°32'03
evening set	482 Jun 05 j 13:35	25°♁03'35		minimum elong	484 Nov 01 j 20:29	11°♁39'16	0°31'42
inferior conj	482 Jun 11 j 23:31	21°♁14'03	-2°-38'-54	desc. node	484 Nov 15 j 07:33	28°♁35'56	
minimum elong	482 Jun 11 j 17:53	21°♁22'50	2°37'20		484 Nov 16 j 10:17	0°♁	
min. Earth dist.	482 Jun 12 j 01:44	21°♁10'35	0.28961 AU		484 Dec 10 j 06:53	0°♁	
morning rise	482 Jun 17 j 21:54	17°♁39'06		evening rise	484 Dec 13 j 03:23	3°♁35'01	

	485 Jan 03 j 05:11	0°♊			487 Aug 01 j 17:31	0°♋	
	485 Jan 27 j 06:47	0°♋		asc. node	487 Aug 24 j 05:44	26°♋24'50	
	485 Feb 20 j 14:12	0°♌			487 Aug 27 j 05:44	0°♌	
asc. node	485 Mar 08 j 10:40	19°♌19'37			487 Sep 20 j 22:43	0°♍	
	485 Mar 17 j 06:51	0°♍			487 Oct 15 j 03:45	0°♎	
	485 Apr 11 j 13:31	0°♎			487 Nov 08 j 02:30	0°♏	
	485 May 07 j 18:53	0°♏			487 Dec 01 j 22:59	0°♐	
	485 Jun 04 j 22:19	0°♐		morning set	487 Dec 08 j 04:59	7°♐51'50	
evening max el	485 Jun 12 j 15:56	7°♐34'47	45°27'09	desc. node	487 Dec 13 j 19:16	14°♐54'03	
desc. node	485 Jun 28 j 00:09	21°♐11'24			487 Dec 25 j 19:33	0°♑	
	485 Jul 10 j 06:10	0°♑			488 Jan 18 j 17:27	0°♒	
greatest brilliancy	485 Jul 19 j 14:18	4°♑45'49	-4.5m				
retrograde	485 Jul 31 j 08:43	7°♑12'19		superior conj	488 Jan 19 j 02:47	0°♒29'15	-1°-12'-30
evening set	485 Aug 18 j 05:59	1°♑15'13		minimum elong	488 Jan 18 j 16:08	29°♑55'55	1°12'14
	485 Aug 20 j 07:52	30°♒		max. Earth dist.	488 Jan 23 j 02:36	5°♒29'06	1.71582 AU
inferior conj	485 Aug 21 j 12:17	29°♒16'26	-8°-43'-34		488 Feb 11 j 17:39	0°♋	
minimum elong	485 Aug 21 j 10:29	29°♒19'12	8°43'32	evening rise	488 Feb 28 j 11:01	20°♋47'31	
min. Earth dist.	485 Aug 22 j 01:58	28°♒55'24	0.28196 AU		488 Mar 06 j 21:23	0°♌	
morning rise	485 Aug 24 j 14:48	27°♒22'56			488 Mar 31 j 05:48	0°♍	
direct	485 Sep 11 j 19:57	21°♒10'28		asc. node	488 Apr 04 j 22:40	5°♍45'46	
greatest brilliancy	485 Sep 26 j 05:03	24°♒54'03	-4.6m		488 Apr 24 j 19:56	0°♎	
	485 Oct 04 j 21:10	0°♎			488 May 19 j 17:01	0°♏	
asc. node	485 Oct 19 j 03:22	11°♎22'36			488 Jun 13 j 23:37	0°♐	
morning max el	485 Nov 01 j 09:21	24°♎06'12	46°46'23		488 Jul 09 j 21:31	0°♑	
	485 Nov 07 j 02:08	0°♏		desc. node	488 Jul 25 j 11:52	17°♑28'52	
	485 Dec 04 j 00:28	0°♐			488 Aug 06 j 00:44	0°♒	
	485 Dec 29 j 08:58	0°♑		evening max el	488 Aug 24 j 15:23	19°♒03'03	46°31'03
	486 Jan 23 j 03:41	0°♒			488 Sep 05 j 10:33	0°♓	
desc. node	486 Feb 07 j 16:54	18°♓58'17		greatest brilliancy	488 Oct 02 j 19:11	18°♓18'23	-4.6m
	486 Feb 16 j 17:19	0°♊		retrograde	488 Oct 13 j 09:28	20°♓22'32	
	486 Mar 13 j 05:22	0°♋		evening set	488 Oct 28 j 08:50	16°♓01'36	
	486 Apr 06 j 17:13	0°♌		inferior conj	488 Nov 02 j 23:27	12°♓44'35	-3°-12'-45
	486 May 01 j 05:11	0°♍		minimum elong	488 Nov 03 j 06:26	12°♓33'57	3°10'38
morning set	486 May 06 j 16:20	6°♍41'29		min. Earth dist.	488 Nov 03 j 08:47	12°♓30'22	0.26490 AU
	486 May 25 j 16:43	0°♎		morning rise	488 Nov 09 j 03:37	9°♓08'41	
asc. node	486 May 31 j 20:16	7°♎32'32		asc. node	488 Nov 15 j 15:08	6°♓20'33	
max. Earth dist.	486 Jun 10 j 10:09	19°♎18'17	1.73589 AU	direct	488 Nov 23 j 09:45	5°♓06'02	
				greatest brilliancy	488 Dec 05 j 23:57	8°♓03'00	-4.7m
superior conj	486 Jun 12 j 03:13	21°♎24'25	0°26'21		489 Jan 04 j 12:30	0°♏	
minimum elong	486 Jun 11 j 22:07	21°♎08'47	0°26'07	morning max el	489 Jan 12 j 22:48	8°♏15'32	46°51'38
	486 Jun 19 j 02:53	0°♏			489 Feb 02 j 10:01	0°♐	
	486 Jul 13 j 11:09	0°♐			489 Feb 28 j 20:25	0°♑	
evening rise	486 Jul 17 j 20:59	5°♐26'42		desc. node	489 Mar 07 j 04:55	7°♑23'16	
	486 Aug 06 j 17:57	0°♑			489 Mar 26 j 10:23	0°♒	
	486 Aug 31 j 00:32	0°♒			489 Apr 20 j 15:04	0°♓	
desc. node	486 Sep 20 j 09:49	25°♒09'02			489 May 15 j 14:21	0°♋	
	486 Sep 24 j 08:19	0°♓			489 Jun 09 j 09:05	0°♌	
	486 Oct 18 j 18:40	0°♋		asc. node	489 Jun 28 j 08:03	23°♌07'20	
	486 Nov 12 j 09:54	0°♌			489 Jul 03 j 22:48	0°♍	
	486 Dec 07 j 12:01	0°♍		morning set	489 Jul 13 j 02:37	11°♍15'13	
	487 Jan 02 j 16:52	0°♎			489 Jul 28 j 07:12	0°♎	
asc. node	487 Jan 11 j 12:49	9°♎33'20		max. Earth dist.	489 Aug 14 j 20:49	21°♎47'45	1.72448 AU
evening max el	487 Jan 19 j 14:14	17°♎54'14	46°41'23				
	487 Feb 01 j 05:55	0°♏		superior conj	489 Aug 18 j 16:26	26°♏32'46	1°23'57
greatest brilliancy	487 Feb 24 j 08:21	16°♏38'48	-4.6m	minimum elong	489 Aug 18 j 14:08	26°♏25'37	1°23'57
retrograde	487 Mar 10 j 19:21	20°♏24'04			489 Aug 21 j 11:00	0°♐	
evening set	487 Mar 27 j 16:27	14°♏50'31			489 Sep 14 j 11:52	0°♑	
inferior conj	487 Apr 01 j 01:53	12°♏06'33	6°37'25	evening rise	489 Sep 25 j 11:12	13°♑43'08	
minimum elong	487 Apr 01 j 11:21	11°♏51'33	6°35'39		489 Oct 08 j 11:38	0°♒	
min. Earth dist.	487 Apr 01 j 01:30	12°♏07'09	0.28726 AU	desc. node	489 Oct 17 j 21:45	11°♒47'03	
morning rise	487 Apr 06 j 06:34	8°♏55'13			489 Nov 01 j 11:34	0°♓	
direct	487 Apr 22 j 11:12	3°♏52'40			489 Nov 25 j 12:43	0°♋	
desc. node	487 May 03 j 02:21	5°♏55'44			489 Dec 19 j 16:56	0°♌	
greatest brilliancy	487 May 04 j 16:00	6°♏32'26	-4.5m		490 Jan 13 j 04:03	0°♍	
	487 Jun 06 j 06:54	0°♎			490 Feb 07 j 05:12	0°♌	
morning max el	487 Jun 10 j 06:30	3°♎44'24	45°44'30	asc. node	490 Feb 08 j 00:46	0°♍57'33	
	487 Jul 05 j 21:58	0°♏			490 Mar 05 j 10:06	0°♎	

evening max el	490 Mar 31 j 10:30	27°♄12'37	45°33'18			492 Sep 29 j 04:32	0°♁		
	490 Apr 03 j 08:24	0°♂				492 Oct 23 j 01:25	0°♁		
greatest brilliancy	490 May 04 j 16:50	23°♂37'33	-4.5m	max. Earth dist.		492 Oct 29 j 12:37	8°♁08'15	1.71128 AU	
retrograde	490 May 19 j 03:53	27°♂17'10							
desc. node	490 May 30 j 14:15	24°♂43'08			superior conj	492 Oct 29 j 23:44	8°♁43'13	0°35'37	
evening set	490 Jun 03 j 05:32	22°♂55'34			minimum elong	492 Oct 30 j 08:08	9°♁09'38	0°35'14	
inferior conj	490 Jun 09 j 16:00	19°♂05'28	-2°-19'-58		desc. node	492 Nov 14 j 09:30	28°♁06'44		
minimum elong	490 Jun 09 j 11:00	19°♂13'17	2°18'34			492 Nov 15 j 21:31	0°♁		
min. Earth dist.	490 Jun 09 j 18:19	19°♂01'51	0.28970 AU			492 Dec 09 j 18:13	0°♁		
morning rise	490 Jun 15 j 16:11	15°♂28'13			evening rise	492 Dec 10 j 13:03	0°♁59'06		
direct	490 Jul 01 j 07:33	10°♂47'10				493 Jan 02 j 16:37	0°♁		
greatest brilliancy	490 Jul 15 j 09:59	14°♂13'35	-4.5m			493 Jan 26 j 18:20	0°♁		
	490 Aug 07 j 09:32	0°♁				493 Feb 20 j 01:57	0°♁		
morning max el	490 Aug 19 j 11:22	11°♁04'45	46°03'29		asc. node	493 Mar 07 j 12:49	18°♁49'41		
	490 Sep 06 j 20:39	0°♁				493 Mar 16 j 19:04	0°♁		
asc. node	490 Sep 20 j 17:45	15°♁21'41				493 Apr 11 j 02:40	0°♂		
	490 Oct 03 j 10:45	0°♁				493 May 07 j 10:04	0°♁		
	490 Oct 28 j 13:30	0°♁				493 Jun 04 j 18:54	0°♁		
	490 Nov 21 j 23:45	0°♁			evening max el	493 Jun 10 j 07:26	5°♁22'26	45°25'54	
	490 Dec 16 j 02:57	0°♁			desc. node	493 Jun 27 j 02:08	20°♁07'21		
	491 Jan 09 j 04:06	0°♁				493 Jul 11 j 18:47	0°♁		
desc. node	491 Jan 10 j 07:05	1°♁24'07			greatest brilliancy	493 Jul 17 j 02:44	2°♁28'45	-4.5m	
	491 Feb 02 j 05:39	0°♁			retrograde	493 Jul 28 j 22:49	4°♁56'30		
morning set	491 Feb 22 j 23:28	25°♁47'43				493 Aug 14 j 02:44	30°♁		
	491 Feb 26 j 08:44	0°♁			evening set	493 Aug 15 j 18:38	29°♁02'12		
	491 Mar 22 j 14:01	0°♁			inferior conj	493 Aug 19 j 03:00	27°♁00'01	-8°-40'-52	
					minimum elong	493 Aug 19 j 00:23	27°♁04'02	8°40'47	
superior conj	491 Apr 02 j 15:35	13°♁40'00	-1°-4'-29		min. Earth dist.	493 Aug 19 j 15:47	26°♁40'19	0.28248 AU	
minimum elong	491 Apr 03 j 01:16	14°♁09'52	1°04'11		morning rise	493 Aug 22 j 05:58	25°♁05'35		
max. Earth dist.	491 Apr 05 j 01:50	16°♁39'35	1.73119 AU		direct	493 Sep 09 j 11:35	18°♁53'31		
	491 Apr 15 j 21:44	0°♁			greatest brilliancy	493 Sep 23 j 19:40	22°♁35'27	-4.6m	
asc. node	491 May 03 j 10:30	21°♁33'12				493 Oct 05 j 18:10	0°♁		
evening rise	491 May 10 j 00:44	29°♁38'38			asc. node	493 Oct 18 j 05:20	10°♁21'45		
	491 May 10 j 07:42	0°♂			morning max el	493 Oct 29 j 23:23	21°♁43'17	46°45'08	
	491 Jun 03 j 19:32	0°♁				493 Nov 06 j 22:18	0°♁		
	491 Jun 28 j 09:21	0°♁				493 Dec 03 j 16:06	0°♁		
	491 Jul 23 j 02:14	0°♁				493 Dec 28 j 22:45	0°♁		
	491 Aug 17 j 00:18	0°♁				494 Jan 22 j 16:28	0°♁		
desc. node	491 Aug 22 j 23:54	7°♁08'57			desc. node	494 Feb 06 j 19:03	18°♁27'10		
	491 Sep 11 j 06:58	0°♁				494 Feb 16 j 05:28	0°♁		
	491 Oct 07 j 05:15	0°♁				494 Mar 12 j 17:03	0°♁		
	491 Nov 03 j 16:47	0°♁				494 Apr 06 j 04:33	0°♁		
evening max el	491 Nov 06 j 13:14	2°♁55'21	47°22'55			494 Apr 30 j 16:16	0°♁		
	491 Dec 08 j 00:56	0°♁			morning set	494 May 04 j 10:18	4°♁35'45		
asc. node	491 Dec 14 j 03:05	3°♁21'01				494 May 25 j 03:39	0°♂		
greatest brilliancy	491 Dec 14 j 18:18	3°♁38'39	-4.7m		asc. node	494 May 30 j 22:17	7°♂05'20		
retrograde	491 Dec 27 j 13:59	6°♁44'33			max. Earth dist.	494 Jun 08 j 07:21	17°♂22'31	1.73598 AU	
evening set	492 Jan 12 j 17:09	1°♁33'21							
	492 Jan 15 j 07:20	30°♁			superior conj	494 Jun 09 j 21:54	19°♂20'58	0°23'23	
min. Earth dist.	492 Jan 16 j 08:57	29°♁20'24	0.27195 AU		minimum elong	494 Jun 09 j 17:20	19°♂06'56	0°23'11	
inferior conj	492 Jan 17 j 08:34	28°♁43'40	7°22'21			494 Jun 18 j 13:47	0°♁		
minimum elong	492 Jan 16 j 23:12	28°♁58'15	7°20'45			494 Jul 12 j 22:07	0°♁		
morning rise	492 Jan 21 j 05:39	26°♁21'38			evening rise	494 Jul 15 j 15:47	3°♁22'37		
direct	492 Feb 06 j 21:17	20°♁55'56				494 Aug 06 j 05:07	0°♁		
greatest brilliancy	492 Feb 17 j 12:26	23°♁02'15	-4.6m			494 Aug 30 j 12:01	0°♁		
	492 Mar 01 j 09:38	0°♁			desc. node	494 Sep 19 j 11:53	24°♁38'51		
morning max el	492 Mar 27 j 09:07	22°♁06'08	46°12'17			494 Sep 23 j 20:15	0°♁		
desc. node	492 Apr 03 j 16:40	29°♁22'42				494 Oct 18 j 07:11	0°♁		
	492 Apr 04 j 07:19	0°♁				494 Nov 11 j 23:14	0°♁		
	492 May 02 j 06:53	0°♁				494 Dec 07 j 02:45	0°♁		
	492 May 28 j 16:16	0°♁				495 Jan 02 j 10:43	0°♁		
	492 Jun 23 j 06:50	0°♂			asc. node	495 Jan 10 j 14:57	8°♁46'53		
	492 Jul 18 j 08:17	0°♁			evening max el	495 Jan 17 j 04:49	15°♁34'24	46°43'49	
asc. node	492 Jul 25 j 19:56	9°♁04'16				495 Feb 01 j 11:19	0°♁		
	492 Aug 11 j 22:50	0°♁			greatest brilliancy	495 Feb 22 j 02:53	14°♁28'07	-4.6m	
	492 Sep 05 j 04:39	0°♁			retrograde	495 Mar 08 j 11:11	18°♁10'43		
morning set	492 Sep 20 j 19:25	19°♁29'56			evening set	495 Mar 25 j 11:19	12°♁33'26		

inferior conj	495 Mar 29 j 17:55	9°♃53'30	6°50'15	evening rise	497 Sep 23 j 01:09	11°♌22'14	
minimum elong	495 Mar 30 j 03:13	9°♃38'44	6°48'36		497 Oct 07 j 22:46	0°♌	
min. Earth dist.	495 Mar 29 j 17:09	9°♃54'43	0.28696 AU	desc. node	497 Oct 16 j 23:44	11°♌18'13	
morning rise	495 Apr 03 j 19:26	6°♃46'25			497 Oct 31 j 22:55	0°♌	
direct	495 Apr 20 j 02:35	1°♃40'16			497 Nov 25 j 00:20	0°♌	
greatest brilliancy	495 May 02 j 05:17	4°♃17'33	-4.5m		497 Dec 19 j 04:56	0°♌	
desc. node	495 May 02 j 04:20	4°♃16'35			498 Jan 12 j 16:38	0°♌	
	495 Jun 06 j 06:54	0°♌			498 Feb 06 j 18:52	0°♃	
morning max el	495 Jun 07 j 21:04	1°♌30'26	45°44'46	asc. node	498 Feb 07 j 02:53	0°♃23'31	
	495 Jul 05 j 14:09	0°♌			498 Mar 05 j 02:11	0°♌	
	495 Aug 01 j 07:05	0°♌		evening max el	498 Mar 29 j 02:01	25°♌00'28	45°35'03
asc. node	495 Aug 23 j 07:55	25°♌54'08			498 Apr 03 j 08:14	0°♌	
	495 Aug 26 j 18:06	0°♌		greatest brilliancy	498 May 02 j 07:02	21°♌26'06	-4.5m
	495 Sep 20 j 10:30	0°♌		retrograde	498 May 16 j 20:46	25°♌08'34	
	495 Oct 14 j 15:15	0°♌		desc. node	498 May 29 j 16:19	21°♌55'21	
	495 Nov 07 j 13:54	0°♌		evening set	498 May 31 j 21:30	20°♌46'55	
	495 Dec 01 j 10:19	0°♌		inferior conj	498 Jun 07 j 08:16	16°♌56'16	-2°00'-45
morning set	495 Dec 05 j 14:46	5°♌16'02		minimum elong	498 Jun 07 j 03:55	17°♌03'04	1°59'32
desc. node	495 Dec 12 j 21:19	14°♌25'04		min. Earth dist.	498 Jun 07 j 10:26	16°♌52'54	0.28975 AU
	495 Dec 25 j 06:49	0°♌		morning rise	498 Jun 13 j 10:09	13°♌16'57	
				direct	498 Jun 29 j 00:02	8°♌37'47	
superior conj	496 Jan 16 j 13:06	27°♌56'14	-1°-10'-19	greatest brilliancy	498 Jul 13 j 02:20	12°♌04'35	-4.5m
minimum elong	496 Jan 16 j 02:01	27°♌21'31	1°10'02		498 Aug 07 j 13:28	0°♌	
	496 Jan 18 j 04:38	0°♌		morning max el	498 Aug 17 j 03:56	8°♌54'57	46°02'19
max. Earth dist.	496 Jan 20 j 10:39	2°♌49'08	1.71532 AU		498 Sep 06 j 13:40	0°♌	
	496 Feb 11 j 04:48	0°♌		asc. node	498 Sep 19 j 19:39	14°♌44'10	
evening rise	496 Feb 25 j 23:36	18°♌23'04			498 Oct 03 j 00:44	0°♌	
	496 Mar 06 j 08:32	0°♌			498 Oct 28 j 02:10	0°♌	
	496 Mar 30 j 17:04	0°♌			498 Nov 21 j 11:45	0°♌	
asc. node	496 Apr 04 j 00:40	5°♌17'19			498 Dec 15 j 14:33	0°♌	
	496 Apr 24 j 07:27	0°♌			499 Jan 08 j 15:27	0°♌	
	496 May 19 j 05:02	0°♌		desc. node	499 Jan 09 j 09:16	0°♌55'34	
	496 Jun 13 j 12:31	0°♌			499 Feb 01 j 16:48	0°♌	
	496 Jul 09 j 12:08	0°♌		morning set	499 Feb 20 j 12:02	23°♌23'26	
desc. node	496 Jul 24 j 14:03	16°♌49'49			499 Feb 25 j 19:44	0°♌	
	496 Aug 05 j 19:10	0°♌			499 Mar 22 j 00:53	0°♌	
evening max el	496 Aug 22 j 03:05	16°♌36'58	46°28'24				
	496 Sep 05 j 18:31	0°♌		superior conj	499 Mar 31 j 07:05	11°♌26'17	-1°-6'-40
greatest brilliancy	496 Sep 30 j 08:26	15°♌51'39	-4.6m	minimum elong	499 Mar 31 j 16:42	11°♌55'58	1°06'24
retrograde	496 Oct 10 j 21:02	17°♌54'36		max. Earth dist.	499 Apr 02 j 20:14	14°♌34'57	1.73077 AU
evening set	496 Oct 25 j 23:27	13°♌29'51			499 Apr 15 j 08:31	0°♌	
inferior conj	496 Oct 31 j 11:42	10°♌16'28	-3°-35'-17	asc. node	499 May 02 j 12:30	21°♌06'14	
minimum elong	496 Oct 31 j 19:23	10°♌04'48	3°33'00	evening rise	499 May 07 j 18:27	27°♌32'40	
min. Earth dist.	496 Oct 31 j 22:41	9°♌59'46	0.26530 AU		499 May 09 j 18:30	0°♌	
morning rise	496 Nov 06 j 14:48	6°♌42'00			499 Jun 03 j 06:30	0°♌	
asc. node	496 Nov 14 j 17:11	3°♌24'33			499 Jun 27 j 20:38	0°♌	
direct	496 Nov 20 j 22:02	2°♌36'52			499 Jul 22 j 14:03	0°♌	
greatest brilliancy	496 Dec 03 j 16:17	5°♌38'11	-4.7m		499 Aug 16 j 12:55	0°♌	
	497 Jan 04 j 15:10	0°♌		desc. node	499 Aug 22 j 01:57	6°♌36'44	
morning max el	497 Jan 10 j 12:00	5°♌48'45	46°52'26		499 Sep 10 j 20:50	0°♌	
	497 Feb 02 j 03:40	0°♌			499 Oct 06 j 21:26	0°♌	
	497 Feb 28 j 10:59	0°♌			499 Nov 03 j 14:45	0°♌	
desc. node	497 Mar 06 j 06:59	6°♌48'03		evening max el	499 Nov 04 j 04:39	0°♌35'21	47°22'41
	497 Mar 25 j 23:25	0°♌			499 Dec 09 j 19:45	0°♌	
	497 Apr 20 j 03:11	0°♌		greatest brilliancy	499 Dec 12 j 09:13	1°♌14'54	-4.7m
	497 May 15 j 01:53	0°♌		asc. node	499 Dec 13 j 05:09	1°♌36'50	
	497 Jun 08 j 20:15	0°♌		retrograde	499 Dec 25 j 04:32	4°♌19'41	
asc. node	497 Jun 27 j 10:11	22°♌40'16			500 Jan 08 j 18:55	30°♌	
	497 Jul 03 j 09:45	0°♌		evening set	500 Jan 10 j 03:11	29°♌14'22	
morning set	497 Jul 10 j 20:23	9°♌08'35		min. Earth dist.	500 Jan 13 j 21:56	26°♌57'09	0.27132 AU
	497 Jul 27 j 18:03	0°♌		inferior conj	500 Jan 14 j 22:05	26°♌19'38	7°09'46
max. Earth dist.	497 Aug 12 j 16:06	19°♌44'39	1.72499 AU	minimum elong	500 Jan 14 j 12:23	26°♌34'42	7°08'01
				morning rise	500 Jan 18 j 22:05	23°♌53'39	
superior conj	497 Aug 16 j 09:27	24°♌22'31	1°23'29	direct	500 Feb 04 j 10:55	18°♌33'08	
minimum elong	497 Aug 16 j 06:27	24°♌13'13	1°23'27	greatest brilliancy	500 Feb 15 j 00:27	20°♌38'31	-4.6m
	497 Aug 20 j 21:52	0°♌			500 Mar 02 j 06:49	0°♌	
	497 Sep 13 j 22:51	0°♌		morning max el	500 Mar 24 j 23:41	19°♌48'57	46°13'35

desc. node	500 Apr 02 j 18:39	28° \approx 36'17
	500 Apr 04 j 03:15	0° \mathfrak{H}
	500 May 01 j 21:56	0° \mathfrak{Y}
	500 May 28 j 05:17	0° \mathfrak{B}
	500 Jun 22 j 18:47	0° \mathfrak{H}
asc. node	500 Jul 17 j 19:37	0° \mathfrak{E}
	500 Jul 24 j 22:03	8° \mathfrak{E} 36'36
	500 Aug 11 j 09:52	0° \mathfrak{Q}