

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 1

Attention, astronomical year style is used: The year -400 in astronomical counting style is the year 401 BCE in historical counting style.

| | | | | | |
|------------------|---------------------|------------------------------------|------------------|---------------------|------------------------------------|
| conjunction | -400 Feb 27 j 16:21 | 3° 1 31'28 -16°22'48 | minimum elong | -392 Mar 07 j 07:34 | 12° 1 04'25 16°48'32 |
| minimum elong | -400 Feb 27 j 16:20 | 3° 1 31'28 16°22'49 | max. Earth dist. | -392 Mar 09 j 13:39 | 12° 1 07'41 48.17429 AU |
| max. Earth dist. | -400 Mar 01 j 07:20 | 3° 1 35'22 47.06731 AU | retrograde | -392 Jun 18 j 15:19 | 13° 1 39'11 |
| retrograde | -400 Jun 09 j 23:10 | 5° 1 08'41 | min. Earth dist. | -392 Sep 08 j 08:32 | 12° 1 39'35 46.32496 AU |
| min. Earth dist. | -400 Aug 30 j 11:51 | 4° 1 08'31 45.23055 AU | opposition | -392 Sep 10 j 12:24 | 12° 1 37'03 -17°32'24 |
| opposition | -400 Sep 01 j 23:29 | 4° 1 05'34 -17°08'02 | direct | -392 Nov 30 j 10:55 | 11° 1 36'21 |
| direct | -400 Nov 22 j 00:05 | 3° 1 03'57 | | | |
| | | | conjunction | -391 Mar 08 j 14:48 | 13° 1 06'50 -16°50'16 |
| conjunction | -399 Feb 28 j 00:36 | 4° 1 36'43 -16°27'10 | minimum elong | -391 Mar 08 j 14:51 | 13° 1 06'51 16°50'15 |
| minimum elong | -399 Feb 28 j 00:34 | 4° 1 36'43 16°27'10 | max. Earth dist. | -391 Mar 10 j 20:17 | 13° 1 10'03 48.29531 AU |
| max. Earth dist. | -399 Mar 02 j 13:34 | 4° 1 40'29 47.22166 AU | retrograde | -391 Jun 19 j 20:52 | 14° 1 41'19 |
| retrograde | -399 Jun 11 j 11:09 | 6° 1 13'38 | min. Earth dist. | -391 Sep 09 j 17:12 | 13° 1 41'45 46.44493 AU |
| min. Earth dist. | -399 Aug 31 j 20:41 | 5° 1 13'36 45.38362 AU | opposition | -391 Sep 11 j 19:26 | 13° 1 39'18 -17°33'55 |
| opposition | -399 Sep 03 j 07:43 | 5° 1 10'41 -17°12'15 | direct | -391 Dec 01 j 18:44 | 12° 1 38'42 |
| direct | -399 Nov 23 j 04:44 | 4° 1 09'14 | | | |
| | | | conjunction | -390 Mar 09 j 21:59 | 14° 1 08'56 -16°51'40 |
| conjunction | -398 Mar 01 j 08:49 | 5° 1 41'44 -16°31'11 | minimum elong | -390 Mar 09 j 22:00 | 14° 1 08'56 16°51'39 |
| minimum elong | -398 Mar 01 j 08:49 | 5° 1 41'44 16°31'11 | max. Earth dist. | -390 Mar 12 j 03:17 | 14° 1 12'08 48.41365 AU |
| max. Earth dist. | -398 Mar 03 j 21:46 | 5° 1 45'28 47.37169 AU | retrograde | -390 Jun 21 j 01:09 | 15° 1 43'09 |
| retrograde | -398 Jun 12 j 20:32 | 7° 1 18'21 | min. Earth dist. | -390 Sep 11 j 00:10 | 14° 1 43'41 46.56192 AU |
| min. Earth dist. | -398 Sep 02 j 06:54 | 6° 1 18'21 45.53193 AU | opposition | -390 Sep 13 j 02:13 | 14° 1 41'15 -17°35'05 |
| opposition | -398 Sep 04 j 15:49 | 6° 1 15'33 -17°16'07 | direct | -390 Dec 03 j 04:34 | 13° 1 40'46 |
| direct | -398 Nov 24 j 11:40 | 5° 1 14'15 | | | |
| | | | conjunction | -389 Mar 11 j 05:03 | 15° 1 10'45 -16°52'44 |
| conjunction | -397 Mar 02 j 17:04 | 6° 1 46'27 -16°34'53 | minimum elong | -389 Mar 11 j 05:06 | 15° 1 10'45 16°52'44 |
| minimum elong | -397 Mar 02 j 17:04 | 6° 1 46'27 16°34'52 | max. Earth dist. | -389 Mar 13 j 08:31 | 15° 1 13'50 48.52897 AU |
| max. Earth dist. | -397 Mar 05 j 04:11 | 6° 1 50'04 47.51691 AU | retrograde | -389 Jun 22 j 10:16 | 16° 1 44'44 |
| retrograde | -397 Jun 14 j 02:16 | 8° 1 22'46 | min. Earth dist. | -389 Sep 12 j 07:41 | 15° 1 45'20 46.67584 AU |
| min. Earth dist. | -397 Sep 03 j 14:50 | 7° 1 22'54 45.67516 AU | opposition | -389 Sep 14 j 08:50 | 15° 1 42'57 -17°35'55 |
| opposition | -397 Sep 05 j 23:34 | 7° 1 20'07 -17°19'40 | direct | -389 Dec 04 j 10:20 | 14° 1 42'35 |
| direct | -397 Nov 25 j 20:36 | 6° 1 18'56 | | | |
| | | | conjunction | -388 Mar 11 j 12:09 | 16° 1 12'21 -16°53'29 |
| conjunction | -396 Mar 03 j 01:06 | 7° 1 50'51 -16°38'15 | minimum elong | -388 Mar 11 j 12:11 | 16° 1 12'21 16°53'29 |
| minimum elong | -396 Mar 03 j 01:05 | 7° 1 50'51 16°38'16 | max. Earth dist. | -388 Mar 13 j 15:44 | 16° 1 15'25 48.64096 AU |
| max. Earth dist. | -396 Mar 05 j 10:51 | 7° 1 54'22 47.65694 AU | retrograde | -388 Jun 22 j 18:36 | 17° 1 46'06 |
| retrograde | -396 Jun 14 j 07:53 | 9° 1 26'51 | min. Earth dist. | -388 Sep 12 j 15:56 | 16° 1 46'45 46.78603 AU |
| min. Earth dist. | -396 Sep 04 j 00:41 | 8° 1 27'00 45.81333 AU | opposition | -388 Sep 14 j 15:26 | 16° 1 44'27 -17°36'27 |
| opposition | -396 Sep 06 j 07:23 | 8° 1 24'19 -17°22'53 | direct | -388 Dec 04 j 16:02 | 15° 1 44'11 |
| direct | -396 Nov 26 j 06:53 | 7° 1 23'15 | | | |
| | | | conjunction | -387 Mar 12 j 18:57 | 17° 1 13'45 -16°53'56 |
| conjunction | -395 Mar 04 j 08:53 | 8° 1 54'52 -16°41'19 | minimum elong | -387 Mar 12 j 19:01 | 17° 1 13'45 16°53'56 |
| minimum elong | -395 Mar 04 j 08:54 | 8° 1 54'52 16°41'19 | max. Earth dist. | -387 Mar 14 j 20:51 | 17° 1 16'43 48.74912 AU |
| max. Earth dist. | -395 Mar 06 j 18:14 | 8° 1 58'21 47.79220 AU | retrograde | -387 Jun 24 j 02:07 | 18° 1 47'16 |
| retrograde | -395 Jun 15 j 14:14 | 10° 1 30'33 | min. Earth dist. | -387 Sep 13 j 22:37 | 17° 1 48'02 46.89204 AU |
| min. Earth dist. | -395 Sep 05 j 08:52 | 9° 1 30'46 45.94675 AU | opposition | -387 Sep 15 j 21:56 | 17° 1 45'45 -17°36'40 |
| opposition | -395 Sep 07 j 14:54 | 9° 1 28'07 -17°25'46 | direct | -387 Dec 05 j 20:55 | 16° 1 45'36 |
| direct | -395 Nov 27 j 16:46 | 8° 1 27'09 | | | |
| | | | conjunction | -386 Mar 14 j 01:55 | 18° 1 14'58 -16°54'06 |
| conjunction | -394 Mar 05 j 16:32 | 9° 1 58'27 -16°44'03 | minimum elong | -386 Mar 14 j 01:58 | 18° 1 14'58 16°54'05 |
| minimum elong | -394 Mar 05 j 16:32 | 9° 1 58'27 16°44'04 | max. Earth dist. | -386 Mar 16 j 02:36 | 18° 1 17'51 48.85266 AU |
| max. Earth dist. | -394 Mar 07 j 23:58 | 10° 1 01'49 47.92311 AU | retrograde | -386 Jun 25 j 07:21 | 19° 1 48'15 |
| retrograde | -394 Jun 16 j 23:47 | 11° 1 33'50 | min. Earth dist. | -386 Sep 15 j 07:20 | 18° 1 49'01 46.99316 AU |
| min. Earth dist. | -394 Sep 06 j 17:03 | 10° 1 34'06 46.07626 AU | opposition | -386 Sep 17 j 04:22 | 18° 1 46'51 -17°36'36 |
| opposition | -394 Sep 08 j 22:16 | 10° 1 31'30 -17°28'20 | direct | -386 Dec 07 j 04:39 | 17° 1 46'48 |
| direct | -394 Nov 28 j 22:47 | 9° 1 30'37 | | | |
| | | | conjunction | -385 Mar 15 j 08:58 | 19° 1 15'58 -16°53'59 |
| conjunction | -393 Mar 07 j 00:10 | 11° 1 01'38 -16°46'27 | minimum elong | -385 Mar 15 j 09:02 | 19° 1 15'58 16°54'00 |
| minimum elong | -393 Mar 07 j 00:11 | 11° 1 01'38 16°46'27 | max. Earth dist. | -385 Mar 17 j 08:45 | 19° 1 18'48 48.95119 AU |
| max. Earth dist. | -393 Mar 09 j 07:44 | 11° 1 04'59 48.05030 AU | retrograde | -385 Jun 26 j 11:41 | 20° 1 49'02 |
| retrograde | -393 Jun 18 j 07:55 | 12° 1 36'42 | min. Earth dist. | -385 Sep 16 j 14:22 | 19° 1 49'52 47.08884 AU |
| min. Earth dist. | -393 Sep 08 j 01:46 | 11° 1 37'00 46.20214 AU | opposition | -385 Sep 18 j 10:38 | 19° 1 47'44 -17°36'15 |
| opposition | -393 Sep 10 j 05:29 | 11° 1 34'28 -17°30'32 | direct | -385 Dec 08 j 13:31 | 18° 1 47'46 |
| direct | -393 Nov 30 j 05:09 | 10° 1 33'41 | | | |
| | | | conjunction | -384 Mar 15 j 15:41 | 20° 1 16'44 -16°53'37 |
| conjunction | -392 Mar 07 j 07:34 | 12° 1 04'25 -16°48'32 | minimum elong | -384 Mar 15 j 15:45 | 20° 1 16'44 16°53'36 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 2

Attention, astronomical year style is used: The year -384 in astronomical counting style is the year 385 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|---------------------------------|-------------|------------------|---------------------|---|-------------|
| max. Earth dist. | -384 Mar 17 j 13:05 | 20° $\mathring{\text{K}}$ 19'25 | 49.04423 AU | opposition | -376 Sep 26 j 13:54 | 28° $\mathring{\text{K}}$ 44'22 | -17°20'21 |
| retrograde | -384 Jun 26 j 19:32 | 21° $\mathring{\text{K}}$ 49'35 | | direct | -376 Dec 16 j 15:30 | 27° $\mathring{\text{K}}$ 45'02 | |
| min. Earth dist. | -384 Sep 16 j 22:00 | 20° $\mathring{\text{K}}$ 50'26 | 47.17922 AU | | | | |
| opposition | -384 Sep 18 j 16:50 | 20° $\mathring{\text{K}}$ 48'22 | -17°35'39 | conjunction | -375 Mar 25 j 00:08 | 29° $\mathring{\text{K}}$ 12'30 | -16°37'39 |
| direct | -384 Dec 08 j 19:16 | 19° $\mathring{\text{K}}$ 48'29 | | minimum elong | -375 Mar 25 j 00:14 | 29° $\mathring{\text{K}}$ 12'31 | 16°37'39 |
| | | | | max. Earth dist. | -375 Mar 26 j 13:28 | 29° $\mathring{\text{K}}$ 14'40 | 49.70528 AU |
| conjunction | -383 Mar 16 j 22:24 | 21° $\mathring{\text{K}}$ 17'14 | -16°52'58 | | -375 Apr 29 j 23:28 | 0° $\mathring{\text{Y}}$ | |
| minimum elong | -383 Mar 16 j 22:28 | 21° $\mathring{\text{K}}$ 17'14 | 16°52'59 | retrograde | -375 Jul 05 j 23:32 | 0° $\mathring{\text{Y}}$ 43'39 | |
| max. Earth dist. | -383 Mar 18 j 19:32 | 21° $\mathring{\text{K}}$ 19'53 | 49.13216 AU | | -375 Sep 12 j 21:05 | 30° $\mathring{\text{R}}$ $\mathring{\text{K}}$ | |
| retrograde | -383 Jun 28 j 02:32 | 22° $\mathring{\text{K}}$ 49'51 | | min. Earth dist. | -375 Sep 26 j 08:55 | 29° $\mathring{\text{K}}$ 44'49 | 47.82111 AU |
| min. Earth dist. | -383 Sep 18 j 05:42 | 21° $\mathring{\text{K}}$ 50'41 | 47.26456 AU | opposition | -375 Sep 27 j 19:05 | 29° $\mathring{\text{K}}$ 43'11 | -17°17'08 |
| opposition | -383 Sep 19 j 22:53 | 21° $\mathring{\text{K}}$ 48'42 | -17°34'46 | direct | -375 Dec 17 j 23:10 | 28° $\mathring{\text{K}}$ 43'56 | |
| direct | -383 Dec 10 j 01:20 | 20° $\mathring{\text{K}}$ 48'53 | | | -374 Mar 18 j 01:55 | 0° $\mathring{\text{Y}}$ | |
| | | | | | | | |
| conjunction | -382 Mar 18 j 04:52 | 22° $\mathring{\text{K}}$ 17'26 | -16°52'04 | conjunction | -374 Mar 26 j 06:04 | 0° $\mathring{\text{Y}}$ 11'18 | -16°34'29 |
| minimum elong | -382 Mar 18 j 04:57 | 22° $\mathring{\text{K}}$ 17'26 | 16°52'03 | minimum elong | -374 Mar 26 j 06:12 | 0° $\mathring{\text{Y}}$ 11'18 | 16°34'29 |
| max. Earth dist. | -382 Mar 20 j 00:06 | 22° $\mathring{\text{K}}$ 19'58 | 49.21553 AU | max. Earth dist. | -374 Mar 27 j 17:15 | 0° $\mathring{\text{Y}}$ 13'20 | 49.76141 AU |
| retrograde | -382 Jun 29 j 10:13 | 23° $\mathring{\text{K}}$ 49'49 | | retrograde | -374 Jul 07 j 05:53 | 1° $\mathring{\text{Y}}$ 42'19 | |
| min. Earth dist. | -382 Sep 19 j 11:49 | 22° $\mathring{\text{K}}$ 50'42 | 47.34562 AU | min. Earth dist. | -374 Sep 27 j 15:55 | 0° $\mathring{\text{Y}}$ 43'29 | 47.87431 AU |
| opposition | -382 Sep 21 j 04:46 | 22° $\mathring{\text{K}}$ 48'45 | -17°33'36 | opposition | -374 Sep 29 j 00:23 | 0° $\mathring{\text{Y}}$ 41'56 | -17°13'39 |
| direct | -382 Dec 11 j 05:14 | 21° $\mathring{\text{K}}$ 48'59 | | | -374 Nov 08 j 18:22 | 30° $\mathring{\text{R}}$ $\mathring{\text{K}}$ | |
| | | | | direct | -374 Dec 19 j 05:03 | 29° $\mathring{\text{K}}$ 42'45 | |
| conjunction | -381 Mar 19 j 11:19 | 23° $\mathring{\text{K}}$ 17'20 | -16°50'52 | | -373 Jan 28 j 00:33 | 0° $\mathring{\text{Y}}$ | |
| minimum elong | -381 Mar 19 j 11:23 | 23° $\mathring{\text{K}}$ 17'20 | 16°50'53 | | | | |
| max. Earth dist. | -381 Mar 21 j 05:44 | 23° $\mathring{\text{K}}$ 19'49 | 49.29476 AU | conjunction | -373 Mar 27 j 12:17 | 1° $\mathring{\text{Y}}$ 09'59 | -16°31'04 |
| retrograde | -381 Jun 30 j 15:23 | 24° $\mathring{\text{K}}$ 49'30 | | minimum elong | -373 Mar 27 j 12:24 | 1° $\mathring{\text{Y}}$ 09'59 | 16°31'03 |
| min. Earth dist. | -381 Sep 20 j 19:34 | 23° $\mathring{\text{K}}$ 50'22 | 47.42290 AU | max. Earth dist. | -373 Mar 28 j 22:54 | 1° $\mathring{\text{Y}}$ 11'59 | 49.81257 AU |
| opposition | -381 Sep 22 j 10:28 | 23° $\mathring{\text{K}}$ 48'30 | -17°32'08 | retrograde | -373 Jul 08 j 11:35 | 2° $\mathring{\text{Y}}$ 40'51 | |
| direct | -381 Dec 12 j 11:01 | 22° $\mathring{\text{K}}$ 48'48 | | min. Earth dist. | -373 Sep 28 j 22:37 | 1° $\mathring{\text{Y}}$ 42'01 | 47.92218 AU |
| | | | | opposition | -373 Sep 30 j 05:28 | 1° $\mathring{\text{Y}}$ 40'33 | -17°09'57 |
| conjunction | -380 Mar 19 j 17:42 | 24° $\mathring{\text{K}}$ 16'58 | -16°49'24 | direct | -373 Dec 20 j 11:28 | 0° $\mathring{\text{Y}}$ 41'24 | |
| minimum elong | -380 Mar 19 j 17:48 | 24° $\mathring{\text{K}}$ 16'59 | 16°49'23 | | | | |
| max. Earth dist. | -380 Mar 21 j 11:39 | 24° $\mathring{\text{K}}$ 19'25 | 49.37067 AU | conjunction | -372 Mar 27 j 18:16 | 2° $\mathring{\text{Y}}$ 08'31 | -16°27'25 |
| retrograde | -380 Jun 30 j 18:01 | 25° $\mathring{\text{K}}$ 48'56 | | minimum elong | -372 Mar 27 j 18:24 | 2° $\mathring{\text{Y}}$ 08'31 | 16°27'25 |
| min. Earth dist. | -380 Sep 21 j 01:10 | 24° $\mathring{\text{K}}$ 49'52 | 47.49689 AU | max. Earth dist. | -372 Mar 29 j 02:37 | 2° $\mathring{\text{Y}}$ 10'22 | 49.85852 AU |
| opposition | -380 Sep 22 j 16:04 | 24° $\mathring{\text{K}}$ 48'01 | -17°30'23 | retrograde | -372 Jul 08 j 20:02 | 3° $\mathring{\text{Y}}$ 39'13 | |
| direct | -380 Dec 12 j 20:01 | 23° $\mathring{\text{K}}$ 48'22 | | min. Earth dist. | -372 Sep 29 j 04:23 | 2° $\mathring{\text{Y}}$ 40'24 | 47.96484 AU |
| | | | | opposition | -372 Sep 30 j 10:35 | 2° $\mathring{\text{Y}}$ 38'58 | -17°05'59 |
| conjunction | -379 Mar 20 j 23:42 | 25° $\mathring{\text{K}}$ 16'22 | -16°47'37 | direct | -372 Dec 20 j 13:54 | 1° $\mathring{\text{Y}}$ 39'51 | |
| minimum elong | -379 Mar 20 j 23:46 | 25° $\mathring{\text{K}}$ 16'23 | 16°47'37 | | | | |
| max. Earth dist. | -379 Mar 22 j 15:53 | 25° $\mathring{\text{K}}$ 18'43 | 49.44350 AU | conjunction | -371 Mar 29 j 00:01 | 3° $\mathring{\text{Y}}$ 06'50 | -16°23'32 |
| retrograde | -379 Jul 02 j 00:47 | 26° $\mathring{\text{K}}$ 48'10 | | minimum elong | -371 Mar 29 j 00:09 | 3° $\mathring{\text{Y}}$ 06'50 | 16°23'32 |
| min. Earth dist. | -379 Sep 22 j 07:52 | 25° $\mathring{\text{K}}$ 49'07 | 47.56803 AU | max. Earth dist. | -371 Mar 30 j 07:17 | 3° $\mathring{\text{Y}}$ 08'37 | 49.89923 AU |
| opposition | -379 Sep 23 j 21:43 | 25° $\mathring{\text{K}}$ 47'19 | -17°28'19 | retrograde | -371 Jul 10 j 02:32 | 4° $\mathring{\text{Y}}$ 37'23 | |
| direct | -379 Dec 14 j 02:14 | 24° $\mathring{\text{K}}$ 47'45 | | min. Earth dist. | -371 Sep 30 j 11:46 | 3° $\mathring{\text{Y}}$ 38'29 | 48.00246 AU |
| | | | | opposition | -371 Oct 01 j 15:44 | 3° $\mathring{\text{Y}}$ 37'09 | -17°01'48 |
| conjunction | -378 Mar 22 j 05:56 | 26° $\mathring{\text{K}}$ 15'35 | -16°45'34 | direct | -371 Dec 21 j 17:45 | 2° $\mathring{\text{Y}}$ 38'04 | |
| minimum elong | -378 Mar 22 j 06:03 | 26° $\mathring{\text{K}}$ 15'36 | 16°45'33 | | | | |
| max. Earth dist. | -378 Mar 23 j 22:25 | 26° $\mathring{\text{K}}$ 17'57 | 49.51354 AU | conjunction | -370 Mar 30 j 05:56 | 4° $\mathring{\text{Y}}$ 04'54 | -16°19'25 |
| retrograde | -378 Jul 03 j 08:16 | 27° $\mathring{\text{K}}$ 47'12 | | minimum elong | -370 Mar 30 j 06:04 | 4° $\mathring{\text{Y}}$ 04'55 | 16°19'25 |
| min. Earth dist. | -378 Sep 23 j 14:31 | 26° $\mathring{\text{K}}$ 48'12 | 47.63623 AU | max. Earth dist. | -370 Mar 31 j 12:19 | 4° $\mathring{\text{Y}}$ 06'39 | 49.93536 AU |
| opposition | -378 Sep 25 j 03:08 | 26° $\mathring{\text{K}}$ 46'27 | -17°25'57 | retrograde | -370 Jul 11 j 04:40 | 5° $\mathring{\text{Y}}$ 35'17 | |
| direct | -378 Dec 15 j 06:59 | 25° $\mathring{\text{K}}$ 46'57 | | opposition | -370 Oct 02 j 20:30 | 4° $\mathring{\text{Y}}$ 35'06 | -16°57'21 |
| | | | | min. Earth dist. | -370 Oct 01 j 16:52 | 4° $\mathring{\text{Y}}$ 36'24 | 48.03564 AU |
| conjunction | -377 Mar 23 j 12:03 | 27° $\mathring{\text{K}}$ 14'40 | -16°43'12 | direct | -370 Dec 23 j 01:18 | 3° $\mathring{\text{Y}}$ 36'01 | |
| minimum elong | -377 Mar 23 j 12:08 | 27° $\mathring{\text{K}}$ 14'40 | 16°43'12 | | | | |
| max. Earth dist. | -377 Mar 25 j 02:48 | 27° $\mathring{\text{K}}$ 16'55 | 49.58080 AU | conjunction | -369 Mar 31 j 11:39 | 5° $\mathring{\text{Y}}$ 02'44 | -16°15'02 |
| retrograde | -377 Jul 04 j 16:29 | 28° $\mathring{\text{K}}$ 46'07 | | minimum elong | -369 Mar 31 j 11:48 | 5° $\mathring{\text{Y}}$ 02'45 | 16°15'02 |
| min. Earth dist. | -377 Sep 24 j 19:57 | 27° $\mathring{\text{K}}$ 47'12 | 47.70149 AU | max. Earth dist. | -369 Apr 01 j 15:58 | 5° $\mathring{\text{Y}}$ 04'22 | 49.96728 AU |
| opposition | -377 Sep 26 j 08:32 | 27° $\mathring{\text{K}}$ 45'27 | -17°23'17 | retrograde | -369 Jul 12 j 08:52 | 6° $\mathring{\text{Y}}$ 32'58 | |
| direct | -377 Dec 16 j 09:38 | 26° $\mathring{\text{K}}$ 46'03 | | min. Earth dist. | -369 Oct 02 j 23:14 | 5° $\mathring{\text{Y}}$ 34'03 | 48.06501 AU |
| | | | | opposition | -369 Oct 04 j 01:24 | 5° $\mathring{\text{Y}}$ 32'48 | -16°52'39 |
| conjunction | -376 Mar 23 j 18:02 | 28° $\mathring{\text{K}}$ 13'38 | -16°40'34 | direct | -369 Dec 24 j 07:54 | 4° $\mathring{\text{Y}}$ 33'44 | |
| minimum elong | -376 Mar 23 j 18:09 | 28° $\mathring{\text{K}}$ 13'38 | 16°40'34 | | | | |
| max. Earth dist. | -376 Mar 25 j 08:02 | 28° $\mathring{\text{K}}$ 15'50 | 49.64479 AU | conjunction | -368 Mar 31 j 17:19 | 6° $\mathring{\text{Y}}$ 00'21 | -16°10'25 |
| retrograde | -376 Jul 04 j 20:58 | 29° $\mathring{\text{K}}$ 44'55 | | minimum elong | -368 Mar 31 j 17:27 | 6° $\mathring{\text{Y}}$ 00'21 | 16°10'25 |
| min. Earth dist. | -376 Sep 25 j 03:19 | 28° $\mathring{\text{K}}$ 46'01 | 47.76329 AU | max. Earth dist. | -368 Apr 01 j 21:45 | 6° $\mathring{\text{Y}}$ 01'58 | 49.99562 AU |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 3

Attention, astronomical year style is used: The year -368 in astronomical counting style is the year 369 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| retrograde | -368 Jul 12 j 13:59 | 7°♂30'27 | | direct | -359 Jan 01 j 00:16 | 13°♂10'14 | |
| min. Earth dist. | -368 Oct 03 j 05:06 | 6°♂31'30 | 48.09088 AU | | | | |
| opposition | -368 Oct 04 j 06:08 | 6°♂30'19 | -16°47'40 | conjunction | -359 Apr 09 j 19:37 | 14°♂36'28 | -15°17'17 |
| direct | -368 Dec 24 j 13:50 | 5°♂31'17 | | minimum elong | -359 Apr 09 j 19:47 | 14°♂36'29 | 15°17'17 |
| | | | | max. Earth dist. | -359 Apr 10 j 11:47 | 14°♂37'23 | 50.09364 AU |
| conjunction | -367 Apr 01 j 22:52 | 6°♂57'47 | -16°05'31 | retrograde | -359 Jul 21 j 14:07 | 16°♂05'56 | |
| minimum elong | -367 Apr 01 j 23:02 | 6°♂57'48 | 16°05'31 | opposition | -359 Oct 12 j 23:28 | 15°♂06'17 | -15°51'13 |
| max. Earth dist. | -367 Apr 03 j 01:33 | 6°♂59'19 | 50.02089 AU | min. Earth dist. | -359 Oct 12 j 08:59 | 15°♂06'58 | 48.16122 AU |
| retrograde | -367 Jul 13 j 21:47 | 8°♂27'46 | | direct | -358 Jan 02 j 07:05 | 14°♂07'32 | |
| min. Earth dist. | -367 Oct 04 j 09:52 | 7°♂28'52 | 48.11386 AU | | | | |
| opposition | -367 Oct 05 j 10:49 | 7°♂27'41 | -16°42'25 | conjunction | -358 Apr 11 j 01:16 | 15°♂33'44 | -15°10'13 |
| direct | -367 Dec 25 j 16:10 | 6°♂28'40 | | minimum elong | -358 Apr 11 j 01:27 | 15°♂33'44 | 15°10'13 |
| | | | | max. Earth dist. | -358 Apr 11 j 17:06 | 15°♂34'38 | 50.08114 AU |
| conjunction | -366 Apr 03 j 04:24 | 7°♂55'06 | -16°00'21 | retrograde | -358 Jul 22 j 18:10 | 17°♂03'07 | |
| minimum elong | -366 Apr 03 j 04:32 | 7°♂55'07 | 16°00'21 | opposition | -358 Oct 14 j 03:55 | 16°♂03'28 | -15°43'46 |
| max. Earth dist. | -366 Apr 04 j 06:20 | 7°♂56'35 | 50.04321 AU | min. Earth dist. | -358 Oct 13 j 14:43 | 16°♂04'06 | 48.14518 AU |
| retrograde | -366 Jul 15 j 02:51 | 9°♂24'59 | | direct | -357 Jan 03 j 14:00 | 15°♂04'43 | |
| opposition | -366 Oct 06 j 15:34 | 8°♂24'57 | -16°36'54 | | | | |
| min. Earth dist. | -366 Oct 05 j 16:29 | 8°♂26'03 | 48.13386 AU | conjunction | -357 Apr 12 j 06:47 | 16°♂30'52 | -15°02'56 |
| direct | -366 Dec 26 j 20:30 | 7°♂25'59 | | minimum elong | -357 Apr 12 j 06:57 | 16°♂30'53 | 15°02'56 |
| | | | | max. Earth dist. | -357 Apr 12 j 20:27 | 16°♂31'39 | 50.06418 AU |
| conjunction | -365 Apr 04 j 10:03 | 8°♂52'22 | -15°54'56 | retrograde | -357 Jul 24 j 02:05 | 18°♂00'12 | |
| minimum elong | -365 Apr 04 j 10:14 | 8°♂52'23 | 15°54'55 | opposition | -357 Oct 15 j 08:09 | 17°♂00'33 | -15°36'05 |
| max. Earth dist. | -365 Apr 05 j 11:30 | 8°♂53'49 | 50.06270 AU | min. Earth dist. | -357 Oct 14 j 19:33 | 17°♂01'09 | 48.12505 AU |
| retrograde | -365 Jul 16 j 05:38 | 10°♂22'09 | | direct | -356 Jan 04 j 16:11 | 16°♂01'46 | |
| opposition | -365 Oct 07 j 20:02 | 9°♂22'12 | -16°31'06 | evening set | -356 Apr 10 j 21:23 | 17°♂25'42 | |
| min. Earth dist. | -365 Oct 06 j 21:04 | 9°♂23'17 | 48.15080 AU | | | | |
| direct | -365 Dec 28 j 02:48 | 8°♂23'16 | | conjunction | -356 Apr 12 j 12:16 | 17°♂27'54 | -14°55'25 |
| | | | | minimum elong | -356 Apr 12 j 12:28 | 17°♂27'55 | 14°55'24 |
| conjunction | -364 Apr 04 j 15:31 | 9°♂49'37 | -15°49'14 | max. Earth dist. | -356 Apr 13 j 01:03 | 17°♂28'37 | 50.04326 AU |
| minimum elong | -364 Apr 04 j 15:40 | 9°♂49'38 | 15°49'14 | morning rise | -356 Apr 14 j 03:36 | 17°♂30'07 | |
| max. Earth dist. | -364 Apr 05 j 14:58 | 9°♂50'58 | 50.07898 AU | retrograde | -356 Jul 24 j 07:49 | 18°♂57'10 | |
| retrograde | -364 Jul 16 j 11:05 | 11°♂19'21 | | opposition | -356 Oct 15 j 12:36 | 17°♂57'31 | -15°28'09 |
| min. Earth dist. | -364 Oct 07 j 03:13 | 10°♂20'29 | 48.16444 AU | min. Earth dist. | -356 Oct 15 j 01:54 | 17°♂58'02 | 48.10122 AU |
| opposition | -364 Oct 08 j 00:42 | 10°♂19'28 | -16°25'02 | direct | -355 Jan 04 j 19:24 | 16°♂58'42 | |
| direct | -364 Dec 28 j 07:59 | 9°♂20'36 | | evening set | -355 Apr 11 j 01:51 | 18°♂21'13 | |
| | | | | | | | |
| conjunction | -363 Apr 05 j 21:01 | 10°♂46'55 | -15°43'18 | conjunction | -355 Apr 13 j 17:38 | 18°♂24'50 | -14°47'39 |
| minimum elong | -363 Apr 05 j 21:12 | 10°♂46'56 | 15°43'18 | minimum elong | -355 Apr 13 j 17:49 | 18°♂24'50 | 14°47'38 |
| max. Earth dist. | -363 Apr 06 j 20:23 | 10°♂48'15 | 50.09167 AU | max. Earth dist. | -355 Apr 14 j 05:52 | 18°♂25'31 | 50.01907 AU |
| retrograde | -363 Jul 17 j 16:02 | 12°♂16'37 | | morning rise | -355 Apr 16 j 09:51 | 18°♂28'28 | |
| min. Earth dist. | -363 Oct 08 j 09:08 | 11°♂17'45 | 48.17397 AU | retrograde | -355 Jul 25 j 11:00 | 19°♂54'03 | |
| opposition | -363 Oct 09 j 05:18 | 11°♂16'48 | -16°18'44 | opposition | -355 Oct 16 j 16:55 | 18°♂54'23 | -15°19'58 |
| direct | -363 Dec 29 j 13:47 | 10°♂17'59 | | min. Earth dist. | -355 Oct 16 j 06:16 | 18°♂54'54 | 48.07415 AU |
| | | | | direct | -354 Jan 06 j 01:04 | 17°♂55'33 | |
| conjunction | -362 Apr 07 j 02:40 | 11°♂44'17 | -15°37'07 | evening set | -354 Apr 11 j 13:19 | 19°♂17'03 | |
| minimum elong | -362 Apr 07 j 02:50 | 11°♂44'17 | 15°37'07 | | | | |
| max. Earth dist. | -362 Apr 07 j 23:51 | 11°♂45'29 | 50.10004 AU | conjunction | -354 Apr 14 j 23:04 | 19°♂21'41 | -14°39'38 |
| retrograde | -362 Jul 19 j 00:32 | 13°♂13'56 | | minimum elong | -354 Apr 14 j 23:16 | 19°♂21'42 | 14°39'37 |
| opposition | -362 Oct 10 j 09:45 | 12°♂14'11 | -16°12'11 | max. Earth dist. | -354 Apr 15 j 09:19 | 19°♂22'16 | 49.99170 AU |
| min. Earth dist. | -362 Oct 09 j 14:25 | 12°♂15'06 | 48.17888 AU | morning rise | -354 Apr 18 j 09:23 | 19°♂26'20 | |
| direct | -362 Dec 30 j 15:25 | 11°♂15'25 | | retrograde | -354 Jul 26 j 14:43 | 20°♂50'52 | |
| | | | | opposition | -354 Oct 17 j 21:14 | 19°♂51'13 | -15°11'30 |
| conjunction | -361 Apr 08 j 08:26 | 12°♂41'42 | -15°30'43 | min. Earth dist. | -354 Oct 17 j 12:04 | 19°♂51'39 | 48.04410 AU |
| minimum elong | -361 Apr 08 j 08:36 | 12°♂41'43 | 15°30'44 | direct | -353 Jan 07 j 06:47 | 18°♂52'22 | |
| max. Earth dist. | -361 Apr 09 j 04:15 | 12°♂42'49 | 50.10328 AU | evening set | -353 Apr 12 j 03:51 | 20°♂13'02 | |
| retrograde | -361 Jul 20 j 07:54 | 14°♂11'17 | | | | | |
| opposition | -361 Oct 11 j 14:27 | 13°♂11'35 | -16°05'25 | conjunction | -353 Apr 16 j 04:40 | 20°♂18'31 | -14°31'21 |
| min. Earth dist. | -361 Oct 10 j 21:32 | 13°♂12'23 | 48.17840 AU | minimum elong | -353 Apr 16 j 04:50 | 20°♂18'31 | 14°31'21 |
| direct | -361 Dec 31 j 18:06 | 12°♂12'51 | | max. Earth dist. | -353 Apr 16 j 14:52 | 20°♂19'05 | 49.96137 AU |
| | | | | morning rise | -353 Apr 20 j 05:59 | 20°♂24'01 | |
| conjunction | -360 Apr 08 j 14:04 | 13°♂39'07 | -15°24'07 | retrograde | -353 Jul 27 j 18:06 | 21°♂47'41 | |
| minimum elong | -360 Apr 08 j 14:14 | 13°♂39'07 | 15°24'06 | opposition | -353 Oct 19 j 01:35 | 20°♂48'03 | -15°02'48 |
| max. Earth dist. | -360 Apr 09 j 08:39 | 13°♂40'10 | 50.10118 AU | min. Earth dist. | -353 Oct 18 j 17:22 | 20°♂48'26 | 48.01088 AU |
| retrograde | -360 Jul 20 j 10:48 | 15°♂08'38 | | direct | -352 Jan 08 j 13:17 | 19°♂49'11 | |
| opposition | -360 Oct 11 j 18:56 | 14°♂08'58 | -15°58'25 | evening set | -352 Apr 11 j 20:02 | 21°♂09'08 | |
| min. Earth dist. | -360 Oct 11 j 02:27 | 14°♂09'45 | 48.17238 AU | | | | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 4

Attention, astronomical year style is used: The year -352 in astronomical counting style is the year 353 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| conjunction | -352 Apr 16 j 09:58 | 21°♊15'21 | -14°22'50 | direct | -345 Jan 14 j 17:37 | 26°♊28'22 | |
| minimum elong | -352 Apr 16 j 10:11 | 21°♊15'22 | 14°22'50 | evening set | -345 Apr 16 j 13:40 | 27°♊44'44 | |
| max. Earth dist. | -352 Apr 16 j 18:25 | 21°♊15'50 | 49.92793 AU | | | | |
| morning rise | -352 Apr 21 j 00:33 | 21°♊21'37 | | conjunction | -345 Apr 24 j 01:45 | 27°♊54'55 | -13°16'47 |
| retrograde | -352 Jul 28 j 01:27 | 22°♊44'32 | | minimum elong | -345 Apr 24 j 01:57 | 27°♊54'56 | 13°16'46 |
| opposition | -352 Oct 19 j 05:54 | 21°♊44'55 | -14°53'49 | max. Earth dist. | -345 Apr 24 j 00:37 | 27°♊54'52 | 49.56783 AU |
| min. Earth dist. | -352 Oct 18 j 22:12 | 21°♊45'17 | 47.97441 AU | morning rise | -345 May 01 j 14:39 | 28°♊05'10 | |
| direct | -351 Jan 08 j 16:09 | 20°♊46'03 | | retrograde | -345 Aug 04 j 15:04 | 29°♊24'14 | |
| evening set | -351 Apr 12 j 13:27 | 22°♊05'22 | | opposition | -345 Oct 26 j 12:26 | 28°♊24'33 | -13°44'33 |
| | | | | min. Earth dist. | -345 Oct 26 j 14:03 | 28°♊24'28 | 47.58805 AU |
| conjunction | -351 Apr 17 j 15:30 | 22°♊12'16 | -14°14'04 | direct | -344 Jan 15 j 23:13 | 27°♊25'26 | |
| minimum elong | -351 Apr 17 j 15:41 | 22°♊12'16 | 14°14'04 | evening set | -344 Apr 16 j 10:57 | 28°♊41'26 | |
| max. Earth dist. | -351 Apr 17 j 22:54 | 22°♊12'41 | 49.89086 AU | | | | |
| morning rise | -351 Apr 22 j 18:11 | 22°♊19'12 | | conjunction | -344 Apr 24 j 07:14 | 28°♊52'05 | -13°06'27 |
| retrograde | -351 Jul 29 j 09:04 | 23°♊41'27 | | minimum elong | -344 Apr 24 j 07:25 | 28°♊52'06 | 13°06'27 |
| opposition | -351 Oct 20 j 10:16 | 22°♊41'51 | -14°44'37 | max. Earth dist. | -344 Apr 24 j 03:59 | 28°♊51'54 | 49.49801 AU |
| min. Earth dist. | -351 Oct 20 j 04:41 | 22°♊42'07 | 47.93404 AU | morning rise | -344 May 02 j 04:32 | 29°♊02'48 | |
| direct | -350 Jan 09 j 18:26 | 21°♊42'59 | | | -344 Jun 19 j 19:31 | 0°♊ | |
| evening set | -350 Apr 13 j 08:04 | 23°♊01'44 | | retrograde | -344 Aug 04 j 18:52 | 0°♊21'26 | |
| | | | | | -344 Sep 20 j 03:43 | 30°♊ | |
| conjunction | -350 Apr 18 j 21:10 | 23°♊09'15 | -14°05'04 | opposition | -344 Oct 26 j 16:53 | 29°♊21'43 | -13°33'42 |
| minimum elong | -350 Apr 18 j 21:22 | 23°♊09'16 | 14°05'04 | min. Earth dist. | -344 Oct 26 j 20:07 | 29°♊21'34 | 47.51518 AU |
| max. Earth dist. | -350 Apr 19 j 03:35 | 23°♊09'37 | 49.84970 AU | direct | -343 Jan 16 j 05:03 | 28°♊22'32 | |
| morning rise | -350 Apr 24 j 10:56 | 23°♊16'49 | | evening set | -343 Apr 17 j 08:39 | 29°♊38'11 | |
| retrograde | -350 Jul 30 j 13:57 | 24°♊38'27 | | | | | |
| opposition | -350 Oct 21 j 14:35 | 23°♊38'53 | -14°35'10 | conjunction | -343 Apr 25 j 13:01 | 29°♊49'17 | -12°55'51 |
| min. Earth dist. | -350 Oct 21 j 09:26 | 23°♊39'07 | 47.88906 AU | minimum elong | -343 Apr 25 j 13:14 | 29°♊49'18 | 12°55'51 |
| direct | -349 Jan 10 j 22:45 | 22°♊40'00 | | max. Earth dist. | -343 Apr 25 j 09:49 | 29°♊49'06 | 49.42498 AU |
| evening set | -349 Apr 14 j 03:19 | 23°♊58'13 | | morning rise | -343 May 03 j 18:16 | 0°♊00'27 | |
| | | | | | -343 May 03 j 10:13 | 0°♊ | |
| conjunction | -349 Apr 20 j 02:49 | 24°♊06'20 | -13°55'51 | retrograde | -343 Aug 05 j 22:02 | 1°♊18'42 | |
| minimum elong | -349 Apr 20 j 03:00 | 24°♊06'21 | 13°55'49 | opposition | -343 Oct 27 j 21:13 | 0°♊18'56 | -13°22'37 |
| max. Earth dist. | -349 Apr 20 j 06:43 | 24°♊06'33 | 49.80351 AU | min. Earth dist. | -343 Oct 28 j 01:14 | 0°♊18'45 | 47.43919 AU |
| morning rise | -349 Apr 26 j 03:05 | 24°♊14'29 | | | -343 Nov 13 j 18:24 | 30°♊ | |
| retrograde | -349 Jul 31 j 18:05 | 25°♊35'33 | | direct | -342 Jan 17 j 11:53 | 29°♊19'43 | |
| opposition | -349 Oct 22 j 18:57 | 24°♊35'58 | -14°25'29 | | -342 Mar 21 j 18:17 | 0°♊ | |
| min. Earth dist. | -349 Oct 22 j 15:57 | 24°♊36'07 | 47.83894 AU | evening set | -342 Apr 18 j 06:42 | 0°♊35'01 | |
| direct | -348 Jan 12 j 04:29 | 23°♊37'04 | | | | | |
| evening set | -348 Apr 13 j 23:15 | 24°♊54'48 | | conjunction | -342 Apr 26 j 18:43 | 0°♊46'33 | -12°45'01 |
| | | | | minimum elong | -342 Apr 26 j 18:54 | 0°♊46'34 | 12°45'01 |
| conjunction | -348 Apr 20 j 08:36 | 25°♊03'28 | -13°46'24 | max. Earth dist. | -342 Apr 26 j 13:42 | 0°♊46'16 | 49.34914 AU |
| minimum elong | -348 Apr 20 j 08:48 | 25°♊03'28 | 13°46'25 | morning rise | -342 May 05 j 07:45 | 0°♊58'11 | |
| max. Earth dist. | -348 Apr 20 j 11:56 | 25°♊03'39 | 49.75207 AU | retrograde | -342 Aug 07 j 05:10 | 2°♊16'03 | |
| morning rise | -348 Apr 26 j 18:40 | 25°♊12'11 | | opposition | -342 Oct 29 j 01:38 | 1°♊16'16 | -13°11'15 |
| retrograde | -348 Jul 31 j 21:06 | 26°♊32'42 | | min. Earth dist. | -342 Oct 29 j 06:09 | 1°♊16'03 | 47.36049 AU |
| opposition | -348 Oct 22 j 23:23 | 25°♊33'07 | -14°15'36 | direct | -341 Jan 18 j 15:14 | 0°♊17'00 | |
| min. Earth dist. | -348 Oct 22 j 21:42 | 25°♊33'12 | 47.78339 AU | evening set | -341 Apr 19 j 04:53 | 1°♊31'58 | |
| direct | -347 Jan 12 j 11:43 | 24°♊34'10 | | | | | |
| evening set | -347 Apr 14 j 19:36 | 25°♊51'25 | | conjunction | -341 Apr 28 j 00:32 | 1°♊43'57 | -12°33'56 |
| | | | | minimum elong | -341 Apr 28 j 00:44 | 1°♊43'58 | 12°33'55 |
| conjunction | -347 Apr 21 j 14:09 | 26°♊00'37 | -13°36'45 | max. Earth dist. | -341 Apr 27 j 18:39 | 1°♊43'37 | 49.27043 AU |
| minimum elong | -347 Apr 21 j 14:21 | 26°♊00'37 | 13°36'44 | morning rise | -341 May 06 j 21:11 | 1°♊56'01 | |
| max. Earth dist. | -347 Apr 21 j 15:07 | 26°♊00'40 | 49.69543 AU | retrograde | -341 Aug 08 j 13:02 | 3°♊13'32 | |
| morning rise | -347 Apr 28 j 09:34 | 26°♊09'52 | | opposition | -341 Oct 30 j 06:07 | 2°♊13'44 | -12°59'37 |
| retrograde | -347 Aug 02 j 04:35 | 27°♊29'53 | | min. Earth dist. | -341 Oct 30 j 12:21 | 2°♊13'27 | 47.27894 AU |
| opposition | -347 Oct 24 j 03:47 | 26°♊30'16 | -14°05'29 | direct | -340 Jan 19 j 17:26 | 1°♊14'26 | |
| min. Earth dist. | -347 Oct 24 j 02:56 | 26°♊30'18 | 47.72279 AU | evening set | -340 Apr 19 j 03:26 | 2°♊29'07 | |
| direct | -346 Jan 13 j 14:30 | 25°♊31'16 | | | | | |
| evening set | -346 Apr 15 j 16:22 | 26°♊48'05 | | conjunction | -340 Apr 28 j 06:23 | 2°♊41'32 | -12°22'35 |
| | | | | minimum elong | -340 Apr 28 j 06:34 | 2°♊41'33 | 12°22'34 |
| conjunction | -346 Apr 22 j 19:56 | 26°♊57'46 | -13°26'53 | max. Earth dist. | -340 Apr 27 j 23:53 | 2°♊41'10 | 49.18905 AU |
| minimum elong | -346 Apr 22 j 20:08 | 26°♊57'47 | 13°26'53 | morning rise | -340 May 07 j 10:17 | 2°♊54'01 | |
| max. Earth dist. | -346 Apr 22 j 19:40 | 26°♊57'45 | 49.63376 AU | retrograde | -340 Aug 08 j 19:46 | 4°♊11'12 | |
| morning rise | -346 Apr 30 j 00:21 | 27°♊07'31 | | opposition | -340 Oct 30 j 10:35 | 3°♊11'24 | -12°47'44 |
| retrograde | -346 Aug 03 j 11:03 | 28°♊27'03 | | min. Earth dist. | -340 Oct 30 j 16:49 | 3°♊11'06 | 47.19445 AU |
| opposition | -346 Oct 25 j 08:08 | 27°♊27'25 | -13°55'08 | direct | -339 Jan 19 j 20:24 | 2°♊12'03 | |
| min. Earth dist. | -346 Oct 25 j 09:32 | 27°♊27'21 | 47.65745 AU | evening set | -339 Apr 20 j 02:05 | 3°♊26'29 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 5

Attention, astronomical year style is used: The year -339 in astronomical counting style is the year 340 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| conjunction | -339 Apr 29 j 12:08 | 3°839'19 | -12°10'59 | direct | -332 Jan 27 j 11:53 | 9°800'12 | |
| minimum elong | -339 Apr 29 j 12:21 | 3°839'20 | 12°10'59 | evening set | -332 Apr 25 j 01:09 | 10°813'05 | |
| max. Earth dist. | -339 Apr 29 j 03:39 | 3°838'50 | 49.10439 AU | | | | |
| morning rise | -339 May 08 j 23:21 | 3°852'13 | | conjunction | -332 May 06 j 08:16 | 10°828'36 | -10°43'18 |
| retrograde | -339 Aug 10 j 00:37 | 5°809'06 | | minimum elong | -332 May 06 j 08:28 | 10°828'37 | 10°43'18 |
| opposition | -339 Oct 31 j 15:14 | 4°809'17 | -12°35'35 | max. Earth dist. | -332 May 05 j 13:42 | 10°827'32 | 48.38295 AU |
| min. Earth dist. | -339 Oct 31 j 23:25 | 4°808'54 | 47.10645 AU | morning rise | -332 May 17 j 16:37 | 10°844'12 | |
| direct | -338 Jan 21 j 01:52 | 3°809'54 | | retrograde | -332 Aug 16 j 14:15 | 11°859'13 | |
| evening set | -338 Apr 21 j 01:14 | 4°824'05 | | opposition | -332 Nov 07 j 00:51 | 10°858'58 | -11°03'50 |
| | | | | min. Earth dist. | -332 Nov 07 j 17:37 | 10°858'09 | 46.35840 AU |
| conjunction | -338 Apr 30 j 18:21 | 4°837'20 | -11°59'09 | direct | -331 Jan 27 j 16:49 | 9°858'54 | |
| minimum elong | -338 Apr 30 j 18:33 | 4°837'20 | 11°59'08 | evening set | -331 Apr 26 j 01:38 | 11°811'37 | |
| max. Earth dist. | -338 Apr 30 j 09:28 | 4°836'49 | 49.01582 AU | | | | |
| morning rise | -338 May 10 j 12:25 | 4°850'38 | | conjunction | -331 May 07 j 14:43 | 11°827'29 | -10°29'49 |
| retrograde | -338 Aug 11 j 02:36 | 6°807'14 | | minimum elong | -331 May 07 j 14:54 | 11°827'30 | 10°29'49 |
| opposition | -338 Nov 01 j 19:46 | 5°807'24 | -12°23'11 | max. Earth dist. | -331 May 06 j 19:13 | 11°826'22 | 48.26288 AU |
| min. Earth dist. | -338 Nov 02 j 05:07 | 5°806'57 | 47.01409 AU | morning rise | -331 May 19 j 04:54 | 11°843'27 | |
| direct | -337 Jan 22 j 10:15 | 4°807'58 | | retrograde | -331 Aug 17 j 21:22 | 12°858'15 | |
| evening set | -337 Apr 22 j 00:48 | 5°821'55 | | opposition | -331 Nov 08 j 05:58 | 11°857'55 | -10°49'44 |
| | | | | min. Earth dist. | -331 Nov 09 j 00:27 | 11°857'01 | 46.23532 AU |
| conjunction | -337 May 02 j 00:32 | 5°835'33 | -11°47'05 | direct | -330 Jan 28 j 21:12 | 10°857'44 | |
| minimum elong | -337 May 02 j 00:45 | 5°835'34 | 11°47'05 | evening set | -330 Apr 27 j 02:39 | 12°810'18 | |
| max. Earth dist. | -337 May 01 j 13:15 | 5°834'55 | 48.92266 AU | | | | |
| morning rise | -337 May 12 j 01:27 | 5°849'16 | | conjunction | -330 May 08 j 21:24 | 12°826'32 | -10°16'05 |
| retrograde | -337 Aug 12 j 09:49 | 7°805'35 | | minimum elong | -330 May 08 j 21:36 | 12°826'33 | 10°16'04 |
| opposition | -337 Nov 03 j 00:31 | 6°805'43 | -12°10'34 | max. Earth dist. | -330 May 08 j 01:16 | 12°825'22 | 48.13995 AU |
| min. Earth dist. | -337 Nov 03 j 10:54 | 6°805'14 | 46.91690 AU | morning rise | -330 May 20 j 17:12 | 12°842'51 | |
| direct | -336 Jan 23 j 14:17 | 5°806'13 | | retrograde | -330 Aug 19 j 05:21 | 13°857'28 | |
| evening set | -336 Apr 22 j 00:17 | 6°819'56 | | opposition | -330 Nov 09 j 10:57 | 12°857'02 | -10°35'21 |
| | | | | min. Earth dist. | -330 Nov 10 j 05:24 | 12°856'09 | 46.10945 AU |
| conjunction | -336 May 02 j 06:43 | 6°833'58 | -11°34'47 | direct | -329 Jan 30 j 00:44 | 11°856'45 | |
| minimum elong | -336 May 02 j 06:55 | 6°833'58 | 11°34'46 | evening set | -329 Apr 28 j 03:51 | 13°809'13 | |
| max. Earth dist. | -336 May 01 j 18:06 | 6°833'14 | 48.82429 AU | max. Earth dist. | -329 May 09 j 05:59 | 13°824'31 | 48.01421 AU |
| morning rise | -336 May 12 j 14:15 | 6°848'04 | | | | | |
| retrograde | -336 Aug 12 j 17:28 | 8°804'07 | | conjunction | -329 May 10 j 04:06 | 13°825'48 | -10°02'05 |
| opposition | -336 Nov 03 j 05:27 | 7°804'12 | -11°57'42 | minimum elong | -329 May 10 j 04:17 | 13°825'48 | 10°02'05 |
| min. Earth dist. | -336 Nov 03 j 18:03 | 7°803'36 | 46.81442 AU | morning rise | -329 May 22 j 05:35 | 13°842'27 | |
| direct | -335 Jan 23 j 17:32 | 6°804'36 | | retrograde | -329 Aug 20 j 12:11 | 14°856'55 | |
| evening set | -335 Apr 23 j 00:14 | 7°818'05 | | opposition | -329 Nov 10 j 16:16 | 13°856'25 | -10°20'41 |
| | | | | min. Earth dist. | -329 Nov 11 j 12:30 | 13°855'27 | 45.98090 AU |
| conjunction | -335 May 03 j 13:05 | 7°832'30 | -11°22'16 | direct | -328 Jan 31 j 05:34 | 12°856'03 | |
| minimum elong | -335 May 03 j 13:17 | 7°832'31 | 11°22'16 | evening set | -328 Apr 28 j 05:02 | 14°808'25 | |
| max. Earth dist. | -335 May 02 j 23:17 | 7°831'43 | 48.72087 AU | | | | |
| morning rise | -335 May 14 j 02:57 | 7°847'00 | | conjunction | -328 May 10 j 10:51 | 14°825'20 | -9°47'49 |
| retrograde | -335 Aug 13 j 23:37 | 9°802'46 | | minimum elong | -328 May 10 j 11:03 | 14°825'21 | 9°47'50 |
| opposition | -335 Nov 04 j 10:10 | 8°802'46 | -11°44'37 | max. Earth dist. | -328 May 09 j 12:45 | 14°824'03 | 47.88574 AU |
| min. Earth dist. | -335 Nov 04 j 23:14 | 8°802'09 | 46.70690 AU | morning rise | -328 May 22 j 17:36 | 14°842'21 | |
| direct | -334 Jan 24 j 22:18 | 7°803'04 | | | -328 Jun 04 j 23:01 | 15°8 | |
| evening set | -334 Apr 24 j 00:21 | 8°816'20 | | retrograde | -328 Aug 20 j 15:31 | 15°856'40 | |
| | | | | | -328 Nov 07 j 13:54 | 15°8 | |
| conjunction | -334 May 04 j 19:25 | 8°831'08 | -11°09'31 | opposition | -328 Nov 10 j 21:37 | 14°856'08 | -10°05'45 |
| minimum elong | -334 May 04 j 19:37 | 8°831'09 | 11°09'31 | min. Earth dist. | -328 Nov 11 j 18:24 | 14°855'07 | 45.84937 AU |
| max. Earth dist. | -334 May 04 j 03:07 | 8°830'12 | 48.61248 AU | direct | -327 Jan 31 j 13:55 | 13°855'40 | |
| morning rise | -334 May 15 j 15:44 | 8°846'00 | | | -327 Apr 23 j 09:43 | 15°8 | |
| retrograde | -334 Aug 15 j 05:19 | 10°801'29 | | evening set | -327 Apr 29 j 06:48 | 15°807'58 | |
| opposition | -334 Nov 05 j 15:05 | 9°801'25 | -11°31'16 | | | | |
| min. Earth dist. | -334 Nov 06 j 06:11 | 9°800'41 | 46.59471 AU | conjunction | -327 May 11 j 17:45 | 15°825'14 | -9°33'18 |
| direct | -333 Jan 26 j 03:47 | 8°801'36 | | minimum elong | -327 May 11 j 17:56 | 15°825'15 | 9°33'18 |
| evening set | -333 Apr 25 j 00:35 | 9°814'40 | | max. Earth dist. | -327 May 10 j 17:36 | 15°823'50 | 47.75420 AU |
| max. Earth dist. | -333 May 05 j 09:20 | 9°828'53 | 48.49962 AU | morning rise | -327 May 24 j 05:55 | 15°842'35 | |
| | | | | retrograde | -327 Aug 21 j 22:40 | 16°856'48 | |
| conjunction | -333 May 06 j 01:54 | 9°829'50 | -10°56'32 | opposition | -327 Nov 12 j 02:56 | 15°856'13 | -9°50'32 |
| minimum elong | -333 May 06 j 02:06 | 9°829'51 | 10°56'32 | min. Earth dist. | -327 Nov 13 j 00:42 | 15°855'09 | 45.71456 AU |
| morning rise | -333 May 17 j 04:11 | 9°845'04 | | | -326 Jan 12 j 21:47 | 15°8 | |
| retrograde | -333 Aug 16 j 08:14 | 11°800'18 | | direct | -326 Feb 01 j 19:01 | 14°855'39 | |
| opposition | -333 Nov 06 j 19:56 | 10°800'08 | -11°17'41 | | -326 Feb 21 j 12:53 | 15°8 | |
| min. Earth dist. | -333 Nov 07 j 11:58 | 9°859'22 | 46.47827 AU | evening set | -326 Apr 30 j 08:45 | 16°807'55 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 6

Attention, astronomical year style is used: The year -326 in astronomical counting style is the year 327 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|------------------------|-------------|------------------|---------------------|-------------------------------|-------------|
| max. Earth dist. | -326 May 11 j 23:46 | 16° 8 24'03 | 47.61877 AU | min. Earth dist. | -320 Nov 20 j 03:06 | 23° 8 04'58 | 44.64032 AU |
| | | | | direct | -319 Feb 08 j 11:20 | 22° 8 04'55 | |
| conjunction | -326 May 13 j 01:00 | 16° 8 25'32 | -9°18'32 | evening set | -319 May 06 j 06:03 | 23° 8 17'06 | |
| minimum elong | -326 May 13 j 01:12 | 16° 8 25'32 | 9°18'32 | max. Earth dist. | -319 May 18 j 18:34 | 23° 8 34'48 | 46.53909 AU |
| morning rise | -326 May 25 j 18:17 | 16° 8 43'13 | | | | | |
| retrograde | -326 Aug 23 j 06:59 | 17° 8 57'21 | | conjunction | -319 May 20 j 06:35 | 23° 8 36'56 | -7°28'11 |
| opposition | -326 Nov 13 j 08:34 | 16° 8 56'42 | -9°35'04 | minimum elong | -319 May 20 j 06:45 | 23° 8 36'57 | 7°28'11 |
| min. Earth dist. | -326 Nov 14 j 08:28 | 16° 8 55'32 | 45.57548 AU | morning rise | -319 Jun 03 j 08:04 | 23° 8 56'52 | |
| direct | -325 Feb 02 j 22:57 | 15° 8 56'03 | | retrograde | -319 Aug 30 j 12:54 | 25° 8 10'34 | |
| evening set | -325 May 01 j 11:05 | 17° 8 08'16 | | opposition | -319 Nov 20 j 02:38 | 24° 8 09'04 | -7°39'31 |
| max. Earth dist. | -325 May 13 j 05:49 | 17° 8 24'40 | 47.47888 AU | min. Earth dist. | -319 Nov 21 j 11:21 | 24° 8 07'27 | 44.47093 AU |
| | | | | direct | -318 Feb 09 j 15:44 | 23° 8 07'18 | |
| conjunction | -325 May 14 j 08:19 | 17° 8 26'13 | -9°03'30 | evening set | -318 May 07 j 10:04 | 24° 8 19'32 | |
| minimum elong | -325 May 14 j 08:30 | 17° 8 26'14 | 9°03'29 | max. Earth dist. | -318 May 20 j 02:44 | 24° 8 37'32 | 46.36966 AU |
| morning rise | -325 May 27 j 06:32 | 17° 8 44'15 | | | | | |
| retrograde | -325 Aug 24 j 15:13 | 18° 8 58'18 | | conjunction | -318 May 21 j 14:50 | 24° 8 39'41 | -7°11'24 |
| opposition | -325 Nov 14 j 14:10 | 17° 8 57'34 | -9°19'21 | minimum elong | -318 May 21 j 14:59 | 24° 8 39'42 | 7°11'24 |
| min. Earth dist. | -325 Nov 15 j 14:31 | 17° 8 56'23 | 45.43161 AU | morning rise | -318 Jun 04 j 20:12 | 24° 8 59'54 | |
| direct | -324 Feb 04 j 03:31 | 16° 8 56'49 | | retrograde | -318 Aug 31 j 18:08 | 26° 8 13'35 | |
| evening set | -324 May 01 j 13:41 | 18° 8 09'01 | | opposition | -318 Nov 21 j 09:09 | 25° 8 11'57 | -7°21'54 |
| max. Earth dist. | -324 May 13 j 10:39 | 18° 8 25'35 | 47.33388 AU | min. Earth dist. | -318 Nov 22 j 18:07 | 25° 8 10'18 | 44.29890 AU |
| | | | | direct | -317 Feb 11 j 01:23 | 24° 8 10'00 | |
| conjunction | -324 May 14 j 15:44 | 18° 8 27'17 | -8°48'14 | evening set | -317 May 08 j 14:29 | 25° 8 22'19 | |
| minimum elong | -324 May 14 j 15:55 | 18° 8 27'18 | 8°48'15 | max. Earth dist. | -317 May 21 j 08:58 | 25° 8 40'29 | 46.19779 AU |
| morning rise | -324 May 27 j 18:57 | 18° 8 45'39 | | | | | |
| retrograde | -324 Aug 24 j 23:27 | 19° 8 59'37 | | conjunction | -317 May 22 j 22:59 | 25° 8 42'46 | -6°54'19 |
| opposition | -324 Nov 14 j 20:04 | 18° 8 58'48 | -9°03'22 | minimum elong | -317 May 22 j 23:09 | 25° 8 42'46 | 6°54'19 |
| min. Earth dist. | -324 Nov 15 j 22:41 | 18° 8 57'30 | 45.28264 AU | morning rise | -317 Jun 06 j 08:22 | 26° 8 03'16 | |
| direct | -323 Feb 04 j 09:09 | 17° 8 57'54 | | retrograde | -317 Sep 02 j 00:32 | 27° 8 16'58 | |
| evening set | -323 May 02 j 16:21 | 19° 8 10'05 | | opposition | -317 Nov 22 j 15:44 | 26° 8 15'12 | -7°04'00 |
| | | | | min. Earth dist. | -317 Nov 24 j 01:34 | 26° 8 13'30 | 44.12465 AU |
| conjunction | -323 May 15 j 23:20 | 19° 8 28'41 | -8°32'44 | direct | -316 Feb 12 j 09:34 | 25° 8 13'05 | |
| minimum elong | -323 May 15 j 23:31 | 19° 8 28'42 | 8°32'43 | evening set | -316 May 08 j 19:02 | 26° 8 25'29 | |
| max. Earth dist. | -323 May 14 j 17:45 | 19° 8 26'57 | 47.18379 AU | max. Earth dist. | -316 May 21 j 16:57 | 26° 8 43'55 | 46.02356 AU |
| morning rise | -323 May 29 j 07:08 | 19° 8 47'22 | | | | | |
| retrograde | -323 Aug 26 j 03:56 | 21° 8 01'15 | | conjunction | -316 May 23 j 07:28 | 26° 8 46'13 | -6°36'58 |
| opposition | -323 Nov 16 j 02:01 | 20° 8 00'19 | -8°47'08 | minimum elong | -316 May 23 j 07:37 | 26° 8 46'14 | 6°36'58 |
| min. Earth dist. | -323 Nov 17 j 05:36 | 19° 8 58'58 | 45.12849 AU | morning rise | -316 Jun 06 j 20:29 | 27° 8 07'02 | |
| direct | -322 Feb 05 j 18:25 | 18° 8 59'16 | | retrograde | -316 Sep 02 j 07:36 | 28° 8 20'47 | |
| evening set | -322 May 03 j 19:34 | 20° 8 11'27 | | opposition | -316 Nov 22 j 22:36 | 27° 8 18'52 | -6°45'48 |
| max. Earth dist. | -322 May 15 j 22:56 | 20° 8 28'28 | 47.02874 AU | min. Earth dist. | -316 Nov 24 j 09:53 | 27° 8 17'06 | 43.94796 AU |
| | | | | direct | -315 Feb 12 j 16:52 | 26° 8 16'36 | |
| conjunction | -322 May 17 j 07:02 | 20° 8 30'22 | -8°16'59 | evening set | -315 May 09 j 23:59 | 27° 8 29'06 | |
| minimum elong | -322 May 17 j 07:12 | 20° 8 30'22 | 8°16'59 | max. Earth dist. | -315 May 23 j 00:35 | 27° 8 47'46 | 45.84689 AU |
| morning rise | -322 May 30 j 19:34 | 20° 8 49'22 | | | | | |
| retrograde | -322 Aug 27 j 10:41 | 22° 8 03'11 | | conjunction | -315 May 24 j 16:04 | 27° 8 50'08 | -6°19'21 |
| opposition | -322 Nov 17 j 07:55 | 21° 8 02'07 | -8°30'39 | minimum elong | -315 May 24 j 16:13 | 27° 8 50'09 | 6°19'21 |
| min. Earth dist. | -322 Nov 18 j 12:49 | 21° 8 00'42 | 44.96974 AU | morning rise | -315 Jun 08 j 08:45 | 28° 8 11'14 | |
| direct | -321 Feb 07 j 00:50 | 20° 8 00'55 | | retrograde | -315 Sep 03 j 17:24 | 29° 8 25'04 | |
| evening set | -321 May 04 j 22:50 | 21° 8 13'04 | | opposition | -315 Nov 24 j 05:31 | 28° 8 23'02 | -6°27'18 |
| max. Earth dist. | -321 May 17 j 05:43 | 21° 8 30'20 | 46.86915 AU | min. Earth dist. | -315 Nov 25 j 16:59 | 28° 8 21'15 | 43.76853 AU |
| | | | | direct | -314 Feb 13 j 22:15 | 27° 8 20'35 | |
| conjunction | -321 May 18 j 14:54 | 21° 8 32'18 | -8°00'59 | evening set | -314 May 11 j 05:29 | 28° 8 33'15 | |
| minimum elong | -321 May 18 j 15:05 | 21° 8 32'19 | 8°00'58 | max. Earth dist. | -314 May 24 j 07:27 | 28° 8 52'03 | 45.66692 AU |
| morning rise | -321 Jun 01 j 07:48 | 21° 8 51'37 | | | | | |
| retrograde | -321 Aug 28 j 17:27 | 23° 8 05'23 | | conjunction | -314 May 26 j 01:00 | 28° 8 54'34 | -6°01'27 |
| opposition | -321 Nov 18 j 14:08 | 22° 8 04'11 | -8°13'53 | minimum elong | -314 May 26 j 01:08 | 28° 8 54'34 | 6°01'26 |
| min. Earth dist. | -321 Nov 19 j 20:47 | 22° 8 02'40 | 44.80676 AU | morning rise | -314 Jun 09 j 21:10 | 29° 8 15'57 | |
| direct | -320 Feb 08 j 07:23 | 21° 8 02'48 | | | -314 Jul 14 j 12:03 | 0° II | |
| evening set | -320 May 05 j 02:15 | 22° 8 14'57 | | retrograde | -314 Sep 05 j 04:27 | 0° II 29'53 | |
| | | | | | -314 Oct 28 j 08:20 | 30° R 8 | |
| conjunction | -320 May 18 j 22:38 | 22° 8 34'29 | -7°44'43 | opposition | -314 Nov 25 j 12:40 | 29° 8 27'42 | -6°08'32 |
| minimum elong | -320 May 18 j 22:47 | 22° 8 34'30 | 7°44'43 | min. Earth dist. | -314 Nov 27 j 02:21 | 29° 8 25'49 | 43.58559 AU |
| max. Earth dist. | -320 May 17 j 12:34 | 22° 8 32'28 | 46.70580 AU | direct | -313 Feb 15 j 03:34 | 28° 8 25'05 | |
| morning rise | -320 Jun 01 j 19:50 | 22° 8 54'06 | | evening set | -313 May 12 j 11:17 | 29° 8 37'55 | |
| retrograde | -320 Aug 29 j 03:28 | 24° 8 07'50 | | max. Earth dist. | -313 May 25 j 16:23 | 29° 8 56'59 | 45.48312 AU |
| opposition | -320 Nov 18 j 20:19 | 23° 8 06'29 | -7°56'51 | | | | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 7

Attention, astronomical year style is used: The year -313 in astronomical counting style is the year 314 BCE in historical counting style.

| | | | | | |
|------------------|---------------------|--------------------------------|------------------|---------------------|---------------------------------|
| conjunction | -313 May 27 j 10:17 | 29° 8 59'31 -5°43'17 | opposition | -307 Dec 02 j 20:26 | 7° II 14'23 -3°49'05 |
| minimum elong | -313 May 27 j 10:25 | 29° 8 59'32 5°43'17 | min. Earth dist. | -307 Dec 04 j 18:05 | 7° II 12'02 42.19034 AU |
| | -313 May 27 j 18:09 | 0° II | direct | -306 Feb 22 j 13:27 | 6° II 10'09 |
| morning rise | -313 Jun 11 j 09:35 | 0° II 21'11 | evening set | -306 May 19 j 14:04 | 7° II 24'37 |
| retrograde | -313 Sep 06 j 13:09 | 1° II 35'13 | max. Earth dist. | -306 Jun 02 j 04:33 | 7° II 44'51 44.08196 AU |
| opposition | -313 Nov 26 j 20:06 | 0° II 32'54 -5°49'28 | | | |
| min. Earth dist. | -313 Nov 28 j 10:24 | 0° II 30'58 43.39848 AU | conjunction | -306 Jun 04 j 08:02 | 7° II 48'05 -3°28'39 |
| | -313 Dec 25 j 10:20 | 30° 8 | minimum elong | -306 Jun 04 j 08:08 | 7° II 48'05 3°28'37 |
| direct | -312 Feb 16 j 12:22 | 29° 8 30'05 | morning rise | -306 Jun 20 j 01:47 | 8° II 11'33 |
| | -312 Apr 08 j 23:11 | 0° II | retrograde | -306 Sep 14 j 06:27 | 9° II 26'47 |
| evening set | -312 May 12 j 17:26 | 0° II 43'06 | opposition | -306 Dec 04 j 05:14 | 8° II 23'08 -3°27'59 |
| max. Earth dist. | -312 May 25 j 22:59 | 1° II 02'17 45.29494 AU | min. Earth dist. | -306 Dec 06 j 03:52 | 8° II 20'43 41.97884 AU |
| | | | direct | -305 Feb 24 j 00:18 | 7° II 18'40 |
| conjunction | -312 May 27 j 19:27 | 1° II 04'59 -5°24'52 | evening set | -305 May 20 j 22:56 | 8° II 33'27 |
| minimum elong | -312 May 27 j 19:34 | 1° II 05'00 5°24'51 | max. Earth dist. | -305 Jun 03 j 14:07 | 8° II 53'50 43.87042 AU |
| morning rise | -312 Jun 11 j 22:03 | 1° II 26'56 | | | |
| retrograde | -312 Sep 06 j 22:35 | 2° II 41'05 | conjunction | -305 Jun 05 j 18:49 | 8° II 57'09 -3°08'18 |
| opposition | -312 Nov 27 j 03:45 | 1° II 38'36 -5°30'07 | minimum elong | -305 Jun 05 j 18:54 | 8° II 57'09 3°08'18 |
| min. Earth dist. | -312 Nov 28 j 19:36 | 1° II 36'35 43.20696 AU | morning rise | -305 Jun 21 j 14:36 | 9° II 20'52 |
| direct | -311 Feb 16 j 20:00 | 0° II 35'35 | retrograde | -305 Sep 15 j 17:05 | 10° II 36'22 |
| evening set | -311 May 13 j 23:56 | 1° II 48'48 | opposition | -305 Dec 05 j 14:17 | 9° II 32'32 -3°06'35 |
| max. Earth dist. | -311 May 27 j 07:41 | 2° II 08'10 45.10211 AU | min. Earth dist. | -305 Dec 07 j 12:58 | 9° II 30'06 41.76578 AU |
| | | | direct | -304 Feb 25 j 08:27 | 8° II 27'49 |
| conjunction | -311 May 29 j 05:10 | 2° II 10'57 -5°06'10 | evening set | -304 May 21 j 08:02 | 9° II 42'59 |
| minimum elong | -311 May 29 j 05:17 | 2° II 10'58 5°06'10 | max. Earth dist. | -304 Jun 03 j 23:48 | 10° II 03'29 43.65712 AU |
| morning rise | -311 Jun 13 j 10:36 | 2° II 33'10 | | | |
| retrograde | -311 Sep 08 j 05:04 | 3° II 47'27 | conjunction | -304 Jun 06 j 05:45 | 10° II 06'54 -2°47'41 |
| opposition | -311 Nov 28 j 11:31 | 2° II 44'48 -5°10'30 | minimum elong | -304 Jun 06 j 05:50 | 10° II 06'54 2°47'41 |
| min. Earth dist. | -311 Nov 30 j 05:03 | 2° II 42'41 43.01083 AU | morning rise | -304 Jun 22 j 03:14 | 10° II 30'52 |
| direct | -310 Feb 18 j 05:43 | 1° II 41'33 | retrograde | -304 Sep 16 j 05:22 | 11° II 46'41 |
| evening set | -310 May 15 j 06:57 | 2° II 54'58 | opposition | -304 Dec 05 j 23:43 | 10° II 42'39 -2°44'52 |
| max. Earth dist. | -310 May 28 j 16:01 | 3° II 14'30 44.90497 AU | min. Earth dist. | -304 Dec 08 j 00:05 | 10° II 40'07 41.55102 AU |
| | | | direct | -303 Feb 25 j 15:23 | 9° II 37'42 |
| conjunction | -310 May 30 j 15:00 | 3° II 17'23 -4°47'12 | evening set | -303 May 22 j 17:46 | 10° II 53'16 |
| minimum elong | -310 May 30 j 15:07 | 3° II 17'24 4°47'12 | max. Earth dist. | -303 Jun 05 j 11:13 | 11° II 13'59 43.44207 AU |
| morning rise | -310 Jun 14 j 23:19 | 3° II 39'52 | | | |
| retrograde | -310 Sep 09 j 15:25 | 4° II 54'17 | conjunction | -303 Jun 07 j 17:13 | 11° II 17'25 -2°26'48 |
| opposition | -310 Nov 29 j 19:25 | 3° II 51'27 -4°50'35 | minimum elong | -303 Jun 07 j 17:17 | 11° II 17'25 2°26'48 |
| min. Earth dist. | -310 Dec 01 j 13:28 | 3° II 49'19 42.81060 AU | morning rise | -303 Jun 23 j 16:13 | 11° II 41'36 |
| direct | -309 Feb 19 j 12:28 | 2° II 47'58 | retrograde | -303 Sep 17 j 19:08 | 12° II 57'45 |
| evening set | -309 May 16 j 14:11 | 4° II 01'37 | opposition | -303 Dec 07 j 09:09 | 11° II 53'32 -2°22'52 |
| max. Earth dist. | -309 May 29 j 23:59 | 4° II 21'17 44.70371 AU | min. Earth dist. | -303 Dec 09 j 09:37 | 11° II 51'00 41.33425 AU |
| | | | direct | -302 Feb 26 j 23:31 | 10° II 48'22 |
| conjunction | -309 Jun 01 j 00:55 | 4° II 24'18 -4°27'59 | evening set | -302 May 24 j 04:13 | 12° II 04'22 |
| minimum elong | -309 Jun 01 j 01:01 | 4° II 24'18 4°27'59 | max. Earth dist. | -302 Jun 06 j 20:39 | 12° II 25'09 43.22459 AU |
| morning rise | -309 Jun 16 j 11:52 | 4° II 47'02 | | | |
| retrograde | -309 Sep 11 j 03:08 | 6° II 01'38 | conjunction | -302 Jun 09 j 04:57 | 12° II 28'45 -2°05'37 |
| opposition | -309 Dec 01 j 03:37 | 4° II 58'36 -4°30'23 | minimum elong | -302 Jun 09 j 05:00 | 12° II 28'45 2°05'37 |
| min. Earth dist. | -309 Dec 02 j 23:49 | 4° II 56'20 42.60667 AU | morning rise | -302 Jun 25 j 05:23 | 12° II 53'09 |
| direct | -308 Feb 20 j 17:48 | 3° II 54'52 | retrograde | -302 Sep 19 j 08:33 | 14° II 09'40 |
| evening set | -308 May 16 j 21:42 | 5° II 08'45 | opposition | -302 Dec 08 j 19:04 | 13° II 05'16 -2°00'34 |
| max. Earth dist. | -308 May 30 j 09:56 | 5° II 28'39 44.49913 AU | min. Earth dist. | -302 Dec 10 j 21:20 | 13° II 02'38 41.11488 AU |
| | | | direct | -301 Feb 28 j 08:09 | 11° II 59'51 |
| conjunction | -308 Jun 01 j 11:06 | 5° II 31'42 -4°08'29 | evening set | -301 May 25 j 14:58 | 13° II 16'18 |
| minimum elong | -308 Jun 01 j 11:12 | 5° II 31'42 4°08'28 | max. Earth dist. | -301 Jun 08 j 08:22 | 13° II 37'16 43.00396 AU |
| morning rise | -308 Jun 17 j 00:26 | 5° II 54'41 | | | |
| retrograde | -308 Sep 11 j 12:21 | 7° II 09'28 | conjunction | -301 Jun 10 j 17:03 | 13° II 40'55 -1°44'11 |
| opposition | -308 Dec 01 j 11:52 | 6° II 06'13 -4°09'53 | minimum elong | -301 Jun 10 j 17:05 | 13° II 40'55 1°44'10 |
| min. Earth dist. | -308 Dec 03 j 08:12 | 6° II 03'57 42.39972 AU | morning rise | -301 Jun 26 j 18:25 | 14° II 05'31 |
| direct | -307 Feb 21 j 03:50 | 5° II 02'15 | retrograde | -301 Sep 20 j 18:06 | 15° II 22'25 |
| evening set | -307 May 18 j 05:42 | 6° II 16'25 | opposition | -301 Dec 10 j 05:20 | 14° II 17'49 -1°37'58 |
| max. Earth dist. | -307 May 31 j 18:01 | 6° II 36'25 44.29174 AU | min. Earth dist. | -301 Dec 12 j 08:37 | 14° II 15'06 40.89207 AU |
| | | | direct | -300 Feb 29 j 21:07 | 13° II 12'08 |
| conjunction | -307 Jun 02 j 21:20 | 6° II 39'37 -3°48'42 | evening set | -300 May 26 j 02:28 | 14° II 29'05 |
| minimum elong | -307 Jun 02 j 21:25 | 6° II 39'37 3°48'42 | max. Earth dist. | -300 Jun 08 j 18:49 | 14° II 50'05 42.77980 AU |
| morning rise | -307 Jun 18 j 13:09 | 7° II 02'51 | | | |
| retrograde | -307 Sep 12 j 22:26 | 8° II 17'50 | conjunction | -300 Jun 11 j 05:25 | 14° II 53'54 -1°22'28 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 8

Attention, astronomical year style is used: The year -300 in astronomical counting style is the year 301 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|------------|-------------|------------------|---------------------|------------|-------------|
| minimum elong | -300 Jun 11 j 05:27 | 14°II53'54 | 1°22'28 | min. Earth dist. | -294 Dec 21 j 00:48 | 23°II04'04 | 39.24062 AU |
| morning rise | -300 Jun 27 j 07:50 | 15°II18'42 | | direct | -293 Mar 10 j 05:48 | 21°II59'18 | |
| retrograde | -300 Sep 21 j 05:24 | 16°II36'00 | | evening set | -293 Jun 05 j 02:06 | 23°II20'17 | |
| opposition | -300 Dec 10 j 15:47 | 15°II31'11 | -1°15'04 | max. Earth dist. | -293 Jun 18 j 11:21 | 23°II41'46 | 41.11938 AU |
| min. Earth dist. | -300 Dec 12 j 19:56 | 15°II28'24 | 40.66567 AU | | | | |
| direct | -299 Mar 02 j 08:22 | 14°II25'13 | | conjunction | -293 Jun 21 j 05:36 | 23°II46'15 | 1°16'53 |
| evening set | -299 May 27 j 14:24 | 15°II42'38 | | minimum elong | -293 Jun 21 j 05:33 | 23°II46'15 | 1°16'54 |
| max. Earth dist. | -299 Jun 10 j 06:03 | 16°II03'44 | 42.55164 AU | morning rise | -293 Jul 07 j 07:45 | 24°II12'10 | |
| | | | | retrograde | -293 Oct 01 j 04:16 | 25°II33'00 | |
| conjunction | -299 Jun 12 j 18:14 | 16°II07'39 | -1°00'29 | opposition | -293 Dec 20 j 02:38 | 24°II26'12 | 1°33'11 |
| minimum elong | -299 Jun 12 j 18:16 | 16°II07'40 | 1°00'29 | min. Earth dist. | -293 Dec 22 j 13:21 | 24°II22'58 | 38.99698 AU |
| morning rise | -299 Jun 28 j 21:17 | 16°II32'40 | | direct | -292 Mar 10 j 17:22 | 23°II17'52 | |
| retrograde | -299 Sep 22 j 17:16 | 17°II50'24 | | evening set | -292 Jun 05 j 18:15 | 24°II39'35 | |
| opposition | -299 Dec 12 j 02:45 | 16°II45'19 | -0°51'53 | max. Earth dist. | -292 Jun 19 j 00:56 | 25°II01'03 | 40.87496 AU |
| min. Earth dist. | -299 Dec 14 j 09:02 | 16°II42'25 | 40.43531 AU | | | | |
| direct | -298 Mar 03 j 17:54 | 15°II39'03 | | conjunction | -292 Jun 21 j 20:44 | 25°II05'41 | 1°40'39 |
| evening set | -298 May 29 j 02:59 | 16°II56'59 | | minimum elong | -292 Jun 21 j 20:41 | 25°II05'40 | 1°40'39 |
| max. Earth dist. | -298 Jun 11 j 18:24 | 17°II18'11 | 42.31972 AU | morning rise | -292 Jul 07 j 21:49 | 25°II31'43 | |
| | | | | retrograde | -292 Oct 01 j 20:46 | 26°II53'13 | |
| conjunction | -298 Jun 14 j 07:25 | 17°II22'11 | -0°38'15 | opposition | -292 Dec 20 j 15:56 | 25°II46'08 | 1°58'20 |
| minimum elong | -298 Jun 14 j 07:26 | 17°II22'11 | 0°38'15 | min. Earth dist. | -292 Dec 23 j 04:20 | 25°II42'48 | 38.75269 AU |
| morning rise | -298 Jun 30 j 10:55 | 17°II47'22 | | direct | -291 Mar 12 j 03:26 | 24°II37'28 | |
| retrograde | -298 Sep 24 j 06:44 | 19°II05'32 | | evening set | -291 Jun 07 j 11:02 | 25°II59'59 | |
| opposition | -298 Dec 13 j 13:48 | 18°II00'11 | -0°28'25 | max. Earth dist. | -291 Jun 20 j 16:49 | 26°II21'33 | 40.62980 AU |
| min. Earth dist. | -298 Dec 15 j 20:19 | 17°II57'16 | 40.20138 AU | | | | |
| direct | -297 Mar 05 j 04:36 | 16°II53'36 | | conjunction | -291 Jun 23 j 12:24 | 26°II26'11 | 2°04'39 |
| evening set | -297 May 30 j 16:10 | 18°II12'04 | | minimum elong | -291 Jun 23 j 12:20 | 26°II26'11 | 2°04'40 |
| max. Earth dist. | -297 Jun 13 j 05:27 | 18°II33'16 | 42.08429 AU | morning rise | -291 Jul 09 j 12:04 | 26°II52'19 | |
| | | | | retrograde | -291 Oct 03 j 13:12 | 28°II14'33 | |
| conjunction | -297 Jun 15 j 20:48 | 18°II37'27 | -0°15'45 | opposition | -291 Dec 22 j 05:38 | 27°II07'11 | 2°23'43 |
| minimum elong | -297 Jun 15 j 20:48 | 18°II37'27 | 0°15'44 | min. Earth dist. | -291 Dec 24 j 18:02 | 27°II03'50 | 38.50744 AU |
| morning rise | -297 Jul 02 j 00:36 | 19°II02'48 | | direct | -290 Mar 13 j 18:00 | 25°II58'11 | |
| retrograde | -297 Sep 25 j 22:34 | 20°II21'26 | | evening set | -290 Jun 09 j 04:49 | 27°II21'34 | |
| opposition | -297 Dec 15 j 01:21 | 19°II15'48 | -0°04'40 | max. Earth dist. | -290 Jun 22 j 06:51 | 27°II43'03 | 40.38337 AU |
| min. Earth dist. | -297 Dec 17 j 09:45 | 19°II12'46 | 39.96441 AU | | | | |
| asc. node | -296 Feb 24 j 09:58 | 18°II10'10 | | conjunction | -290 Jun 25 j 04:25 | 27°II47'52 | 2°28'53 |
| direct | -296 Mar 05 j 14:26 | 18°II08'52 | | minimum elong | -290 Jun 25 j 04:21 | 27°II47'51 | 2°28'53 |
| evening set | -296 May 31 j 05:34 | 19°II27'55 | | morning rise | -290 Jul 11 j 02:33 | 28°II14'05 | |
| max. Earth dist. | -296 Jun 13 j 19:09 | 19°II49'15 | 41.84597 AU | retrograde | -290 Oct 05 j 07:37 | 29°II37'04 | |
| | | | | opposition | -290 Dec 23 j 19:44 | 28°II29'26 | 2°49'22 |
| conjunction | -296 Jun 16 j 10:28 | 19°II53'27 | 0°07'06 | min. Earth dist. | -290 Dec 26 j 09:23 | 28°II26'00 | 38.26088 AU |
| minimum elong | -296 Jun 16 j 10:27 | 19°II53'27 | 0°07'06 | direct | -289 Mar 15 j 07:56 | 27°II20'07 | |
| behind sun begin | -296 Jun 16 j 04:27 | 19°II53'05 | | evening set | -289 Jun 10 j 23:13 | 28°II44'24 | |
| behind sun end | -296 Jun 16 j 16:28 | 19°II53'49 | | max. Earth dist. | -289 Jun 23 j 23:16 | 29°II05'54 | 40.13509 AU |
| morning rise | -296 Jul 02 j 14:08 | 20°II18'58 | | | | | |
| retrograde | -296 Sep 26 j 11:56 | 21°II38'05 | | conjunction | -289 Jun 26 j 21:05 | 29°II10'46 | 2°53'19 |
| opposition | -296 Dec 15 j 13:11 | 20°II32'09 | 0°19'23 | minimum elong | -289 Jun 26 j 21:00 | 29°II10'46 | 2°53'20 |
| min. Earth dist. | -296 Dec 17 j 22:06 | 20°II29'05 | 39.72483 AU | morning rise | -289 Jul 12 j 17:04 | 29°II37'04 | |
| direct | -295 Mar 07 j 04:07 | 19°II24'52 | | | -289 Jul 27 j 06:43 | 0°☾ | |
| evening set | -295 Jun 01 j 19:53 | 20°II44'32 | | retrograde | -289 Oct 06 j 23:40 | 1°☾00'51 | |
| max. Earth dist. | -295 Jun 15 j 07:17 | 21°II05'52 | 41.60535 AU | | -289 Dec 20 j 04:34 | 30°☾II | |
| | | | | opposition | -289 Dec 25 j 10:29 | 29°II52'57 | 3°15'15 |
| conjunction | -295 Jun 18 j 00:27 | 21°II10'13 | 0°30'05 | min. Earth dist. | -289 Dec 28 j 01:19 | 29°II49'25 | 38.01230 AU |
| minimum elong | -295 Jun 18 j 00:27 | 21°II10'13 | 0°30'06 | direct | -288 Mar 15 j 23:30 | 28°II43'17 | |
| morning rise | -295 Jul 04 j 04:03 | 21°II35'53 | | | -288 Jun 06 j 12:48 | 0°☾ | |
| retrograde | -295 Sep 28 j 02:00 | 22°II55'32 | | evening set | -288 Jun 11 j 18:25 | 0°☾08'29 | |
| opposition | -295 Dec 17 j 01:10 | 21°II49'18 | 0°43'43 | max. Earth dist. | -288 Jun 24 j 14:47 | 0°☾29'55 | 39.88464 AU |
| min. Earth dist. | -295 Dec 19 j 10:57 | 21°II46'10 | 39.48345 AU | | | | |
| direct | -294 Mar 08 j 16:14 | 20°II41'39 | | conjunction | -288 Jun 27 j 13:58 | 0°☾34'55 | 3°17'58 |
| evening set | -294 Jun 03 j 10:43 | 22°II01'57 | | minimum elong | -288 Jun 27 j 13:52 | 0°☾34'55 | 3°17'58 |
| max. Earth dist. | -294 Jun 16 j 21:08 | 22°II23'22 | 41.36290 AU | morning rise | -288 Jul 13 j 07:49 | 1°☾01'16 | |
| | | | | retrograde | -288 Oct 07 j 15:56 | 2°☾25'54 | |
| conjunction | -294 Jun 19 j 14:59 | 22°II27'48 | 0°53'22 | opposition | -288 Dec 26 j 01:36 | 1°☾17'42 | 3°41'22 |
| minimum elong | -294 Jun 19 j 14:57 | 22°II27'48 | 0°53'22 | min. Earth dist. | -288 Dec 28 j 16:51 | 1°☾14'07 | 37.76145 AU |
| morning rise | -294 Jul 05 j 17:52 | 22°II53'36 | | direct | -287 Mar 17 j 14:16 | 0°☾07'39 | |
| retrograde | -294 Sep 29 j 13:37 | 24°II13'49 | | evening set | -287 Jun 13 j 14:33 | 1°☾33'50 | |
| opposition | -294 Dec 18 j 13:48 | 23°II07'17 | 1°08'19 | max. Earth dist. | -287 Jun 26 j 06:45 | 1°☾55'09 | 39.63151 AU |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 9

Attention, astronomical year style is used: The year -287 in astronomical counting style is the year 288 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| conjunction | -287 Jun 29 j 07:37 | 2°☾00'19 | 3°42'50 | evening set | -280 Jun 25 j 11:30 | 12°☾06'31 | |
| minimum elong | -287 Jun 29 j 07:30 | 2°☾00'18 | 3°42'50 | max. Earth dist. | -280 Jul 06 j 18:11 | 12°☾26'40 | 37.82116 AU |
| morning rise | -287 Jul 14 j 22:45 | 2°☾26'41 | | | | | |
| retrograde | -287 Oct 09 j 08:42 | 3°☾52'12 | | conjunction | -280 Jul 10 j 00:04 | 12°☾32'32 | 6°41'12 |
| opposition | -287 Dec 27 j 17:13 | 2°☾43'40 | 4°07'43 | minimum elong | -280 Jul 09 j 23:51 | 12°☾32'31 | 6°41'12 |
| min. Earth dist. | -287 Dec 30 j 10:27 | 2°☾39'58 | 37.50809 AU | morning rise | -280 Jul 24 j 10:20 | 12°☾58'23 | |
| direct | -286 Mar 19 j 03:43 | 1°☾33'15 | | retrograde | -280 Oct 20 j 03:13 | 14°☾31'20 | |
| evening set | -286 Jun 15 j 11:32 | 3°☾00'26 | | opposition | -279 Jan 06 j 20:46 | 13°☾20'11 | 7°17'04 |
| max. Earth dist. | -286 Jun 28 j 00:35 | 3°☾21'42 | 39.37601 AU | min. Earth dist. | -279 Jan 09 j 18:04 | 13°☾16'05 | 35.70714 AU |
| | | | | direct | -279 Mar 29 j 02:46 | 12°☾06'41 | |
| conjunction | -286 Jul 01 j 01:44 | 3°☾26'55 | 4°07'53 | evening set | -279 Jun 27 j 15:00 | 13°☾42'25 | |
| minimum elong | -286 Jul 01 j 01:36 | 3°☾26'55 | 4°07'52 | max. Earth dist. | -279 Jul 08 j 16:42 | 14°☾02'23 | 37.56411 AU |
| morning rise | -286 Jul 16 j 13:52 | 3°☾53'18 | | | | | |
| retrograde | -286 Oct 11 j 03:24 | 5°☾19'44 | | conjunction | -279 Jul 11 j 21:52 | 14°☾08'14 | 7°07'03 |
| opposition | -286 Dec 29 j 09:20 | 4°☾10'52 | 4°34'17 | minimum elong | -279 Jul 11 j 21:38 | 14°☾08'13 | 7°07'02 |
| min. Earth dist. | -285 Jan 01 j 02:31 | 4°☾07'08 | 37.25255 AU | morning rise | -279 Jul 26 j 02:15 | 14°☾33'54 | |
| direct | -285 Mar 20 j 18:01 | 3°☾00'01 | | retrograde | -279 Oct 22 j 01:20 | 16°☾08'10 | |
| evening set | -285 Jun 17 j 09:17 | 4°☾28'16 | | opposition | -278 Jan 08 j 16:37 | 14°☾56'39 | 7°44'32 |
| max. Earth dist. | -285 Jun 29 j 16:54 | 4°☾49'19 | 39.11836 AU | min. Earth dist. | -278 Jan 11 j 13:21 | 14°☾52'33 | 35.45264 AU |
| | | | | direct | -278 Mar 30 j 21:47 | 13°☾42'44 | |
| conjunction | -285 Jul 02 j 20:05 | 4°☾54'44 | 4°33'06 | evening set | -278 Jun 29 j 19:45 | 15°☾19'58 | |
| minimum elong | -285 Jul 02 j 19:56 | 4°☾54'43 | 4°33'06 | max. Earth dist. | -278 Jul 10 j 13:39 | 15°☾39'32 | 37.30818 AU |
| morning rise | -285 Jul 18 j 04:58 | 5°☾21'06 | | | | | |
| retrograde | -285 Oct 12 j 23:30 | 6°☾48'30 | | conjunction | -278 Jul 13 j 20:13 | 15°☾45'33 | 7°32'55 |
| opposition | -285 Dec 31 j 01:56 | 5°☾39'15 | 5°01'03 | minimum elong | -278 Jul 13 j 19:58 | 15°☾45'32 | 7°32'55 |
| min. Earth dist. | -284 Jan 02 j 20:48 | 5°☾35'25 | 36.99537 AU | morning rise | -278 Jul 27 j 18:27 | 16°☾10'59 | |
| direct | -284 Mar 21 j 08:55 | 4°☾27'59 | | retrograde | -278 Oct 24 j 02:34 | 17°☾46'39 | |
| evening set | -284 Jun 18 j 07:47 | 5°☾57'20 | | opposition | -277 Jan 10 j 13:15 | 16°☾34'46 | 8°12'01 |
| max. Earth dist. | -284 Jun 30 j 12:07 | 6°☾18'19 | 38.85921 AU | min. Earth dist. | -277 Jan 13 j 10:59 | 16°☾30'35 | 35.19932 AU |
| | | | | direct | -277 Apr 01 j 16:46 | 15°☾20'25 | |
| conjunction | -284 Jul 03 j 15:08 | 6°☾23'46 | 4°58'29 | evening set | -277 Jul 02 j 01:22 | 16°☾59'14 | |
| minimum elong | -284 Jul 03 j 14:58 | 6°☾23'45 | 4°58'29 | max. Earth dist. | -277 Jul 12 j 13:14 | 17°☾18'31 | 37.05295 AU |
| morning rise | -284 Jul 18 j 20:10 | 6°☾50'05 | | | | | |
| retrograde | -284 Oct 13 j 19:07 | 8°☾18'28 | | conjunction | -277 Jul 15 j 19:13 | 17°☾24'33 | 7°58'46 |
| opposition | -284 Dec 31 j 18:55 | 7°☾08'51 | 5°27'59 | minimum elong | -277 Jul 15 j 18:57 | 17°☾24'31 | 7°58'46 |
| min. Earth dist. | -283 Jan 03 j 14:10 | 7°☾04'58 | 36.73707 AU | morning rise | -277 Jul 29 j 10:30 | 17°☾49'42 | |
| direct | -283 Mar 23 j 04:08 | 5°☾57'09 | | retrograde | -277 Oct 26 j 02:42 | 19°☾26'50 | |
| evening set | -283 Jun 20 j 07:24 | 7°☾27'39 | | opposition | -276 Jan 12 j 10:38 | 18°☾14'35 | 8°39'31 |
| max. Earth dist. | -283 Jul 02 j 05:59 | 7°☾48'24 | 38.59929 AU | min. Earth dist. | -276 Jan 15 j 08:48 | 18°☾10'20 | 34.94652 AU |
| | | | | direct | -276 Apr 02 j 15:08 | 16°☾59'48 | |
| conjunction | -283 Jul 05 j 10:33 | 7°☾54'01 | 5°24'01 | evening set | -276 Jul 03 j 08:30 | 18°☾40'15 | |
| minimum elong | -283 Jul 05 j 10:22 | 7°☾54'00 | 5°24'01 | max. Earth dist. | -276 Jul 13 j 11:43 | 18°☾59'05 | 36.79809 AU |
| morning rise | -283 Jul 20 j 11:41 | 8°☾20'15 | | | | | |
| retrograde | -283 Oct 15 j 16:37 | 9°☾49'41 | | conjunction | -276 Jul 16 j 18:54 | 19°☾05'15 | 8°24'36 |
| opposition | -282 Jan 02 j 12:28 | 8°☾39'41 | 5°55'05 | minimum elong | -276 Jul 16 j 18:37 | 19°☾05'14 | 8°24'37 |
| min. Earth dist. | -282 Jan 05 j 08:08 | 8°☾35'45 | 36.47851 AU | morning rise | -276 Jul 30 j 03:03 | 19°☾30'06 | |
| direct | -282 Mar 24 j 22:25 | 7°☾27'31 | | retrograde | -276 Oct 27 j 04:31 | 21°☾08'45 | |
| evening set | -282 Jun 22 j 07:47 | 8°☾59'14 | | opposition | -275 Jan 13 j 08:30 | 19°☾56'07 | 9°07'00 |
| max. Earth dist. | -282 Jul 04 j 01:52 | 9°☾19'51 | 38.33909 AU | min. Earth dist. | -275 Jan 16 j 06:51 | 19°☾51'51 | 34.69411 AU |
| | | | | direct | -275 Apr 04 j 12:39 | 18°☾40'53 | |
| conjunction | -282 Jul 07 j 06:36 | 9°☾25'31 | 5°49'39 | evening set | -275 Jul 05 j 16:47 | 20°☾23'04 | |
| minimum elong | -282 Jul 07 j 06:25 | 9°☾25'30 | 5°49'40 | max. Earth dist. | -275 Jul 15 j 11:47 | 20°☾41'26 | 36.54320 AU |
| morning rise | -282 Jul 22 j 03:03 | 9°☾51'40 | | | | | |
| retrograde | -282 Oct 17 j 10:38 | 11°☾22'12 | | conjunction | -275 Jul 18 j 19:29 | 20°☾47'43 | 8°50'23 |
| opposition | -281 Jan 04 j 06:40 | 10°☾11'48 | 6°22'19 | minimum elong | -275 Jul 18 j 19:11 | 20°☾47'41 | 8°50'23 |
| min. Earth dist. | -281 Jan 07 j 03:21 | 10°☾07'47 | 36.22019 AU | morning rise | -275 Jul 31 j 19:41 | 21°☾12'12 | |
| direct | -281 Mar 26 j 16:51 | 8°☾59'11 | | retrograde | -275 Oct 29 j 03:48 | 22°☾52'25 | |
| evening set | -281 Jun 24 j 09:14 | 10°☾32'10 | | opposition | -274 Jan 15 j 07:22 | 21°☾39'24 | 9°34'25 |
| max. Earth dist. | -281 Jul 05 j 22:15 | 10°☾52'35 | 38.07960 AU | min. Earth dist. | -274 Jan 18 j 07:00 | 21°☾35'01 | 34.44174 AU |
| | | | | direct | -274 Apr 06 j 10:43 | 20°☾23'43 | |
| conjunction | -281 Jul 09 j 03:05 | 10°☾58'19 | 6°15'24 | evening set | -274 Jul 08 j 02:26 | 22°☾07'41 | |
| minimum elong | -281 Jul 09 j 02:52 | 10°☾58'18 | 6°15'24 | max. Earth dist. | -274 Jul 17 j 12:49 | 22°☾25'33 | 36.28850 AU |
| morning rise | -281 Jul 23 j 18:41 | 11°☾24'21 | | | | | |
| retrograde | -281 Oct 19 j 05:59 | 12°☾56'02 | | conjunction | -274 Jul 20 j 20:36 | 22°☾31'54 | 9°16'04 |
| opposition | -280 Jan 06 j 01:22 | 11°☾45'16 | 6°49'39 | minimum elong | -274 Jul 20 j 20:18 | 22°☾31'53 | 9°16'05 |
| min. Earth dist. | -280 Jan 08 j 21:25 | 11°☾41'15 | 35.96299 AU | morning rise | -274 Aug 02 j 12:26 | 22°☾55'58 | |
| direct | -280 Mar 27 j 11:00 | 10°☾32'13 | | retrograde | -274 Oct 31 j 05:02 | 24°☾37'51 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 10

Attention, astronomical year style is used: The year -273 in astronomical counting style is the year 274 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------------------------------|-------------|------------------|---------------------|-----------------------------------|-------------|
| opposition | -273 Jan 17 j 06:48 | 23° \mathring{O} 24'26 | 10°01'46 | direct | -267 Apr 18 j 16:30 | 3° \mathring{O} 13'10 | |
| min. Earth dist. | -273 Jan 20 j 05:57 | 23° \mathring{O} 20'02 | 34.18974 AU | evening set | -267 Jul 24 j 12:10 | 5° \mathring{O} 12'09 | |
| direct | -273 Apr 08 j 09:28 | 22° \mathring{O} 08'15 | | max. Earth dist. | -267 Jul 30 j 17:08 | 5° \mathring{O} 24'48 | 34.55509 AU |
| evening set | -273 Jul 10 j 13:18 | 23° \mathring{O} 54'05 | | | | | |
| max. Earth dist. | -273 Jul 19 j 13:28 | 24° \mathring{O} 11'19 | 36.03417 AU | conjunction | -267 Aug 02 j 24:00 | 5° \mathring{O} 31'32 | 12°09'28 |
| | | | | minimum elong | -267 Aug 02 j 23:37 | 5° \mathring{O} 31'30 | 12°09'27 |
| conjunction | -273 Jul 22 j 22:28 | 24° \mathring{O} 17'50 | 9°41'38 | morning rise | -267 Aug 12 j 09:59 | 5° \mathring{O} 50'46 | |
| minimum elong | -273 Jul 22 j 22:08 | 24° \mathring{O} 17'48 | 9°41'38 | retrograde | -267 Nov 13 j 16:24 | 7° \mathring{O} 46'47 | |
| morning rise | -273 Aug 04 j 05:19 | 24° \mathring{O} 41'25 | | opposition | -266 Jan 30 j 00:17 | 6° \mathring{O} 30'23 | 13°06'08 |
| retrograde | -273 Nov 02 j 07:09 | 26° \mathring{O} 25'03 | | min. Earth dist. | -266 Feb 01 j 22:31 | 6° \mathring{O} 25'51 | 32.48718 AU |
| opposition | -272 Jan 19 j 07:02 | 25° \mathring{O} 11'12 | 10°28'58 | direct | -266 Apr 20 j 20:27 | 5° \mathring{O} 10'50 | |
| min. Earth dist. | -272 Jan 22 j 07:32 | 25° \mathring{O} 06'42 | 33.93861 AU | evening set | -266 Jul 27 j 09:36 | 7° \mathring{O} 12'26 | |
| direct | -272 Apr 09 j 06:07 | 23° \mathring{O} 54'32 | | max. Earth dist. | -266 Aug 02 j 00:11 | 7° \mathring{O} 23'59 | 34.32224 AU |
| evening set | -272 Jul 12 j 01:24 | 25° \mathring{O} 42'18 | | | | | |
| max. Earth dist. | -272 Jul 20 j 16:44 | 25° \mathring{O} 59'00 | 35.78094 AU | conjunction | -266 Aug 05 j 06:56 | 7° \mathring{O} 30'46 | 12°32'38 |
| | | | | minimum elong | -266 Aug 05 j 06:33 | 7° \mathring{O} 30'44 | 12°32'39 |
| conjunction | -272 Jul 24 j 00:56 | 26° \mathring{O} 05'30 | 10°07'01 | morning rise | -266 Aug 14 j 02:29 | 7° \mathring{O} 48'58 | |
| minimum elong | -272 Jul 24 j 00:36 | 26° \mathring{O} 05'29 | 10°07'02 | retrograde | -266 Nov 15 j 22:36 | 9° \mathring{O} 47'27 | |
| morning rise | -272 Aug 04 j 22:04 | 26° \mathring{O} 28'33 | | opposition | -265 Feb 01 j 06:12 | 8° \mathring{O} 30'41 | 13°30'43 |
| retrograde | -272 Nov 03 j 09:46 | 28° \mathring{O} 14'00 | | min. Earth dist. | -265 Feb 04 j 05:03 | 8° \mathring{O} 26'05 | 32.25973 AU |
| opposition | -271 Jan 20 j 07:56 | 26° \mathring{O} 59'43 | 10°55'59 | direct | -265 Apr 22 j 23:20 | 7° \mathring{O} 10'43 | |
| min. Earth dist. | -271 Jan 23 j 07:50 | 26° \mathring{O} 55'14 | 33.68882 AU | evening set | -265 Jul 30 j 09:14 | 9° \mathring{O} 15'03 | |
| direct | -271 Apr 11 j 07:19 | 25° \mathring{O} 42'33 | | max. Earth dist. | -265 Aug 04 j 09:34 | 9° \mathring{O} 25'28 | 34.09384 AU |
| evening set | -271 Jul 14 j 15:02 | 27° \mathring{O} 32'22 | | | | | |
| max. Earth dist. | -271 Jul 22 j 18:43 | 27° \mathring{O} 48'17 | 35.52932 AU | conjunction | -265 Aug 07 j 14:45 | 9° \mathring{O} 32'12 | 12°55'13 |
| | | | | minimum elong | -265 Aug 07 j 14:21 | 9° \mathring{O} 32'10 | 12°55'13 |
| conjunction | -271 Jul 26 j 04:07 | 27° \mathring{O} 54'58 | 10°32'12 | morning rise | -265 Aug 15 j 18:34 | 9° \mathring{O} 49'13 | |
| minimum elong | -271 Jul 26 j 03:46 | 27° \mathring{O} 54'56 | 10°32'11 | retrograde | -265 Nov 18 j 06:32 | 11° \mathring{O} 50'19 | |
| morning rise | -271 Aug 06 j 15:05 | 28° \mathring{O} 17'24 | | opposition | -264 Feb 03 j 12:53 | 10° \mathring{O} 33'11 | 13°54'41 |
| | -271 Oct 19 j 00:31 | 0° \mathring{O} | | min. Earth dist. | -264 Feb 06 j 10:28 | 10° \mathring{O} 28'38 | 32.03650 AU |
| retrograde | -271 Nov 05 j 15:39 | 0° \mathring{O} 04'46 | | direct | -264 Apr 24 j 04:45 | 9° \mathring{O} 12'47 | |
| | -271 Nov 23 j 08:08 | 30° \mathring{R} \mathring{O} | | evening set | -264 Aug 01 j 10:52 | 11° \mathring{O} 20'00 | |
| opposition | -270 Jan 22 j 09:31 | 28° \mathring{O} 50'02 | 11°22'45 | max. Earth dist. | -264 Aug 05 j 17:33 | 11° \mathring{O} 29'00 | 33.86944 AU |
| min. Earth dist. | -270 Jan 25 j 09:56 | 28° \mathring{O} 45'29 | 33.44125 AU | | | | |
| direct | -270 Apr 13 j 07:35 | 27° \mathring{O} 32'21 | | conjunction | -264 Aug 08 j 23:19 | 11° \mathring{O} 35'51 | 13°17'11 |
| evening set | -270 Jul 17 j 05:58 | 29° \mathring{O} 24'18 | | minimum elong | -264 Aug 08 j 22:56 | 11° \mathring{O} 35'49 | 13°17'12 |
| max. Earth dist. | -270 Jul 24 j 23:55 | 29° \mathring{O} 39'36 | 35.28011 AU | morning rise | -264 Aug 16 j 10:18 | 11° \mathring{O} 51'33 | |
| | | | | retrograde | -264 Nov 19 j 16:57 | 13° \mathring{O} 55'24 | |
| conjunction | -270 Jul 28 j 08:06 | 29° \mathring{O} 46'14 | 10°57'05 | opposition | -263 Feb 04 j 20:34 | 12° \mathring{O} 37'52 | 14°17'58 |
| minimum elong | -270 Jul 28 j 07:45 | 29° \mathring{O} 46'12 | 10°57'06 | min. Earth dist. | -263 Feb 07 j 18:31 | 12° \mathring{O} 33'17 | 31.81720 AU |
| | -270 Aug 04 j 06:33 | 0° \mathring{O} | | direct | -263 Apr 26 j 08:50 | 11° \mathring{O} 17'03 | |
| morning rise | -270 Aug 08 j 07:54 | 0° \mathring{O} 08'00 | | evening set | -263 Aug 04 j 15:17 | 13° \mathring{O} 27'20 | |
| retrograde | -270 Nov 07 j 19:43 | 1° \mathring{O} 57'21 | | max. Earth dist. | -263 Aug 08 j 04:47 | 13° \mathring{O} 34'54 | 33.64881 AU |
| opposition | -269 Jan 24 j 12:04 | 0° \mathring{O} 42'11 | 11°49'14 | | | | |
| min. Earth dist. | -269 Jan 27 j 12:17 | 0° \mathring{O} 37'37 | 33.19654 AU | conjunction | -263 Aug 11 j 08:56 | 13° \mathring{O} 41'40 | 13°38'27 |
| | -269 Feb 22 j 19:23 | 30° \mathring{R} \mathring{O} | | minimum elong | -263 Aug 11 j 08:32 | 13° \mathring{O} 41'38 | 13°38'27 |
| direct | -269 Apr 15 j 10:15 | 29° \mathring{O} 24'01 | | morning rise | -263 Aug 18 j 01:07 | 13° \mathring{O} 55'54 | |
| | -269 Jun 04 j 20:30 | 0° \mathring{O} | | | -263 Sep 19 j 04:09 | 15° \mathring{O} | |
| evening set | -269 Jul 19 j 22:20 | 1° \mathring{O} 18'11 | | retrograde | -263 Nov 22 j 02:52 | 16° \mathring{O} 02'39 | |
| max. Earth dist. | -269 Jul 27 j 04:04 | 1° \mathring{O} 32'38 | 35.03428 AU | | -262 Jan 28 j 12:41 | 15° \mathring{R} \mathring{O} | |
| | | | | opposition | -262 Feb 07 j 05:11 | 14° \mathring{O} 44'44 | 14°40'31 |
| conjunction | -269 Jul 30 j 12:26 | 1° \mathring{O} 39'21 | 11°21'38 | min. Earth dist. | -262 Feb 10 j 02:22 | 14° \mathring{O} 40'10 | 31.60154 AU |
| minimum elong | -269 Jul 30 j 12:04 | 1° \mathring{O} 39'19 | 11°21'37 | direct | -262 Apr 28 j 16:51 | 13° \mathring{O} 23'29 | |
| morning rise | -269 Aug 10 j 00:34 | 2° \mathring{O} 00'22 | | | -262 Jul 21 j 06:08 | 15° \mathring{O} | |
| retrograde | -269 Nov 10 j 02:34 | 3° \mathring{O} 51'50 | | evening set | -262 Aug 07 j 22:39 | 15° \mathring{O} 37'02 | |
| opposition | -268 Jan 26 j 15:19 | 2° \mathring{O} 36'14 | 12°15'20 | max. Earth dist. | -262 Aug 10 j 14:40 | 15° \mathring{O} 42'46 | 33.43207 AU |
| min. Earth dist. | -268 Jan 29 j 14:45 | 2° \mathring{O} 31'41 | 32.95570 AU | | | | |
| direct | -268 Apr 16 j 12:59 | 1° \mathring{O} 17'35 | | conjunction | -262 Aug 13 j 19:14 | 15° \mathring{O} 49'38 | 13°58'58 |
| evening set | -268 Jul 21 j 16:17 | 3° \mathring{O} 14'06 | | minimum elong | -262 Aug 13 j 18:51 | 15° \mathring{O} 49'36 | 13°58'59 |
| max. Earth dist. | -268 Jul 28 j 10:14 | 3° \mathring{O} 27'42 | 34.79238 AU | morning rise | -262 Aug 19 j 14:39 | 16° \mathring{O} 02'08 | |
| | | | | retrograde | -262 Nov 24 j 16:16 | 18° \mathring{O} 12'02 | |
| conjunction | -268 Jul 31 j 17:51 | 3° \mathring{O} 34'26 | 11°45'47 | opposition | -261 Feb 09 j 14:44 | 16° \mathring{O} 53'42 | 15°02'14 |
| minimum elong | -268 Jul 31 j 17:29 | 3° \mathring{O} 34'24 | 11°45'47 | min. Earth dist. | -261 Feb 12 j 11:22 | 16° \mathring{O} 49'09 | 31.38993 AU |
| morning rise | -268 Aug 10 j 17:20 | 3° \mathring{O} 54'36 | | direct | -261 May 01 j 02:02 | 15° \mathring{O} 32'00 | |
| retrograde | -268 Nov 11 j 08:12 | 5° \mathring{O} 48'16 | | evening set | -261 Aug 11 j 09:57 | 17° \mathring{O} 49'09 | |
| opposition | -267 Jan 27 j 19:23 | 4° \mathring{O} 32'16 | 12°40'59 | max. Earth dist. | -261 Aug 13 j 03:22 | 17° \mathring{O} 52'53 | 33.21941 AU |
| min. Earth dist. | -267 Jan 30 j 19:07 | 4° \mathring{O} 27'40 | 32.71912 AU | | | | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 11

Attention, astronomical year style is used: The year -261 in astronomical counting style is the year 262 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| conjunction | -261 Aug 16 j 06:19 | 17°Ω59'40 | 14°18'40 | opposition | -253 Feb 28 j 02:05 | 5°♊15'03 | 17°15'30 |
| minimum elong | -261 Aug 16 j 05:56 | 17°Ω59'38 | 14°18'39 | min. Earth dist. | -253 Mar 02 j 12:17 | 5°♊11'01 | 29.90944 AU |
| morning rise | -261 Aug 21 j 01:35 | 18°Ω10'07 | | direct | -253 May 19 j 05:13 | 3°♊50'14 | |
| retrograde | -261 Nov 27 j 03:30 | 20°Ω23'28 | | max. Earth dist. | -253 Sep 01 j 10:32 | 6°♊22'46 | 31.74800 AU |
| opposition | -260 Feb 12 j 01:14 | 19°Ω04'43 | 15°23'03 | | | | |
| min. Earth dist. | -260 Feb 14 j 21:42 | 19°Ω00'09 | 31.18249 AU | conjunction | -253 Sep 04 j 00:49 | 6°♊28'48 | 16°16'21 |
| direct | -260 May 02 j 12:14 | 17°Ω42'34 | | minimum elong | -253 Sep 04 j 00:33 | 6°♊28'46 | 16°16'20 |
| evening set | -260 Aug 14 j 03:49 | 20°Ω03'50 | | retrograde | -253 Dec 16 j 06:19 | 9°♊02'46 | |
| max. Earth dist. | -260 Aug 14 j 15:38 | 20°Ω04'54 | 33.01143 AU | opposition | -252 Mar 01 j 19:12 | 7°♊41'10 | 17°25'40 |
| | | | | min. Earth dist. | -252 Mar 04 j 03:29 | 7°♊37'15 | 29.76048 AU |
| conjunction | -260 Aug 17 j 18:10 | 20°Ω11'43 | 14°37'28 | direct | -252 May 20 j 20:56 | 6°♊16'06 | |
| minimum elong | -260 Aug 17 j 17:48 | 20°Ω11'41 | 14°37'28 | max. Earth dist. | -252 Sep 03 j 07:13 | 8°♊50'05 | 31.60168 AU |
| morning rise | -260 Aug 21 j 07:38 | 20°Ω19'31 | | | | | |
| retrograde | -260 Nov 28 j 17:43 | 22°Ω36'51 | | conjunction | -252 Sep 05 j 18:16 | 8°♊55'51 | 16°24'48 |
| opposition | -259 Feb 13 j 12:18 | 21°Ω17'42 | 15°42'52 | minimum elong | -252 Sep 05 j 18:04 | 8°♊55'49 | 16°24'48 |
| min. Earth dist. | -259 Feb 16 j 07:21 | 21°Ω13'12 | 30.97995 AU | retrograde | -252 Dec 17 j 23:47 | 11°♊30'55 | |
| direct | -259 May 04 j 23:22 | 19°Ω55'06 | | opposition | -251 Mar 04 j 13:09 | 10°♊09'05 | 17°34'09 |
| max. Earth dist. | -259 Aug 17 j 05:33 | 22°Ω18'56 | 32.80860 AU | min. Earth dist. | -251 Mar 06 j 20:03 | 10°♊05'15 | 29.61982 AU |
| evening set | -259 Aug 18 j 15:00 | 22°Ω22'01 | | direct | -251 May 23 j 13:41 | 8°♊43'48 | |
| | | | | max. Earth dist. | -251 Sep 06 j 02:34 | 11°♊18'58 | 31.46402 AU |
| conjunction | -259 Aug 20 j 06:56 | 22°Ω25'42 | 14°55'16 | | | | |
| minimum elong | -259 Aug 20 j 06:33 | 22°Ω25'40 | 14°55'16 | conjunction | -251 Sep 08 j 12:12 | 11°♊24'37 | 16°31'38 |
| morning rise | -259 Aug 21 j 22:06 | 22°Ω29'19 | | minimum elong | -251 Sep 08 j 12:01 | 11°♊24'36 | 16°31'37 |
| retrograde | -259 Dec 01 j 07:03 | 24°Ω52'11 | | retrograde | -251 Dec 20 j 20:37 | 14°♊00'44 | |
| opposition | -258 Feb 16 j 00:34 | 23°Ω32'36 | 16°01'37 | opposition | -250 Mar 07 j 07:52 | 12°♊38'40 | 17°40'52 |
| min. Earth dist. | -258 Feb 18 j 19:32 | 23°Ω28'05 | 30.78288 AU | min. Earth dist. | -250 Mar 09 j 12:13 | 12°♊35'01 | 29.48753 AU |
| direct | -258 May 07 j 10:40 | 22°Ω09'34 | | direct | -250 May 26 j 07:51 | 11°♊13'11 | |
| max. Earth dist. | -258 Aug 19 j 20:28 | 24°Ω34'54 | 32.61193 AU | max. Earth dist. | -250 Sep 08 j 24:00 | 13°♊49'36 | 31.33479 AU |
| | | | | | | | |
| conjunction | -258 Aug 22 j 20:08 | 24°Ω41'34 | 15°12'01 | conjunction | -250 Sep 11 j 06:43 | 13°♊55'01 | 16°36'48 |
| minimum elong | -258 Aug 22 j 19:47 | 24°Ω41'32 | 15°12'01 | minimum elong | -250 Sep 11 j 06:35 | 13°♊55'00 | 16°36'48 |
| retrograde | -258 Dec 03 j 22:03 | 27°Ω09'21 | | retrograde | -250 Dec 23 j 16:01 | 16°♊32'05 | |
| opposition | -257 Feb 18 j 13:33 | 25°Ω49'23 | 16°19'10 | opposition | -249 Mar 10 j 03:29 | 15°♊09'47 | 17°45'46 |
| min. Earth dist. | -257 Feb 21 j 06:13 | 25°Ω44'59 | 30.59223 AU | min. Earth dist. | -249 Mar 12 j 06:39 | 15°♊06'12 | 29.36341 AU |
| direct | -257 May 09 j 23:42 | 24°Ω25'54 | | direct | -249 May 29 j 03:08 | 13°♊44'08 | |
| max. Earth dist. | -257 Aug 22 j 11:36 | 26°Ω52'41 | 32.42216 AU | max. Earth dist. | -249 Sep 11 j 20:55 | 16°♊21'35 | 31.21429 AU |
| | | | | | | | |
| conjunction | -257 Aug 25 j 10:08 | 26°Ω59'18 | 15°27'35 | conjunction | -249 Sep 14 j 01:41 | 16°♊26'49 | 16°40'16 |
| minimum elong | -257 Aug 25 j 09:48 | 26°Ω59'16 | 15°27'34 | minimum elong | -249 Sep 14 j 01:33 | 16°♊26'49 | 16°40'15 |
| retrograde | -257 Dec 06 j 11:35 | 29°Ω28'22 | | retrograde | -249 Dec 26 j 12:55 | 19°♊04'45 | |
| opposition | -256 Feb 21 j 03:24 | 28°Ω08'00 | 16°35'26 | opposition | -248 Mar 11 j 23:22 | 17°♊42'15 | 17°48'48 |
| min. Earth dist. | -256 Feb 23 j 19:35 | 28°Ω03'36 | 30.40896 AU | min. Earth dist. | -248 Mar 13 j 23:25 | 17°♊38'52 | 29.24776 AU |
| direct | -256 May 11 j 11:08 | 26°Ω44'07 | | direct | -248 May 30 j 23:42 | 16°♊16'24 | |
| max. Earth dist. | -256 Aug 24 j 05:05 | 29°Ω12'27 | 32.24042 AU | max. Earth dist. | -248 Sep 13 j 18:52 | 18°♊54'52 | 31.10254 AU |
| | | | | | | | |
| conjunction | -256 Aug 27 j 00:50 | 29°Ω18'52 | 15°41'53 | conjunction | -248 Sep 15 j 21:10 | 18°♊59'53 | 16°41'57 |
| minimum elong | -256 Aug 27 j 00:32 | 29°Ω18'50 | 15°41'53 | minimum elong | -248 Sep 15 j 21:07 | 18°♊59'52 | 16°41'57 |
| | -256 Sep 14 j 08:29 | 0°♊ | | retrograde | -248 Dec 28 j 08:47 | 21°♊38'34 | |
| retrograde | -256 Dec 08 j 02:34 | 1°♊49'11 | | opposition | -247 Mar 14 j 20:05 | 20°♊15'51 | 17°49'55 |
| opposition | -255 Feb 22 j 18:06 | 0°♊28'28 | 16°50'19 | min. Earth dist. | -247 Mar 16 j 18:59 | 20°♊12'33 | 29.14073 AU |
| min. Earth dist. | -255 Feb 25 j 07:48 | 0°♊24'13 | 30.23372 AU | direct | -247 Jun 02 j 18:57 | 18°♊49'51 | |
| | -255 Mar 12 j 08:28 | 30°♋ | | max. Earth dist. | -247 Sep 16 j 17:26 | 21°♊29'13 | 31.00008 AU |
| direct | -255 May 14 j 01:17 | 29°Ω04'13 | | | | | |
| | -255 Jul 13 j 00:22 | 0°♊ | | conjunction | -247 Sep 18 j 16:53 | 21°♊33'58 | 16°41'50 |
| max. Earth dist. | -255 Aug 26 j 21:26 | 1°♊33'55 | 32.06721 AU | minimum elong | -247 Sep 18 j 16:49 | 21°♊33'58 | 16°41'50 |
| | | | | retrograde | -247 Dec 31 j 06:39 | 24°♊13'18 | |
| conjunction | -255 Aug 29 j 16:11 | 1°♊40'17 | 15°54'50 | opposition | -246 Mar 17 j 17:08 | 22°♊50'23 | 17°49'03 |
| minimum elong | -255 Aug 29 j 15:52 | 1°♊40'15 | 15°54'49 | min. Earth dist. | -246 Mar 19 j 12:39 | 22°♊47'19 | 29.04281 AU |
| retrograde | -255 Dec 10 j 19:15 | 4°♊11'52 | | direct | -246 Jun 05 j 17:08 | 21°♊24'14 | |
| opposition | -254 Feb 25 j 09:37 | 2°♊50'48 | 17°03'41 | max. Earth dist. | -246 Sep 19 j 15:50 | 24°♊04'21 | 30.90733 AU |
| min. Earth dist. | -254 Feb 27 j 22:03 | 2°♊46'38 | 30.06720 AU | | | | |
| direct | -254 May 16 j 13:33 | 1°♊26'15 | | conjunction | -246 Sep 21 j 12:51 | 24°♊08'53 | 16°39'51 |
| max. Earth dist. | -254 Aug 29 j 16:52 | 3°♊57'30 | 31.90308 AU | minimum elong | -246 Sep 21 j 12:52 | 24°♊08'53 | 16°39'51 |
| | | | | retrograde | -245 Jan 03 j 02:16 | 26°♊48'47 | |
| conjunction | -254 Sep 01 j 08:19 | 4°♊03'36 | 16°06'20 | opposition | -245 Mar 20 j 14:43 | 25°♊25'40 | 17°46'09 |
| minimum elong | -254 Sep 01 j 08:03 | 4°♊03'34 | 16°06'21 | min. Earth dist. | -245 Mar 22 j 08:30 | 25°♊22'43 | 28.95481 AU |
| retrograde | -254 Dec 13 j 11:22 | 6°♊36'23 | | direct | -245 Jun 08 j 13:02 | 23°♊59'23 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 12

Attention, astronomical year style is used: The year -245 in astronomical counting style is the year 246 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-------------------------|-------------|------------------|---------------------|-------------------------|-------------|
| max. Earth dist. | -245 Sep 22 j 15:41 | 26° 17 40'16 | 30.82522 AU | evening set | -237 Oct 13 j 12:57 | 17° 17 32'25 | |
| | | | | max. Earth dist. | -237 Oct 14 j 11:46 | 17° 17 34'44 | 30.59598 AU |
| conjunction | -245 Sep 24 j 08:53 | 26° 17 44'26 | 16°35'58 | | | | |
| minimum elong | -245 Sep 24 j 08:54 | 26° 17 44'26 | 16°35'58 | conjunction | -237 Oct 15 j 01:50 | 17° 17 36'10 | 14°55'34 |
| retrograde | -244 Jan 05 j 22:13 | 29° 17 24'46 | | minimum elong | -237 Oct 15 j 02:09 | 17° 17 36'12 | 14°55'34 |
| opposition | -244 Mar 22 j 12:32 | 28° 17 01'29 | 17°41'11 | morning rise | -237 Oct 16 j 15:21 | 17° 17 39'58 | |
| min. Earth dist. | -244 Mar 24 j 02:43 | 27° 17 58'47 | 28.87729 AU | retrograde | -236 Jan 26 j 17:19 | 20° 17 16'43 | |
| direct | -244 Jun 10 j 11:54 | 26° 17 35'06 | | opposition | -236 Apr 13 j 01:03 | 18° 17 53'24 | 15°46'40 |
| max. Earth dist. | -244 Sep 24 j 14:14 | 29° 17 16'31 | 30.75430 AU | min. Earth dist. | -236 Apr 13 j 14:28 | 18° 17 52'28 | 28.67650 AU |
| | | | | direct | -236 Jul 01 j 20:01 | 17° 17 27'46 | |
| conjunction | -244 Sep 26 j 05:03 | 29° 17 20'27 | 16°30'09 | evening set | -236 Oct 13 j 05:38 | 20° 17 02'42 | |
| minimum elong | -244 Sep 26 j 05:09 | 29° 17 20'28 | 16°30'08 | | | | |
| | -244 Oct 12 j 15:25 | 0° 17 | | conjunction | -236 Oct 16 j 21:14 | 20° 17 11'34 | 14°34'52 |
| retrograde | -243 Jan 07 j 19:24 | 2° 17 01'08 | | minimum elong | -236 Oct 16 j 21:35 | 20° 17 11'36 | 14°34'51 |
| opposition | -243 Mar 25 j 10:35 | 0° 17 37'43 | 17°34'07 | max. Earth dist. | -236 Oct 16 j 10:05 | 20° 17 10'26 | 30.61842 AU |
| min. Earth dist. | -243 Mar 26 j 22:06 | 0° 17 35'13 | 28.81118 AU | morning rise | -236 Oct 20 j 13:25 | 20° 17 20'29 | |
| | -243 Apr 17 j 10:32 | 30° 17 | | retrograde | -235 Jan 28 j 14:13 | 22° 17 51'42 | |
| direct | -243 Jun 13 j 07:58 | 29° 17 11'16 | | opposition | -235 Apr 15 j 23:15 | 21° 17 28'29 | 15°23'40 |
| | -243 Aug 06 j 15:13 | 0° 17 | | min. Earth dist. | -235 Apr 16 j 08:36 | 21° 17 27'50 | 28.70060 AU |
| max. Earth dist. | -243 Sep 27 j 15:03 | 1° 17 53'19 | 30.69546 AU | direct | -235 Jul 04 j 20:27 | 20° 17 03'03 | |
| | | | | evening set | -235 Oct 14 j 16:44 | 22° 17 34'07 | |
| conjunction | -243 Sep 29 j 01:25 | 1° 17 56'49 | 16°22'22 | | | | |
| minimum elong | -243 Sep 29 j 01:32 | 1° 17 56'49 | 16°22'22 | conjunction | -235 Oct 19 j 16:19 | 22° 17 46'10 | 14°12'35 |
| retrograde | -242 Jan 10 j 14:43 | 4° 17 37'45 | | minimum elong | -235 Oct 19 j 16:40 | 22° 17 46'12 | 14°12'35 |
| opposition | -242 Mar 28 j 09:04 | 3° 17 14'15 | 17°24'55 | max. Earth dist. | -235 Oct 19 j 08:22 | 22° 17 45'22 | 30.65108 AU |
| min. Earth dist. | -242 Mar 29 j 17:07 | 3° 17 11'59 | 28.75690 AU | morning rise | -235 Oct 24 j 16:23 | 22° 17 58'16 | |
| direct | -242 Jun 16 j 06:40 | 1° 17 47'49 | | retrograde | -234 Jan 31 j 09:23 | 25° 17 25'47 | |
| | | | | opposition | -234 Apr 18 j 21:27 | 24° 17 02'40 | 14°58'58 |
| conjunction | -242 Oct 01 j 21:33 | 4° 17 33'25 | 16°12'38 | min. Earth dist. | -234 Apr 19 j 04:30 | 24° 17 02'11 | 28.73493 AU |
| minimum elong | -242 Oct 01 j 21:43 | 4° 17 33'26 | 16°12'37 | direct | -234 Jul 07 j 18:28 | 22° 17 37'28 | |
| max. Earth dist. | -242 Sep 30 j 13:43 | 4° 17 30'11 | 30.64904 AU | evening set | -234 Oct 16 j 09:27 | 25° 17 05'11 | |
| retrograde | -241 Jan 13 j 11:31 | 7° 17 14'32 | | | | | |
| opposition | -241 Mar 31 j 07:37 | 5° 17 50'59 | 17°13'36 | conjunction | -234 Oct 22 j 10:48 | 25° 17 19'46 | 13°48'45 |
| min. Earth dist. | -241 Apr 01 j 12:11 | 5° 17 48'58 | 28.71489 AU | minimum elong | -234 Oct 22 j 11:11 | 25° 17 19'49 | 13°48'44 |
| direct | -241 Jun 19 j 04:02 | 4° 17 24'35 | | max. Earth dist. | -234 Oct 22 j 06:25 | 25° 17 19'20 | 30.69423 AU |
| | | | | morning rise | -234 Oct 28 j 12:34 | 25° 17 34'25 | |
| conjunction | -241 Oct 04 j 17:57 | 7° 17 10'11 | 16°00'56 | retrograde | -233 Feb 03 j 03:50 | 27° 17 58'47 | |
| minimum elong | -241 Oct 04 j 18:08 | 7° 17 10'12 | 16°00'56 | opposition | -233 Apr 21 j 19:04 | 26° 17 35'47 | 14°32'39 |
| max. Earth dist. | -241 Oct 03 j 14:45 | 7° 17 07'25 | 30.61508 AU | min. Earth dist. | -233 Apr 21 j 22:12 | 26° 17 35'34 | 28.77947 AU |
| retrograde | -240 Jan 16 j 07:09 | 9° 17 51'23 | | direct | -233 Jul 10 j 17:56 | 25° 17 10'48 | |
| opposition | -240 Apr 02 j 06:12 | 8° 17 27'50 | 17°00'11 | evening set | -233 Oct 18 j 05:01 | 27° 17 35'26 | |
| min. Earth dist. | -240 Apr 03 j 08:02 | 8° 17 26'00 | 28.68478 AU | | | | |
| direct | -240 Jun 21 j 01:58 | 7° 17 01'32 | | conjunction | -233 Oct 25 j 04:48 | 27° 17 52'13 | 13°23'28 |
| | | | | minimum elong | -233 Oct 25 j 05:11 | 27° 17 52'15 | 13°23'28 |
| conjunction | -240 Oct 06 j 14:07 | 9° 17 46'59 | 15°47'20 | max. Earth dist. | -233 Oct 25 j 03:09 | 27° 17 52'03 | 30.74779 AU |
| minimum elong | -240 Oct 06 j 14:21 | 9° 17 47'00 | 15°47'20 | morning rise | -233 Nov 01 j 04:59 | 28° 17 09'02 | |
| max. Earth dist. | -240 Oct 05 j 13:24 | 9° 17 44'28 | 30.59326 AU | | -233 Dec 25 j 23:48 | 0° 17 | |
| retrograde | -239 Jan 18 j 04:52 | 12° 17 28'10 | | retrograde | -232 Feb 05 j 22:41 | 0° 17 30'31 | |
| opposition | -239 Apr 05 j 04:53 | 11° 17 04'39 | 16°44'43 | | -232 Mar 20 j 13:45 | 30° 17 | |
| min. Earth dist. | -239 Apr 06 j 02:46 | 11° 17 03'07 | 28.66635 AU | opposition | -232 Apr 23 j 16:09 | 29° 17 07'39 | 14°04'49 |
| direct | -239 Jun 23 j 23:50 | 9° 17 38'28 | | min. Earth dist. | -232 Apr 23 j 16:28 | 29° 17 07'38 | 28.83472 AU |
| | | | | direct | -232 Jul 12 j 15:06 | 27° 17 42'55 | |
| conjunction | -239 Oct 09 j 10:15 | 12° 17 23'41 | 15°31'52 | | -232 Oct 17 j 03:11 | 0° 17 | |
| minimum elong | -239 Oct 09 j 10:31 | 12° 17 23'43 | 15°31'52 | evening set | -232 Oct 19 j 02:31 | 0° 17 04'41 | |
| max. Earth dist. | -239 Oct 08 j 13:51 | 12° 17 21'37 | 30.58304 AU | | | | |
| retrograde | -238 Jan 21 j 00:19 | 15° 17 04'46 | | conjunction | -232 Oct 26 j 22:19 | 0° 17 23'22 | 12°56'48 |
| opposition | -238 Apr 08 j 03:47 | 13° 17 41'18 | 16°27'16 | minimum elong | -232 Oct 26 j 22:43 | 0° 17 23'24 | 12°56'47 |
| min. Earth dist. | -238 Apr 08 j 23:21 | 13° 17 39'56 | 28.65902 AU | max. Earth dist. | -232 Oct 27 j 00:50 | 0° 17 23'37 | 30.81236 AU |
| direct | -238 Jun 26 j 22:59 | 12° 17 15'18 | | morning rise | -232 Nov 03 j 18:20 | 0° 17 42'04 | |
| | | | | retrograde | -231 Feb 07 j 15:08 | 3° 17 00'54 | |
| conjunction | -238 Oct 12 j 06:08 | 15° 17 00'09 | 15°14'35 | opposition | -231 Apr 26 j 12:52 | 1° 17 38'11 | 13°35'31 |
| minimum elong | -238 Oct 12 j 06:26 | 15° 17 00'10 | 15°14'35 | min. Earth dist. | -231 Apr 26 j 09:40 | 1° 17 38'24 | 28.90094 AU |
| max. Earth dist. | -238 Oct 11 j 12:19 | 14° 17 58'20 | 30.58413 AU | direct | -231 Jul 15 j 13:42 | 0° 17 13'43 | |
| retrograde | -237 Jan 23 j 21:49 | 17° 17 41'01 | | evening set | -231 Oct 21 j 01:02 | 2° 17 32'43 | |
| opposition | -237 Apr 11 j 02:24 | 16° 17 17'37 | 16°07'53 | | | | |
| min. Earth dist. | -237 Apr 11 j 17:48 | 16° 17 16'32 | 28.66256 AU | conjunction | -231 Oct 29 j 14:59 | 2° 17 53'07 | 12°28'50 |
| direct | -237 Jun 29 j 22:03 | 14° 17 51'47 | | minimum elong | -231 Oct 29 j 15:22 | 2° 17 53'09 | 12°28'50 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 13

Attention, astronomical year style is used: The year -231 in astronomical counting style is the year 232 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|------------|-------------|------------------|---------------------|---------------------|-------------|
| max. Earth dist. | -231 Oct 29 j 20:10 | 2°M.53'38 | 30.88820 AU | retrograde | -224 Feb 24 j 21:41 | 19°M.51'32 | |
| morning rise | -231 Nov 07 j 05:14 | 3°M.13'31 | | opposition | -224 May 13 j 21:20 | 18°M.30'38 | 9°38'41 |
| retrograde | -230 Feb 10 j 07:44 | 5°M.29'50 | | min. Earth dist. | -224 May 12 j 19:12 | 18°M.32'22 | 29.67194 AU |
| opposition | -230 Apr 29 j 09:06 | 4°M.07'17 | 13°04'52 | direct | -224 Aug 01 j 23:06 | 17°M.08'47 | |
| min. Earth dist. | -230 Apr 29 j 02:07 | 4°M.07'46 | 28.97877 AU | evening set | -224 Nov 02 j 08:20 | 19°M.11'26 | |
| direct | -230 Jul 18 j 09:31 | 2°M.43'07 | | | | | |
| evening set | -230 Oct 23 j 00:34 | 4°M.59'31 | | conjunction | -224 Nov 14 j 19:11 | 19°M.39'41 | 8°45'00 |
| | | | | minimum elong | -224 Nov 14 j 19:31 | 19°M.39'43 | 8°44'59 |
| conjunction | -230 Nov 01 j 07:18 | 5°M.21'26 | 11°59'39 | max. Earth dist. | -224 Nov 15 j 22:35 | 19°M.42'18 | 31.72050 AU |
| minimum elong | -230 Nov 01 j 07:42 | 5°M.21'28 | 11°59'39 | morning rise | -224 Nov 27 j 06:08 | 20°M.07'58 | |
| max. Earth dist. | -230 Nov 01 j 17:04 | 5°M.22'24 | 30.97572 AU | retrograde | -223 Feb 26 j 11:12 | 22°M.09'28 | |
| morning rise | -230 Nov 10 j 14:04 | 5°M.43'22 | | min. Earth dist. | -223 May 15 j 09:04 | 20°M.50'43 | 29.81918 AU |
| retrograde | -229 Feb 12 j 22:08 | 7°M.57'16 | | opposition | -223 May 16 j 13:14 | 20°M.48'51 | 9°01'43 |
| opposition | -229 May 02 j 04:42 | 6°M.34'57 | 12°32'57 | direct | -223 Aug 04 j 14:56 | 19°M.27'25 | |
| min. Earth dist. | -229 May 01 j 18:41 | 6°M.35'38 | 29.06813 AU | evening set | -223 Nov 04 j 10:35 | 21°M.28'02 | |
| direct | -229 Jul 21 j 05:42 | 5°M.11'08 | | | | | |
| evening set | -229 Oct 25 j 00:46 | 7°M.25'00 | | conjunction | -223 Nov 17 j 06:50 | 21°M.56'57 | 8°10'18 |
| | | | | minimum elong | -223 Nov 17 j 07:09 | 21°M.56'59 | 8°10'18 |
| conjunction | -229 Nov 03 j 22:47 | 7°M.48'18 | 11°29'22 | max. Earth dist. | -223 Nov 18 j 13:00 | 21°M.59'48 | 31.87467 AU |
| minimum elong | -229 Nov 03 j 23:10 | 7°M.48'20 | 11°29'22 | morning rise | -223 Nov 30 j 03:03 | 22°M.25'53 | |
| max. Earth dist. | -229 Nov 04 j 10:55 | 7°M.49'29 | 31.07476 AU | retrograde | -222 Feb 28 j 22:10 | 24°M.25'35 | |
| morning rise | -229 Nov 13 j 21:01 | 8°M.11'36 | | min. Earth dist. | -222 May 17 j 21:17 | 23°M.07'18 | 29.97365 AU |
| retrograde | -228 Feb 15 j 14:55 | 10°M.23'13 | | opposition | -222 May 19 j 04:19 | 23°M.05'16 | 8°24'20 |
| opposition | -228 May 03 j 23:37 | 9°M.01'09 | 11°59'54 | direct | -222 Aug 07 j 08:05 | 21°M.44'12 | |
| min. Earth dist. | -228 May 03 j 09:23 | 9°M.02'08 | 29.16886 AU | evening set | -222 Nov 06 j 13:07 | 23°M.42'53 | |
| direct | -228 Jul 22 j 23:58 | 7°M.37'42 | | | | | |
| evening set | -228 Oct 26 j 01:26 | 9°M.49'10 | | conjunction | -222 Nov 19 j 17:47 | 24°M.12'21 | 7°35'13 |
| | | | | minimum elong | -222 Nov 19 j 18:05 | 24°M.12'23 | 7°35'12 |
| conjunction | -228 Nov 05 j 13:47 | 10°M.13'41 | 10°58'04 | max. Earth dist. | -222 Nov 21 j 01:42 | 24°M.15'21 | 32.03572 AU |
| minimum elong | -228 Nov 05 j 14:10 | 10°M.13'44 | 10°58'03 | morning rise | -222 Dec 02 j 22:42 | 24°M.41'52 | |
| max. Earth dist. | -228 Nov 06 j 06:13 | 10°M.15'18 | 31.18476 AU | retrograde | -221 Mar 03 j 09:46 | 26°M.39'48 | |
| morning rise | -228 Nov 16 j 02:06 | 10°M.38'14 | | min. Earth dist. | -221 May 20 j 09:05 | 25°M.21'57 | 30.13528 AU |
| retrograde | -227 Feb 17 j 03:40 | 12°M.47'40 | | opposition | -221 May 21 j 18:34 | 25°M.19'46 | 7°46'35 |
| opposition | -227 May 06 j 18:04 | 11°M.25'53 | 11°25'49 | direct | -221 Aug 09 j 22:54 | 23°M.59'05 | |
| min. Earth dist. | -227 May 06 j 01:31 | 11°M.27'00 | 29.28027 AU | evening set | -221 Nov 08 j 15:29 | 25°M.55'52 | |
| direct | -227 Jul 25 j 18:50 | 10°M.02'49 | | | | | |
| evening set | -227 Oct 28 j 02:43 | 12°M.11'58 | | conjunction | -221 Nov 22 j 04:03 | 26°M.25'50 | 6°59'50 |
| | | | | minimum elong | -221 Nov 22 j 04:20 | 26°M.25'52 | 6°59'50 |
| conjunction | -227 Nov 08 j 04:03 | 12°M.37'35 | 10°25'52 | max. Earth dist. | -221 Nov 23 j 15:13 | 26°M.29'06 | 32.20364 AU |
| minimum elong | -227 Nov 08 j 04:26 | 12°M.37'38 | 10°25'52 | morning rise | -221 Dec 05 j 16:36 | 26°M.55'49 | |
| max. Earth dist. | -227 Nov 08 j 22:45 | 12°M.39'24 | 31.30517 AU | retrograde | -220 Mar 04 j 18:39 | 28°M.52'04 | |
| morning rise | -227 Nov 19 j 05:32 | 13°M.03'14 | | min. Earth dist. | -220 May 21 j 20:33 | 27°M.34'37 | 30.30375 AU |
| | -226 Jan 25 j 21:20 | 15°M. | | opposition | -220 May 23 j 08:04 | 27°M.32'18 | 7°08'35 |
| retrograde | -226 Feb 19 j 18:47 | 15°M.10'34 | | direct | -220 Aug 11 j 15:22 | 26°M.12'00 | |
| | -226 Mar 17 j 08:37 | 15°R.M. | | evening set | -220 Nov 09 j 17:57 | 28°M.06'59 | |
| opposition | -226 May 09 j 11:50 | 13°M.49'04 | 10°50'51 | | | | |
| min. Earth dist. | -226 May 08 j 15:10 | 13°M.50'28 | 29.40181 AU | conjunction | -220 Nov 23 j 13:17 | 28°M.37'20 | 6°24'14 |
| direct | -226 Jul 28 j 12:27 | 12°M.26'25 | | minimum elong | -220 Nov 23 j 13:33 | 28°M.37'21 | 6°24'13 |
| evening set | -226 Oct 30 j 04:08 | 14°M.33'19 | | max. Earth dist. | -220 Nov 25 j 01:57 | 28°M.40'43 | 32.37833 AU |
| | | | | morning rise | -220 Dec 07 j 08:59 | 29°M.07'43 | |
| conjunction | -226 Nov 10 j 17:41 | 14°M.59'56 | 9°52'53 | | -219 Jan 02 j 06:46 | 0° \nearrow | |
| minimum elong | -226 Nov 10 j 18:03 | 14°M.59'58 | 9°52'52 | retrograde | -219 Mar 07 j 04:12 | 1° \nearrow 02'22 | |
| | -226 Nov 10 j 18:25 | 15°M. | | | -219 May 14 j 18:09 | 30°R.M. | |
| max. Earth dist. | -226 Nov 11 j 16:05 | 15°M.02'05 | 31.43508 AU | min. Earth dist. | -219 May 24 j 05:53 | 29°M.45'23 | 30.47956 AU |
| morning rise | -226 Nov 22 j 07:15 | 15°M.26'34 | | opposition | -219 May 25 j 20:46 | 29°M.42'52 | 6°30'25 |
| retrograde | -225 Feb 22 j 07:50 | 17°M.31'53 | | direct | -219 Aug 14 j 04:25 | 28°M.22'55 | |
| min. Earth dist. | -225 May 11 j 06:32 | 16°M.12'12 | 29.53264 AU | | -219 Nov 04 j 04:41 | 0° \nearrow | |
| opposition | -225 May 12 j 05:05 | 16°M.10'41 | 10°15'05 | evening set | -219 Nov 11 j 20:16 | 0° \nearrow 16'11 | |
| | -225 Jul 04 j 02:45 | 15°R.M. | | | | | |
| direct | -225 Jul 31 j 04:20 | 14°M.48'26 | | conjunction | -219 Nov 25 j 21:59 | 0° \nearrow 46'51 | 5°48'30 |
| | -225 Aug 26 j 20:09 | 15°M. | | minimum elong | -219 Nov 25 j 22:13 | 0° \nearrow 46'52 | 5°48'30 |
| evening set | -225 Nov 01 j 06:08 | 16°M.53'10 | | max. Earth dist. | -219 Nov 27 j 14:14 | 0° \nearrow 50'32 | 32.56027 AU |
| | | | | morning rise | -219 Dec 09 j 23:48 | 1° \nearrow 17'33 | |
| conjunction | -225 Nov 13 j 06:45 | 17°M.20'39 | 9°19'13 | retrograde | -218 Mar 09 j 09:59 | 3° \nearrow 10'41 | |
| minimum elong | -225 Nov 13 j 07:07 | 17°M.20'41 | 9°19'13 | min. Earth dist. | -218 May 26 j 16:13 | 1° \nearrow 54'05 | 30.66295 AU |
| max. Earth dist. | -225 Nov 14 j 07:33 | 17°M.23'02 | 31.57384 AU | opposition | -218 May 28 j 08:47 | 1° \nearrow 51'28 | 5°52'09 |
| morning rise | -225 Nov 25 j 07:25 | 17°M.48'10 | | direct | -218 Aug 16 j 17:47 | 0° \nearrow 31'55 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 14

Attention, astronomical year style is used: The year -218 in astronomical counting style is the year 219 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| evening set | -218 Nov 13 j 22:38 | 2°♂23'31 | | min. Earth dist. | -211 Jun 09 j 15:39 | 16°♂06'29 | 32.13759 AU |
| | | | | opposition | -211 Jun 11 j 23:20 | 16°♂03'03 | 1°27'53 |
| conjunction | -218 Nov 28 j 05:43 | 2°♂54'26 | 5°12'41 | direct | -211 Aug 31 j 11:30 | 14°♂46'32 | |
| minimum elong | -218 Nov 28 j 05:56 | 2°♂54'27 | 5°12'40 | evening set | -211 Nov 26 j 14:09 | 16°♂28'58 | |
| max. Earth dist. | -218 Nov 29 j 23:31 | 2°♂58'14 | 32.74973 AU | | | | |
| morning rise | -218 Dec 12 j 13:13 | 3°♂25'23 | | conjunction | -211 Dec 11 j 17:52 | 16°♂59'56 | 1°05'37 |
| retrograde | -217 Mar 11 j 17:51 | 5°♂17'05 | | minimum elong | -211 Dec 11 j 17:54 | 16°♂59'57 | 1°05'38 |
| min. Earth dist. | -217 May 28 j 23:39 | 4°♂01'01 | 30.85410 AU | max. Earth dist. | -211 Dec 14 j 01:34 | 17°♂04'43 | 34.25278 AU |
| opposition | -217 May 30 j 19:51 | 3°♂58'11 | 5°13'52 | morning rise | -211 Dec 26 j 22:31 | 17°♂30'59 | |
| direct | -217 Aug 19 j 04:49 | 2°♂39'02 | | retrograde | -210 Mar 25 j 07:56 | 19°♂14'42 | |
| evening set | -217 Nov 16 j 00:58 | 4°♂29'05 | | min. Earth dist. | -210 Jun 11 j 19:17 | 18°♂01'52 | 32.36741 AU |
| | | | | opposition | -210 Jun 14 j 05:27 | 17°♂58'17 | 0°51'25 |
| conjunction | -217 Nov 30 j 12:56 | 5°♂00'11 | 4°36'53 | direct | -210 Sep 02 j 17:47 | 16°♂42'10 | |
| minimum elong | -217 Nov 30 j 13:07 | 5°♂00'12 | 4°36'53 | evening set | -210 Nov 28 j 16:04 | 18°♂23'33 | |
| max. Earth dist. | -217 Dec 02 j 09:54 | 5°♂04'14 | 32.94657 AU | | | | |
| morning rise | -217 Dec 15 j 01:14 | 5°♂31'19 | | conjunction | -210 Dec 13 j 20:36 | 18°♂54'20 | 0°31'32 |
| retrograde | -216 Mar 12 j 23:57 | 7°♂21'40 | | minimum elong | -210 Dec 13 j 20:37 | 18°♂54'20 | 0°31'31 |
| min. Earth dist. | -216 May 30 j 08:32 | 6°♂06'00 | 31.05279 AU | max. Earth dist. | -210 Dec 16 j 06:34 | 18°♂59'16 | 34.48426 AU |
| opposition | -216 Jun 01 j 06:11 | 6°♂03'06 | 4°35'39 | morning rise | -210 Dec 29 j 01:56 | 19°♂25'12 | |
| direct | -216 Aug 20 j 14:27 | 4°♂44'22 | | retrograde | -209 Mar 27 j 07:42 | 21°♂07'59 | |
| evening set | -216 Nov 17 j 03:17 | 6°♂32'58 | | min. Earth dist. | -209 Jun 14 j 00:32 | 19°♂55'28 | 32.59994 AU |
| | | | | opposition | -209 Jun 16 j 10:59 | 19°♂51'54 | 0°15'25 |
| conjunction | -216 Dec 01 j 19:25 | 7°♂04'11 | 4°01'08 | direct | -209 Sep 05 j 00:36 | 18°♂36'10 | |
| minimum elong | -216 Dec 01 j 19:34 | 7°♂04'12 | 4°01'07 | desc. node | -209 Nov 22 j 06:42 | 20°♂00'08 | |
| max. Earth dist. | -216 Dec 03 j 18:20 | 7°♂08'23 | 33.15065 AU | evening set | -209 Nov 30 j 17:59 | 20°♂16'31 | |
| morning rise | -216 Dec 16 j 11:55 | 7°♂35'26 | | | | | |
| retrograde | -215 Mar 15 j 07:01 | 9°♂24'31 | | conjunction | -209 Dec 15 j 22:39 | 20°♂47'04 | -0°02'13 |
| min. Earth dist. | -215 Jun 01 j 14:52 | 8°♂09'24 | 31.25854 AU | minimum elong | -209 Dec 15 j 22:40 | 20°♂47'04 | 0°02'13 |
| opposition | -215 Jun 03 j 15:48 | 8°♂06'18 | 3°57'33 | behind sun begin | -209 Dec 15 j 16:19 | 20°♂46'34 | |
| direct | -215 Aug 23 j 01:04 | 6°♂48'01 | | behind sun end | -209 Dec 16 j 05:01 | 20°♂47'35 | |
| evening set | -215 Nov 19 j 05:28 | 8°♂35'14 | | max. Earth dist. | -209 Dec 18 j 09:07 | 20°♂52'01 | 34.71820 AU |
| | | | | morning rise | -209 Dec 31 j 04:17 | 21°♂17'42 | |
| conjunction | -215 Dec 04 j 01:03 | 9°♂06'31 | 3°25'31 | retrograde | -208 Mar 28 j 09:05 | 22°♂59'37 | |
| minimum elong | -215 Dec 04 j 01:11 | 9°♂06'31 | 3°25'32 | min. Earth dist. | -208 Jun 15 j 02:50 | 21°♂47'31 | 32.83503 AU |
| max. Earth dist. | -215 Dec 06 j 02:17 | 9°♂10'52 | 33.36115 AU | opposition | -208 Jun 17 j 15:32 | 21°♂43'50 | -0°20'05 |
| morning rise | -215 Dec 18 j 21:14 | 9°♂37'50 | | direct | -208 Sep 06 j 05:29 | 20°♂28'28 | |
| retrograde | -214 Mar 17 j 14:43 | 11°♂25'43 | | evening set | -208 Dec 01 j 19:41 | 22°♂07'51 | |
| min. Earth dist. | -214 Jun 03 j 22:11 | 10°♂11'03 | 31.47079 AU | | | | |
| opposition | -214 Jun 06 j 00:51 | 10°♂07'52 | 3°19'41 | conjunction | -208 Dec 17 j 00:02 | 22°♂38'08 | -0°35'23 |
| direct | -214 Aug 25 j 08:45 | 8°♂50'02 | | minimum elong | -208 Dec 17 j 00:01 | 22°♂38'08 | 0°35'24 |
| evening set | -214 Nov 21 j 07:39 | 10°♂35'58 | | max. Earth dist. | -208 Dec 19 j 12:14 | 22°♂43'11 | 34.95455 AU |
| | | | | morning rise | -207 Jan 01 j 05:29 | 23°♂08'30 | |
| conjunction | -214 Dec 06 j 06:16 | 11°♂07'14 | 2°50'07 | retrograde | -207 Mar 30 j 10:32 | 24°♂49'36 | |
| minimum elong | -214 Dec 06 j 06:22 | 11°♂07'14 | 2°50'06 | min. Earth dist. | -207 Jun 17 j 06:17 | 23°♂37'48 | 33.07307 AU |
| max. Earth dist. | -214 Dec 08 j 09:51 | 11°♂11'46 | 33.57753 AU | opposition | -207 Jun 19 j 19:42 | 23°♂34'05 | -0°55'03 |
| morning rise | -214 Dec 21 j 05:19 | 11°♂38'33 | | direct | -207 Sep 08 j 08:18 | 22°♂19'04 | |
| retrograde | -213 Mar 19 j 19:21 | 13°♂25'18 | | evening set | -207 Dec 03 j 21:01 | 23°♂57'31 | |
| min. Earth dist. | -213 Jun 06 j 04:14 | 12°♂11'07 | 31.68855 AU | | | | |
| opposition | -213 Jun 08 j 08:54 | 12°♂07'50 | 2°42'04 | conjunction | -207 Dec 19 j 00:44 | 24°♂27'30 | -1°08'06 |
| direct | -213 Aug 27 j 18:07 | 10°♂50'27 | | minimum elong | -207 Dec 19 j 00:42 | 24°♂27'30 | 1°08'06 |
| evening set | -213 Nov 23 j 09:55 | 12°♂35'09 | | max. Earth dist. | -207 Dec 21 j 14:34 | 24°♂32'39 | 35.19386 AU |
| | | | | morning rise | -206 Jan 03 j 05:24 | 24°♂57'35 | |
| conjunction | -213 Dec 08 j 10:42 | 13°♂06'22 | 2°14'58 | retrograde | -206 Apr 01 j 11:11 | 26°♂37'53 | |
| minimum elong | -213 Dec 08 j 10:47 | 13°♂06'23 | 2°14'58 | min. Earth dist. | -206 Jun 19 j 07:44 | 25°♂26'28 | 33.31428 AU |
| max. Earth dist. | -213 Dec 10 j 15:20 | 13°♂10'57 | 33.79874 AU | opposition | -206 Jun 21 j 23:01 | 25°♂22'40 | -1°29'27 |
| morning rise | -213 Dec 23 j 12:18 | 13°♂37'39 | | direct | -206 Sep 10 j 13:15 | 24°♂07'59 | |
| retrograde | -212 Mar 21 j 01:10 | 15°♂23'20 | | evening set | -206 Dec 05 j 22:25 | 25°♂45'36 | |
| min. Earth dist. | -212 Jun 07 j 09:41 | 14°♂09'37 | 31.91115 AU | | | | |
| opposition | -212 Jun 09 j 16:26 | 14°♂06'13 | 2°04'47 | conjunction | -206 Dec 21 j 00:48 | 26°♂15'14 | -1°40'18 |
| direct | -212 Aug 29 j 01:55 | 12°♂49'17 | | minimum elong | -206 Dec 21 j 00:44 | 26°♂15'14 | 1°40'19 |
| evening set | -212 Nov 24 j 11:57 | 14°♂32'49 | | max. Earth dist. | -206 Dec 23 j 15:33 | 26°♂20'25 | 35.43631 AU |
| | | | | morning rise | -205 Jan 05 j 04:29 | 26°♂44'59 | |
| conjunction | -212 Dec 09 j 14:36 | 15°♂03'57 | 1°40'07 | retrograde | -205 Apr 03 j 13:34 | 28°♂24'33 | |
| minimum elong | -212 Dec 09 j 14:40 | 15°♂03'57 | 1°40'06 | min. Earth dist. | -205 Jun 21 j 08:39 | 27°♂13'30 | 33.55917 AU |
| max. Earth dist. | -212 Dec 11 j 21:53 | 15°♂08'44 | 34.02408 AU | opposition | -205 Jun 24 j 01:34 | 27°♂09'37 | -2°03'15 |
| morning rise | -212 Dec 24 j 17:50 | 15°♂35'08 | | direct | -205 Sep 12 j 14:43 | 25°♂55'18 | |
| retrograde | -211 Mar 23 j 03:52 | 17°♂19'48 | | evening set | -205 Dec 07 j 23:30 | 27°♂32'07 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 15

Attention, astronomical year style is used: The year -205 in astronomical counting style is the year 206 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|---|-------------|------------------|---------------------|---------------------------------|-------------|
| conjunction | -205 Dec 23 j 00:26 | 28° $\mathring{\text{A}}$ 01'24 | -2°11'57 | max. Earth dist. | -198 Jan 04 j 09:20 | 8° $\mathring{\text{B}}$ 15'43 | 37.21003 AU |
| minimum elong | -205 Dec 23 j 00:22 | 28° $\mathring{\text{A}}$ 01'24 | 2°11'57 | morning rise | -198 Jan 15 j 19:29 | 8° $\mathring{\text{B}}$ 36'58 | |
| max. Earth dist. | -205 Dec 25 j 17:29 | 28° $\mathring{\text{A}}$ 06'43 | 35.68231 AU | retrograde | -198 Apr 15 j 00:14 | 10° $\mathring{\text{B}}$ 12'54 | |
| morning rise | -204 Jan 07 j 02:23 | 28° $\mathring{\text{A}}$ 30'47 | | min. Earth dist. | -198 Jul 03 j 03:39 | 9° $\mathring{\text{B}}$ 04'24 | 35.34725 AU |
| | -204 Mar 09 j 09:00 | 0° $\mathring{\text{B}}$ | | opposition | -198 Jul 06 j 03:59 | 9° $\mathring{\text{B}}$ 00'15 | -5°41'48 |
| retrograde | -204 Apr 04 j 12:06 | 0° $\mathring{\text{B}}$ 09'41 | | direct | -198 Sep 24 j 18:07 | 7° $\mathring{\text{B}}$ 48'33 | |
| | -204 May 01 j 01:45 | 30° $\mathring{\text{R}}$ $\mathring{\text{A}}$ | | evening set | -198 Dec 20 j 03:58 | 9° $\mathring{\text{B}}$ 21'18 | |
| min. Earth dist. | -204 Jun 22 j 09:49 | 28° $\mathring{\text{A}}$ 58'58 | 33.80755 AU | | | | |
| opposition | -204 Jun 25 j 03:36 | 28° $\mathring{\text{A}}$ 55'04 | -2°36'27 | conjunction | -197 Jan 03 j 07:10 | 9° $\mathring{\text{B}}$ 47'28 | -5°37'00 |
| direct | -204 Sep 13 j 18:09 | 27° $\mathring{\text{A}}$ 41'06 | | minimum elong | -197 Jan 03 j 07:00 | 9° $\mathring{\text{B}}$ 47'27 | 5°37'00 |
| evening set | -204 Dec 09 j 00:28 | 29° $\mathring{\text{A}}$ 17'12 | | max. Earth dist. | -197 Jan 06 j 07:01 | 9° $\mathring{\text{B}}$ 53'02 | 37.46707 AU |
| | | | | morning rise | -197 Jan 17 j 11:37 | 10° $\mathring{\text{B}}$ 13'44 | |
| conjunction | -204 Dec 23 j 23:14 | 29° $\mathring{\text{A}}$ 46'06 | -2°43'03 | retrograde | -197 Apr 16 j 19:13 | 11° $\mathring{\text{B}}$ 49'17 | |
| minimum elong | -204 Dec 23 j 23:09 | 29° $\mathring{\text{A}}$ 46'05 | 2°43'04 | min. Earth dist. | -197 Jul 05 j 02:05 | 10° $\mathring{\text{B}}$ 41'04 | 35.60546 AU |
| max. Earth dist. | -204 Dec 26 j 16:43 | 29° $\mathring{\text{A}}$ 51'25 | 35.93163 AU | opposition | -197 Jul 08 j 02:03 | 10° $\mathring{\text{B}}$ 36'57 | -6°10'20 |
| | -204 Dec 31 j 02:47 | 0° $\mathring{\text{B}}$ | | direct | -197 Sep 26 j 17:57 | 9° $\mathring{\text{B}}$ 25'35 | |
| morning rise | -203 Jan 07 j 23:21 | 0° $\mathring{\text{B}}$ 15'06 | | evening set | -197 Dec 22 j 04:17 | 10° $\mathring{\text{B}}$ 57'55 | |
| retrograde | -203 Apr 06 j 11:02 | 1° $\mathring{\text{B}}$ 53'23 | | | | | |
| min. Earth dist. | -203 Jun 24 j 08:52 | 0° $\mathring{\text{B}}$ 43'06 | 34.05938 AU | conjunction | -196 Jan 05 j 02:56 | 11° $\mathring{\text{B}}$ 23'33 | -6°03'50 |
| opposition | -203 Jun 27 j 05:03 | 0° $\mathring{\text{B}}$ 39'04 | -3°09'00 | minimum elong | -196 Jan 05 j 02:46 | 11° $\mathring{\text{B}}$ 23'32 | 6°03'49 |
| | -203 Jul 26 j 03:58 | 30° $\mathring{\text{R}}$ $\mathring{\text{A}}$ | | max. Earth dist. | -196 Jan 08 j 02:03 | 11° $\mathring{\text{B}}$ 29'03 | 37.72316 AU |
| direct | -203 Sep 15 j 20:08 | 29° $\mathring{\text{A}}$ 25'30 | | morning rise | -196 Jan 19 j 03:05 | 11° $\mathring{\text{B}}$ 49'18 | |
| | -203 Nov 04 j 07:03 | 0° $\mathring{\text{B}}$ | | retrograde | -196 Apr 17 j 14:39 | 13° $\mathring{\text{B}}$ 24'30 | |
| evening set | -203 Dec 11 j 01:16 | 1° $\mathring{\text{B}}$ 00'54 | | min. Earth dist. | -196 Jul 05 j 22:26 | 12° $\mathring{\text{B}}$ 16'38 | 35.86283 AU |
| | | | | opposition | -196 Jul 08 j 23:44 | 12° $\mathring{\text{B}}$ 12'27 | -6°38'10 |
| conjunction | -203 Dec 25 j 21:44 | 1° $\mathring{\text{B}}$ 29'24 | -3°13'34 | direct | -196 Sep 27 j 16:47 | 11° $\mathring{\text{B}}$ 01'24 | |
| minimum elong | -203 Dec 25 j 21:38 | 1° $\mathring{\text{B}}$ 29'24 | 3°13'33 | evening set | -196 Dec 23 j 04:08 | 12° $\mathring{\text{B}}$ 33'20 | |
| max. Earth dist. | -203 Dec 28 j 17:36 | 1° $\mathring{\text{B}}$ 34'52 | 36.18397 AU | | | | |
| morning rise | -202 Jan 09 j 19:25 | 1° $\mathring{\text{B}}$ 58'00 | | conjunction | -195 Jan 05 j 22:09 | 12° $\mathring{\text{B}}$ 58'26 | -6°30'02 |
| retrograde | -202 Apr 08 j 07:32 | 3° $\mathring{\text{B}}$ 35'43 | | minimum elong | -195 Jan 05 j 21:57 | 12° $\mathring{\text{B}}$ 58'26 | 6°30'02 |
| min. Earth dist. | -202 Jun 26 j 09:32 | 2° $\mathring{\text{B}}$ 25'47 | 34.31409 AU | max. Earth dist. | -195 Jan 08 j 22:43 | 13° $\mathring{\text{B}}$ 04'00 | 37.97828 AU |
| opposition | -202 Jun 29 j 05:57 | 2° $\mathring{\text{B}}$ 21'45 | -3°40'54 | morning rise | -195 Jan 19 j 17:32 | 13° $\mathring{\text{B}}$ 23'39 | |
| direct | -202 Sep 17 j 22:54 | 1° $\mathring{\text{B}}$ 08'33 | | retrograde | -195 Apr 19 j 08:10 | 14° $\mathring{\text{B}}$ 58'33 | |
| evening set | -202 Dec 13 j 01:58 | 2° $\mathring{\text{B}}$ 43'20 | | min. Earth dist. | -195 Jul 07 j 20:18 | 13° $\mathring{\text{B}}$ 50'53 | 36.11945 AU |
| | | | | opposition | -195 Jul 10 j 21:01 | 13° $\mathring{\text{B}}$ 46'45 | -7°05'20 |
| conjunction | -202 Dec 27 j 19:40 | 3° $\mathring{\text{B}}$ 11'24 | -3°43'28 | direct | -195 Sep 29 j 15:45 | 12° $\mathring{\text{B}}$ 36'00 | |
| minimum elong | -202 Dec 27 j 19:33 | 3° $\mathring{\text{B}}$ 11'24 | 3°43'29 | evening set | -195 Dec 25 j 03:57 | 14° $\mathring{\text{B}}$ 07'33 | |
| max. Earth dist. | -202 Dec 30 j 15:53 | 3° $\mathring{\text{B}}$ 16'52 | 36.43879 AU | | | | |
| morning rise | -201 Jan 11 j 14:39 | 3° $\mathring{\text{B}}$ 39'35 | | conjunction | -194 Jan 07 j 16:58 | 14° $\mathring{\text{B}}$ 32'07 | -6°55'36 |
| retrograde | -201 Apr 10 j 05:20 | 5° $\mathring{\text{B}}$ 16'47 | | minimum elong | -194 Jan 07 j 16:47 | 14° $\mathring{\text{B}}$ 32'06 | 6°55'36 |
| min. Earth dist. | -201 Jun 28 j 07:43 | 4° $\mathring{\text{B}}$ 07'17 | 34.57096 AU | max. Earth dist. | -194 Jan 10 j 17:31 | 14° $\mathring{\text{B}}$ 37'38 | 38.23291 AU |
| opposition | -201 Jul 01 j 06:09 | 4° $\mathring{\text{B}}$ 03'09 | -4°12'08 | morning rise | -194 Jan 21 j 07:18 | 14° $\mathring{\text{B}}$ 56'47 | |
| direct | -201 Sep 19 j 23:30 | 2° $\mathring{\text{B}}$ 50'21 | | retrograde | -194 Apr 21 j 02:03 | 16° $\mathring{\text{B}}$ 31'22 | |
| evening set | -201 Dec 15 j 02:38 | 4° $\mathring{\text{B}}$ 24'33 | | min. Earth dist. | -194 Jul 09 j 15:22 | 15° $\mathring{\text{B}}$ 24'02 | 36.37583 AU |
| | | | | opposition | -194 Jul 12 j 17:31 | 15° $\mathring{\text{B}}$ 19'50 | -7°31'49 |
| conjunction | -201 Dec 29 j 17:07 | 4° $\mathring{\text{B}}$ 52'10 | -4°12'47 | direct | -194 Oct 01 j 13:10 | 14° $\mathring{\text{B}}$ 09'23 | |
| minimum elong | -201 Dec 29 j 16:59 | 4° $\mathring{\text{B}}$ 52'10 | 4°12'47 | evening set | -194 Dec 27 j 03:35 | 15° $\mathring{\text{B}}$ 40'35 | |
| max. Earth dist. | -200 Jan 01 j 14:38 | 4° $\mathring{\text{B}}$ 57'42 | 36.69514 AU | | | | |
| morning rise | -200 Jan 13 j 09:02 | 5° $\mathring{\text{B}}$ 19'54 | | conjunction | -193 Jan 09 j 11:15 | 16° $\mathring{\text{B}}$ 04'35 | -7°20'32 |
| retrograde | -200 Apr 11 j 03:11 | 6° $\mathring{\text{B}}$ 56'39 | | minimum elong | -193 Jan 09 j 11:03 | 16° $\mathring{\text{B}}$ 04'35 | 7°20'33 |
| min. Earth dist. | -200 Jun 29 j 07:23 | 5° $\mathring{\text{B}}$ 47'28 | 34.82931 AU | max. Earth dist. | -193 Jan 12 j 12:28 | 16° $\mathring{\text{B}}$ 10'08 | 38.48736 AU |
| opposition | -200 Jul 02 j 05:55 | 5° $\mathring{\text{B}}$ 43'21 | -4°42'42 | morning rise | -193 Jan 22 j 20:26 | 16° $\mathring{\text{B}}$ 28'42 | |
| direct | -200 Sep 20 j 22:24 | 4° $\mathring{\text{B}}$ 30'56 | | retrograde | -193 Apr 22 j 21:21 | 18° $\mathring{\text{B}}$ 03'03 | |
| evening set | -200 Dec 16 j 03:09 | 6° $\mathring{\text{B}}$ 04'37 | | min. Earth dist. | -193 Jul 11 j 11:31 | 16° $\mathring{\text{B}}$ 55'56 | 36.63246 AU |
| | | | | opposition | -193 Jul 14 j 13:41 | 16° $\mathring{\text{B}}$ 51'46 | -7°57'36 |
| conjunction | -200 Dec 30 j 14:16 | 6° $\mathring{\text{B}}$ 31'46 | -4°41'28 | direct | -193 Oct 03 j 08:16 | 15° $\mathring{\text{B}}$ 41'37 | |
| minimum elong | -200 Dec 30 j 14:07 | 6° $\mathring{\text{B}}$ 31'45 | 4°41'29 | evening set | -193 Dec 29 j 02:57 | 17° $\mathring{\text{B}}$ 12'31 | |
| max. Earth dist. | -199 Jan 02 j 12:45 | 6° $\mathring{\text{B}}$ 37'19 | 36.95255 AU | | | | |
| morning rise | -199 Jan 14 j 02:35 | 6° $\mathring{\text{B}}$ 59'01 | | conjunction | -192 Jan 11 j 05:12 | 17° $\mathring{\text{B}}$ 35'57 | -7°44'50 |
| retrograde | -199 Apr 13 j 01:05 | 8° $\mathring{\text{B}}$ 35'21 | | minimum elong | -192 Jan 11 j 05:00 | 17° $\mathring{\text{B}}$ 35'56 | 7°44'50 |
| min. Earth dist. | -199 Jul 01 j 05:37 | 7° $\mathring{\text{B}}$ 26'31 | 35.08826 AU | max. Earth dist. | -192 Jan 14 j 07:30 | 17° $\mathring{\text{B}}$ 41'32 | 38.74218 AU |
| opposition | -199 Jul 04 j 05:09 | 7° $\mathring{\text{B}}$ 22'23 | -5°12'35 | morning rise | -192 Jan 24 j 08:37 | 17° $\mathring{\text{B}}$ 59'29 | |
| direct | -199 Sep 22 j 21:23 | 6° $\mathring{\text{B}}$ 10'20 | | retrograde | -192 Apr 23 j 16:15 | 19° $\mathring{\text{B}}$ 33'36 | |
| evening set | -199 Dec 18 j 03:37 | 7° $\mathring{\text{B}}$ 43'32 | | min. Earth dist. | -192 Jul 12 j 06:24 | 18° $\mathring{\text{B}}$ 26'47 | 36.88941 AU |
| | | | | opposition | -192 Jul 15 j 09:13 | 18° $\mathring{\text{B}}$ 22'35 | -8°22'41 |
| conjunction | -198 Jan 01 j 10:47 | 8° $\mathring{\text{B}}$ 10'11 | -5°09'33 | direct | -192 Oct 04 j 02:50 | 17° $\mathring{\text{B}}$ 12'44 | |
| minimum elong | -198 Jan 01 j 10:37 | 8° $\mathring{\text{B}}$ 10'11 | 5°09'33 | evening set | -192 Dec 30 j 02:22 | 18° $\mathring{\text{B}}$ 43'23 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 16

Attention, astronomical year style is used: The year -191 in astronomical counting style is the year 192 BCE in historical counting style.

| | | | | | |
|------------------|---------------------|------------------------------------|------------------|---------------------|------------------------------------|
| conjunction | -191 Jan 11 j 22:39 | 19° 3 06'15 -8°08'28 | direct | -185 Oct 15 j 08:50 | 27° 3 24'36 |
| minimum elong | -191 Jan 11 j 22:26 | 19° 3 06'14 8°08'28 | evening set | -184 Jan 11 j 18:47 | 28° 3 54'17 |
| max. Earth dist. | -191 Jan 15 j 00:47 | 19° 3 11'46 38.99741 AU | | | |
| morning rise | -191 Jan 24 j 20:24 | 19° 3 29'12 | conjunction | -184 Jan 22 j 15:46 | 29° 3 12'50 -10°36'29 |
| retrograde | -191 Apr 25 j 11:37 | 21° 3 03'07 | minimum elong | -184 Jan 22 j 15:34 | 29° 3 12'50 10°36'30 |
| min. Earth dist. | -191 Jul 14 j 00:28 | 19° 3 56'37 37.14698 AU | max. Earth dist. | -184 Jan 25 j 18:50 | 29° 3 18'12 40.76379 AU |
| opposition | -191 Jul 17 j 04:27 | 19° 3 52'24 -8°47'04 | morning rise | -184 Feb 02 j 13:53 | 29° 3 31'29 |
| direct | -191 Oct 05 j 20:13 | 18° 3 42'51 | | -184 Feb 20 j 01:48 | 0° ≈ |
| evening set | -190 Jan 01 j 01:22 | 20° 3 13'17 | retrograde | -184 May 05 j 05:00 | 1° ≈ 04'49 |
| | | | min. Earth dist. | -184 Jul 24 j 03:17 | 0° ≈ 00'04 38.92241 AU |
| conjunction | -190 Jan 13 j 15:46 | 20° 3 35'33 -8°31'28 | | -184 Jul 24 j 04:36 | 30° R 3 |
| minimum elong | -190 Jan 13 j 15:34 | 20° 3 35'32 8°31'29 | opposition | -184 Jul 27 j 07:24 | 29° 3 55'57 -11°19'07 |
| max. Earth dist. | -190 Jan 16 j 19:33 | 20° 3 41'09 39.25302 AU | direct | -184 Oct 16 j 00:39 | 28° 3 48'26 |
| morning rise | -190 Jan 26 j 07:22 | 20° 3 57'55 | | -183 Jan 01 j 18:35 | 0° ≈ |
| retrograde | -190 Apr 27 j 03:18 | 22° 3 31'41 | evening set | -183 Jan 12 j 17:21 | 0° ≈ 18'03 |
| min. Earth dist. | -190 Jul 15 j 19:39 | 21° 3 25'26 37.40464 AU | | | |
| opposition | -190 Jul 18 j 23:13 | 21° 3 21'14 -9°10'46 | conjunction | -183 Jan 23 j 06:44 | 0° ≈ 35'58 -10°55'16 |
| direct | -190 Oct 07 j 16:51 | 20° 3 12'00 | minimum elong | -183 Jan 23 j 06:31 | 0° ≈ 35'57 10°55'16 |
| evening set | -189 Jan 03 j 00:33 | 21° 3 42'15 | max. Earth dist. | -183 Jan 26 j 10:33 | 0° ≈ 41'20 41.00667 AU |
| | | | morning rise | -183 Feb 02 j 21:04 | 0° ≈ 53'56 |
| conjunction | -189 Jan 15 j 08:34 | 22° 3 03'55 -8°53'50 | retrograde | -183 May 06 j 17:44 | 2° ≈ 27'15 |
| minimum elong | -189 Jan 15 j 08:21 | 22° 3 03'54 8°53'50 | min. Earth dist. | -183 Jul 25 j 20:41 | 1° ≈ 22'38 39.16604 AU |
| max. Earth dist. | -189 Jan 18 j 11:43 | 22° 3 09'27 39.50856 AU | opposition | -183 Jul 28 j 23:33 | 1° ≈ 18'36 -11°38'20 |
| morning rise | -189 Jan 27 j 17:53 | 22° 3 25'41 | direct | -183 Oct 17 j 19:00 | 0° ≈ 11'18 |
| retrograde | -189 Apr 28 j 19:35 | 23° 3 59'19 | evening set | -182 Jan 14 j 15:50 | 1° ≈ 40'53 |
| min. Earth dist. | -189 Jul 17 j 12:30 | 22° 3 53'25 37.66203 AU | | | |
| opposition | -189 Jul 20 j 17:21 | 22° 3 49'10 -9°33'46 | conjunction | -182 Jan 24 j 21:14 | 1° ≈ 58'08 -11°13'29 |
| direct | -189 Oct 09 j 12:03 | 21° 3 40'15 | minimum elong | -182 Jan 24 j 21:02 | 1° ≈ 58'07 11°13'30 |
| evening set | -188 Jan 04 j 23:29 | 23° 3 10'21 | max. Earth dist. | -182 Jan 28 j 00:16 | 2° ≈ 03'25 41.24691 AU |
| | | | morning rise | -182 Feb 04 j 03:30 | 2° ≈ 15'26 |
| conjunction | -188 Jan 17 j 01:00 | 23° 3 31'25 -9°15'34 | retrograde | -182 May 08 j 06:41 | 3° ≈ 48'45 |
| minimum elong | -188 Jan 17 j 00:48 | 23° 3 31'24 9°15'35 | min. Earth dist. | -182 Jul 27 j 11:32 | 2° ≈ 44'22 39.40720 AU |
| max. Earth dist. | -188 Jan 20 j 05:12 | 23° 3 36'59 39.76341 AU | opposition | -182 Jul 30 j 15:08 | 2° ≈ 40'17 -11°56'56 |
| morning rise | -188 Jan 29 j 03:48 | 23° 3 52'34 | direct | -182 Oct 19 j 12:04 | 1° ≈ 33'12 |
| retrograde | -188 Apr 29 j 11:00 | 25° 3 26'07 | evening set | -181 Jan 16 j 14:16 | 3° ≈ 02'47 |
| min. Earth dist. | -188 Jul 18 j 07:23 | 24° 3 20'25 37.91854 AU | | | |
| opposition | -188 Jul 21 j 11:23 | 24° 3 16'14 -9°56'07 | conjunction | -181 Jan 26 j 11:26 | 3° ≈ 19'21 -11°31'07 |
| direct | -188 Oct 10 j 06:52 | 23° 3 07'38 | minimum elong | -181 Jan 26 j 11:14 | 3° ≈ 19'20 11°31'06 |
| evening set | -187 Jan 05 j 22:16 | 24° 3 37'36 | max. Earth dist. | -181 Jan 29 j 14:34 | 3° ≈ 24'37 41.48485 AU |
| | | | morning rise | -181 Feb 05 j 09:33 | 3° ≈ 35'59 |
| conjunction | -187 Jan 17 j 17:04 | 24° 3 58'03 -9°36'42 | retrograde | -181 May 09 j 20:42 | 5° ≈ 09'20 |
| minimum elong | -187 Jan 17 j 16:51 | 24° 3 58'02 9°36'41 | min. Earth dist. | -181 Jul 29 j 03:30 | 4° ≈ 05'05 39.64653 AU |
| max. Earth dist. | -187 Jan 20 j 21:18 | 25° 3 03'36 40.01710 AU | opposition | -181 Aug 01 j 06:20 | 4° ≈ 01'04 -12°14'56 |
| morning rise | -187 Jan 29 j 12:56 | 25° 3 18'35 | direct | -181 Oct 21 j 03:41 | 2° ≈ 54'12 |
| retrograde | -187 May 01 j 02:28 | 26° 3 52'04 | evening set | -180 Jan 18 j 12:35 | 4° ≈ 23'47 |
| min. Earth dist. | -187 Jul 20 j 00:13 | 25° 3 46'41 38.17341 AU | | | |
| opposition | -187 Jul 23 j 04:56 | 25° 3 42'28 -10°17'49 | conjunction | -180 Jan 28 j 01:22 | 4° ≈ 39'41 -11°48'10 |
| direct | -187 Oct 12 j 01:15 | 24° 3 34'10 | minimum elong | -180 Jan 28 j 01:10 | 4° ≈ 39'40 11°48'11 |
| evening set | -186 Jan 07 j 21:12 | 26° 3 04'01 | max. Earth dist. | -180 Jan 31 j 05:04 | 4° ≈ 44'58 41.72130 AU |
| | | | morning rise | -180 Feb 06 j 14:49 | 4° ≈ 55'38 |
| conjunction | -186 Jan 19 j 08:54 | 26° 3 23'50 -9°57'13 | retrograde | -180 May 10 j 10:27 | 6° ≈ 29'02 |
| minimum elong | -186 Jan 19 j 08:41 | 26° 3 23'49 9°57'13 | min. Earth dist. | -180 Jul 29 j 18:07 | 5° ≈ 25'00 39.88435 AU |
| max. Earth dist. | -186 Jan 22 j 12:42 | 26° 3 29'19 40.26873 AU | opposition | -180 Aug 01 j 21:11 | 5° ≈ 20'59 -12°32'19 |
| morning rise | -186 Jan 30 j 21:53 | 26° 3 43'46 | direct | -180 Oct 21 j 18:51 | 4° ≈ 14'21 |
| retrograde | -186 May 02 j 20:58 | 28° 3 17'11 | evening set | -179 Jan 19 j 10:49 | 5° ≈ 43'59 |
| min. Earth dist. | -186 Jul 21 j 17:50 | 27° 3 12'01 38.42612 AU | | | |
| opposition | -186 Jul 24 j 22:08 | 27° 3 07'51 -10°38'52 | conjunction | -179 Jan 28 j 14:44 | 5° ≈ 59'11 -12°04'39 |
| direct | -186 Oct 13 j 16:13 | 25° 3 59'50 | minimum elong | -179 Jan 28 j 14:32 | 5° ≈ 59'11 12°04'39 |
| evening set | -185 Jan 09 j 19:59 | 27° 3 29'35 | max. Earth dist. | -179 Jan 31 j 17:40 | 6° ≈ 04'23 41.95642 AU |
| | | | morning rise | -179 Feb 06 j 19:30 | 6° ≈ 14'27 |
| conjunction | -185 Jan 21 j 00:36 | 27° 3 48'47 -10°17'08 | retrograde | -179 May 12 j 02:52 | 7° ≈ 47'57 |
| minimum elong | -185 Jan 21 j 00:24 | 27° 3 48'46 10°17'08 | min. Earth dist. | -179 Jul 31 j 08:15 | 6° ≈ 44'08 40.12106 AU |
| max. Earth dist. | -185 Jan 24 j 04:56 | 27° 3 54'16 40.51783 AU | opposition | -179 Aug 03 j 11:50 | 6° ≈ 40'07 -12°49'05 |
| morning rise | -185 Feb 01 j 06:10 | 28° 3 08'04 | direct | -179 Oct 23 j 06:33 | 5° ≈ 33'43 |
| retrograde | -185 May 04 j 12:49 | 29° 3 41'27 | evening set | -178 Jan 21 j 09:01 | 7° ≈ 03'27 |
| min. Earth dist. | -185 Jul 23 j 11:22 | 28° 3 36'28 38.67581 AU | | | |
| opposition | -185 Jul 26 j 14:57 | 28° 3 32'22 -10°59'18 | conjunction | -178 Jan 30 j 04:06 | 7° ≈ 17'58 -12°20'34 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 17

Attention, astronomical year style is used: The year -178 in astronomical counting style is the year 179 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|---------------------|-------------|------------------|---------------------|---------------------|-------------|
| minimum elong | -178 Jan 30 j 03:53 | 7° \approx 17'57 | 12°20'34 | min. Earth dist. | -172 Aug 09 j 08:23 | 15° \approx 40'33 | 41.71782 AU |
| max. Earth dist. | -178 Feb 02 j 08:08 | 7° \approx 23'12 | 42.19041 AU | opposition | -172 Aug 12 j 09:12 | 15° \approx 36'46 | -14°30'38 |
| morning rise | -178 Feb 07 j 23:45 | 7° \approx 32'31 | | | -172 Sep 12 j 16:20 | 15° \approx | |
| retrograde | -178 May 13 j 15:45 | 9° \approx 06'09 | | direct | -172 Nov 01 j 02:42 | 14° \approx 32'02 | |
| min. Earth dist. | -178 Aug 01 j 23:22 | 8° \approx 02'30 | 40.35642 AU | | -172 Dec 19 j 04:47 | 15° \approx | |
| opposition | -178 Aug 05 j 01:58 | 7° \approx 58'33 | -13°05'16 | evening set | -171 Feb 02 j 01:13 | 16° \approx 03'23 | |
| direct | -178 Oct 24 j 20:59 | 6° \approx 52'24 | | | | | |
| evening set | -177 Jan 23 j 07:25 | 8° \approx 22'15 | | conjunction | -171 Feb 07 j 18:32 | 16° \approx 12'31 | -13°57'09 |
| | | | | minimum elong | -171 Feb 07 j 18:23 | 16° \approx 12'30 | 13°57'10 |
| conjunction | -177 Jan 31 j 17:06 | 8° \approx 36'04 | -12°35'56 | max. Earth dist. | -171 Feb 10 j 19:37 | 16° \approx 17'23 | 43.76333 AU |
| minimum elong | -177 Jan 31 j 16:55 | 8° \approx 36'03 | 12°35'56 | morning rise | -171 Feb 13 j 12:03 | 16° \approx 21'39 | |
| max. Earth dist. | -177 Feb 03 j 20:13 | 8° \approx 41'13 | 42.42307 AU | retrograde | -171 May 22 j 05:55 | 17° \approx 57'04 | |
| morning rise | -177 Feb 09 j 03:22 | 8° \approx 49'54 | | min. Earth dist. | -171 Aug 10 j 22:33 | 16° \approx 54'42 | 41.93195 AU |
| retrograde | -177 May 15 j 03:27 | 10° \approx 23'42 | | opposition | -171 Aug 13 j 21:34 | 16° \approx 51'01 | -14°43'04 |
| min. Earth dist. | -177 Aug 03 j 12:18 | 9° \approx 20'20 | 40.59026 AU | direct | -171 Nov 02 j 16:58 | 15° \approx 46'27 | |
| opposition | -177 Aug 06 j 15:50 | 9° \approx 16'20 | -13°20'51 | evening set | -170 Feb 04 j 01:49 | 17° \approx 18'11 | |
| direct | -177 Oct 26 j 11:44 | 8° \approx 10'26 | | | | | |
| evening set | -176 Jan 25 j 05:37 | 9° \approx 40'28 | | conjunction | -170 Feb 09 j 06:03 | 17° \approx 26'25 | -14°09'00 |
| | | | | minimum elong | -170 Feb 09 j 05:54 | 17° \approx 26'24 | 14°08'59 |
| conjunction | -176 Feb 02 j 05:44 | 9° \approx 53'33 | -12°50'44 | max. Earth dist. | -170 Feb 12 j 06:19 | 17° \approx 31'12 | 43.97393 AU |
| minimum elong | -176 Feb 02 j 05:32 | 9° \approx 53'32 | 12°50'45 | morning rise | -170 Feb 14 j 10:21 | 17° \approx 34'39 | |
| max. Earth dist. | -176 Feb 05 j 09:20 | 9° \approx 58'43 | 42.65389 AU | retrograde | -170 May 23 j 14:14 | 19° \approx 10'27 | |
| morning rise | -176 Feb 10 j 06:25 | 10° \approx 06'40 | | min. Earth dist. | -170 Aug 12 j 10:05 | 18° \approx 08'14 | 42.14253 AU |
| retrograde | -176 May 15 j 14:55 | 11° \approx 40'40 | | opposition | -170 Aug 15 j 09:20 | 18° \approx 04'33 | -14°55'00 |
| min. Earth dist. | -176 Aug 04 j 03:09 | 10° \approx 37'28 | 40.82209 AU | direct | -170 Nov 04 j 07:51 | 17° \approx 00'09 | |
| opposition | -176 Aug 07 j 05:32 | 10° \approx 33'33 | -13°35'53 | evening set | -169 Feb 06 j 03:12 | 18° \approx 32'21 | |
| direct | -176 Oct 27 j 02:54 | 9° \approx 27'54 | | | | | |
| evening set | -175 Jan 26 j 04:12 | 10° \approx 58'08 | | conjunction | -169 Feb 10 j 17:11 | 18° \approx 39'36 | -14°20'22 |
| | | | | minimum elong | -169 Feb 10 j 17:02 | 18° \approx 39'35 | 14°20'23 |
| conjunction | -175 Feb 02 j 18:21 | 11° \approx 10'29 | -13°05'01 | max. Earth dist. | -169 Feb 13 j 16:43 | 18° \approx 44'19 | 44.18122 AU |
| minimum elong | -175 Feb 02 j 18:11 | 11° \approx 10'28 | 13°05'01 | morning rise | -169 Feb 15 j 07:13 | 18° \approx 46'51 | |
| max. Earth dist. | -175 Feb 05 j 21:42 | 11° \approx 15'36 | 42.88263 AU | retrograde | -169 May 25 j 02:12 | 20° \approx 23'08 | |
| morning rise | -175 Feb 10 j 08:52 | 11° \approx 22'51 | | min. Earth dist. | -169 Aug 13 j 22:42 | 19° \approx 21'02 | 42.35025 AU |
| retrograde | -175 May 17 j 03:04 | 12° \approx 57'05 | | opposition | -169 Aug 16 j 21:04 | 19° \approx 17'24 | -15°06'27 |
| min. Earth dist. | -175 Aug 05 j 16:17 | 11° \approx 54'07 | 41.05135 AU | direct | -169 Nov 05 j 19:44 | 18° \approx 13'10 | |
| opposition | -175 Aug 08 j 18:48 | 11° \approx 50'12 | -13°50'21 | evening set | -168 Feb 08 j 05:59 | 19° \approx 45'56 | |
| direct | -175 Oct 28 j 17:02 | 10° \approx 44'49 | | | | | |
| evening set | -174 Jan 28 j 02:55 | 12° \approx 15'17 | | conjunction | -168 Feb 12 j 04:04 | 19° \approx 52'06 | -14°31'16 |
| | | | | minimum elong | -168 Feb 12 j 03:55 | 19° \approx 52'05 | 14°31'16 |
| conjunction | -174 Feb 04 j 06:38 | 12° \approx 26'51 | -13°18'47 | max. Earth dist. | -168 Feb 15 j 04:04 | 19° \approx 56'49 | 44.38597 AU |
| minimum elong | -174 Feb 04 j 06:27 | 12° \approx 26'51 | 13°18'47 | morning rise | -168 Feb 16 j 02:04 | 19° \approx 58'16 | |
| max. Earth dist. | -174 Feb 07 j 08:59 | 12° \approx 31'53 | 43.10842 AU | retrograde | -168 May 25 j 12:33 | 21° \approx 35'09 | |
| morning rise | -174 Feb 11 j 10:48 | 12° \approx 38'29 | | min. Earth dist. | -168 Aug 14 j 10:30 | 20° \approx 33'10 | 42.55544 AU |
| retrograde | -174 May 18 j 17:50 | 14° \approx 12'58 | | opposition | -168 Aug 17 j 08:25 | 20° \approx 29'34 | -15°17'23 |
| min. Earth dist. | -174 Aug 07 j 06:09 | 13° \approx 10'10 | 41.27749 AU | direct | -168 Nov 06 j 07:46 | 19° \approx 25'30 | |
| opposition | -174 Aug 10 j 07:57 | 13° \approx 06'19 | -14°04'17 | evening set | -167 Feb 09 j 11:20 | 20° \approx 59'02 | |
| direct | -174 Oct 30 j 04:21 | 12° \approx 01'10 | | | | | |
| evening set | -173 Jan 30 j 02:01 | 13° \approx 31'53 | | conjunction | -167 Feb 12 j 14:42 | 21° \approx 03'57 | -14°41'41 |
| | | | | minimum elong | -167 Feb 12 j 14:34 | 21° \approx 03'56 | 14°41'42 |
| conjunction | -173 Feb 05 j 18:58 | 13° \approx 42'41 | -13°32'03 | morning rise | -167 Feb 15 j 17:59 | 21° \approx 08'52 | |
| minimum elong | -173 Feb 05 j 18:48 | 13° \approx 42'41 | 13°32'03 | max. Earth dist. | -167 Feb 15 j 13:27 | 21° \approx 08'34 | 44.58855 AU |
| max. Earth dist. | -173 Feb 08 j 21:41 | 13° \approx 47'42 | 43.33073 AU | retrograde | -167 May 27 j 01:34 | 22° \approx 46'31 | |
| morning rise | -173 Feb 12 j 12:10 | 13° \approx 53'31 | | min. Earth dist. | -167 Aug 15 j 21:22 | 21° \approx 44'42 | 42.75867 AU |
| | -173 Mar 31 j 15:32 | 15° \approx | | opposition | -167 Aug 18 j 19:34 | 21° \approx 41'07 | -15°27'50 |
| retrograde | -173 May 20 j 07:01 | 15° \approx 28'17 | | direct | -167 Nov 07 j 16:21 | 20° \approx 37'13 | |
| | -173 Jul 10 j 07:39 | 15° \approx | | evening set | -166 Feb 11 j 21:57 | 22° \approx 11'53 | |
| min. Earth dist. | -173 Aug 08 j 20:02 | 14° \approx 25'38 | 41.49967 AU | | | | |
| opposition | -173 Aug 11 j 20:37 | 14° \approx 21'51 | -14°17'42 | conjunction | -166 Feb 14 j 01:13 | 22° \approx 15'12 | -14°51'38 |
| direct | -173 Oct 31 j 16:04 | 13° \approx 16'55 | | minimum elong | -166 Feb 14 j 01:05 | 22° \approx 15'12 | 14°51'37 |
| evening set | -172 Feb 01 j 01:31 | 14° \approx 47'56 | | morning rise | -166 Feb 16 j 04:19 | 22° \approx 18'32 | |
| | | | | max. Earth dist. | -166 Feb 17 j 00:41 | 22° \approx 19'51 | 44.78914 AU |
| conjunction | -172 Feb 07 j 06:55 | 14° \approx 57'56 | -13°44'50 | retrograde | -166 May 28 j 11:37 | 23° \approx 57'19 | |
| minimum elong | -172 Feb 07 j 06:44 | 14° \approx 57'55 | 13°44'50 | min. Earth dist. | -166 Aug 17 j 09:35 | 22° \approx 55'36 | 42.95975 AU |
| | -172 Feb 08 j 13:54 | 15° \approx | | opposition | -166 Aug 20 j 06:32 | 22° \approx 52'05 | -15°37'47 |
| max. Earth dist. | -172 Feb 10 j 07:49 | 15° \approx 02'48 | 43.54908 AU | direct | -166 Nov 09 j 03:22 | 21° \approx 48'23 | |
| morning rise | -172 Feb 13 j 12:34 | 15° \approx 07'55 | | | | | |
| retrograde | -172 May 20 j 21:02 | 16° \approx 43'00 | | conjunction | -165 Feb 15 j 11:33 | 23° \approx 25'55 | -15°01'06 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 18

Attention, astronomical year style is used: The year -165 in astronomical counting style is the year 166 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------------------|-------------|------------------|---------------------|------------------------|-------------|
| minimum elong | -165 Feb 15 j 11:25 | 23° \approx 25'55 | 15°01'07 | conjunction | -157 Feb 24 j 16:26 | 2° \mathbb{H} 36'08 | -16°01'53 |
| max. Earth dist. | -165 Feb 18 j 10:03 | 23° \approx 30'29 | 44.98769 AU | minimum elong | -157 Feb 24 j 16:21 | 2° \mathbb{H} 36'07 | 16°01'53 |
| retrograde | -165 May 29 j 20:27 | 25° \approx 07'35 | | max. Earth dist. | -157 Feb 27 j 08:09 | 2° \mathbb{H} 40'07 | 46.45006 AU |
| min. Earth dist. | -165 Aug 18 j 19:33 | 24° \approx 06'05 | 43.15856 AU | retrograde | -157 Jun 08 j 01:15 | 4° \mathbb{H} 14'40 | |
| opposition | -165 Aug 21 j 17:01 | 24° \approx 02'33 | -15°47'15 | min. Earth dist. | -157 Aug 28 j 09:05 | 3° \mathbb{H} 14'05 | 44.61481 AU |
| direct | -165 Nov 10 j 14:17 | 22° \approx 59'02 | | opposition | -157 Aug 30 j 23:10 | 3° \mathbb{H} 11'00 | -16°47'36 |
| | | | | direct | -157 Nov 19 j 22:23 | 2° \mathbb{H} 08'49 | |
| conjunction | -164 Feb 16 j 21:36 | 24° \approx 36'09 | -15°10'08 | | | | |
| minimum elong | -164 Feb 16 j 21:29 | 24° \approx 36'09 | 15°10'07 | conjunction | -156 Feb 26 j 01:18 | 3° \mathbb{H} 42'51 | -16°07'44 |
| max. Earth dist. | -164 Feb 19 j 19:39 | 24° \approx 40'40 | 45.18382 AU | minimum elong | -156 Feb 26 j 01:15 | 3° \mathbb{H} 42'51 | 16°07'45 |
| retrograde | -164 May 30 j 05:52 | 26° \approx 17'25 | | max. Earth dist. | -156 Feb 28 j 17:31 | 3° \mathbb{H} 46'52 | 46.61432 AU |
| min. Earth dist. | -164 Aug 19 j 07:23 | 25° \approx 16'02 | 43.35485 AU | retrograde | -156 Jun 08 j 10:58 | 5° \mathbb{H} 21'02 | |
| opposition | -164 Aug 22 j 03:36 | 25° \approx 12'34 | -15°56'15 | min. Earth dist. | -156 Aug 28 j 19:13 | 4° \mathbb{H} 20'30 | 44.77849 AU |
| direct | -164 Nov 11 j 02:04 | 24° \approx 09'16 | | opposition | -156 Aug 31 j 08:01 | 4° \mathbb{H} 17'29 | -16°53'21 |
| | | | | direct | -156 Nov 20 j 05:57 | 3° \mathbb{H} 15'27 | |
| conjunction | -163 Feb 17 j 07:32 | 25° \approx 45'58 | -15°18'43 | | | | |
| minimum elong | -163 Feb 17 j 07:25 | 25° \approx 45'57 | 15°18'43 | conjunction | -155 Feb 26 j 09:50 | 4° \mathbb{H} 49'08 | -16°13'13 |
| max. Earth dist. | -163 Feb 20 j 05:46 | 25° \approx 50'28 | 45.37725 AU | minimum elong | -155 Feb 26 j 09:47 | 4° \mathbb{H} 49'08 | 16°13'12 |
| retrograde | -163 May 31 j 15:41 | 27° \approx 26'50 | | max. Earth dist. | -155 Mar 01 j 00:35 | 4° \mathbb{H} 53'02 | 46.77570 AU |
| min. Earth dist. | -163 Aug 20 j 18:11 | 26° \approx 25'36 | 43.54790 AU | retrograde | -155 Jun 09 j 20:45 | 6° \mathbb{H} 26'56 | |
| opposition | -163 Aug 23 j 13:51 | 26° \approx 22'11 | -16°04'48 | min. Earth dist. | -155 Aug 30 j 03:26 | 5° \mathbb{H} 26'34 | 44.93938 AU |
| direct | -163 Nov 12 j 13:12 | 25° \approx 19'04 | | opposition | -155 Sep 01 j 16:38 | 5° \mathbb{H} 23'32 | -16°58'42 |
| | | | | direct | -155 Nov 21 j 12:35 | 4° \mathbb{H} 21'38 | |
| conjunction | -162 Feb 18 j 17:22 | 26° \approx 55'23 | -15°26'52 | | | | |
| minimum elong | -162 Feb 18 j 17:17 | 26° \approx 55'22 | 15°26'52 | conjunction | -154 Feb 27 j 18:22 | 5° \mathbb{H} 54'59 | -16°18'18 |
| max. Earth dist. | -162 Feb 21 j 13:52 | 26° \approx 59'45 | 45.56718 AU | minimum elong | -154 Feb 27 j 18:20 | 5° \mathbb{H} 54'59 | 16°18'18 |
| retrograde | -162 Jun 02 j 04:40 | 28° \approx 35'51 | | max. Earth dist. | -154 Mar 02 j 08:52 | 5° \mathbb{H} 58'51 | 46.93429 AU |
| min. Earth dist. | -162 Aug 22 j 04:41 | 27° \approx 34'47 | 43.73724 AU | retrograde | -154 Jun 11 j 02:14 | 7° \mathbb{H} 32'27 | |
| opposition | -162 Aug 24 j 23:50 | 27° \approx 31'24 | -16°12'55 | min. Earth dist. | -154 Aug 31 j 13:34 | 6° \mathbb{H} 32'08 | 45.09756 AU |
| direct | -162 Nov 13 j 20:18 | 26° \approx 28'28 | | opposition | -154 Sep 03 j 01:04 | 6° \mathbb{H} 29'12 | -17°03'38 |
| | | | | direct | -154 Nov 22 j 23:18 | 5° \mathbb{H} 27'26 | |
| conjunction | -161 Feb 20 j 03:13 | 28° \approx 04'24 | -15°34'38 | | | | |
| minimum elong | -161 Feb 20 j 03:07 | 28° \approx 04'24 | 15°34'38 | conjunction | -153 Mar 01 j 02:49 | 7° \mathbb{H} 00'28 | -16°23'00 |
| max. Earth dist. | -161 Feb 22 j 23:44 | 28° \approx 08'46 | 45.75300 AU | minimum elong | -153 Mar 01 j 02:47 | 7° \mathbb{H} 00'28 | 16°22'59 |
| retrograde | -161 Jun 03 j 14:14 | 29° \approx 44'30 | | max. Earth dist. | -153 Mar 03 j 16:59 | 7° \mathbb{H} 04'19 | 47.09035 AU |
| min. Earth dist. | -161 Aug 23 j 16:30 | 28° \approx 43'31 | 43.92201 AU | retrograde | -153 Jun 12 j 07:49 | 8° \mathbb{H} 37'36 | |
| opposition | -161 Aug 26 j 09:45 | 28° \approx 40'14 | -16°20'39 | min. Earth dist. | -153 Sep 01 j 21:46 | 7° \mathbb{H} 37'27 | 45.25291 AU |
| direct | -161 Nov 15 j 06:16 | 27° \approx 37'29 | | opposition | -153 Sep 04 j 09:17 | 7° \mathbb{H} 34'30 | -17°08'11 |
| | | | | direct | -153 Nov 24 j 10:25 | 6° \mathbb{H} 32'54 | |
| conjunction | -160 Feb 21 j 12:43 | 29° \approx 13'02 | -15°42'01 | | | | |
| minimum elong | -160 Feb 21 j 12:39 | 29° \approx 13'02 | 15°42'01 | conjunction | -152 Mar 01 j 10:48 | 8° \mathbb{H} 05'37 | -16°27'19 |
| max. Earth dist. | -160 Feb 24 j 07:33 | 29° \approx 17'16 | 45.93421 AU | minimum elong | -152 Mar 01 j 10:47 | 8° \mathbb{H} 05'37 | 16°27'20 |
| | -160 Mar 24 j 16:15 | 0° \mathbb{H} | | max. Earth dist. | -152 Mar 03 j 23:34 | 8° \mathbb{H} 09'22 | 47.24351 AU |
| retrograde | -160 Jun 03 j 22:22 | 0° \mathbb{H} 52'44 | | retrograde | -152 Jun 12 j 18:14 | 9° \mathbb{H} 42'27 | |
| | -160 Aug 17 j 07:58 | 30° \mathbb{R} | | min. Earth dist. | -152 Sep 02 j 06:51 | 8° \mathbb{H} 42'24 | 45.40532 AU |
| min. Earth dist. | -160 Aug 24 j 02:13 | 29° \approx 51'54 | 44.10196 AU | opposition | -152 Sep 04 j 17:33 | 8° \mathbb{H} 39'30 | -17°12'21 |
| opposition | -160 Aug 26 j 19:27 | 29° \approx 48'38 | -16°27'58 | direct | -152 Nov 24 j 17:36 | 7° \mathbb{H} 38'03 | |
| direct | -160 Nov 15 j 16:37 | 28° \approx 46'03 | | | | | |
| | -159 Feb 07 j 19:43 | 0° \mathbb{H} | | conjunction | -151 Mar 02 j 19:01 | 9° \mathbb{H} 10'28 | -16°31'16 |
| | | | | minimum elong | -151 Mar 02 j 19:00 | 9° \mathbb{H} 10'28 | 16°31'16 |
| conjunction | -159 Feb 21 j 22:10 | 0° \mathbb{H} 21'13 | -15°49'01 | max. Earth dist. | -151 Mar 05 j 08:02 | 9° \mathbb{H} 14'13 | 47.39354 AU |
| minimum elong | -159 Feb 21 j 22:04 | 0° \mathbb{H} 21'13 | 15°49'01 | retrograde | -151 Jun 14 j 02:53 | 10° \mathbb{H} 47'01 | |
| max. Earth dist. | -159 Feb 24 j 16:07 | 0° \mathbb{H} 25'23 | 46.11053 AU | min. Earth dist. | -151 Sep 03 j 16:11 | 9° \mathbb{H} 47'02 | 45.55417 AU |
| retrograde | -159 Jun 05 j 06:20 | 2° \mathbb{H} 00'32 | | opposition | -151 Sep 06 j 01:30 | 9° \mathbb{H} 44'13 | -17°16'09 |
| min. Earth dist. | -159 Aug 25 j 13:40 | 0° \mathbb{H} 59'45 | 44.27715 AU | direct | -151 Nov 26 j 01:37 | 8° \mathbb{H} 42'55 | |
| opposition | -159 Aug 28 j 05:01 | 0° \mathbb{H} 56'34 | -16°34'54 | | | | |
| | -159 Oct 25 j 18:59 | 30° \mathbb{R} | | conjunction | -150 Mar 04 j 03:04 | 10° \mathbb{H} 15'03 | -16°34'53 |
| direct | -159 Nov 17 j 03:40 | 29° \approx 54'08 | | minimum elong | -150 Mar 04 j 03:02 | 10° \mathbb{H} 15'03 | 16°34'54 |
| | -159 Dec 09 j 05:02 | 0° \mathbb{H} | | max. Earth dist. | -150 Mar 06 j 14:12 | 10° \mathbb{H} 18'39 | 47.53986 AU |
| | | | | retrograde | -150 Jun 15 j 12:36 | 11° \mathbb{H} 51'17 | |
| conjunction | -158 Feb 23 j 07:28 | 1° \mathbb{H} 28'55 | -15°55'38 | min. Earth dist. | -150 Sep 05 j 00:18 | 10° \mathbb{H} 51'26 | 45.69895 AU |
| minimum elong | -158 Feb 23 j 07:24 | 1° \mathbb{H} 28'55 | 15°55'39 | opposition | -150 Sep 07 j 09:20 | 10° \mathbb{H} 48'38 | -17°19'36 |
| max. Earth dist. | -158 Feb 26 j 00:54 | 1° \mathbb{H} 33'02 | 46.28239 AU | direct | -150 Nov 27 j 06:53 | 9° \mathbb{H} 47'28 | |
| retrograde | -158 Jun 06 j 14:06 | 3° \mathbb{H} 07'51 | | | | | |
| min. Earth dist. | -158 Aug 26 j 23:20 | 2° \mathbb{H} 07'11 | 44.44784 AU | conjunction | -149 Mar 05 j 11:03 | 11° \mathbb{H} 19'20 | -16°38'10 |
| opposition | -158 Aug 29 j 14:12 | 2° \mathbb{H} 04'02 | -16°41'27 | minimum elong | -149 Mar 05 j 11:03 | 11° \mathbb{H} 19'20 | 16°38'10 |
| direct | -158 Nov 18 j 14:49 | 1° \mathbb{H} 01'43 | | max. Earth dist. | -149 Mar 07 j 21:33 | 11° \mathbb{H} 22'54 | 47.68164 AU |

Attention, astronomical year style is used: The year -149 in astronomical counting style is the year 150 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-------------------------|-------------|------------------|---------------------|-------------------------|-------------|
| retrograde | -149 Jun 16 j 19:41 | 12° 11 55'16 | | direct | -141 Dec 07 j 04:46 | 19° 11 11'37 | |
| min. Earth dist. | -149 Sep 06 j 10:12 | 11° 11 55'27 | 45.83891 AU | | | | |
| opposition | -149 Sep 08 j 17:04 | 11° 11 52'46 | -17°22'43 | conjunction | -140 Mar 14 j 04:50 | 20° 11 41'04 | -16°53'34 |
| direct | -149 Nov 28 j 14:50 | 10° 11 51'43 | | minimum elong | -140 Mar 14 j 04:53 | 20° 11 41'04 | 16°53'33 |
| | | | | max. Earth dist. | -140 Mar 16 j 06:16 | 20° 11 44'00 | 48.76303 AU |
| conjunction | -148 Mar 05 j 19:00 | 12° 11 23'18 | -16°41'08 | retrograde | -140 Jun 25 j 10:25 | 22° 11 14'29 | |
| minimum elong | -148 Mar 05 j 19:00 | 12° 11 23'18 | 16°41'08 | min. Earth dist. | -140 Sep 15 j 08:09 | 21° 11 15'12 | 46.90595 AU |
| max. Earth dist. | -148 Mar 08 j 04:19 | 12° 11 26'47 | 47.81861 AU | opposition | -140 Sep 17 j 07:30 | 21° 11 12'55 | -17°36'14 |
| retrograde | -148 Jun 17 j 00:43 | 13° 11 58'55 | | direct | -140 Dec 07 j 08:13 | 20° 11 12'45 | |
| min. Earth dist. | -148 Sep 06 j 18:10 | 12° 11 59'12 | 45.97371 AU | | | | |
| opposition | -148 Sep 09 j 00:37 | 12° 11 56'32 | -17°25'31 | conjunction | -139 Mar 15 j 11:32 | 21° 11 42'01 | -16°53'40 |
| direct | -148 Nov 29 j 00:33 | 11° 11 55'36 | | minimum elong | -139 Mar 15 j 11:35 | 21° 11 42'02 | 16°53'40 |
| | | | | max. Earth dist. | -139 Mar 17 j 12:48 | 21° 11 44'56 | 48.86708 AU |
| conjunction | -147 Mar 07 j 02:38 | 13° 11 26'53 | -16°43'48 | retrograde | -139 Jun 26 j 17:28 | 23° 11 15'14 | |
| minimum elong | -147 Mar 07 j 02:39 | 13° 11 26'53 | 16°43'48 | min. Earth dist. | -139 Sep 16 j 16:28 | 22° 11 15'59 | 47.00826 AU |
| max. Earth dist. | -147 Mar 09 j 10:02 | 13° 11 30'14 | 47.95034 AU | opposition | -139 Sep 18 j 13:53 | 22° 11 13'48 | -17°36'05 |
| retrograde | -147 Jun 18 j 08:21 | 15° 11 02'12 | | direct | -139 Dec 08 j 13:39 | 21° 11 13'46 | |
| min. Earth dist. | -147 Sep 08 j 03:19 | 14° 11 02'30 | 46.10340 AU | | | | |
| opposition | -147 Sep 10 j 08:11 | 13° 11 59'55 | -17°28'01 | conjunction | -138 Mar 16 j 18:22 | 22° 11 42'51 | -16°53'28 |
| direct | -147 Nov 30 j 09:06 | 12° 11 59'05 | | minimum elong | -138 Mar 16 j 18:26 | 22° 11 42'51 | 16°53'27 |
| | | | | max. Earth dist. | -138 Mar 18 j 18:29 | 22° 11 45'42 | 48.96760 AU |
| conjunction | -146 Mar 08 j 10:22 | 14° 11 30'03 | -16°46'09 | retrograde | -138 Jun 27 j 22:05 | 24° 11 15'51 | |
| minimum elong | -146 Mar 08 j 10:22 | 14° 11 30'03 | 16°46'09 | min. Earth dist. | -138 Sep 17 j 22:41 | 23° 11 16'44 | 47.10658 AU |
| max. Earth dist. | -146 Mar 10 j 17:38 | 14° 11 33'24 | 48.07714 AU | opposition | -138 Sep 19 j 19:53 | 23° 11 14'34 | -17°35'39 |
| retrograde | -146 Jun 19 j 16:01 | 16° 11 05'04 | | direct | -138 Dec 09 j 20:27 | 22° 11 14'38 | |
| min. Earth dist. | -146 Sep 09 j 11:50 | 15° 11 05'23 | 46.22820 AU | | | | |
| opposition | -146 Sep 11 j 15:17 | 15° 11 02'53 | -17°30'11 | conjunction | -137 Mar 18 j 01:01 | 23° 11 43'33 | -16°52'59 |
| direct | -146 Dec 01 j 17:01 | 14° 11 02'07 | | minimum elong | -137 Mar 18 j 01:05 | 23° 11 43'34 | 16°52'59 |
| | | | | max. Earth dist. | -137 Mar 19 j 23:20 | 23° 11 46'17 | 49.06373 AU |
| conjunction | -145 Mar 09 j 17:46 | 15° 11 32'48 | -16°48'12 | retrograde | -137 Jun 29 j 04:01 | 25° 11 16'22 | |
| minimum elong | -145 Mar 09 j 17:48 | 15° 11 32'48 | 16°48'12 | min. Earth dist. | -137 Sep 19 j 06:51 | 24° 11 17'17 | 47.20033 AU |
| max. Earth dist. | -145 Mar 11 j 23:01 | 15° 11 36'00 | 48.19951 AU | opposition | -137 Sep 21 j 02:07 | 24° 11 15'12 | -17°34'55 |
| retrograde | -145 Jun 21 j 01:43 | 17° 11 07'30 | | direct | -137 Dec 11 j 04:13 | 23° 11 15'23 | |
| min. Earth dist. | -145 Sep 10 j 19:04 | 16° 11 07'53 | 46.34894 AU | | | | |
| opposition | -145 Sep 12 j 22:20 | 16° 11 05'24 | -17°32'02 | conjunction | -136 Mar 18 j 07:39 | 24° 11 44'07 | -16°52'14 |
| direct | -145 Dec 02 j 21:39 | 15° 11 04'43 | | minimum elong | -136 Mar 18 j 07:44 | 24° 11 44'08 | 16°52'14 |
| | | | | max. Earth dist. | -136 Mar 20 j 05:41 | 24° 11 46'50 | 49.15504 AU |
| conjunction | -144 Mar 10 j 00:54 | 16° 11 35'07 | -16°49'56 | retrograde | -136 Jun 29 j 10:07 | 26° 11 16'45 | |
| minimum elong | -144 Mar 10 j 00:55 | 16° 11 35'07 | 16°49'56 | min. Earth dist. | -136 Sep 19 j 14:08 | 25° 11 17'42 | 47.28882 AU |
| max. Earth dist. | -144 Mar 12 j 05:53 | 16° 11 38'17 | 48.31804 AU | opposition | -136 Sep 21 j 08:12 | 25° 11 15'41 | -17°33'55 |
| retrograde | -144 Jun 21 j 07:24 | 18° 11 09'31 | | direct | -136 Dec 11 j 12:06 | 24° 11 15'57 | |
| min. Earth dist. | -144 Sep 11 j 03:55 | 17° 11 09'54 | 46.46613 AU | | | | |
| opposition | -144 Sep 13 j 05:20 | 17° 11 07'30 | -17°33'33 | conjunction | -135 Mar 19 j 14:14 | 25° 11 44'30 | -16°51'14 |
| direct | -144 Dec 03 j 05:05 | 16° 11 06'54 | | minimum elong | -135 Mar 19 j 14:17 | 25° 11 44'30 | 16°51'14 |
| | | | | max. Earth dist. | -135 Mar 21 j 09:45 | 25° 11 47'03 | 49.24117 AU |
| conjunction | -143 Mar 11 j 08:06 | 17° 11 37'02 | -16°51'20 | retrograde | -135 Jun 30 j 20:02 | 27° 11 16'54 | |
| minimum elong | -143 Mar 11 j 08:08 | 17° 11 37'03 | 16°51'20 | min. Earth dist. | -135 Sep 20 j 20:50 | 26° 11 17'54 | 47.37217 AU |
| max. Earth dist. | -143 Mar 13 j 12:28 | 17° 11 40'11 | 48.43349 AU | opposition | -135 Sep 22 j 14:06 | 26° 11 15'56 | -17°32'40 |
| retrograde | -143 Jun 22 j 11:20 | 19° 11 11'10 | | direct | -135 Dec 12 j 15:03 | 25° 11 16'16 | |
| min. Earth dist. | -143 Sep 12 j 10:27 | 18° 11 11'39 | 46.58029 AU | | | | |
| opposition | -143 Sep 14 j 11:57 | 18° 11 09'15 | -17°34'44 | conjunction | -134 Mar 20 j 20:47 | 26° 11 44'37 | -16°49'58 |
| direct | -143 Dec 04 j 14:06 | 17° 11 08'44 | | minimum elong | -134 Mar 20 j 20:54 | 26° 11 44'38 | 16°49'58 |
| | | | | max. Earth dist. | -134 Mar 22 j 15:40 | 26° 11 47'08 | 49.32215 AU |
| conjunction | -142 Mar 12 j 15:06 | 18° 11 38'38 | -16°52'24 | retrograde | -134 Jul 02 j 02:43 | 28° 11 16'49 | |
| minimum elong | -142 Mar 12 j 15:08 | 18° 11 38'38 | 16°52'24 | min. Earth dist. | -134 Sep 22 j 04:55 | 27° 11 17'46 | 47.45047 AU |
| max. Earth dist. | -142 Mar 14 j 18:00 | 18° 11 41'40 | 48.54602 AU | opposition | -134 Sep 23 j 20:00 | 27° 11 15'54 | -17°31'08 |
| retrograde | -142 Jun 23 j 18:31 | 20° 11 12'30 | | direct | -134 Dec 13 j 20:09 | 26° 11 16'18 | |
| min. Earth dist. | -142 Sep 13 j 18:18 | 19° 11 13'02 | 46.69170 AU | | | | |
| opposition | -142 Sep 15 j 18:40 | 19° 11 10'41 | -17°35'34 | conjunction | -133 Mar 22 j 03:08 | 27° 11 44'27 | -16°48'26 |
| direct | -142 Dec 05 j 21:28 | 18° 11 10'17 | | minimum elong | -133 Mar 22 j 03:12 | 27° 11 44'28 | 16°48'26 |
| | | | | max. Earth dist. | -133 Mar 23 j 20:47 | 27° 11 46'53 | 49.39853 AU |
| conjunction | -141 Mar 13 j 22:04 | 19° 11 39'57 | -16°53'09 | retrograde | -133 Jul 03 j 05:53 | 29° 11 16'25 | |
| minimum elong | -141 Mar 13 j 22:07 | 19° 11 39'57 | 16°53'09 | min. Earth dist. | -133 Sep 23 j 10:38 | 28° 11 17'26 | 47.52439 AU |
| max. Earth dist. | -141 Mar 16 j 01:14 | 19° 11 43'00 | 48.65588 AU | opposition | -133 Sep 25 j 01:34 | 28° 11 15'34 | -17°29'20 |
| retrograde | -141 Jun 25 j 00:59 | 21° 11 13'36 | | direct | -133 Dec 15 j 03:32 | 27° 11 16'00 | |
| min. Earth dist. | -141 Sep 15 j 01:35 | 20° 11 14'12 | 46.80022 AU | | | | |
| opposition | -141 Sep 17 j 01:05 | 20° 11 11'54 | -17°36'04 | conjunction | -132 Mar 22 j 09:17 | 28° 11 43'59 | -16°46'38 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 20

Attention, astronomical year style is used: The year -132 in astronomical counting style is the year 133 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|---------------------------|-------------|------------------|---------------------|----------------------|-------------|
| minimum elong | -132 Mar 22 j 09:24 | 28° H 44'00 | 16°46'39 | conjunction | -124 Mar 30 j 09:05 | 6° Y 32'56 | -16°22'11 |
| max. Earth dist. | -132 Mar 24 j 01:22 | 28° H 46'19 | 49.47081 AU | minimum elong | -124 Mar 30 j 09:12 | 6° Y 32'56 | 16°22'11 |
| | -132 May 25 j 10:57 | 0° Y | | max. Earth dist. | -124 Mar 31 j 17:18 | 6° Y 34'47 | 49.93039 AU |
| retrograde | -132 Jul 03 j 09:53 | 0° Y 15'44 | | retrograde | -124 Jul 11 j 10:52 | 8° Y 03'27 | |
| | -132 Aug 11 j 21:26 | 30° R H | | min. Earth dist. | -124 Oct 01 j 20:30 | 7° Y 04'38 | 48.03463 AU |
| min. Earth dist. | -132 Sep 23 j 17:53 | 29° H 16'43 | 47.59463 AU | opposition | -124 Oct 03 j 01:00 | 7° Y 03'17 | -17°00'19 |
| opposition | -132 Sep 25 j 07:13 | 29° H 14'56 | -17°27'15 | direct | -124 Dec 23 j 04:09 | 6° Y 04'17 | |
| direct | -132 Dec 15 j 11:02 | 28° H 15'25 | | | | | |
| | | | | conjunction | -123 Mar 31 j 15:00 | 7° Y 31'06 | -16°17'59 |
| conjunction | -131 Mar 23 j 15:28 | 29° H 43'13 | -16°44'33 | minimum elong | -123 Mar 31 j 15:10 | 7° Y 31'06 | 16°17'59 |
| minimum elong | -131 Mar 23 j 15:33 | 29° H 43'14 | 16°44'32 | max. Earth dist. | -123 Apr 01 j 21:36 | 7° Y 32'51 | 49.96869 AU |
| max. Earth dist. | -131 Mar 25 j 07:35 | 29° H 45'33 | 49.53970 AU | retrograde | -123 Jul 12 j 15:18 | 9° Y 01'28 | |
| | -131 Apr 04 j 17:41 | 0° Y | | min. Earth dist. | -123 Oct 03 j 01:53 | 8° Y 02'42 | 48.06935 AU |
| retrograde | -131 Jul 04 j 14:08 | 1° Y 14'46 | | opposition | -123 Oct 04 j 05:57 | 8° Y 01'22 | -16°55'48 |
| min. Earth dist. | -131 Sep 25 j 00:04 | 0° Y 15'47 | 47.66145 AU | direct | -123 Dec 24 j 09:30 | 7° Y 02'24 | |
| opposition | -131 Sep 26 j 12:40 | 0° Y 14'02 | -17°24'53 | | | | |
| | -131 Oct 08 j 21:19 | 30° R H | | conjunction | -122 Apr 01 j 20:51 | 8° Y 29'07 | -16°13'34 |
| direct | -131 Dec 16 j 18:57 | 29° H 14'34 | | minimum elong | -122 Apr 01 j 20:58 | 8° Y 29'07 | 16°13'33 |
| | -130 Feb 21 j 07:28 | 0° Y | | max. Earth dist. | -122 Apr 03 j 01:17 | 8° Y 30'45 | 50.00143 AU |
| | | | | retrograde | -122 Jul 13 j 19:06 | 9° Y 59'21 | |
| conjunction | -130 Mar 24 j 21:31 | 0° Y 42'11 | -16°42'11 | min. Earth dist. | -122 Oct 04 j 08:57 | 9° Y 00'32 | 48.09880 AU |
| minimum elong | -130 Mar 24 j 21:38 | 0° Y 42'12 | 16°42'11 | opposition | -122 Oct 05 j 10:51 | 8° Y 59'18 | -16°51'04 |
| max. Earth dist. | -130 Mar 26 j 11:46 | 0° Y 44'25 | 49.60546 AU | direct | -122 Dec 25 j 16:02 | 8° Y 00'22 | |
| retrograde | -130 Jul 05 j 22:17 | 2° Y 13'33 | | | | | |
| min. Earth dist. | -130 Sep 26 j 05:50 | 1° Y 14'37 | 47.72534 AU | conjunction | -121 Apr 03 j 02:41 | 9° Y 26'58 | -16°08'54 |
| opposition | -130 Sep 27 j 17:56 | 1° Y 12'54 | -17°22'12 | minimum elong | -121 Apr 03 j 02:51 | 9° Y 26'59 | 16°08'54 |
| direct | -130 Dec 17 j 22:51 | 0° Y 13'29 | | max. Earth dist. | -121 Apr 04 j 06:49 | 9° Y 28'35 | 50.02927 AU |
| | | | | retrograde | -121 Jul 14 j 22:22 | 10° Y 57'05 | |
| conjunction | -129 Mar 26 j 03:32 | 1° Y 40'57 | -16°39'31 | opposition | -121 Oct 06 j 15:38 | 9° Y 57'04 | -16°46'05 |
| minimum elong | -129 Mar 26 j 03:38 | 1° Y 40'57 | 16°39'31 | min. Earth dist. | -121 Oct 05 j 14:38 | 9° Y 58'15 | 48.12346 AU |
| max. Earth dist. | -129 Mar 27 j 17:34 | 1° Y 43'09 | 49.66826 AU | direct | -121 Dec 26 j 23:40 | 8° Y 58'09 | |
| retrograde | -129 Jul 07 j 05:30 | 3° Y 12'08 | | | | | |
| opposition | -129 Sep 28 j 23:19 | 2° Y 11'33 | -17°19'14 | conjunction | -120 Apr 03 j 08:08 | 10° Y 24'39 | -16°04'01 |
| min. Earth dist. | -129 Sep 27 j 12:48 | 2° Y 13'12 | 47.78623 AU | minimum elong | -120 Apr 03 j 08:16 | 10° Y 24'40 | 16°04'00 |
| direct | -129 Dec 19 j 02:37 | 1° Y 12'12 | | max. Earth dist. | -120 Apr 04 j 10:07 | 10° Y 26'08 | 50.05271 AU |
| | | | | retrograde | -120 Jul 15 j 05:30 | 11° Y 54'39 | |
| conjunction | -128 Mar 26 j 09:20 | 2° Y 39'32 | -16°36'35 | opposition | -120 Oct 06 j 20:26 | 10° Y 54'40 | -16°40'50 |
| minimum elong | -128 Mar 26 j 09:27 | 2° Y 39'32 | 16°36'35 | min. Earth dist. | -120 Oct 05 j 20:16 | 10° Y 55'49 | 48.14412 AU |
| max. Earth dist. | -128 Mar 27 j 22:25 | 2° Y 41'40 | 49.72828 AU | direct | -120 Dec 27 j 03:33 | 9° Y 55'46 | |
| retrograde | -128 Jul 07 j 11:02 | 4° Y 10'33 | | | | | |
| min. Earth dist. | -128 Sep 27 j 17:57 | 3° Y 11'42 | 47.84407 AU | conjunction | -119 Apr 04 j 13:48 | 11° Y 22'11 | -15°58'52 |
| opposition | -128 Sep 29 j 04:33 | 3° Y 10'03 | -17°15'59 | minimum elong | -119 Apr 04 j 13:58 | 11° Y 22'11 | 15°58'52 |
| direct | -128 Dec 19 j 06:49 | 2° Y 10'47 | | max. Earth dist. | -119 Apr 05 j 15:25 | 11° Y 23'38 | 50.07229 AU |
| | | | | retrograde | -119 Jul 16 j 12:14 | 12° Y 52'04 | |
| conjunction | -127 Mar 27 j 15:13 | 3° Y 37'59 | -16°33'22 | min. Earth dist. | -119 Oct 07 j 02:38 | 11° Y 53'10 | 48.16110 AU |
| minimum elong | -127 Mar 27 j 15:21 | 3° Y 38'00 | 16°33'21 | opposition | -119 Oct 08 j 01:04 | 11° Y 52'07 | -16°35'20 |
| max. Earth dist. | -127 Mar 29 j 02:50 | 3° Y 40'03 | 49.78502 AU | direct | -119 Dec 28 j 06:53 | 10° Y 53'14 | |
| retrograde | -127 Jul 08 j 15:41 | 5° Y 08'52 | | | | | |
| min. Earth dist. | -127 Sep 29 j 00:59 | 4° Y 10'01 | 47.89853 AU | conjunction | -118 Apr 05 j 19:26 | 12° Y 19'34 | -15°53'28 |
| opposition | -127 Sep 30 j 09:44 | 4° Y 08'27 | -17°12'27 | minimum elong | -118 Apr 05 j 19:35 | 12° Y 19'35 | 15°53'27 |
| direct | -127 Dec 20 j 13:13 | 3° Y 09'16 | | max. Earth dist. | -118 Apr 06 j 19:51 | 12° Y 20'58 | 50.08861 AU |
| | | | | retrograde | -118 Jul 17 j 18:17 | 13° Y 49'21 | |
| conjunction | -126 Mar 28 j 21:16 | 4° Y 36'22 | -16°29'53 | min. Earth dist. | -118 Oct 08 j 07:09 | 12° Y 50'30 | 48.17487 AU |
| minimum elong | -126 Mar 28 j 21:23 | 4° Y 36'22 | 16°29'54 | opposition | -118 Oct 09 j 05:38 | 12° Y 49'26 | -16°29'34 |
| max. Earth dist. | -126 Mar 30 j 08:40 | 4° Y 38'24 | 49.83813 AU | direct | -118 Dec 29 j 09:49 | 11° Y 50'34 | |
| retrograde | -126 Jul 09 j 19:15 | 6° Y 07'07 | | | | | |
| min. Earth dist. | -126 Sep 30 j 07:03 | 5° Y 08'18 | 47.94881 AU | conjunction | -117 Apr 07 j 00:47 | 13° Y 16'52 | -15°47'48 |
| opposition | -126 Oct 01 j 14:48 | 5° Y 06'48 | -17°08'39 | minimum elong | -117 Apr 07 j 00:57 | 13° Y 16'52 | 15°47'48 |
| direct | -126 Dec 21 j 21:02 | 4° Y 07'40 | | max. Earth dist. | -117 Apr 07 j 23:48 | 13° Y 18'10 | 50.10173 AU |
| | | | | retrograde | -117 Jul 18 j 22:12 | 14° Y 46'33 | |
| conjunction | -125 Mar 30 j 03:06 | 5° Y 34'41 | -16°26'09 | opposition | -117 Oct 10 j 10:18 | 13° Y 46'41 | -16°23'32 |
| minimum elong | -125 Mar 30 j 03:14 | 5° Y 34'41 | 16°26'09 | min. Earth dist. | -117 Oct 09 j 13:33 | 13° Y 47'40 | 48.18563 AU |
| max. Earth dist. | -125 Mar 31 j 12:05 | 5° Y 36'35 | 49.88679 AU | direct | -117 Dec 30 j 15:18 | 12° Y 47'51 | |
| retrograde | -125 Jul 11 j 03:39 | 7° Y 05'19 | | | | | |
| opposition | -125 Oct 02 j 19:52 | 6° Y 05'05 | -17°04'36 | conjunction | -116 Apr 07 j 06:20 | 14° Y 14'05 | -15°41'53 |
| min. Earth dist. | -125 Oct 01 j 13:04 | 6° Y 06'33 | 47.99441 AU | minimum elong | -116 Apr 07 j 06:30 | 14° Y 14'05 | 15°41'52 |
| direct | -125 Dec 23 j 00:14 | 5° Y 06'02 | | max. Earth dist. | -116 Apr 08 j 05:18 | 14° Y 15'23 | 50.11201 AU |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 21

Attention, astronomical year style is used: The year -116 in astronomical counting style is the year 117 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|-----------|-------------|------------------|---------------------|-----------|-------------|
| retrograde | -116 Jul 18 j 23:53 | 15°♊43'42 | | morning rise | -108 Apr 17 j 22:49 | 21°♊54'49 | |
| opposition | -116 Oct 10 j 14:47 | 14°♊43'53 | -16°17'14 | retrograde | -108 Jul 26 j 20:32 | 23°♊20'06 | |
| min. Earth dist. | -116 Oct 09 j 18:30 | 14°♊44'50 | 48.19332 AU | opposition | -108 Oct 18 j 02:11 | 22°♊20'27 | -15°18'11 |
| direct | -116 Dec 30 j 23:27 | 13°♊45'05 | | min. Earth dist. | -108 Oct 17 j 15:40 | 22°♊20'56 | 48.09744 AU |
| | | | | direct | -107 Jan 07 j 10:21 | 21°♊21'37 | |
| conjunction | -115 Apr 08 j 11:43 | 15°♊11'17 | -15°35'42 | evening set | -107 Apr 12 j 18:47 | 22°♊42'50 | |
| minimum elong | -115 Apr 08 j 11:53 | 15°♊11'17 | 15°35'42 | | | | |
| max. Earth dist. | -115 Apr 09 j 08:36 | 15°♊12'28 | 50.11918 AU | conjunction | -107 Apr 16 j 07:49 | 22°♊47'39 | -14°37'56 |
| retrograde | -115 Jul 20 j 07:08 | 16°♊40'50 | | minimum elong | -107 Apr 16 j 08:00 | 22°♊47'39 | 14°37'56 |
| opposition | -115 Oct 11 j 19:19 | 15°♊41'05 | -16°10'40 | max. Earth dist. | -107 Apr 16 j 17:54 | 22°♊48'13 | 50.01434 AU |
| min. Earth dist. | -115 Oct 10 j 23:54 | 15°♊42'00 | 48.19774 AU | morning rise | -107 Apr 19 j 21:23 | 22°♊52'29 | |
| direct | -114 Jan 01 j 03:22 | 14°♊42'19 | | retrograde | -107 Jul 28 j 01:25 | 24°♊16'45 | |
| | | | | opposition | -107 Oct 19 j 06:33 | 23°♊17'05 | -15°09'44 |
| conjunction | -114 Apr 09 j 17:18 | 16°♊08'29 | -15°29'16 | min. Earth dist. | -107 Oct 18 j 21:58 | 23°♊17'29 | 48.06549 AU |
| minimum elong | -114 Apr 09 j 17:28 | 16°♊08'30 | 15°29'15 | direct | -106 Jan 08 j 14:30 | 22°♊18'14 | |
| max. Earth dist. | -114 Apr 10 j 13:45 | 16°♊09'39 | 50.12269 AU | evening set | -106 Apr 13 j 09:52 | 23°♊38'38 | |
| retrograde | -114 Jul 21 j 14:39 | 17°♊38'00 | | | | | |
| opposition | -114 Oct 12 j 23:45 | 16°♊38'17 | -16°03'51 | conjunction | -106 Apr 17 j 13:21 | 23°♊44'16 | -14°29'41 |
| min. Earth dist. | -114 Oct 12 j 06:19 | 16°♊39'07 | 48.19814 AU | minimum elong | -106 Apr 17 j 13:33 | 23°♊44'16 | 14°29'41 |
| direct | -113 Jan 02 j 06:24 | 15°♊39'33 | | max. Earth dist. | -106 Apr 17 j 23:19 | 23°♊44'49 | 49.98203 AU |
| | | | | morning rise | -106 Apr 21 j 17:23 | 23°♊49'55 | |
| conjunction | -113 Apr 10 j 22:51 | 17°♊05'43 | -15°22'36 | retrograde | -106 Jul 29 j 03:00 | 25°♊13'20 | |
| minimum elong | -113 Apr 10 j 23:00 | 17°♊05'43 | 15°22'36 | opposition | -106 Oct 20 j 10:41 | 24°♊13'40 | -15°01'02 |
| max. Earth dist. | -113 Apr 11 j 17:48 | 17°♊06'47 | 50.12208 AU | min. Earth dist. | -106 Oct 20 j 02:29 | 24°♊14'03 | 48.03034 AU |
| retrograde | -113 Jul 22 j 20:18 | 18°♊35'10 | | direct | -105 Jan 09 j 22:01 | 23°♊14'48 | |
| min. Earth dist. | -113 Oct 13 j 11:07 | 17°♊36'19 | 48.19405 AU | evening set | -105 Apr 14 j 02:22 | 24°♊34'30 | |
| opposition | -113 Oct 14 j 04:11 | 17°♊35'30 | -15°56'48 | | | | |
| direct | -112 Jan 03 j 09:27 | 16°♊36'47 | | conjunction | -105 Apr 18 j 18:40 | 24°♊40'51 | -14°21'10 |
| | | | | minimum elong | -105 Apr 18 j 18:51 | 24°♊40'51 | 14°21'09 |
| conjunction | -112 Apr 11 j 04:14 | 18°♊02'56 | -15°15'42 | max. Earth dist. | -105 Apr 19 j 02:37 | 24°♊41'18 | 49.94682 AU |
| minimum elong | -112 Apr 11 j 04:25 | 18°♊02'57 | 15°15'41 | morning rise | -105 Apr 23 j 11:37 | 24°♊47'14 | |
| max. Earth dist. | -112 Apr 11 j 21:10 | 18°♊03'54 | 50.11652 AU | retrograde | -105 Jul 30 j 08:44 | 26°♊09'55 | |
| retrograde | -112 Jul 23 j 00:30 | 19°♊32'20 | | opposition | -105 Oct 21 j 15:00 | 25°♊10'16 | -14°52'05 |
| opposition | -112 Oct 14 j 08:48 | 18°♊32'42 | -15°49'31 | min. Earth dist. | -105 Oct 21 j 07:32 | 25°♊10'37 | 47.99249 AU |
| min. Earth dist. | -112 Oct 13 j 17:57 | 18°♊33'24 | 48.18481 AU | direct | -104 Jan 11 j 02:23 | 24°♊11'23 | |
| direct | -111 Jan 03 j 14:51 | 17°♊33'59 | | evening set | -104 Apr 13 j 19:52 | 25°♊30'28 | |
| | | | | | | | |
| conjunction | -111 Apr 12 j 09:57 | 19°♊00'07 | -15°08'36 | conjunction | -104 Apr 18 j 24:00 | 25°♊37'28 | -14°12'24 |
| minimum elong | -111 Apr 12 j 10:07 | 19°♊00'07 | 15°08'35 | minimum elong | -104 Apr 19 j 00:11 | 25°♊37'29 | 14°12'24 |
| max. Earth dist. | -111 Apr 13 j 02:17 | 19°♊01'02 | 50.10576 AU | max. Earth dist. | -104 Apr 19 j 07:46 | 25°♊37'54 | 49.90880 AU |
| retrograde | -111 Jul 24 j 02:20 | 20°♊29'26 | | morning rise | -104 Apr 24 j 04:46 | 25°♊44'31 | |
| opposition | -111 Oct 15 j 13:08 | 19°♊29'49 | -15°42'02 | retrograde | -104 Jul 30 j 15:40 | 27°♊06'33 | |
| min. Earth dist. | -111 Oct 14 j 23:22 | 19°♊30'28 | 48.17013 AU | opposition | -104 Oct 21 j 19:23 | 26°♊06'55 | -14°42'51 |
| direct | -110 Jan 04 j 22:44 | 18°♊31'06 | | min. Earth dist. | -104 Oct 21 j 13:30 | 26°♊07'12 | 47.95168 AU |
| | | | | direct | -103 Jan 11 j 05:34 | 25°♊08'03 | |
| conjunction | -110 Apr 13 j 15:31 | 19°♊57'11 | -15°01'16 | evening set | -103 Apr 14 j 14:31 | 26°♊26'34 | |
| minimum elong | -110 Apr 13 j 15:43 | 19°♊57'12 | 15°01'16 | | | | |
| max. Earth dist. | -110 Apr 14 j 05:16 | 19°♊57'58 | 50.08970 AU | conjunction | -103 Apr 20 j 05:30 | 26°♊34'11 | -14°03'23 |
| retrograde | -110 Jul 25 j 08:11 | 21°♊26'27 | | minimum elong | -103 Apr 20 j 05:42 | 26°♊34'12 | 14°03'22 |
| opposition | -110 Oct 16 j 17:35 | 20°♊26'50 | -15°34'19 | max. Earth dist. | -103 Apr 20 j 12:04 | 26°♊34'33 | 49.86796 AU |
| min. Earth dist. | -110 Oct 16 j 05:01 | 20°♊27'25 | 48.15038 AU | morning rise | -103 Apr 25 j 21:11 | 26°♊41'51 | |
| direct | -109 Jan 06 j 03:13 | 19°♊28'05 | | retrograde | -103 Jul 31 j 22:10 | 28°♊03'18 | |
| evening set | -109 Apr 12 j 23:29 | 20°♊51'33 | | opposition | -103 Oct 22 j 23:31 | 27°♊03'42 | -14°33'22 |
| | | | | min. Earth dist. | -103 Oct 22 j 17:42 | 27°♊03'58 | 47.90781 AU |
| conjunction | -109 Apr 14 j 20:58 | 20°♊54'08 | -14°53'44 | direct | -102 Jan 12 j 07:42 | 26°♊04'49 | |
| minimum elong | -109 Apr 14 j 21:08 | 20°♊54'08 | 14°53'43 | evening set | -102 Apr 15 j 09:45 | 27°♊22'50 | |
| max. Earth dist. | -109 Apr 15 j 09:59 | 20°♊54'52 | 50.06865 AU | | | | |
| morning rise | -109 Apr 16 j 18:50 | 20°♊56'44 | | conjunction | -102 Apr 21 j 11:01 | 27°♊31'03 | -13°54'07 |
| retrograde | -109 Jul 26 j 14:01 | 22°♊23'21 | | minimum elong | -102 Apr 21 j 11:12 | 27°♊31'03 | 13°54'08 |
| opposition | -109 Oct 17 j 21:59 | 21°♊23'42 | -15°26'22 | max. Earth dist. | -102 Apr 21 j 15:49 | 27°♊31'19 | 49.82365 AU |
| min. Earth dist. | -109 Oct 17 j 11:16 | 21°♊24'13 | 48.12589 AU | morning rise | -102 Apr 27 j 13:06 | 27°♊39'18 | |
| direct | -108 Jan 07 j 07:45 | 20°♊24'55 | | retrograde | -102 Aug 02 j 03:01 | 29°♊00'12 | |
| evening set | -108 Apr 12 j 06:32 | 21°♊47'06 | | opposition | -102 Oct 24 j 03:56 | 28°♊00'38 | -14°23'39 |
| | | | | min. Earth dist. | -102 Oct 24 j 00:13 | 28°♊00'48 | 47.86026 AU |
| conjunction | -108 Apr 15 j 02:26 | 21°♊50'57 | -14°45'57 | direct | -101 Jan 13 j 12:31 | 27°♊01'46 | |
| minimum elong | -108 Apr 15 j 02:38 | 21°♊50'57 | 14°45'57 | evening set | -101 Apr 16 j 05:34 | 28°♊19'19 | |
| max. Earth dist. | -108 Apr 15 j 14:12 | 21°♊51'37 | 50.04341 AU | | | | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 22

Attention, astronomical year style is used: The year -101 in astronomical counting style is the year 102 BCE in historical counting style.

| | | | | | | | |
|------------------|---------------------|---------------------------|-------------|------------------|--------------------|-------------------------|-------------|
| conjunction | -101 Apr 22 j 16:35 | 28° Υ 28'05 | -13°44'37 | max. Earth dist. | -95 Apr 27 j 21:36 | 4° \mathcal{B} 12'01 | 49.38201 AU |
| minimum elong | -101 Apr 22 j 16:47 | 28° Υ 28'06 | 13°44'37 | morning rise | -95 May 06 j 17:21 | 4° \mathcal{B} 24'01 | |
| max. Earth dist. | -101 Apr 22 j 21:07 | 28° Υ 28'20 | 49.77537 AU | retrograde | -95 Aug 08 j 13:03 | 5° \mathcal{B} 41'47 | |
| morning rise | -101 Apr 29 j 04:19 | 28° Υ 36'53 | | opposition | -95 Oct 30 j 10:39 | 4° \mathcal{B} 42'04 | -13°09'08 |
| retrograde | -101 Aug 03 j 05:04 | 29° Υ 57'17 | | min. Earth dist. | -95 Oct 30 j 15:38 | 4° \mathcal{B} 41'50 | 47.39222 AU |
| opposition | -101 Oct 25 j 08:15 | 28° Υ 57'44 | -14°13'41 | direct | -94 Jan 20 j 00:18 | 3° \mathcal{B} 42'52 | |
| min. Earth dist. | -101 Oct 25 j 05:20 | 28° Υ 57'53 | 47.80825 AU | evening set | -94 Apr 20 j 11:58 | 4° \mathcal{B} 57'43 | |
| direct | -100 Jan 14 j 20:02 | 27° Υ 58'52 | | | | | |
| evening set | -100 Apr 16 j 02:01 | 29° Υ 16'00 | | conjunction | -94 Apr 29 j 08:51 | 5° \mathcal{B} 09'46 | -12°31'56 |
| | | | | minimum elong | -94 Apr 29 j 09:02 | 5° \mathcal{B} 09'47 | 12°31'55 |
| conjunction | -100 Apr 22 j 22:12 | 29° Υ 25'17 | -13°34'54 | max. Earth dist. | -94 Apr 29 j 03:03 | 5° \mathcal{B} 09'27 | 49.30147 AU |
| minimum elong | -100 Apr 22 j 22:23 | 29° Υ 25'18 | 13°34'54 | morning rise | -94 May 08 j 06:41 | 5° \mathcal{B} 21'54 | |
| max. Earth dist. | -100 Apr 23 j 00:07 | 29° Υ 25'23 | 49.72238 AU | retrograde | -94 Aug 09 j 18:56 | 6° \mathcal{B} 39'18 | |
| morning rise | -100 Apr 29 j 19:16 | 29° Υ 34'37 | | opposition | -94 Oct 31 j 15:12 | 5° \mathcal{B} 39'32 | -12°57'32 |
| | -100 May 19 j 03:08 | 0° \mathcal{B} | | min. Earth dist. | -94 Oct 31 j 21:40 | 5° \mathcal{B} 39'14 | 47.30862 AU |
| retrograde | -100 Aug 03 j 11:13 | 0° \mathcal{B} 54'33 | | direct | -93 Jan 21 j 05:12 | 4° \mathcal{B} 40'16 | |
| | -100 Oct 21 j 03:00 | 30° $\mathcal{K}\Upsilon$ | | evening set | -93 Apr 21 j 10:30 | 5° \mathcal{B} 54'48 | |
| opposition | -100 Oct 25 j 12:38 | 29° Υ 55'00 | -14°03'30 | | | | |
| min. Earth dist. | -100 Oct 25 j 11:08 | 29° Υ 55'05 | 47.75135 AU | conjunction | -93 Apr 30 j 14:32 | 6° \mathcal{B} 07'16 | -12°20'36 |
| direct | -99 Jan 15 j 00:17 | 28° Υ 56'07 | | minimum elong | -93 Apr 30 j 14:44 | 6° \mathcal{B} 07'16 | 12°20'37 |
| | -99 Apr 07 j 08:20 | 0° \mathcal{B} | | max. Earth dist. | -93 Apr 30 j 07:35 | 6° \mathcal{B} 06'52 | 49.21794 AU |
| evening set | -99 Apr 16 j 22:53 | 0° \mathcal{B} 12'50 | | morning rise | -93 May 09 j 19:35 | 6° \mathcal{B} 19'48 | |
| | | | | retrograde | -93 Aug 11 j 02:30 | 7° \mathcal{B} 36'51 | |
| conjunction | -99 Apr 24 j 04:02 | 0° \mathcal{B} 22'36 | -13°24'58 | opposition | -93 Nov 01 j 19:40 | 6° \mathcal{B} 37'03 | -12°45'40 |
| minimum elong | -99 Apr 24 j 04:14 | 0° \mathcal{B} 22'37 | 13°24'57 | min. Earth dist. | -93 Nov 02 j 02:04 | 6° \mathcal{B} 36'45 | 47.22212 AU |
| max. Earth dist. | -99 Apr 24 j 04:58 | 0° \mathcal{B} 22'40 | 49.66414 AU | direct | -92 Jan 22 j 07:22 | 5° \mathcal{B} 37'43 | |
| morning rise | -99 May 01 j 10:02 | 0° \mathcal{B} 32'27 | | evening set | -92 Apr 21 j 09:16 | 6° \mathcal{B} 51'57 | |
| retrograde | -99 Aug 04 j 17:26 | 1° \mathcal{B} 51'55 | | | | | |
| opposition | -99 Oct 26 j 17:08 | 0° \mathcal{B} 52'23 | -13°53'05 | conjunction | -92 Apr 30 j 20:22 | 7° \mathcal{B} 04'50 | -12°09'02 |
| min. Earth dist. | -99 Oct 26 j 17:38 | 0° \mathcal{B} 52'21 | 47.68895 AU | minimum elong | -92 Apr 30 j 20:34 | 7° \mathcal{B} 04'51 | 12°09'01 |
| | -99 Dec 22 j 11:05 | 30° $\mathcal{K}\Upsilon$ | | max. Earth dist. | -92 Apr 30 j 11:50 | 7° \mathcal{B} 04'21 | 49.13145 AU |
| direct | -98 Jan 16 j 04:56 | 29° Υ 53'27 | | morning rise | -92 May 10 j 08:39 | 7° \mathcal{B} 17'48 | |
| | -98 Feb 09 j 17:08 | 0° \mathcal{B} | | retrograde | -92 Aug 11 j 08:37 | 8° \mathcal{B} 34'31 | |
| evening set | -98 Apr 17 j 20:15 | 1° \mathcal{B} 09'45 | | opposition | -92 Nov 02 j 00:16 | 7° \mathcal{B} 34'41 | -12°33'32 |
| | | | | min. Earth dist. | -92 Nov 02 j 08:32 | 7° \mathcal{B} 34'17 | 47.13274 AU |
| conjunction | -98 Apr 25 j 09:49 | 1° \mathcal{B} 20'01 | -13°14'49 | direct | -91 Jan 22 j 11:20 | 6° \mathcal{B} 35'17 | |
| minimum elong | -98 Apr 25 j 10:00 | 1° \mathcal{B} 20'01 | 13°14'48 | evening set | -91 Apr 22 j 08:20 | 7° \mathcal{B} 49'16 | |
| max. Earth dist. | -98 Apr 25 j 09:04 | 1° \mathcal{B} 19'58 | 49.60064 AU | | | | |
| morning rise | -98 May 03 j 00:14 | 1° \mathcal{B} 30'21 | | conjunction | -91 May 02 j 02:27 | 8° \mathcal{B} 02'33 | -11°57'12 |
| retrograde | -98 Aug 06 j 01:07 | 2° \mathcal{B} 49'21 | | minimum elong | -91 May 02 j 02:39 | 8° \mathcal{B} 02'34 | 11°57'12 |
| opposition | -98 Oct 27 j 21:26 | 1° \mathcal{B} 49'47 | -13°42'27 | max. Earth dist. | -91 May 01 j 17:48 | 8° \mathcal{B} 02'04 | 49.04210 AU |
| min. Earth dist. | -98 Oct 27 j 22:29 | 1° \mathcal{B} 49'44 | 47.62138 AU | morning rise | -91 May 11 j 21:30 | 8° \mathcal{B} 15'55 | |
| direct | -97 Jan 17 j 07:01 | 0° \mathcal{B} 50'49 | | retrograde | -91 Aug 12 j 11:43 | 9° \mathcal{B} 32'20 | |
| evening set | -97 Apr 18 j 17:45 | 2° \mathcal{B} 06'43 | | opposition | -91 Nov 03 j 04:51 | 8° \mathcal{B} 32'28 | -12°21'08 |
| | | | | min. Earth dist. | -91 Nov 03 j 13:36 | 8° \mathcal{B} 32'03 | 47.04016 AU |
| conjunction | -97 Apr 26 j 15:30 | 2° \mathcal{B} 17'27 | -13°04'26 | direct | -90 Jan 23 j 18:20 | 7° \mathcal{B} 33'01 | |
| minimum elong | -97 Apr 26 j 15:43 | 2° \mathcal{B} 17'28 | 13°04'26 | evening set | -90 Apr 23 j 07:45 | 8° \mathcal{B} 46'46 | |
| max. Earth dist. | -97 Apr 26 j 12:44 | 2° \mathcal{B} 17'18 | 49.53203 AU | | | | |
| morning rise | -97 May 04 j 14:17 | 2° \mathcal{B} 28'15 | | conjunction | -90 May 03 j 08:26 | 9° \mathcal{B} 00'27 | -11°45'07 |
| retrograde | -97 Aug 07 j 07:35 | 3° \mathcal{B} 46'49 | | minimum elong | -90 May 03 j 08:38 | 9° \mathcal{B} 00'28 | 11°45'06 |
| opposition | -97 Oct 29 j 01:56 | 2° \mathcal{B} 47'13 | -13°31'35 | max. Earth dist. | -90 May 02 j 21:29 | 8° \mathcal{B} 59'50 | 48.94934 AU |
| min. Earth dist. | -97 Oct 29 j 05:10 | 2° \mathcal{B} 47'04 | 47.54906 AU | morning rise | -90 May 13 j 10:21 | 9° \mathcal{B} 14'13 | |
| direct | -96 Jan 18 j 10:07 | 1° \mathcal{B} 48'10 | | retrograde | -90 Aug 13 j 17:25 | 10° \mathcal{B} 30'22 | |
| evening set | -96 Apr 18 j 15:28 | 3° \mathcal{B} 03'42 | | opposition | -90 Nov 04 j 09:27 | 9° \mathcal{B} 30'28 | -12°08'30 |
| | | | | min. Earth dist. | -90 Nov 04 j 19:28 | 9° \mathcal{B} 30'00 | 46.94402 AU |
| conjunction | -96 Apr 26 j 21:12 | 3° \mathcal{B} 14'53 | -12°53'50 | direct | -89 Jan 24 j 23:22 | 8° \mathcal{B} 30'58 | |
| minimum elong | -96 Apr 26 j 21:24 | 3° \mathcal{B} 14'54 | 12°53'50 | evening set | -89 Apr 24 j 07:17 | 9° \mathcal{B} 44'31 | |
| max. Earth dist. | -96 Apr 26 j 18:04 | 3° \mathcal{B} 14'43 | 49.45902 AU | | | | |
| morning rise | -96 May 05 j 03:48 | 3° \mathcal{B} 26'08 | | conjunction | -89 May 04 j 14:40 | 9° \mathcal{B} 58'35 | -11°32'48 |
| retrograde | -96 Aug 07 j 09:17 | 4° \mathcal{B} 44'18 | | minimum elong | -89 May 04 j 14:51 | 9° \mathcal{B} 58'35 | 11°32'48 |
| opposition | -96 Oct 29 j 06:20 | 3° \mathcal{B} 44'39 | -13°20'29 | max. Earth dist. | -89 May 04 j 03:02 | 9° \mathcal{B} 57'55 | 48.85257 AU |
| min. Earth dist. | -96 Oct 29 j 10:06 | 3° \mathcal{B} 44'28 | 47.47244 AU | morning rise | -89 May 14 j 23:06 | 10° \mathcal{B} 12'44 | |
| direct | -95 Jan 18 j 18:02 | 2° \mathcal{B} 45'31 | | retrograde | -89 Aug 14 j 22:45 | 11° \mathcal{B} 28'38 | |
| evening set | -95 Apr 19 j 13:40 | 4° \mathcal{B} 00'42 | | opposition | -89 Nov 05 j 14:16 | 10° \mathcal{B} 28'43 | -11°55'36 |
| | | | | min. Earth dist. | -89 Nov 06 j 02:04 | 10° \mathcal{B} 28'09 | 46.84347 AU |
| conjunction | -95 Apr 28 j 02:57 | 4° \mathcal{B} 12'19 | -12°43'00 | direct | -88 Jan 26 j 04:59 | 9° \mathcal{B} 29'09 | |
| minimum elong | -95 Apr 28 j 03:10 | 4° \mathcal{B} 12'20 | 12°43'01 | evening set | -88 Apr 24 j 07:11 | 10° \mathcal{B} 42'29 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 23

Attention, astronomical year style is used: The year -88 in astronomical counting style is the year 89 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|-----------|-------------|------------------|--------------------|-----------|-------------|
| conjunction | -88 May 04 j 20:53 | 10°856'56 | -11°20'15 | max. Earth dist. | -82 May 10 j 13:42 | 16°849'30 | 48.03938 AU |
| minimum elong | -88 May 04 j 21:05 | 10°856'57 | 11°20'14 | morning rise | -82 May 23 j 14:19 | 17°807'29 | |
| max. Earth dist. | -88 May 04 j 07:40 | 10°856'11 | 48.75123 AU | retrograde | -82 Aug 21 j 20:40 | 18°821'54 | |
| morning rise | -88 May 15 j 11:42 | 11°811'29 | | opposition | -82 Nov 12 j 01:19 | 17°821'27 | -10°18'37 |
| retrograde | -88 Aug 15 j 06:50 | 12°827'08 | | min. Earth dist. | -82 Nov 12 j 22:11 | 17°820'27 | 46.00412 AU |
| opposition | -88 Nov 05 j 19:05 | 11°827'10 | -11°42'28 | direct | -81 Feb 01 j 14:03 | 16°821'08 | |
| min. Earth dist. | -88 Nov 06 j 07:31 | 11°826'35 | 46.73799 AU | evening set | -81 Apr 30 j 12:34 | 17°833'24 | |
| direct | -87 Jan 26 j 07:59 | 10°827'32 | | | | | |
| evening set | -87 Apr 25 j 07:24 | 11°840'41 | | conjunction | -81 May 12 j 18:58 | 17°850'22 | -9°45'52 |
| max. Earth dist. | -87 May 05 j 11:47 | 11°854'37 | 48.64454 AU | minimum elong | -81 May 12 j 19:09 | 17°850'22 | 9°45'52 |
| | | | | max. Earth dist. | -81 May 11 j 20:25 | 17°849'03 | 47.90753 AU |
| conjunction | -87 May 06 j 03:21 | 11°855'31 | -11°07'28 | morning rise | -81 May 25 j 02:19 | 18°807'24 | |
| minimum elong | -87 May 06 j 03:32 | 11°855'32 | 11°07'28 | retrograde | -81 Aug 23 j 01:17 | 19°821'39 | |
| morning rise | -87 May 17 j 00:31 | 12°810'26 | | opposition | -81 Nov 13 j 06:33 | 18°821'07 | -10°03'43 |
| retrograde | -87 Aug 16 j 14:59 | 13°825'51 | | min. Earth dist. | -81 Nov 14 j 03:31 | 18°820'06 | 45.86942 AU |
| opposition | -87 Nov 07 j 00:01 | 12°825'50 | -11°29'07 | direct | -80 Feb 02 j 21:27 | 17°820'41 | |
| min. Earth dist. | -87 Nov 07 j 14:55 | 12°825'07 | 46.62713 AU | evening set | -80 Apr 30 j 14:07 | 18°832'52 | |
| direct | -86 Jan 27 j 11:10 | 11°826'06 | | max. Earth dist. | -80 May 12 j 00:59 | 18°848'44 | 47.77308 AU |
| evening set | -86 Apr 26 j 07:51 | 12°839'04 | | | | | |
| | | | | conjunction | -80 May 13 j 01:38 | 18°850'10 | -9°31'23 |
| conjunction | -86 May 07 j 09:58 | 12°854'16 | -10°54'28 | minimum elong | -80 May 13 j 01:50 | 18°850'11 | 9°31'23 |
| minimum elong | -86 May 07 j 10:10 | 12°854'17 | 10°54'28 | morning rise | -80 May 25 j 14:26 | 19°807'33 | |
| max. Earth dist. | -86 May 06 j 17:43 | 12°853'21 | 48.53258 AU | retrograde | -80 Aug 23 j 07:05 | 20°821'40 | |
| morning rise | -86 May 18 j 13:04 | 13°809'33 | | opposition | -80 Nov 13 j 11:57 | 19°821'04 | -9°48'33 |
| retrograde | -86 Aug 17 j 18:53 | 14°824'44 | | min. Earth dist. | -80 Nov 14 j 10:02 | 19°819'59 | 45.73223 AU |
| opposition | -86 Nov 08 j 04:59 | 13°824'39 | -11°15'31 | direct | -79 Feb 03 j 03:58 | 18°820'31 | |
| min. Earth dist. | -86 Nov 08 j 20:33 | 13°823'54 | 46.51097 AU | evening set | -79 May 01 j 15:56 | 19°832'39 | |
| direct | -85 Jan 28 j 18:29 | 12°824'49 | | max. Earth dist. | -79 May 13 j 07:48 | 19°848'49 | 47.63598 AU |
| evening set | -85 Apr 27 j 08:22 | 13°837'37 | | | | | |
| | | | | conjunction | -79 May 14 j 08:44 | 19°850'16 | -9°16'38 |
| conjunction | -85 May 08 j 16:16 | 13°853'11 | -10°41'14 | minimum elong | -79 May 14 j 08:56 | 19°850'17 | 9°16'37 |
| minimum elong | -85 May 08 j 16:27 | 13°853'11 | 10°41'14 | morning rise | -79 May 27 j 02:31 | 20°807'59 | |
| max. Earth dist. | -85 May 07 j 21:32 | 13°852'06 | 48.41554 AU | retrograde | -79 Aug 24 j 12:01 | 21°822'01 | |
| morning rise | -85 May 20 j 01:26 | 14°808'49 | | opposition | -79 Nov 14 j 17:23 | 20°821'20 | -9°33'06 |
| | -85 Jul 01 j 22:02 | 15°8 | | min. Earth dist. | -79 Nov 15 j 16:45 | 20°820'11 | 45.59224 AU |
| retrograde | -85 Aug 18 j 23:35 | 15°823'48 | | direct | -78 Feb 04 j 10:57 | 19°820'41 | |
| | -85 Oct 06 j 12:37 | 15°8 | | evening set | -78 May 02 j 18:10 | 20°832'46 | |
| opposition | -85 Nov 09 j 10:02 | 14°823'37 | -11°01'40 | | | | |
| min. Earth dist. | -85 Nov 10 j 03:08 | 14°822'48 | 46.39009 AU | conjunction | -78 May 15 j 15:53 | 20°850'43 | -9°01'37 |
| direct | -84 Jan 30 j 00:54 | 13°823'40 | | minimum elong | -78 May 15 j 16:04 | 20°850'44 | 9°01'38 |
| evening set | -84 Apr 27 j 09:04 | 14°836'19 | | max. Earth dist. | -78 May 14 j 13:39 | 20°849'11 | 47.49610 AU |
| | | | | morning rise | -78 May 28 j 14:42 | 21°808'46 | |
| conjunction | -84 May 08 j 22:54 | 14°852'14 | -10°27'46 | retrograde | -78 Aug 25 j 20:43 | 22°822'43 | |
| minimum elong | -84 May 08 j 23:07 | 14°852'14 | 10°27'47 | opposition | -78 Nov 15 j 22:56 | 21°821'58 | -9°17'22 |
| max. Earth dist. | -84 May 08 j 03:30 | 14°851'07 | 48.29391 AU | min. Earth dist. | -78 Nov 16 j 22:41 | 21°820'48 | 45.44924 AU |
| | -84 May 14 j 13:49 | 15°8 | | direct | -77 Feb 05 j 14:46 | 20°821'12 | |
| morning rise | -84 May 20 j 13:48 | 15°808'14 | | evening set | -77 May 03 j 20:27 | 21°833'15 | |
| retrograde | -84 Aug 19 j 04:58 | 16°823'00 | | | | | |
| opposition | -84 Nov 09 j 15:04 | 15°822'44 | -10°47'35 | conjunction | -77 May 16 j 23:01 | 21°851'33 | -8°46'21 |
| min. Earth dist. | -84 Nov 10 j 09:46 | 15°821'50 | 46.26489 AU | minimum elong | -77 May 16 j 23:12 | 21°851'34 | 8°46'20 |
| | -84 Nov 29 j 18:17 | 15°8 | | max. Earth dist. | -77 May 15 j 19:02 | 21°849'55 | 47.35265 AU |
| direct | -83 Jan 30 j 07:08 | 14°822'40 | | morning rise | -77 May 30 j 02:43 | 22°809'56 | |
| | -83 Mar 31 j 16:22 | 15°8 | | retrograde | -77 Aug 27 j 07:15 | 23°823'49 | |
| evening set | -83 Apr 28 j 10:08 | 15°835'09 | | opposition | -77 Nov 17 j 04:45 | 22°822'58 | -9°01'23 |
| max. Earth dist. | -83 May 09 j 08:41 | 15°850'13 | 48.16843 AU | min. Earth dist. | -77 Nov 18 j 06:40 | 22°821'42 | 45.30241 AU |
| | | | | direct | -76 Feb 06 j 17:20 | 21°822'06 | |
| conjunction | -83 May 10 j 05:33 | 15°851'25 | -10°14'04 | evening set | -76 May 03 j 23:12 | 22°834'09 | |
| minimum elong | -83 May 10 j 05:44 | 15°851'26 | 10°14'03 | max. Earth dist. | -76 May 16 j 02:04 | 22°851'06 | 47.20512 AU |
| morning rise | -83 May 22 j 02:06 | 16°807'46 | | | | | |
| retrograde | -83 Aug 20 j 13:33 | 17°822'21 | | conjunction | -76 May 17 j 06:37 | 22°852'46 | -8°30'49 |
| opposition | -83 Nov 10 j 20:07 | 16°822'00 | -10°33'14 | minimum elong | -76 May 17 j 06:47 | 22°852'47 | 8°30'50 |
| min. Earth dist. | -83 Nov 11 j 15:02 | 16°821'06 | 46.13610 AU | morning rise | -76 May 30 j 14:53 | 23°811'28 | |
| direct | -82 Jan 31 j 09:50 | 15°821'48 | | retrograde | -76 Aug 27 j 14:12 | 24°825'17 | |
| evening set | -82 Apr 29 j 11:15 | 16°834'10 | | opposition | -76 Nov 17 j 10:31 | 23°824'21 | -8°45'07 |
| | | | | min. Earth dist. | -76 Nov 18 j 13:00 | 23°823'03 | 45.15109 AU |
| conjunction | -82 May 11 j 12:10 | 16°850'47 | -10°00'06 | direct | -75 Feb 06 j 23:48 | 22°823'20 | |
| minimum elong | -82 May 11 j 12:22 | 16°850'48 | 10°00'06 | evening set | -75 May 05 j 02:25 | 23°835'24 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 24

Attention, astronomical year style is used: The year -75 in astronomical counting style is the year 76 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|--------------------|-------------|------------------|--------------------|--------------------|-------------|
| max. Earth dist. | -75 May 17 j 07:03 | 23° 8 52'30 | 47.05282 AU | morning rise | -69 Jun 09 j 04:07 | 0° II 30'25 | |
| | | | | retrograde | -69 Sep 04 j 15:51 | 1° II 44'04 | |
| conjunction | -75 May 18 j 14:16 | 23° 8 54'20 | -8°15'03 | opposition | -69 Nov 25 j 07:10 | 0° II 42'08 | -6°43'50 |
| minimum elong | -75 May 18 j 14:27 | 23° 8 54'20 | 8°15'03 | min. Earth dist. | -69 Nov 26 j 18:15 | 0° II 40'23 | 43.97144 AU |
| morning rise | -75 Jun 01 j 03:17 | 24° 8 13'21 | | | -68 Jan 02 j 20:57 | 30° R 8 | |
| retrograde | -75 Aug 28 j 20:34 | 25° 8 27'06 | | direct | -68 Feb 15 j 01:39 | 29° 8 39'51 | |
| opposition | -75 Nov 18 j 16:35 | 24° 8 26'03 | -8°28'36 | | -68 Mar 28 j 19:23 | 0° II | |
| min. Earth dist. | -75 Nov 19 j 20:54 | 24° 8 24'40 | 44.99493 AU | evening set | -68 May 11 j 07:05 | 0° II 52'15 | |
| direct | -74 Feb 08 j 07:00 | 23° 8 24'53 | | max. Earth dist. | -68 May 24 j 07:43 | 1° II 10'53 | 45.86984 AU |
| evening set | -74 May 06 j 05:40 | 24° 8 36'57 | | | | | |
| | | | | conjunction | -68 May 25 j 23:22 | 1° II 13'16 | -6°17'30 |
| conjunction | -74 May 19 j 22:08 | 24° 8 56'12 | -7°59'02 | minimum elong | -68 May 25 j 23:30 | 1° II 13'17 | 6°17'29 |
| minimum elong | -74 May 19 j 22:18 | 24° 8 56'13 | 7°59'02 | morning rise | -68 Jun 09 j 16:22 | 1° II 34'22 | |
| max. Earth dist. | -74 May 18 j 14:04 | 24° 8 54'18 | 46.89549 AU | retrograde | -68 Sep 05 j 00:09 | 2° II 48'06 | |
| morning rise | -74 Jun 02 j 15:25 | 25° 8 15'32 | | opposition | -68 Nov 25 j 13:59 | 1° II 46'02 | -6°25'22 |
| retrograde | -74 Aug 30 j 00:41 | 26° 8 29'14 | | min. Earth dist. | -68 Nov 27 j 01:23 | 1° II 44'15 | 43.79097 AU |
| opposition | -74 Nov 19 j 22:44 | 25° 8 28'03 | -8°11'50 | direct | -67 Feb 15 j 08:03 | 0° II 43'34 | |
| min. Earth dist. | -74 Nov 21 j 04:36 | 25° 8 26'35 | 44.83378 AU | evening set | -67 May 12 j 12:24 | 1° II 56'06 | |
| direct | -73 Feb 09 j 16:21 | 24° 8 26'43 | | max. Earth dist. | -67 May 25 j 15:12 | 2° II 14'57 | 45.68934 AU |
| evening set | -73 May 07 j 09:18 | 25° 8 38'47 | | | | | |
| max. Earth dist. | -73 May 19 j 20:09 | 25° 8 56'20 | 46.73355 AU | conjunction | -67 May 27 j 08:13 | 2° II 17'25 | -5°59'37 |
| | | | | minimum elong | -67 May 27 j 08:22 | 2° II 17'26 | 5°59'38 |
| conjunction | -73 May 21 j 06:00 | 25° 8 58'20 | -7°42'46 | morning rise | -67 Jun 11 j 04:38 | 2° II 38'48 | |
| minimum elong | -73 May 21 j 06:10 | 25° 8 58'21 | 7°42'46 | retrograde | -67 Sep 06 j 10:47 | 3° II 52'38 | |
| morning rise | -73 Jun 04 j 03:38 | 26° 8 17'58 | | opposition | -67 Nov 26 j 21:14 | 2° II 50'26 | -6°06'37 |
| retrograde | -73 Aug 31 j 08:53 | 27° 8 31'38 | | min. Earth dist. | -67 Nov 28 j 10:24 | 2° II 48'34 | 43.60816 AU |
| opposition | -73 Nov 21 j 04:53 | 26° 8 30'19 | -7°54'48 | direct | -66 Feb 16 j 12:47 | 1° II 47'49 | |
| min. Earth dist. | -73 Nov 22 j 11:17 | 26° 8 28'49 | 44.66825 AU | evening set | -66 May 13 j 18:01 | 3° II 00'31 | |
| direct | -72 Feb 10 j 21:44 | 25° 8 28'48 | | max. Earth dist. | -66 May 26 j 23:58 | 3° II 19'38 | 45.50645 AU |
| evening set | -72 May 07 j 13:03 | 26° 8 40'52 | | | | | |
| max. Earth dist. | -72 May 20 j 02:23 | 26° 8 58'37 | 46.56723 AU | conjunction | -66 May 28 j 17:12 | 3° II 22'08 | -5°41'28 |
| | | | | minimum elong | -66 May 28 j 17:20 | 3° II 22'08 | 5°41'28 |
| conjunction | -72 May 21 j 13:59 | 27° 8 00'44 | -7°26'15 | morning rise | -66 Jun 12 j 16:48 | 3° II 43'47 | |
| minimum elong | -72 May 21 j 14:08 | 27° 8 00'44 | 7°26'14 | retrograde | -66 Sep 07 j 21:07 | 4° II 57'45 | |
| morning rise | -72 Jun 04 j 15:49 | 27° 8 20'40 | | opposition | -66 Nov 28 j 04:29 | 3° II 55'26 | -5°47'33 |
| retrograde | -72 Aug 31 j 17:52 | 28° 8 34'18 | | min. Earth dist. | -66 Nov 29 j 17:42 | 3° II 53'33 | 43.42267 AU |
| opposition | -72 Nov 21 j 11:19 | 27° 8 32'50 | -7°37'29 | direct | -65 Feb 17 j 18:50 | 2° II 52'39 | |
| min. Earth dist. | -72 Nov 22 j 19:55 | 27° 8 31'13 | 44.49867 AU | evening set | -65 May 15 j 00:08 | 4° II 05'34 | |
| direct | -71 Feb 11 j 02:31 | 26° 8 31'07 | | max. Earth dist. | -65 May 28 j 06:52 | 4° II 24'48 | 45.32052 AU |
| evening set | -71 May 08 j 17:10 | 27° 8 43'14 | | | | | |
| max. Earth dist. | -71 May 21 j 10:15 | 28° 8 01'15 | 46.39721 AU | conjunction | -65 May 30 j 02:22 | 4° II 27'27 | -5°23'03 |
| | | | | minimum elong | -65 May 30 j 02:29 | 4° II 27'27 | 5°23'03 |
| conjunction | -71 May 22 j 22:15 | 28° 8 03'23 | -7°09'28 | morning rise | -65 Jun 14 j 05:13 | 4° II 49'23 | |
| minimum elong | -71 May 22 j 22:24 | 28° 8 03'24 | 7°09'28 | retrograde | -65 Sep 09 j 06:55 | 6° II 03'29 | |
| morning rise | -71 Jun 06 j 03:59 | 28° 8 23'37 | | opposition | -65 Nov 29 j 11:59 | 5° II 01'03 | -5°28'13 |
| retrograde | -71 Sep 02 j 01:49 | 29° 8 37'13 | | min. Earth dist. | -65 Dec 01 j 03:08 | 4° II 59'04 | 43.23397 AU |
| opposition | -71 Nov 22 j 17:38 | 28° 8 35'36 | -7°19'53 | direct | -64 Feb 19 j 02:00 | 3° II 58'06 | |
| min. Earth dist. | -71 Nov 24 j 02:29 | 28° 8 33'58 | 44.32564 AU | evening set | -64 May 15 j 06:30 | 5° II 11'15 | |
| direct | -70 Feb 12 j 09:49 | 27° 8 33'41 | | max. Earth dist. | -64 May 28 j 15:57 | 5° II 30'43 | 45.13085 AU |
| evening set | -70 May 09 j 21:39 | 28° 8 45'53 | | | | | |
| max. Earth dist. | -70 May 22 j 16:13 | 29° 8 04'03 | 46.22396 AU | conjunction | -64 May 30 j 11:56 | 5° II 33'24 | -5°04'21 |
| | | | | minimum elong | -64 May 30 j 12:04 | 5° II 33'25 | 5°04'20 |
| conjunction | -70 May 24 j 06:28 | 29° 8 06'20 | -6°52'25 | morning rise | -64 Jun 14 j 17:35 | 5° II 55'37 | |
| minimum elong | -70 May 24 j 06:37 | 29° 8 06'20 | 6°52'24 | retrograde | -64 Sep 09 j 13:21 | 7° II 09'53 | |
| morning rise | -70 Jun 07 j 16:14 | 29° 8 26'51 | | opposition | -64 Nov 29 j 19:49 | 6° II 07'19 | -5°08'35 |
| | -70 Jul 02 j 22:59 | 0° II | | min. Earth dist. | -64 Dec 01 j 12:09 | 6° II 05'16 | 43.04109 AU |
| retrograde | -70 Sep 03 j 10:01 | 0° II 40'28 | | direct | -63 Feb 19 j 13:01 | 5° II 04'10 | |
| | -70 Nov 05 j 19:26 | 30° R 8 | | evening set | -63 May 16 j 13:36 | 6° II 17'33 | |
| opposition | -70 Nov 24 j 00:19 | 29° 8 38'41 | -7°02'00 | max. Earth dist. | -63 May 29 j 23:33 | 6° II 37'09 | 44.93683 AU |
| min. Earth dist. | -70 Nov 25 j 10:32 | 29° 8 36'59 | 44.14982 AU | | | | |
| direct | -69 Feb 13 j 16:52 | 28° 8 36'35 | | conjunction | -63 May 31 j 21:45 | 6° II 39'59 | -4°45'23 |
| evening set | -69 May 11 j 02:03 | 29° 8 48'52 | | minimum elong | -63 May 31 j 21:52 | 6° II 40'00 | 4°45'23 |
| | -69 May 18 j 22:30 | 0° II | | morning rise | -63 Jun 16 j 06:19 | 7° II 02'28 | |
| max. Earth dist. | -69 May 24 j 00:31 | 0° II 07'18 | 46.04802 AU | retrograde | -63 Sep 10 j 22:45 | 8° II 16'54 | |
| | | | | opposition | -63 Dec 01 j 03:42 | 7° II 14'11 | -4°48'40 |
| conjunction | -69 May 25 j 14:48 | 0° II 09'36 | -6°35'06 | min. Earth dist. | -63 Dec 02 j 20:59 | 7° II 12'04 | 42.84379 AU |
| minimum elong | -69 May 25 j 14:57 | 0° II 09'37 | 6°35'06 | direct | -62 Feb 20 j 20:53 | 6° II 10'50 | |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 25

Attention, astronomical year style is used: The year -62 in astronomical counting style is the year 63 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|------------|-------------|------------------|--------------------|------------|-------------|
| evening set | -62 May 17 j 20:57 | 7°II24'27 | | opposition | -56 Dec 08 j 17:43 | 15°II17'22 | -2°21'08 |
| max. Earth dist. | -62 May 31 j 08:01 | 7°II44'12 | 44.73808 AU | min. Earth dist. | -56 Dec 10 j 18:17 | 15°II14'49 | 41.35857 AU |
| | | | | direct | -55 Feb 28 j 09:15 | 14°II12'11 | |
| conjunction | -62 Jun 02 j 07:51 | 7°II47'09 | -4°26'10 | evening set | -55 May 25 j 11:20 | 15°II28'02 | |
| minimum elong | -62 Jun 02 j 07:58 | 7°II47'10 | 4°26'09 | max. Earth dist. | -55 Jun 08 j 03:39 | 15°II48'48 | 43.24774 AU |
| morning rise | -62 Jun 17 j 18:57 | 8°II09'54 | | | | | |
| retrograde | -62 Sep 12 j 08:46 | 9°II24'32 | | conjunction | -55 Jun 10 j 12:06 | 15°II52'24 | -2°04'00 |
| opposition | -62 Dec 02 j 12:03 | 8°II21'37 | -4°28'28 | minimum elong | -55 Jun 10 j 12:09 | 15°II52'24 | 2°03'59 |
| min. Earth dist. | -62 Dec 04 j 07:31 | 8°II19'24 | 42.64184 AU | morning rise | -55 Jun 26 j 12:34 | 16°II16'47 | |
| direct | -61 Feb 22 j 03:38 | 7°II18'03 | | retrograde | -55 Sep 20 j 13:18 | 17°II33'12 | |
| evening set | -61 May 19 j 04:30 | 8°II31'55 | | opposition | -55 Dec 10 j 03:35 | 16°II28'46 | -1°58'52 |
| max. Earth dist. | -61 Jun 01 j 17:20 | 8°II51'51 | 44.53494 AU | min. Earth dist. | -55 Dec 12 j 05:56 | 16°II26'07 | 41.13712 AU |
| | | | | direct | -54 Mar 01 j 17:15 | 15°II23'19 | |
| conjunction | -61 Jun 03 j 17:59 | 8°II54'52 | -4°06'40 | evening set | -54 May 26 j 22:02 | 16°II39'37 | |
| minimum elong | -61 Jun 03 j 18:05 | 8°II54'53 | 4°06'40 | max. Earth dist. | -54 Jun 09 j 15:50 | 17°II00'35 | 43.02583 AU |
| morning rise | -61 Jun 19 j 07:31 | 9°II17'52 | | | | | |
| retrograde | -61 Sep 13 j 20:11 | 10°II32'41 | | conjunction | -54 Jun 12 j 00:10 | 17°II04'12 | -1°42'35 |
| opposition | -61 Dec 03 j 20:26 | 9°II29'35 | -4°07'59 | minimum elong | -54 Jun 12 j 00:13 | 17°II04'12 | 1°42'35 |
| min. Earth dist. | -61 Dec 05 j 16:15 | 9°II27'20 | 42.43563 AU | morning rise | -54 Jun 28 j 01:37 | 17°II28'47 | |
| direct | -60 Feb 23 j 11:24 | 8°II25'46 | | retrograde | -54 Sep 22 j 01:32 | 18°II45'35 | |
| evening set | -60 May 19 j 12:41 | 9°II39'55 | | opposition | -54 Dec 11 j 13:46 | 17°II40'56 | -1°36'18 |
| max. Earth dist. | -60 Jun 02 j 01:16 | 9°II59'56 | 44.32760 AU | min. Earth dist. | -54 Dec 13 j 16:25 | 17°II38'15 | 40.91374 AU |
| | | | | direct | -53 Mar 03 j 04:48 | 16°II35'13 | |
| conjunction | -60 Jun 04 j 04:25 | 10°II03'07 | -3°46'55 | evening set | -53 May 28 j 09:18 | 17°II52'01 | |
| minimum elong | -60 Jun 04 j 04:31 | 10°II03'07 | 3°46'55 | max. Earth dist. | -53 Jun 11 j 01:56 | 18°II13'02 | 42.80174 AU |
| morning rise | -60 Jun 19 j 20:21 | 10°II26'21 | | | | | |
| retrograde | -60 Sep 14 j 09:07 | 11°II41'23 | | conjunction | -53 Jun 13 j 12:15 | 18°II16'48 | -1°20'54 |
| opposition | -60 Dec 04 j 04:58 | 10°II38'04 | -3°47'12 | minimum elong | -53 Jun 13 j 12:17 | 18°II16'48 | 1°20'53 |
| min. Earth dist. | -60 Dec 06 j 02:48 | 10°II35'42 | 42.22564 AU | morning rise | -53 Jun 29 j 14:47 | 18°II41'35 | |
| direct | -59 Feb 23 j 18:46 | 9°II33'58 | | retrograde | -53 Sep 23 j 14:50 | 19°II58'48 | |
| evening set | -59 May 20 j 21:09 | 10°II48'25 | | opposition | -53 Dec 13 j 00:13 | 18°II53'55 | -1°13'26 |
| max. Earth dist. | -59 Jun 03 j 11:51 | 11°II08'39 | 44.11664 AU | min. Earth dist. | -53 Dec 15 j 03:59 | 18°II51'11 | 40.68800 AU |
| | | | | direct | -52 Mar 03 j 15:34 | 17°II47'57 | |
| conjunction | -59 Jun 05 j 15:14 | 11°II11'52 | -3°26'53 | evening set | -52 May 28 j 21:12 | 19°II05'15 | |
| minimum elong | -59 Jun 05 j 15:19 | 11°II11'53 | 3°26'53 | max. Earth dist. | -52 Jun 11 j 13:56 | 19°II26'24 | 42.57467 AU |
| morning rise | -59 Jun 21 j 09:06 | 11°II35'21 | | | | | |
| retrograde | -59 Sep 15 j 18:04 | 12°II50'36 | | conjunction | -52 Jun 14 j 01:04 | 19°II30'15 | -0°58'57 |
| opposition | -59 Dec 05 j 13:50 | 11°II47'03 | -3°26'08 | minimum elong | -52 Jun 14 j 01:06 | 19°II30'15 | 0°58'57 |
| min. Earth dist. | -59 Dec 07 j 12:22 | 11°II44'39 | 42.01230 AU | morning rise | -52 Jun 30 j 04:08 | 19°II55'14 | |
| direct | -58 Feb 25 j 05:46 | 10°II42'42 | | retrograde | -52 Sep 24 j 01:32 | 21°II12'53 | |
| evening set | -58 May 22 j 06:03 | 11°II57'27 | | opposition | -52 Dec 13 j 11:00 | 20°II07'47 | -0°50'17 |
| max. Earth dist. | -58 Jun 04 j 20:47 | 12°II17'47 | 43.90267 AU | min. Earth dist. | -52 Dec 15 j 16:30 | 20°II04'56 | 40.45903 AU |
| | | | | direct | -51 Mar 05 j 03:08 | 19°II01'32 | |
| conjunction | -58 Jun 07 j 01:57 | 12°II21'08 | -3°06'34 | evening set | -51 May 30 j 09:50 | 20°II19'22 | |
| minimum elong | -58 Jun 07 j 02:02 | 12°II21'08 | 3°06'34 | max. Earth dist. | -51 Jun 13 j 01:47 | 20°II40'36 | 42.34424 AU |
| morning rise | -58 Jun 22 j 21:53 | 12°II44'51 | | | | | |
| retrograde | -58 Sep 17 j 02:49 | 14°II00'20 | | conjunction | -51 Jun 15 j 14:11 | 20°II44'33 | -0°36'44 |
| opposition | -58 Dec 06 j 22:50 | 12°II56'34 | -3°04'46 | minimum elong | -51 Jun 15 j 14:12 | 20°II44'33 | 0°36'43 |
| min. Earth dist. | -58 Dec 08 j 22:08 | 12°II54'07 | 41.79641 AU | morning rise | -51 Jul 01 j 17:47 | 21°II09'43 | |
| direct | -57 Feb 26 j 16:02 | 11°II51'56 | | retrograde | -51 Sep 25 j 14:11 | 22°II27'50 | |
| evening set | -57 May 23 j 15:17 | 13°II07'01 | | opposition | -51 Dec 14 j 22:09 | 21°II22'30 | -0°26'51 |
| max. Earth dist. | -57 Jun 06 j 06:59 | 13°II27'31 | 43.68620 AU | min. Earth dist. | -51 Dec 17 j 04:05 | 21°II19'37 | 40.22658 AU |
| | | | | direct | -50 Mar 06 j 13:36 | 20°II15'57 | |
| conjunction | -57 Jun 08 j 13:05 | 13°II30'57 | -2°45'59 | evening set | -50 May 31 j 22:54 | 21°II34'21 | |
| minimum elong | -57 Jun 08 j 13:09 | 13°II30'57 | 2°45'59 | max. Earth dist. | -50 Jun 14 j 12:54 | 21°II55'35 | 42.10997 AU |
| morning rise | -57 Jun 24 j 10:37 | 13°II54'53 | | | | | |
| retrograde | -57 Sep 18 j 11:53 | 15°II10'39 | | conjunction | -50 Jun 17 j 03:31 | 21°II59'43 | -0°14'16 |
| opposition | -57 Dec 08 j 08:11 | 14°II06'39 | -2°43'06 | minimum elong | -50 Jun 17 j 03:31 | 21°II59'43 | 0°14'17 |
| min. Earth dist. | -57 Dec 10 j 08:57 | 14°II04'06 | 41.57836 AU | behind sun begin | -50 Jun 17 j 00:40 | 21°II59'32 | |
| direct | -56 Feb 28 j 01:42 | 13°II01'45 | | behind sun end | -50 Jun 17 j 06:21 | 21°II59'53 | |
| evening set | -56 May 24 j 00:59 | 14°II17'12 | | morning rise | -50 Jul 03 j 07:17 | 22°II25'03 | |
| max. Earth dist. | -56 Jun 06 j 17:51 | 14°II37'52 | 43.46790 AU | retrograde | -50 Sep 27 j 05:12 | 23°II43'40 | |
| | | | | opposition | -50 Dec 16 j 09:43 | 22°II38'04 | -0°03'07 |
| conjunction | -56 Jun 09 j 00:25 | 14°II41'21 | -2°25'08 | min. Earth dist. | -50 Dec 18 j 17:47 | 22°II35'03 | 39.99046 AU |
| minimum elong | -56 Jun 09 j 00:29 | 14°II41'21 | 2°25'08 | asc. node | -49 Feb 02 j 04:43 | 21°II44'47 | |
| morning rise | -56 Jun 24 j 23:32 | 15°II05'30 | | direct | -49 Mar 07 j 22:20 | 21°II31'12 | |
| retrograde | -56 Sep 19 j 00:03 | 16°II21'35 | | evening set | -49 Jun 02 j 12:29 | 22°II50'12 | |


























































































































Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 26

Attention, astronomical year style is used: The year -49 in astronomical counting style is the year 50 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|--------------------|-------------|------------------|--------------------|---------------------|-------------|
| max. Earth dist. | -49 Jun 16 j 02:24 | 23° Π 11'33 | 41.87218 AU | max. Earth dist. | -43 Jun 23 j 13:27 | 1° \ominus 05'27 | 40.39761 AU |
| conjunction | -49 Jun 18 j 17:17 | 23° Π 15'43 | 0°08'33 | conjunction | -43 Jun 26 j 11:05 | 1° \ominus 10'15 | 2°30'08 |
| minimum elong | -49 Jun 18 j 17:17 | 23° Π 15'43 | 0°08'33 | minimum elong | -43 Jun 26 j 11:00 | 1° \ominus 10'15 | 2°30'08 |
| behind sun begin | -49 Jun 18 j 11:38 | 23° Π 15'22 | | morning rise | -43 Jul 12 j 09:09 | 1° \ominus 36'27 | |
| behind sun end | -49 Jun 18 j 22:57 | 23° Π 16'04 | | retrograde | -43 Oct 06 j 14:50 | 2° \ominus 59'24 | |
| morning rise | -49 Jul 04 j 20:58 | 23° Π 41'13 | | opposition | -43 Dec 25 j 03:53 | 1° \ominus 51'44 | 2°50'40 |
| retrograde | -49 Sep 28 j 19:07 | 25° Π 00'21 | | min. Earth dist. | -43 Dec 27 j 17:33 | 1° \ominus 48'18 | 38.27463 AU |
| opposition | -49 Dec 17 j 21:28 | 23° Π 54'28 | 0°20'54 | direct | -42 Mar 16 j 13:50 | 0° \ominus 42'24 | |
| min. Earth dist. | -49 Dec 20 j 05:50 | 23° Π 51'26 | 39.75097 AU | evening set | -42 Jun 12 j 05:40 | 2° \ominus 06'34 | |
| direct | -48 Mar 08 j 10:18 | 22° Π 47'16 | | max. Earth dist. | -42 Jun 25 j 06:15 | 2° \ominus 28'06 | 40.14870 AU |
| evening set | -48 Jun 03 j 02:48 | 24° Π 06'53 | | conjunction | -42 Jun 28 j 03:27 | 2° \ominus 32'55 | 2°54'32 |
| max. Earth dist. | -48 Jun 16 j 14:06 | 24° Π 28'13 | 41.63116 AU | minimum elong | -42 Jun 28 j 03:22 | 2° \ominus 32'54 | 2°54'32 |
| conjunction | -48 Jun 19 j 07:19 | 24° Π 32'34 | 0°31'31 | morning rise | -42 Jul 13 j 23:22 | 2° \ominus 59'11 | |
| minimum elong | -48 Jun 19 j 07:18 | 24° Π 32'34 | 0°31'30 | retrograde | -42 Oct 08 j 06:42 | 4° \ominus 22'56 | |
| morning rise | -48 Jul 05 j 10:53 | 24° Π 58'13 | | opposition | -42 Dec 26 j 18:28 | 3° \ominus 14'58 | 3°16'30 |
| retrograde | -48 Sep 29 j 10:18 | 26° Π 17'52 | | min. Earth dist. | -42 Dec 29 j 08:22 | 3° \ominus 11'30 | 38.02619 AU |
| opposition | -48 Dec 18 j 09:36 | 25° Π 11'43 | 0°45'11 | direct | -41 Mar 18 j 04:59 | 2° \ominus 05'17 | |
| min. Earth dist. | -48 Dec 20 j 19:31 | 25° Π 08'34 | 39.50865 AU | evening set | -41 Jun 14 j 00:51 | 3° \ominus 30'24 | |
| direct | -47 Mar 09 j 22:23 | 24° Π 04'09 | | max. Earth dist. | -41 Jun 26 j 21:37 | 3° \ominus 51'50 | 39.89923 AU |
| evening set | -47 Jun 04 j 17:37 | 25° Π 24'25 | | conjunction | -41 Jun 29 j 20:15 | 3° \ominus 56'48 | 3°19'08 |
| max. Earth dist. | -47 Jun 18 j 04:14 | 25° Π 45'51 | 41.38732 AU | minimum elong | -41 Jun 29 j 20:09 | 3° \ominus 56'47 | 3°19'08 |
| conjunction | -47 Jun 20 j 21:50 | 25° Π 50'15 | 0°54'45 | morning rise | -41 Jul 15 j 14:03 | 4° \ominus 23'07 | |
| minimum elong | -47 Jun 20 j 21:49 | 25° Π 50'15 | 0°54'46 | retrograde | -41 Oct 10 j 00:16 | 5° \ominus 47'42 | |
| morning rise | -47 Jul 07 j 00:41 | 26° Π 16'02 | | opposition | -41 Dec 28 j 09:19 | 4° \ominus 39'27 | 3°42'34 |
| retrograde | -47 Sep 30 j 22:23 | 27° Π 36'16 | | min. Earth dist. | -41 Dec 30 j 23:54 | 4° \ominus 35'56 | 37.77711 AU |
| opposition | -47 Dec 19 j 22:05 | 26° Π 29'49 | 1°09'46 | direct | -40 Mar 18 j 20:51 | 3° \ominus 29'25 | |
| min. Earth dist. | -47 Dec 22 j 09:04 | 26° Π 26'35 | 39.26391 AU | evening set | -40 Jun 14 j 20:48 | 4° \ominus 55'31 | |
| direct | -46 Mar 11 j 13:31 | 25° Π 21'54 | | max. Earth dist. | -40 Jun 27 j 14:21 | 5° \ominus 16'54 | 39.64843 AU |
| evening set | -46 Jun 06 j 09:10 | 26° Π 42'51 | | conjunction | -40 Jun 30 j 13:47 | 5° \ominus 21'58 | 3°43'56 |
| max. Earth dist. | -46 Jun 19 j 17:43 | 27° Π 04'17 | 41.14151 AU | minimum elong | -40 Jun 30 j 13:41 | 5° \ominus 21'57 | 3°43'56 |
| conjunction | -46 Jun 22 j 12:33 | 27° Π 08'49 | 1°18'15 | morning rise | -40 Jul 16 j 04:50 | 5° \ominus 48'18 | |
| minimum elong | -46 Jun 22 j 12:30 | 27° Π 08'49 | 1°18'15 | retrograde | -40 Oct 10 j 16:31 | 7° \ominus 13'47 | |
| morning rise | -46 Jul 08 j 14:44 | 27° Π 34'44 | | opposition | -40 Dec 29 j 00:56 | 6° \ominus 05'14 | 4°08'51 |
| retrograde | -46 Oct 02 j 12:54 | 28° Π 55'34 | | min. Earth dist. | -40 Dec 31 j 17:08 | 6° \ominus 01'36 | 37.52651 AU |
| opposition | -46 Dec 21 j 10:53 | 27° Π 48'48 | 1°34'36 | direct | -39 Mar 20 j 12:30 | 4° \ominus 54'50 | |
| min. Earth dist. | -46 Dec 23 j 21:59 | 27° Π 45'33 | 39.01768 AU | evening set | -39 Jun 16 j 17:45 | 6° \ominus 21'57 | |
| direct | -45 Mar 13 j 02:10 | 26° Π 40'32 | | max. Earth dist. | -39 Jun 29 j 07:35 | 6° \ominus 43'15 | 39.39593 AU |
| evening set | -45 Jun 08 j 01:06 | 28° Π 02'13 | | conjunction | -39 Jul 02 j 07:46 | 6° \ominus 48'25 | 4°08'55 |
| max. Earth dist. | -45 Jun 21 j 07:38 | 28° Π 23'40 | 40.89421 AU | minimum elong | -39 Jul 02 j 07:37 | 6° \ominus 48'24 | 4°08'55 |
| conjunction | -45 Jun 24 j 03:33 | 28° Π 28'17 | 1°41'59 | morning rise | -39 Jul 17 j 19:52 | 7° \ominus 14'46 | |
| minimum elong | -45 Jun 24 j 03:29 | 28° Π 28'17 | 1°41'59 | retrograde | -39 Oct 12 j 10:09 | 8° \ominus 41'10 | |
| morning rise | -45 Jul 10 j 04:35 | 28° Π 54'19 | | opposition | -39 Dec 30 j 16:54 | 7° \ominus 32'19 | 4°35'21 |
| retrograde | -45 Aug 29 j 19:13 | 0° \ominus | | min. Earth dist. | -38 Jan 02 j 09:05 | 7° \ominus 28'39 | 37.27409 AU |
| opposition | -45 Oct 04 j 03:05 | 0° \ominus 15'49 | | direct | -38 Mar 22 j 03:27 | 6° \ominus 21'31 | |
| min. Earth dist. | -45 Nov 08 j 21:16 | 30° \Re Π | | evening set | -38 Jun 18 j 15:34 | 7° \ominus 49'42 | |
| direct | -45 Dec 23 j 00:13 | 29° Π 08'45 | 1°59'42 | max. Earth dist. | -38 Jul 01 j 00:10 | 8° \ominus 10'49 | 39.14128 AU |
| evening set | -44 Jun 08 j 17:54 | 29° Π 22'34 | | conjunction | -38 Jul 04 j 02:17 | 8° \ominus 16'09 | 4°34'05 |
| max. Earth dist. | -44 Jun 21 j 23:21 | 29° Π 44'05 | 40.64615 AU | minimum elong | -38 Jul 04 j 02:08 | 8° \ominus 16'08 | 4°34'05 |
| conjunction | -44 Jun 24 j 19:08 | 29° Π 48'44 | 2°05'57 | morning rise | -38 Jul 19 j 11:02 | 8° \ominus 42'29 | |
| minimum elong | -44 Jun 24 j 19:04 | 29° Π 48'44 | 2°05'56 | retrograde | -38 Oct 14 j 05:14 | 10° \ominus 09'52 | |
| morning rise | -44 Jul 01 j 15:06 | 0° \ominus | | opposition | -37 Jan 01 j 09:35 | 9° \ominus 00'40 | 5°02'02 |
| retrograde | -44 Oct 04 j 19:36 | 1° \ominus 37'04 | | min. Earth dist. | -37 Jan 04 j 03:40 | 8° \ominus 56'52 | 37.01974 AU |
| opposition | -44 Dec 23 j 13:44 | 0° \ominus 29'42 | 2°25'04 | direct | -37 Mar 23 j 17:37 | 7° \ominus 49'28 | |
| min. Earth dist. | -44 Dec 26 j 02:06 | 0° \ominus 26'20 | 38.52261 AU | evening set | -37 Jun 20 j 14:03 | 9° \ominus 18'44 | |
| direct | -43 Jan 15 j 14:11 | 30° \Re Π | | max. Earth dist. | -37 Jul 02 j 19:15 | 9° \ominus 39'47 | 38.88470 AU |
| evening set | -43 Mar 15 j 02:13 | 29° Π 20'42 | | conjunction | -37 Jul 05 j 21:15 | 9° \ominus 45'09 | 4°59'24 |
| max. Earth dist. | -43 May 11 j 12:39 | 0° \ominus | | minimum elong | -37 Jul 05 j 21:05 | 9° \ominus 45'08 | 4°59'24 |
| conjunction | -43 Jun 10 j 11:34 | 0° \ominus 43'59 | | morning rise | -37 Jul 21 j 02:14 | 10° \ominus 11'27 | |
| retrograde | | | | retrograde | -37 Oct 16 j 01:24 | 11° \ominus 39'50 | |
| opposition | | | | opposition | -36 Jan 03 j 02:42 | 10° \ominus 30'16 | 5°28'55 |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 27

Attention, astronomical year style is used: The year -36 in astronomical counting style is the year 37 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|--|-------------|------------------|--------------------|--|-------------|
| min. Earth dist. | -36 Jan 05 j 20:56 | 10°  26'26" | 36.76353 AU | morning rise | -30 Jul 30 j 16:41 | 21°  10'22" | |
| direct | -36 Mar 24 j 10:27 | 9°  18'38" | | retrograde | -30 Oct 27 j 08:33 | 22°  47'26" | |
| evening set | -36 Jun 21 j 13:46 | 10°  49'04" | | opposition | -29 Jan 13 j 18:10 | 21°  35'10" | 8°40'08" |
| max. Earth dist. | -36 Jul 03 j 12:40 | 11°  09'51" | 38.62637 AU | min. Earth dist. | -29 Jan 16 j 15:34 | 21°  30'58" | 34.96736 AU |
| | | | | direct | -29 Apr 04 j 21:25 | 20°  20'23" | |
| conjunction | -36 Jul 06 j 16:47 | 11°  15'25" | 5°24'52" | evening set | -29 Jul 05 j 14:38 | 22°  00'44" | |
| minimum elong | -36 Jul 06 j 16:37 | 11°  15'24" | 5°24'52" | max. Earth dist. | -29 Jul 15 j 18:09 | 22°  19'34" | 36.81928 AU |
| morning rise | -36 Jul 21 j 17:50 | 11°  41'38" | | | | | |
| retrograde | -36 Oct 16 j 22:48 | 13°  11'04" | | conjunction | -29 Jul 19 j 00:57 | 22°  25'42" | 8°25'09" |
| opposition | -35 Jan 03 j 20:12 | 12°  01'07" | 5°55'57" | minimum elong | -29 Jul 19 j 00:40 | 22°  25'41" | 8°25'09" |
| min. Earth dist. | -35 Jan 06 j 15:41 | 11°  57'12" | 36.50606 AU | morning rise | -29 Aug 01 j 09:04 | 22°  50'32" | |
| direct | -35 Mar 26 j 02:47 | 10°  49'02" | | retrograde | -29 Oct 29 j 10:44 | 24°  29'07" | |
| evening set | -35 Jun 23 j 14:15 | 12°  20'41" | | opposition | -28 Jan 15 j 16:04 | 23°  16'30" | 9°07'32" |
| max. Earth dist. | -35 Jul 05 j 08:48 | 12°  41'19" | 38.36677 AU | min. Earth dist. | -28 Jan 18 j 13:56 | 23°  12'15" | 34.71595 AU |
| | | | | direct | -28 Apr 05 j 17:39 | 22°  01'18" | |
| conjunction | -35 Jul 08 j 12:59 | 12°  46'56" | 5°50'28" | evening set | -28 Jul 06 j 22:48 | 23°  43'24" | |
| minimum elong | -35 Jul 08 j 12:48 | 12°  46'55" | 5°50'27" | max. Earth dist. | -28 Jul 16 j 18:52 | 24°  01'49" | 36.56590 AU |
| morning rise | -35 Jul 23 j 09:21 | 13°  13'04" | | | | | |
| retrograde | -35 Oct 18 j 18:09 | 14°  43'35" | | conjunction | -28 Jul 20 j 01:28 | 24°  08'01" | 8°50'52" |
| opposition | -34 Jan 05 j 14:27 | 13°  33'15" | 6°23'08" | minimum elong | -28 Jul 20 j 01:10 | 24°  07'59" | 8°50'52" |
| min. Earth dist. | -34 Jan 08 j 10:41 | 13°  29'16" | 36.24770 AU | morning rise | -28 Aug 02 j 01:35 | 24°  32'28" | |
| direct | -34 Mar 27 j 22:24 | 12°  20'43" | | retrograde | -28 Oct 30 j 11:28 | 26°  12'41" | |
| evening set | -34 Jun 25 j 15:39 | 13°  53'37" | | opposition | -27 Jan 16 j 14:45 | 24°  59'42" | 9°34'52" |
| max. Earth dist. | -34 Jul 07 j 04:21 | 14°  14'01" | 38.10669 AU | min. Earth dist. | -27 Jan 19 j 13:27 | 24°  55'22" | 34.46545 AU |
| | | | | direct | -27 Apr 07 j 17:12 | 23°  44'05" | |
| conjunction | -34 Jul 10 j 09:21 | 14°  19'45" | 6°16'09" | evening set | -27 Jul 09 j 08:30 | 25°  28'00" | |
| minimum elong | -34 Jul 10 j 09:09 | 14°  19'44" | 6°16'10" | max. Earth dist. | -27 Jul 18 j 19:23 | 25°  45'54" | 36.31334 AU |
| morning rise | -34 Jul 25 j 00:56 | 14°  45'45" | | | | | |
| retrograde | -34 Oct 20 j 15:07 | 16°  17'26" | | conjunction | -27 Jul 22 j 02:34 | 25°  52'12" | 9°16'28" |
| opposition | -33 Jan 07 j 09:07 | 15°  06'42" | 6°50'25" | minimum elong | -27 Jul 22 j 02:15 | 25°  52'10" | 9°16'27" |
| min. Earth dist. | -33 Jan 10 j 05:17 | 15°  02'41" | 35.98937 AU | morning rise | -27 Aug 03 j 18:24 | 26°  16'14" | |
| direct | -33 Mar 29 j 17:47 | 13°  53'41" | | retrograde | -27 Nov 01 j 14:52 | 27°  58'08" | |
| evening set | -33 Jun 27 j 18:00 | 15°  27'56" | | opposition | -26 Jan 18 j 14:11 | 26°  44'47" | 10°02'07" |
| max. Earth dist. | -33 Jul 09 j 00:48 | 15°  48'04" | 37.84665 AU | min. Earth dist. | -26 Jan 21 j 12:34 | 26°  40'27" | 34.21572 AU |
| | | | | direct | -26 Apr 09 j 16:17 | 25°  28'44" | |
| conjunction | -33 Jul 12 j 06:29 | 15°  53'54" | 6°41'55" | evening set | -26 Jul 11 j 19:10 | 27°  14'32" | |
| minimum elong | -33 Jul 12 j 06:16 | 15°  53'53" | 6°41'55" | max. Earth dist. | -26 Jul 20 j 20:25 | 27°  31'51" | 36.06113 AU |
| morning rise | -33 Jul 26 j 16:38 | 16°  19'44" | | | | | |
| retrograde | -33 Oct 22 j 11:23 | 17°  52'38" | | conjunction | -26 Jul 24 j 04:20 | 27°  38'16" | 9°41'56" |
| opposition | -32 Jan 09 j 04:23 | 16°  41'31" | 7°17'48" | minimum elong | -26 Jul 24 j 04:00 | 27°  38'14" | 9°41'57" |
| min. Earth dist. | -32 Jan 12 j 01:53 | 16°  37'23" | 35.73164 AU | morning rise | -26 Aug 05 j 11:09 | 28°  01'50" | |
| direct | -32 Mar 30 j 11:22 | 15°  28'03" | | retrograde | -26 Nov 03 j 15:37 | 29°  45'30" | |
| evening set | -32 Jun 28 j 21:29 | 17°  03'41" | | opposition | -25 Jan 20 j 14:31 | 28°  31'46" | 10°29'13" |
| max. Earth dist. | -32 Jul 09 j 22:49 | 17°  23'35" | 37.58757 AU | min. Earth dist. | -25 Jan 23 j 14:20 | 28°  27'19" | 33.96648 AU |
| | | | | direct | -25 Apr 11 j 14:07 | 27°  15'15" | |
| conjunction | -32 Jul 13 j 04:12 | 17°  29'27" | 7°07'44" | evening set | -25 Jul 14 j 07:29 | 29°  03'01" | |
| minimum elong | -32 Jul 13 j 03:57 | 17°  29'26" | 7°07'45" | max. Earth dist. | -25 Jul 22 j 23:22 | 29°  19'45" | 35.80953 AU |
| morning rise | -32 Jul 27 j 08:33 | 17°  55'06" | | | | | |
| retrograde | -32 Oct 23 j 08:42 | 19°  29'18" | | conjunction | -25 Jul 26 j 06:56 | 29°  26'13" | 10°07'15" |
| opposition | -31 Jan 10 j 00:17 | 18°  17'47" | 7°45'14" | minimum elong | -25 Jul 26 j 06:36 | 29°  26'11" | 10°07'14" |
| min. Earth dist. | -31 Jan 12 j 21:01 | 18°  13'41" | 35.47515 AU | morning rise | -25 Aug 07 j 04:06 | 29°  49'15" | |
| direct | -31 Apr 01 j 06:49 | 17°  03'52" | | | -25 Aug 12 j 19:43 | 0°  00' | |
| evening set | -31 Jul 01 j 02:05 | 18°  40'59" | | retrograde | -25 Nov 05 j 17:38 | 1°  34'44" | |
| max. Earth dist. | -31 Jul 11 j 19:50 | 19°  00'31" | 37.32976 AU | opposition | -24 Jan 22 j 15:20 | 0°  20'36" | 10°56'09" |
| | | | | min. Earth dist. | -24 Jan 25 j 14:36 | 0°  16'09" | 33.71794 AU |
| conjunction | -31 Jul 15 j 02:27 | 19°  06'32" | 7°33'34" | | -24 Feb 05 j 13:25 | 30°  00' | |
| minimum elong | -31 Jul 15 j 02:12 | 19°  06'31" | 7°33'34" | direct | -24 Apr 12 j 14:26 | 29°  03'36" | |
| morning rise | -31 Jul 29 j 00:34 | 19°  31'56" | | | -24 Jun 16 j 05:30 | 0°  00' | |
| retrograde | -31 Oct 25 j 08:37 | 21°  07'32" | | evening set | -24 Jul 15 j 21:11 | 0°  53'25" | |
| opposition | -30 Jan 11 j 20:54 | 19°  55'38" | 8°12'41" | max. Earth dist. | -24 Jul 24 j 01:15 | 1°  09'22" | 35.55865 AU |
| min. Earth dist. | -30 Jan 14 j 18:38 | 19°  51'27" | 35.22038 AU | | | | |
| direct | -30 Apr 03 j 00:29 | 18°  41'16" | | conjunction | -24 Jul 27 j 10:18 | 1°  16'00" | 10°32'21" |
| evening set | -30 Jul 03 j 07:44 | 20°  19'57" | | minimum elong | -24 Jul 27 j 09:57 | 1°  15'58" | 10°32'22" |
| max. Earth dist. | -30 Jul 13 j 19:50 | 20°  39'15" | 37.07370 AU | morning rise | -24 Aug 07 j 21:16 | 1°  38'26" | |
| | | | | retrograde | -24 Nov 06 j 22:02 | 3°  25'51" | |
| conjunction | -30 Jul 17 j 01:28 | 20°  45'14" | 7°59'23" | opposition | -23 Jan 23 j 17:06 | 2°  11'16" | 11°22'52" |
| minimum elong | -30 Jul 17 j 01:12 | 20°  45'13" | 7°59'24" | min. Earth dist. | -23 Jan 26 j 17:31 | 2°  06'43" | 33.47055 AU |

Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 28

Attention, astronomical year style is used: The year -23 in astronomical counting style is the year 24 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|-----------|-------------|------------------|--------------------|-----------|-------------|
| direct | -23 Apr 14 j 12:42 | 0°Ω53'46 | | minimum elong | -17 Aug 11 j 05:10 | 14°Ω56'40 | 13°17'16 |
| evening set | -23 Jul 18 j 12:16 | 2°Ω45'43 | | | -17 Aug 12 j 19:06 | 15°Ω | |
| max. Earth dist. | -23 Jul 26 j 06:19 | 3°Ω01'00 | 35.30907 AU | morning rise | -17 Aug 18 j 16:32 | 15°Ω12'23 | |
| | | | | retrograde | -17 Nov 22 j 00:11 | 17°Ω16'06 | |
| conjunction | -23 Jul 29 j 14:21 | 3°Ω07'37 | 10°57'12 | opposition | -16 Feb 07 j 03:43 | 15°Ω58'29 | 14°18'02 |
| minimum elong | -23 Jul 29 j 14:00 | 3°Ω07'36 | 10°57'11 | min. Earth dist. | -16 Feb 10 j 01:36 | 15°Ω53'53 | 31.82912 AU |
| morning rise | -23 Aug 09 j 14:10 | 3°Ω29'23 | | | -16 Mar 19 j 13:41 | 15°℞Ω | |
| retrograde | -23 Nov 09 j 02:02 | 5°Ω18'47 | | direct | -16 Apr 27 j 17:32 | 14°Ω37'35 | |
| opposition | -22 Jan 25 j 19:37 | 4°Ω03'46 | 11°49'18 | | -16 Jun 05 j 05:53 | 15°Ω | |
| min. Earth dist. | -22 Jan 28 j 19:34 | 3°Ω59'13 | 33.22477 AU | evening set | -16 Aug 05 j 21:19 | 16°Ω47'40 | |
| direct | -22 Apr 16 j 14:43 | 2°Ω45'46 | | max. Earth dist. | -16 Aug 09 j 11:09 | 16°Ω55'15 | 33.66080 AU |
| evening set | -22 Jul 21 j 04:51 | 4°Ω39'55 | | | | | |
| max. Earth dist. | -22 Jul 28 j 10:03 | 4°Ω54'18 | 35.06155 AU | conjunction | -16 Aug 12 j 14:59 | 17°Ω01'59 | 13°38'30 |
| | | | | minimum elong | -16 Aug 12 j 14:35 | 17°Ω01'57 | 13°38'30 |
| conjunction | -22 Jul 31 j 19:00 | 5°Ω01'04 | 11°21'43 | morning rise | -16 Aug 19 j 07:13 | 17°Ω16'12 | |
| minimum elong | -22 Jul 31 j 18:37 | 5°Ω01'02 | 11°21'44 | retrograde | -16 Nov 23 j 09:29 | 19°Ω22'49 | |
| morning rise | -22 Aug 11 j 07:12 | 5°Ω22'05 | | opposition | -15 Feb 08 j 12:10 | 18°Ω04'49 | 14°40'30 |
| retrograde | -22 Nov 11 j 09:37 | 7°Ω13'34 | | min. Earth dist. | -15 Feb 11 j 08:43 | 18°Ω00'17 | 31.61375 AU |
| opposition | -21 Jan 27 j 22:50 | 5°Ω58'05 | 12°15'23 | direct | -15 Apr 30 j 01:34 | 16°Ω43'31 | |
| min. Earth dist. | -21 Jan 30 j 22:53 | 5°Ω53'30 | 32.98165 AU | evening set | -15 Aug 09 j 04:21 | 18°Ω56'52 | |
| direct | -21 Apr 18 j 17:34 | 4°Ω39'34 | | max. Earth dist. | -15 Aug 11 j 20:56 | 19°Ω02'39 | 33.44476 AU |
| evening set | -21 Jul 23 j 22:50 | 6°Ω36'02 | | | | | |
| max. Earth dist. | -21 Jul 30 j 16:35 | 6°Ω49'37 | 34.81682 AU | conjunction | -15 Aug 15 j 01:03 | 19°Ω09'28 | 13°58'57 |
| | | | | minimum elong | -15 Aug 15 j 00:40 | 19°Ω09'26 | 13°58'56 |
| conjunction | -21 Aug 03 j 00:27 | 6°Ω56'21 | 11°45'52 | morning rise | -15 Aug 20 j 20:34 | 19°Ω21'57 | |
| minimum elong | -21 Aug 03 j 00:04 | 6°Ω56'19 | 11°45'52 | retrograde | -15 Nov 25 j 21:37 | 21°Ω31'44 | |
| morning rise | -21 Aug 12 j 23:55 | 7°Ω16'31 | | opposition | -14 Feb 10 j 21:34 | 20°Ω13'21 | 15°02'08 |
| retrograde | -21 Nov 13 j 15:51 | 9°Ω10'11 | | min. Earth dist. | -14 Feb 13 j 17:54 | 20°Ω08'49 | 31.40322 AU |
| opposition | -20 Jan 30 j 02:59 | 7°Ω54'14 | 12°41'03 | direct | -14 May 02 j 08:16 | 18°Ω51'37 | |
| min. Earth dist. | -20 Feb 02 j 03:06 | 7°Ω49'37 | 32.74170 AU | evening set | -14 Aug 12 j 15:38 | 21°Ω08'36 | |
| direct | -20 Apr 19 j 22:34 | 6°Ω35'13 | | max. Earth dist. | -14 Aug 14 j 09:57 | 21°Ω12'25 | 33.23346 AU |
| evening set | -20 Jul 25 j 18:41 | 8°Ω34'07 | | | | | |
| max. Earth dist. | -20 Jul 31 j 22:45 | 8°Ω46'41 | 34.57581 AU | conjunction | -14 Aug 17 j 12:10 | 21°Ω19'07 | 14°18'33 |
| | | | | minimum elong | -14 Aug 17 j 11:47 | 21°Ω19'05 | 14°18'34 |
| conjunction | -20 Aug 04 j 06:33 | 8°Ω53'29 | 12°09'34 | morning rise | -14 Aug 22 j 07:36 | 21°Ω29'34 | |
| minimum elong | -20 Aug 04 j 06:09 | 8°Ω53'27 | 12°09'34 | retrograde | -14 Nov 28 j 08:59 | 23°Ω42'48 | |
| morning rise | -20 Aug 13 j 16:36 | 9°Ω12'42 | | opposition | -13 Feb 13 j 07:54 | 22°Ω24'03 | 15°22'52 |
| retrograde | -20 Nov 14 j 23:45 | 11°Ω08'40 | | min. Earth dist. | -13 Feb 16 j 03:34 | 22°Ω19'32 | 31.19727 AU |
| opposition | -19 Jan 31 j 07:46 | 9°Ω52'17 | 13°06'13 | direct | -13 May 04 j 17:25 | 21°Ω01'54 | |
| min. Earth dist. | -19 Feb 03 j 06:46 | 9°Ω47'42 | 32.50598 AU | evening set | -13 Aug 16 j 09:09 | 23°Ω23'00 | |
| direct | -19 Apr 22 j 03:25 | 8°Ω32'45 | | max. Earth dist. | -13 Aug 16 j 21:44 | 23°Ω24'09 | 33.02697 AU |
| evening set | -19 Jul 28 j 16:11 | 10°Ω34'13 | | | | | |
| max. Earth dist. | -19 Aug 03 j 06:24 | 10°Ω45'43 | 34.33920 AU | conjunction | -13 Aug 19 j 23:56 | 23°Ω30'55 | 14°37'16 |
| | | | | minimum elong | -13 Aug 19 j 23:33 | 23°Ω30'53 | 14°37'16 |
| conjunction | -19 Aug 06 j 13:33 | 10°Ω52'32 | 12°32'45 | morning rise | -13 Aug 23 j 13:50 | 23°Ω38'46 | |
| minimum elong | -19 Aug 06 j 13:10 | 10°Ω52'30 | 12°32'44 | retrograde | -13 Nov 30 j 23:49 | 25°Ω56'00 | |
| morning rise | -19 Aug 15 j 09:04 | 11°Ω10'43 | | opposition | -12 Feb 15 j 19:05 | 24°Ω36'52 | 15°42'35 |
| retrograde | -19 Nov 17 j 06:23 | 13°Ω09'06 | | min. Earth dist. | -12 Feb 18 j 13:45 | 24°Ω32'23 | 30.99613 AU |
| opposition | -18 Feb 02 j 13:42 | 11°Ω52'17 | 13°30'50 | direct | -12 May 06 j 04:12 | 23°Ω14'18 | |
| min. Earth dist. | -18 Feb 05 j 12:53 | 11°Ω47'39 | 32.27507 AU | evening set | -12 Aug 19 j 19:40 | 25°Ω41'01 | |
| direct | -18 Apr 24 j 07:46 | 10°Ω32'16 | | max. Earth dist. | -12 Aug 18 j 12:04 | 25°Ω38'07 | 32.82534 AU |
| evening set | -18 Jul 31 j 15:33 | 12°Ω36'26 | | | | | |
| max. Earth dist. | -18 Aug 05 j 15:18 | 12°Ω46'48 | 34.10783 AU | conjunction | -12 Aug 21 j 12:42 | 25°Ω44'48 | 14°55'00 |
| | | | | minimum elong | -12 Aug 21 j 12:20 | 25°Ω44'46 | 14°55'00 |
| conjunction | -18 Aug 08 j 21:03 | 12°Ω53'34 | 12°55'20 | morning rise | -12 Aug 23 j 04:58 | 25°Ω48'31 | |
| minimum elong | -18 Aug 08 j 20:39 | 12°Ω53'32 | 12°55'20 | retrograde | -12 Dec 02 j 13:14 | 28°Ω11'15 | |
| morning rise | -18 Aug 17 j 00:54 | 13°Ω10'34 | | opposition | -11 Feb 17 j 07:17 | 26°Ω51'43 | 16°01'15 |
| | -18 Oct 23 j 19:27 | 15°Ω | | min. Earth dist. | -11 Feb 20 j 01:47 | 26°Ω47'13 | 30.79995 AU |
| retrograde | -18 Nov 19 j 15:25 | 15°Ω11'33 | | direct | -11 May 08 j 16:12 | 25°Ω28'45 | |
| | -18 Dec 16 j 18:12 | 15°℞Ω | | max. Earth dist. | -11 Aug 21 j 02:19 | 27°Ω54'02 | 32.62925 AU |
| opposition | -17 Feb 04 j 20:16 | 13°Ω54'19 | 13°54'47 | | | | |
| min. Earth dist. | -17 Feb 07 j 17:46 | 13°Ω49'46 | 32.04945 AU | conjunction | -11 Aug 24 j 02:03 | 28°Ω00'42 | 15°11'40 |
| direct | -17 Apr 26 j 13:35 | 12°Ω33'51 | | minimum elong | -11 Aug 24 j 01:42 | 28°Ω00'40 | 15°11'40 |
| evening set | -17 Aug 03 j 17:05 | 14°Ω40'53 | | | -11 Oct 24 j 21:16 | 0°℥ | |
| max. Earth dist. | -17 Aug 07 j 23:53 | 14°Ω49'53 | 33.88170 AU | retrograde | -11 Dec 05 j 04:42 | 0°℥28'29 | |
| | | | | | -10 Jan 16 j 14:16 | 30°℞Ω | |
| conjunction | -17 Aug 11 j 05:33 | 14°Ω56'42 | 13°17'16 | opposition | -10 Feb 19 j 20:14 | 29°Ω08'34 | 16°18'45 |



























































































































Planetary Phenomena of Pluto from -400 through 102 (UT), Astrodienst AG 18-Feb-2025 14:23, page 29

Attention, astronomical year style is used: The year -10 in astronomical counting style is the year 11 BCE in historical counting style.

| | | | | | | | |
|------------------|--------------------|--------------------|-------------|------------------|-------------------|--------------------|-------------|
| min. Earth dist. | -10 Feb 22 j 12:46 | 29° <u>Ω</u> 04'11 | 30.60946 AU | max. Earth dist. | -2 Sep 13 j 02:37 | 19° <u>♊</u> 39'29 | 31.22488 AU |
| direct | -10 May 11 j 05:16 | 27° <u>Ω</u> 45'11 | | | | | |
| | -10 Aug 18 j 09:55 | 0° <u>♊</u> | | conjunction | -2 Sep 15 j 06:57 | 19° <u>♊</u> 44'41 | 16°39'48 |
| max. Earth dist. | -10 Aug 23 j 17:38 | 0° <u>♊</u> 11'56 | 32.43914 AU | minimum elong | -2 Sep 15 j 06:51 | 19° <u>♊</u> 44'40 | 16°39'48 |
| | | | | retrograde | -2 Dec 27 j 17:03 | 22° <u>♊</u> 22'31 | |
| conjunction | -10 Aug 26 j 16:04 | 0° <u>♊</u> 18'32 | 15°27'12 | opposition | -1 Mar 14 j 04:54 | 21° <u>♊</u> 00'00 | 17°48'14 |
| minimum elong | -10 Aug 26 j 15:43 | 0° <u>♊</u> 18'30 | 15°27'13 | min. Earth dist. | -1 Mar 16 j 04:27 | 20° <u>♊</u> 56'40 | 29.25952 AU |
| retrograde | -10 Dec 07 j 19:00 | 2° <u>♊</u> 47'37 | | direct | -1 Jun 02 j 02:24 | 19° <u>♊</u> 34'10 | |
| opposition | -9 Feb 22 j 10:08 | 1° <u>♊</u> 27'19 | 16°35'00 | max. Earth dist. | -1 Sep 16 j 01:04 | 22° <u>♊</u> 12'36 | 31.11573 AU |
| min. Earth dist. | -9 Feb 25 j 02:28 | 1° <u>♊</u> 22'56 | 30.42521 AU | | | | |
| direct | -9 May 13 j 17:27 | 0° <u>♊</u> 03'33 | | conjunction | -1 Sep 18 j 02:23 | 22° <u>♊</u> 17'31 | 16°41'24 |
| max. Earth dist. | -9 Aug 26 j 10:29 | 2° <u>♊</u> 31'47 | 32.25596 AU | minimum elong | -1 Sep 18 j 02:19 | 22° <u>♊</u> 17'31 | 16°41'23 |
| | | | | retrograde | -1 Dec 30 j 13:02 | 24° <u>♊</u> 56'08 | |
| conjunction | -9 Aug 29 j 06:48 | 2° <u>♊</u> 38'15 | 15°41'30 | opposition | 00 Mar 16 j 01:25 | 23° <u>♊</u> 33'26 | 17°49'14 |
| minimum elong | -9 Aug 29 j 06:29 | 2° <u>♊</u> 38'13 | 15°41'29 | min. Earth dist. | 00 Mar 17 j 23:38 | 23° <u>♊</u> 30'11 | 29.15516 AU |
| retrograde | -9 Dec 10 j 11:39 | 5° <u>♊</u> 08'35 | | direct | 00 Jun 03 j 22:48 | 22° <u>♊</u> 07'28 | |
| opposition | -8 Feb 25 j 00:35 | 3° <u>♊</u> 47'55 | 16°49'53 | max. Earth dist. | 00 Sep 17 j 23:00 | 24° <u>♊</u> 46'47 | 31.01595 AU |
| min. Earth dist. | -8 Feb 27 j 14:29 | 3° <u>♊</u> 43'39 | 30.24806 AU | | | | |
| direct | -8 May 15 j 07:50 | 2° <u>♊</u> 23'45 | | conjunction | 00 Sep 19 j 22:06 | 24° <u>♊</u> 51'30 | 16°41'10 |
| max. Earth dist. | -8 Aug 28 j 03:07 | 4° <u>♊</u> 53'22 | 32.08040 AU | minimum elong | 00 Sep 19 j 22:04 | 24° <u>♊</u> 51'30 | 16°41'11 |
| | | | | retrograde | 01 Jan 01 j 10:41 | 27° <u>♊</u> 30'46 | |
| conjunction | -8 Aug 30 j 22:14 | 4° <u>♊</u> 59'46 | 15°54'28 | opposition | 01 Mar 18 j 22:29 | 26° <u>♊</u> 07'54 | 17°48'16 |
| minimum elong | -8 Aug 30 j 21:56 | 4° <u>♊</u> 59'44 | 15°54'29 | min. Earth dist. | 01 Mar 20 j 17:22 | 26° <u>♊</u> 04'53 | 29.05979 AU |
| retrograde | -8 Dec 12 j 02:49 | 7° <u>♊</u> 31'19 | | direct | 01 Jun 06 j 20:56 | 24° <u>♊</u> 41'49 | |
| opposition | -7 Feb 26 j 16:08 | 6° <u>♊</u> 10'17 | 17°03'18 | max. Earth dist. | 01 Sep 20 j 21:43 | 27° <u>♊</u> 21'57 | 30.92544 AU |
| min. Earth dist. | -7 Mar 01 j 05:18 | 6° <u>♊</u> 06'04 | 30.07895 AU | | | | |
| direct | -7 May 17 j 20:36 | 4° <u>♊</u> 45'46 | | conjunction | 01 Sep 22 j 18:05 | 27° <u>♊</u> 26'24 | 16°39'07 |
| max. Earth dist. | -7 Aug 30 j 22:16 | 7° <u>♊</u> 16'53 | 31.91357 AU | minimum elong | 01 Sep 22 j 18:05 | 27° <u>♊</u> 26'24 | 16°39'06 |
| | | | | | 01 Dec 16 j 17:38 | 0° <u>♊</u> | |
| conjunction | -7 Sep 02 j 14:10 | 7° <u>♊</u> 23'02 | 16°06'01 | retrograde | 02 Jan 04 j 06:54 | 0° <u>♊</u> 06'15 | |
| minimum elong | -7 Sep 02 j 13:54 | 7° <u>♊</u> 23'00 | 16°06'01 | | 02 Jan 23 j 03:13 | 30° <u>♊</u> | |
| retrograde | -7 Dec 14 j 18:30 | 9° <u>♊</u> 55'45 | | opposition | 02 Mar 21 j 20:08 | 28° <u>♊</u> 43'13 | 17°45'18 |
| opposition | -6 Mar 01 j 08:26 | 8° <u>♊</u> 34'24 | 17°15'10 | min. Earth dist. | 02 Mar 23 j 13:36 | 28° <u>♊</u> 40'18 | 28.97360 AU |
| min. Earth dist. | -6 Mar 03 j 18:50 | 8° <u>♊</u> 30'21 | 29.91862 AU | direct | 02 Jun 09 j 17:07 | 27° <u>♊</u> 17'02 | |
| direct | -6 May 20 j 12:56 | 7° <u>♊</u> 09'35 | | max. Earth dist. | 02 Sep 23 j 21:03 | 29° <u>♊</u> 57'53 | 30.84471 AU |
| max. Earth dist. | -6 Sep 02 j 16:06 | 9° <u>♊</u> 41'58 | 31.75615 AU | | 02 Sep 24 j 18:06 | 0° <u>♊</u> | |
| | | | | | | | |
| conjunction | -6 Sep 05 j 06:45 | 9° <u>♊</u> 48'02 | 16°16'04 | conjunction | 02 Sep 25 j 14:20 | 0° <u>♊</u> 02'03 | 16°35'11 |
| minimum elong | -6 Sep 05 j 06:30 | 9° <u>♊</u> 48'01 | 16°16'04 | minimum elong | 02 Sep 25 j 14:24 | 0° <u>♊</u> 02'03 | 16°35'11 |
| retrograde | -6 Dec 17 j 12:26 | 12° <u>♊</u> 21'54 | | retrograde | 03 Jan 07 j 04:46 | 2° <u>♊</u> 42'20 | |
| opposition | -5 Mar 04 j 01:23 | 11° <u>♊</u> 00'15 | 17°25'21 | opposition | 03 Mar 24 j 17:50 | 1° <u>♊</u> 19'10 | 17°40'18 |
| min. Earth dist. | -5 Mar 06 j 10:06 | 10° <u>♊</u> 56'18 | 29.76787 AU | min. Earth dist. | 03 Mar 26 j 07:51 | 1° <u>♊</u> 16'28 | 28.89690 AU |
| direct | -5 May 23 j 02:44 | 9° <u>♊</u> 35'09 | | | 03 May 22 j 21:14 | 30° <u>♊</u> | |
| max. Earth dist. | -5 Sep 05 j 12:58 | 12° <u>♊</u> 08'59 | 31.60868 AU | direct | 03 Jun 12 j 16:13 | 29° <u>♊</u> 52'53 | |
| | | | | | 03 Jul 03 j 00:50 | 0° <u>♊</u> | |
| conjunction | -5 Sep 08 j 00:04 | 12° <u>♊</u> 14'45 | 16°24'31 | max. Earth dist. | 03 Sep 26 j 19:52 | 2° <u>♊</u> 34'16 | 30.77397 AU |
| minimum elong | -5 Sep 07 j 23:52 | 12° <u>♊</u> 14'44 | 16°24'30 | | | | |
| retrograde | -5 Dec 20 j 05:40 | 14° <u>♊</u> 49'42 | | conjunction | 03 Sep 28 j 10:45 | 2° <u>♊</u> 38'12 | 16°29'21 |
| opposition | -4 Mar 05 j 19:13 | 13° <u>♊</u> 27'49 | 17°33'49 | minimum elong | 03 Sep 28 j 10:50 | 2° <u>♊</u> 38'12 | 16°29'21 |
| min. Earth dist. | -4 Mar 08 j 01:37 | 13° <u>♊</u> 24'01 | 29.62665 AU | retrograde | 04 Jan 10 j 01:30 | 5° <u>♊</u> 18'51 | |
| direct | -4 May 24 j 19:15 | 12° <u>♊</u> 02'29 | | opposition | 04 Mar 26 j 16:03 | 3° <u>♊</u> 55'31 | 17°33'14 |
| max. Earth dist. | -4 Sep 07 j 08:09 | 14° <u>♊</u> 37'30 | 31.47110 AU | min. Earth dist. | 04 Mar 28 j 04:08 | 3° <u>♊</u> 52'58 | 28.83026 AU |
| | | | | direct | 04 Jun 14 j 13:11 | 2° <u>♊</u> 29'11 | |
| conjunction | -4 Sep 09 j 17:48 | 14° <u>♊</u> 43'09 | 16°31'19 | max. Earth dist. | 04 Sep 28 j 20:11 | 5° <u>♊</u> 11'07 | 30.71396 AU |
| minimum elong | -4 Sep 09 j 17:38 | 14° <u>♊</u> 43'08 | 16°31'20 | | | | |
| retrograde | -4 Dec 22 j 01:17 | 17° <u>♊</u> 19'09 | | conjunction | 04 Sep 30 j 07:09 | 5° <u>♊</u> 14'40 | 16°21'36 |
| opposition | -3 Mar 08 j 13:41 | 15° <u>♊</u> 57'02 | 17°40'29 | minimum elong | 04 Sep 30 j 07:17 | 5° <u>♊</u> 14'41 | 16°21'37 |
| min. Earth dist. | -3 Mar 10 j 17:48 | 15° <u>♊</u> 53'23 | 29.49507 AU | retrograde | 05 Jan 11 j 21:24 | 7° <u>♊</u> 55'33 | |
| direct | -3 May 27 j 12:53 | 14° <u>♊</u> 31'30 | | opposition | 05 Mar 29 j 14:28 | 6° <u>♊</u> 32'07 | 17°24'06 |
| max. Earth dist. | -3 Sep 10 j 06:11 | 17° <u>♊</u> 07'50 | 31.34321 AU | min. Earth dist. | 05 Mar 30 j 22:55 | 6° <u>♊</u> 29'50 | 28.77423 AU |
| | | | | direct | 05 Jun 17 j 12:49 | 5° <u>♊</u> 05'45 | |
| conjunction | -3 Sep 12 j 12:16 | 17° <u>♊</u> 13'11 | 16°36'26 | max. Earth dist. | 05 Oct 01 j 18:59 | 7° <u>♊</u> 48'00 | 30.66531 AU |
| minimum elong | -3 Sep 12 j 12:07 | 17° <u>♊</u> 13'10 | 16°36'25 | | | | |
| retrograde | -3 Dec 24 j 19:45 | 19° <u>♊</u> 50'08 | | conjunction | 05 Oct 03 j 03:28 | 7° <u>♊</u> 51'18 | 16°11'56 |
| opposition | -2 Mar 11 j 09:03 | 18° <u>♊</u> 27'48 | 17°45'18 | minimum elong | 05 Oct 03 j 03:37 | 7° <u>♊</u> 51'18 | 16°11'56 |
| min. Earth dist. | -2 Mar 13 j 11:30 | 18° <u>♊</u> 24'16 | 29.37273 AU | retrograde | 06 Jan 14 j 18:32 | 10° <u>♊</u> 32'20 | |
| direct | -2 May 30 j 07:21 | 17° <u>♊</u> 02'07 | | opposition | 06 Apr 01 j 13:02 | 9° <u>♊</u> 08'49 | 17°12'52 |

| | | | | | | | |
|------------------|-------------------|-------------------|-------------|------------------|-------------------|-------------------|-------------|
| min. Earth dist. | 06 Apr 02 j 18:32 | 9° <u>06</u> '44 | 28.72980 AU | minimum elong | 13 Oct 23 j 16:56 | 28° <u>03</u> '14 | 13°48'13 |
| direct | 06 Jun 20 j 09:44 | 7° <u>04</u> '27 | | max. Earth dist. | 13 Oct 23 j 11:58 | 28° <u>03</u> '44 | 30.70810 AU |
| | | | | morning rise | 13 Oct 29 j 18:54 | 28° <u>05</u> '54 | |
| conjunction | 06 Oct 05 j 23:46 | 10° <u>02</u> '57 | 16°00'19 | | 13 Nov 28 j 17:42 | 0° <u>00</u> ' | |
| minimum elong | 06 Oct 05 j 23:59 | 10° <u>02</u> '59 | 16°00'19 | retrograde | 14 Feb 04 j 09:26 | 1° <u>00</u> '16 | 13 |
| max. Earth dist. | 06 Oct 04 j 19:53 | 10° <u>02</u> '57 | 30.62881 AU | | 14 Apr 19 j 00:08 | 30° <u>00</u> ' | |
| retrograde | 07 Jan 17 j 14:09 | 13° <u>00</u> '03 | | opposition | 14 Apr 22 j 23:55 | 29° <u>05</u> '22 | 14°32'03 |
| opposition | 07 Apr 04 j 11:42 | 11° <u>04</u> '31 | 16°59'32 | min. Earth dist. | 14 Apr 23 j 02:59 | 29° <u>05</u> '09 | 28.79380 AU |
| min. Earth dist. | 07 Apr 05 j 13:50 | 11° <u>04</u> '30 | 28.69723 AU | direct | 14 Jul 11 j 20:46 | 28° <u>02</u> '30 | |
| direct | 07 Jun 23 j 08:24 | 10° <u>01</u> '13 | | | 14 Sep 26 j 06:41 | 0° <u>00</u> ' | |
| | | | | evening set | 14 Oct 19 j 10:22 | 0° <u>00</u> '53 | 11 |
| conjunction | 07 Oct 08 j 19:55 | 13° <u>00</u> '34 | 15°46'47 | | | | |
| minimum elong | 07 Oct 08 j 20:08 | 13° <u>00</u> '35 | 15°46'46 | conjunction | 14 Oct 26 j 10:42 | 1° <u>00</u> '10 | 00 |
| max. Earth dist. | 07 Oct 07 j 18:32 | 13° <u>00</u> '59 | 30.60474 AU | minimum elong | 14 Oct 26 j 11:05 | 1° <u>00</u> '10 | 02 |
| retrograde | 08 Jan 20 j 10:47 | 15° <u>04</u> '53 | | max. Earth dist. | 14 Oct 26 j 09:10 | 1° <u>00</u> '09 | 51 |
| opposition | 08 Apr 06 j 10:15 | 14° <u>02</u> '07 | 16°44'09 | morning rise | 14 Nov 02 j 11:23 | 1° <u>00</u> '26 | 52 |
| min. Earth dist. | 08 Apr 07 j 08:44 | 14° <u>02</u> '32 | 28.67697 AU | retrograde | 15 Feb 07 j 04:13 | 3° <u>00</u> '48 | 21 |
| direct | 08 Jun 25 j 06:07 | 12° <u>05</u> '56 | | opposition | 15 Apr 25 j 21:13 | 2° <u>00</u> '25 | 38 |
| | | | | min. Earth dist. | 15 Apr 25 j 22:00 | 2° <u>00</u> '25 | 34 |
| conjunction | 08 Oct 10 j 16:07 | 15° <u>04</u> '03 | 15°31'22 | direct | 15 Jul 14 j 18:30 | 1° <u>00</u> '01 | 01 |
| minimum elong | 08 Oct 10 j 16:23 | 15° <u>04</u> '05 | 15°31'22 | evening set | 15 Oct 21 j 08:05 | 3° <u>00</u> '22 | 50 |
| max. Earth dist. | 08 Oct 09 j 19:27 | 15° <u>03</u> '57 | 30.59318 AU | | | | |
| retrograde | 09 Jan 22 j 05:49 | 18° <u>02</u> '01 | | conjunction | 15 Oct 29 j 04:19 | 3° <u>00</u> '41 | 33 |
| opposition | 09 Apr 09 j 09:02 | 16° <u>05</u> '33 | 16°26'44 | minimum elong | 15 Oct 29 j 04:42 | 3° <u>00</u> '41 | 35 |
| min. Earth dist. | 09 Apr 10 j 04:40 | 16° <u>05</u> '10 | 28.66873 AU | max. Earth dist. | 15 Oct 29 j 06:08 | 3° <u>00</u> '41 | 44 |
| direct | 09 Jun 28 j 04:32 | 15° <u>03</u> '32 | | morning rise | 15 Nov 06 j 00:45 | 4° <u>00</u> '00 | 19 |
| | | | | retrograde | 16 Feb 09 j 21:04 | 6° <u>00</u> '19 | 07 |
| conjunction | 09 Oct 13 j 11:47 | 18° <u>01</u> '18 | 15°14'07 | opposition | 16 Apr 27 j 17:53 | 4° <u>00</u> '56 | 33 |
| minimum elong | 09 Oct 13 j 12:04 | 18° <u>01</u> '20 | 15°14'06 | min. Earth dist. | 16 Apr 27 j 15:00 | 4° <u>00</u> '56 | 45 |
| max. Earth dist. | 09 Oct 12 j 17:41 | 18° <u>01</u> '28 | 30.59384 AU | direct | 16 Jul 16 j 17:16 | 3° <u>00</u> '32 | 12 |
| retrograde | 10 Jan 25 j 03:21 | 20° <u>05</u> '58 | | evening set | 16 Oct 22 j 06:54 | 5° <u>00</u> '51 | 15 |
| opposition | 10 Apr 12 j 07:35 | 19° <u>03</u> '42 | 16°07'22 | | | | |
| min. Earth dist. | 10 Apr 12 j 23:04 | 19° <u>03</u> '37 | 28.67229 AU | conjunction | 16 Oct 30 j 21:16 | 6° <u>00</u> '11 | 41 |
| direct | 10 Jul 01 j 01:51 | 18° <u>00</u> '53 | | minimum elong | 16 Oct 30 j 21:40 | 6° <u>00</u> '11 | 43 |
| evening set | 10 Oct 14 j 16:42 | 20° <u>04</u> '17 | | max. Earth dist. | 16 Oct 31 j 01:41 | 6° <u>00</u> '12 | 07 |
| | | | | morning rise | 16 Nov 08 j 11:55 | 6° <u>00</u> '32 | 08 |
| conjunction | 10 Oct 16 j 07:32 | 20° <u>05</u> '13 | 14°55'05 | retrograde | 17 Feb 11 j 14:40 | 8° <u>00</u> '48 | 24 |
| minimum elong | 10 Oct 16 j 07:52 | 20° <u>05</u> '15 | 14°55'05 | opposition | 17 Apr 30 j 14:11 | 7° <u>00</u> '25 | 59 |
| max. Earth dist. | 10 Oct 15 j 17:45 | 20° <u>05</u> '19 | 30.60612 AU | min. Earth dist. | 17 Apr 30 j 08:23 | 7° <u>00</u> '26 | 23 |
| morning rise | 10 Oct 17 j 23:02 | 20° <u>05</u> '13 | | direct | 17 Jul 19 j 13:46 | 6° <u>00</u> '01 | 53 |
| retrograde | 11 Jan 27 j 22:06 | 23° <u>03</u> '33 | | evening set | 17 Oct 24 j 06:29 | 8° <u>00</u> '18 | 18 |
| opposition | 11 Apr 15 j 05:59 | 22° <u>01</u> '02 | 15°46'08 | | | | |
| min. Earth dist. | 11 Apr 15 j 19:16 | 22° <u>00</u> '31 | 28.68698 AU | conjunction | 17 Nov 02 j 13:32 | 8° <u>00</u> '40 | 15 |
| direct | 11 Jul 04 j 00:32 | 20° <u>04</u> '45 | | minimum elong | 17 Nov 02 j 13:55 | 8° <u>00</u> '40 | 17 |
| evening set | 11 Oct 15 j 10:24 | 23° <u>01</u> '19 | | max. Earth dist. | 17 Nov 02 j 22:06 | 8° <u>00</u> '41 | 05 |
| | | | | morning rise | 17 Nov 11 j 20:37 | 9° <u>00</u> '02 | 12 |
| conjunction | 11 Oct 19 j 02:54 | 23° <u>02</u> '38 | 14°34'23 | retrograde | 18 Feb 14 j 06:12 | 11° <u>00</u> '16 | 03 |
| minimum elong | 11 Oct 19 j 03:13 | 23° <u>02</u> '40 | 14°34'23 | opposition | 18 May 03 j 09:51 | 9° <u>00</u> '53 | 48 |
| max. Earth dist. | 11 Oct 18 j 15:36 | 23° <u>02</u> '29 | 30.62962 AU | min. Earth dist. | 18 May 03 j 00:48 | 9° <u>00</u> '54 | 25 |
| morning rise | 11 Oct 22 j 19:57 | 23° <u>03</u> '37 | | direct | 18 Jul 22 j 11:51 | 8° <u>00</u> '29 | 59 |
| retrograde | 12 Jan 30 j 18:55 | 26° <u>00</u> '48 | | evening set | 18 Oct 26 j 06:50 | 10° <u>00</u> '43 | 51 |
| opposition | 12 Apr 17 j 04:11 | 24° <u>04</u> '53 | 15°23'06 | | | | |
| min. Earth dist. | 12 Apr 17 j 13:20 | 24° <u>04</u> '57 | 28.71240 AU | conjunction | 18 Nov 05 j 05:06 | 11° <u>00</u> '07 | 09 |
| direct | 12 Jul 05 j 23:45 | 23° <u>02</u> '01 | | minimum elong | 18 Nov 05 j 05:30 | 11° <u>00</u> '07 | 12 |
| evening set | 12 Oct 15 j 21:38 | 25° <u>05</u> '14 | | max. Earth dist. | 18 Nov 05 j 16:07 | 11° <u>00</u> '08 | 14 |
| | | | | morning rise | 18 Nov 15 j 03:36 | 11° <u>00</u> '30 | 29 |
| conjunction | 12 Oct 20 j 21:55 | 26° <u>00</u> '32 | 14°12'04 | retrograde | 19 Feb 16 j 21:26 | 13° <u>00</u> '42 | 00 |
| minimum elong | 12 Oct 20 j 22:17 | 26° <u>00</u> '33 | 14°12'03 | opposition | 19 May 06 j 04:40 | 12° <u>00</u> '19 | 56 |
| max. Earth dist. | 12 Oct 20 j 14:25 | 26° <u>00</u> '23 | 30.66366 AU | min. Earth dist. | 19 May 05 j 15:53 | 12° <u>00</u> '20 | 48 |
| morning rise | 12 Oct 25 j 22:40 | 26° <u>01</u> '53 | | direct | 19 Jul 25 j 06:40 | 10° <u>00</u> '56 | 26 |
| retrograde | 13 Feb 01 j 13:27 | 28° <u>04</u> '25 | | evening set | 19 Oct 28 j 07:38 | 13° <u>00</u> '07 | 51 |
| opposition | 13 Apr 20 j 02:22 | 27° <u>01</u> '58 | 14°58'23 | | | | |
| min. Earth dist. | 13 Apr 20 j 09:28 | 27° <u>01</u> '28 | 28.74810 AU | conjunction | 19 Nov 07 j 20:11 | 13° <u>00</u> '32 | 24 |
| direct | 13 Jul 08 j 20:54 | 25° <u>05</u> '45 | | minimum elong | 19 Nov 07 j 20:34 | 13° <u>00</u> '32 | 26 |
| evening set | 13 Oct 17 j 14:38 | 28° <u>02</u> '23 | | max. Earth dist. | 19 Nov 08 j 11:36 | 13° <u>00</u> '33 | 54 |
| | | | | morning rise | 19 Nov 18 j 08:40 | 13° <u>00</u> '56 | 56 |
| conjunction | 13 Oct 23 j 16:34 | 28° <u>03</u> '12 | 13°48'13 | | 19 Dec 17 j 14:32 | 15° <u>00</u> ' | |

| | | | | | | | |
|------------------|-------------------|-------------------------------|-------------|------------------|-------------------|-------------------------------|-------------|
| retrograde | 20 Feb 19 j 10:04 | 16° \mathbb{M} 06'14 | | conjunction | 26 Nov 23 j 09:50 | 29° \mathbb{M} 42'22 | 6°59'46 |
| | 20 Apr 28 j 07:10 | 15° \mathbb{R} \mathbb{M} | | minimum elong | 26 Nov 23 j 10:07 | 29° \mathbb{M} 42'24 | 6°59'45 |
| opposition | 20 May 07 j 23:07 | 14° \mathbb{M} 44'24 | 11°25'38 | max. Earth dist. | 26 Nov 24 j 20:52 | 29° \mathbb{M} 45'38 | 32.20427 AU |
| min. Earth dist. | 20 May 07 j 07:32 | 14° \mathbb{M} 45'28 | 29.28074 AU | | 26 Dec 01 j 07:44 | 0° \mathbb{A} | |
| direct | 20 Jul 27 j 02:16 | 13° \mathbb{M} 21'15 | | morning rise | 26 Dec 06 j 22:26 | 0° \mathbb{A} 12'22 | |
| | 20 Oct 15 j 19:34 | 15° \mathbb{M} | | retrograde | 27 Mar 07 j 00:23 | 2° \mathbb{A} 08'37 | |
| evening set | 20 Oct 29 j 08:50 | 15° \mathbb{M} 30'19 | | min. Earth dist. | 27 May 24 j 00:47 | 0° \mathbb{A} 51'13 | 30.30513 AU |
| | | | | opposition | 27 May 25 j 12:31 | 0° \mathbb{A} 48'54 | 7°08'31 |
| conjunction | 20 Nov 09 j 10:18 | 15° \mathbb{M} 55'57 | 10°25'43 | | 27 Jun 28 j 03:44 | 30° \mathbb{R} \mathbb{M} | |
| minimum elong | 20 Nov 09 j 10:42 | 15° \mathbb{M} 56'00 | 10°25'43 | direct | 27 Aug 13 j 19:14 | 29° \mathbb{M} 28'36 | |
| max. Earth dist. | 20 Nov 10 j 04:01 | 15° \mathbb{M} 57'40 | 31.30416 AU | | 27 Sep 27 j 11:18 | 0° \mathbb{A} | |
| morning rise | 20 Nov 20 j 11:57 | 16° \mathbb{M} 21'36 | | evening set | 27 Nov 11 j 23:52 | 1° \mathbb{A} 23'41 | |
| retrograde | 21 Feb 21 j 01:16 | 18° \mathbb{M} 28'47 | | | | | |
| opposition | 21 May 10 j 16:49 | 17° \mathbb{M} 07'12 | 10°50'44 | conjunction | 27 Nov 25 j 19:19 | 1° \mathbb{A} 54'03 | 6°24'10 |
| min. Earth dist. | 21 May 09 j 20:56 | 17° \mathbb{M} 08'33 | 29.39963 AU | minimum elong | 27 Nov 25 j 19:34 | 1° \mathbb{A} 54'05 | 6°24'10 |
| direct | 21 Jul 29 j 19:35 | 15° \mathbb{M} 44'25 | | max. Earth dist. | 27 Nov 27 j 07:50 | 1° \mathbb{A} 57'25 | 32.38029 AU |
| evening set | 21 Oct 31 j 10:17 | 17° \mathbb{M} 51'15 | | morning rise | 27 Dec 09 j 15:04 | 2° \mathbb{A} 24'27 | |
| | | | | retrograde | 28 Mar 08 j 10:07 | 4° \mathbb{A} 19'07 | |
| conjunction | 21 Nov 11 j 24:00 | 18° \mathbb{M} 17'52 | 9°52'48 | min. Earth dist. | 28 May 25 j 10:59 | 3° \mathbb{A} 02'11 | 30.48183 AU |
| minimum elong | 21 Nov 12 j 00:22 | 18° \mathbb{M} 17'54 | 9°52'48 | opposition | 28 May 27 j 01:20 | 2° \mathbb{A} 59'43 | 6°30'21 |
| max. Earth dist. | 21 Nov 12 j 21:51 | 18° \mathbb{M} 19'58 | 31.43197 AU | direct | 28 Aug 15 j 07:53 | 1° \mathbb{A} 39'49 | |
| morning rise | 21 Nov 23 j 13:39 | 18° \mathbb{M} 44'29 | | evening set | 28 Nov 13 j 02:16 | 3° \mathbb{A} 33'11 | |
| retrograde | 22 Feb 23 j 12:55 | 20° \mathbb{M} 49'39 | | | | | |
| min. Earth dist. | 22 May 12 j 11:53 | 19° \mathbb{M} 29'50 | 29.52889 AU | conjunction | 28 Nov 27 j 04:05 | 4° \mathbb{A} 03'52 | 5°48'26 |
| opposition | 22 May 13 j 09:51 | 19° \mathbb{M} 28'21 | 10°15'01 | minimum elong | 28 Nov 27 j 04:19 | 4° \mathbb{A} 03'54 | 5°48'26 |
| direct | 22 Aug 01 j 12:42 | 18° \mathbb{M} 05'59 | | max. Earth dist. | 28 Nov 28 j 19:51 | 4° \mathbb{A} 07'31 | 32.56254 AU |
| evening set | 22 Nov 02 j 12:07 | 20° \mathbb{M} 10'38 | | morning rise | 28 Dec 11 j 05:55 | 4° \mathbb{A} 34'35 | |
| | | | | retrograde | 29 Mar 10 j 16:48 | 6° \mathbb{A} 27'45 | |
| conjunction | 22 Nov 14 j 12:51 | 20° \mathbb{M} 38'07 | 9°19'10 | min. Earth dist. | 29 May 27 j 21:18 | 5° \mathbb{A} 11'13 | 30.66481 AU |
| minimum elong | 22 Nov 14 j 13:13 | 20° \mathbb{M} 38'09 | 9°19'10 | opposition | 29 May 29 j 13:23 | 5° \mathbb{A} 08'38 | 5°52'06 |
| max. Earth dist. | 22 Nov 15 j 12:56 | 20° \mathbb{M} 40'26 | 31.56977 AU | direct | 29 Aug 17 j 22:45 | 3° \mathbb{A} 49'08 | |
| morning rise | 22 Nov 26 j 13:41 | 21° \mathbb{M} 05'37 | | evening set | 29 Nov 15 j 04:48 | 5° \mathbb{A} 40'51 | |
| retrograde | 23 Feb 26 j 02:17 | 23° \mathbb{M} 08'50 | | | | | |
| min. Earth dist. | 23 May 15 j 00:08 | 21° \mathbb{M} 49'35 | 29.66781 AU | conjunction | 29 Nov 29 j 11:58 | 6° \mathbb{A} 11'48 | 5°12'39 |
| opposition | 23 May 16 j 02:06 | 21° \mathbb{M} 47'51 | 9°38'38 | minimum elong | 29 Nov 29 j 12:11 | 6° \mathbb{A} 11'49 | 5°12'39 |
| direct | 23 Aug 04 j 05:31 | 20° \mathbb{M} 25'53 | | max. Earth dist. | 29 Dec 01 j 04:58 | 6° \mathbb{A} 15'31 | 32.75100 AU |
| evening set | 23 Nov 04 j 14:03 | 22° \mathbb{M} 28'28 | | morning rise | 29 Dec 13 j 19:32 | 6° \mathbb{A} 42'45 | |
| | | | | retrograde | 30 Mar 13 j 01:26 | 8° \mathbb{A} 34'28 | |
| conjunction | 23 Nov 17 j 01:05 | 22° \mathbb{M} 56'43 | 8°44'57 | min. Earth dist. | 30 May 30 j 05:03 | 7° \mathbb{A} 18'25 | 30.85448 AU |
| minimum elong | 23 Nov 17 j 01:25 | 22° \mathbb{M} 56'45 | 8°44'57 | opposition | 30 Jun 01 j 00:22 | 7° \mathbb{A} 15'39 | 5°13'51 |
| max. Earth dist. | 23 Nov 18 j 04:36 | 22° \mathbb{M} 59'20 | 31.71656 AU | direct | 30 Aug 20 j 10:20 | 5° \mathbb{A} 56'31 | |
| morning rise | 23 Nov 29 j 12:08 | 23° \mathbb{M} 24'59 | | evening set | 30 Nov 17 j 07:07 | 7° \mathbb{A} 46'41 | |
| retrograde | 24 Feb 28 j 14:09 | 25° \mathbb{M} 26'22 | | | | | |
| opposition | 24 May 17 j 17:52 | 24° \mathbb{M} 05'42 | 9°01'41 | conjunction | 30 Dec 01 j 19:14 | 8° \mathbb{A} 17'48 | 4°36'52 |
| min. Earth dist. | 24 May 16 j 14:01 | 24° \mathbb{M} 07'32 | 29.81562 AU | minimum elong | 30 Dec 01 j 19:25 | 8° \mathbb{A} 17'49 | 4°36'51 |
| direct | 24 Aug 05 j 20:05 | 22° \mathbb{M} 44'09 | | max. Earth dist. | 30 Dec 03 j 15:30 | 8° \mathbb{A} 21'47 | 32.94595 AU |
| evening set | 24 Nov 05 j 16:20 | 24° \mathbb{M} 44'44 | | morning rise | 30 Dec 16 j 07:33 | 8° \mathbb{A} 48'57 | |
| | | | | retrograde | 31 Mar 15 j 05:48 | 10° \mathbb{A} 39'16 | |
| conjunction | 24 Nov 18 j 12:41 | 25° \mathbb{M} 13'39 | 8°10'15 | min. Earth dist. | 31 Jun 01 j 14:08 | 9° \mathbb{A} 23'36 | 31.05100 AU |
| minimum elong | 24 Nov 18 j 13:01 | 25° \mathbb{M} 13'41 | 8°10'14 | opposition | 31 Jun 03 j 10:48 | 9° \mathbb{A} 20'46 | 4°35'39 |
| max. Earth dist. | 24 Nov 19 j 18:40 | 25° \mathbb{M} 16'29 | 31.87182 AU | direct | 31 Aug 22 j 21:46 | 8° \mathbb{A} 02'02 | |
| morning rise | 24 Dec 01 j 09:02 | 25° \mathbb{M} 42'35 | | evening set | 31 Nov 19 j 09:24 | 9° \mathbb{A} 50'42 | |
| retrograde | 25 Mar 02 j 02:17 | 27° \mathbb{M} 42'11 | | | | | |
| min. Earth dist. | 25 May 19 j 01:30 | 26° \mathbb{M} 23'54 | 29.97156 AU | conjunction | 31 Dec 04 j 01:33 | 10° \mathbb{A} 21'55 | 4°01'09 |
| opposition | 25 May 20 j 08:49 | 26° \mathbb{M} 21'50 | 8°24'17 | minimum elong | 31 Dec 04 j 01:43 | 10° \mathbb{A} 21'56 | 4°01'09 |
| direct | 25 Aug 08 j 12:44 | 25° \mathbb{M} 00'43 | | max. Earth dist. | 31 Dec 05 j 23:23 | 10° \mathbb{A} 26'01 | 33.14772 AU |
| evening set | 25 Nov 07 j 18:40 | 26° \mathbb{M} 59'24 | | morning rise | 31 Dec 18 j 18:08 | 10° \mathbb{A} 53'11 | |
| | | | | retrograde | 32 Mar 16 j 11:46 | 12° \mathbb{A} 42'13 | |
| conjunction | 25 Nov 20 j 23:30 | 27° \mathbb{M} 28'53 | 7°35'09 | min. Earth dist. | 32 Jun 02 j 20:10 | 11° \mathbb{A} 27'05 | 31.25462 AU |
| minimum elong | 25 Nov 20 j 23:48 | 27° \mathbb{M} 28'55 | 7°35'09 | opposition | 32 Jun 04 j 20:20 | 11° \mathbb{A} 24'02 | 3°57'36 |
| max. Earth dist. | 25 Nov 22 j 07:49 | 27° \mathbb{M} 31'55 | 32.03455 AU | direct | 32 Aug 24 j 07:21 | 10° \mathbb{A} 05'42 | |
| morning rise | 25 Dec 04 j 04:30 | 27° \mathbb{M} 58'24 | | evening set | 32 Nov 20 j 11:39 | 11° \mathbb{A} 52'58 | |
| retrograde | 26 Mar 04 j 14:31 | 29° \mathbb{M} 56'17 | | | | | |
| opposition | 26 May 22 j 23:09 | 28° \mathbb{M} 36'15 | 7°46'31 | conjunction | 32 Dec 05 j 07:19 | 12° \mathbb{A} 24'15 | 3°25'34 |
| min. Earth dist. | 26 May 21 j 13:49 | 28° \mathbb{M} 38'26 | 30.13501 AU | minimum elong | 32 Dec 05 j 07:27 | 12° \mathbb{A} 24'15 | 3°25'33 |
| direct | 26 Aug 11 j 03:18 | 27° \mathbb{M} 15'33 | | max. Earth dist. | 32 Dec 07 j 08:02 | 12° \mathbb{A} 28'34 | 33.35632 AU |
| evening set | 26 Nov 09 j 21:12 | 29° \mathbb{M} 12'24 | | morning rise | 32 Dec 20 j 03:28 | 12° \mathbb{A} 55'34 | |

| | | | | | | | |
|------------------|-------------------|---|-------------|------------------|-------------------|---|-------------|
| retrograde | 33 Mar 18 j 17:21 | 14°  43'24 | | evening set | 39 Dec 04 j 01:29 | 25°  24'50 | |
| min. Earth dist. | 33 Jun 05 j 03:34 | 13°  28'40 | 31.46534 AU | | | | |
| opposition | 33 Jun 07 j 05:19 | 13°  25'32 | 3°19'45 | conjunction | 39 Dec 19 j 05:53 | 25°  55'07 | -0°35'15 |
| direct | 33 Aug 26 j 14:19 | 12°  07'38 | | minimum elong | 39 Dec 19 j 05:52 | 25°  55'07 | 0°35'15 |
| evening set | 33 Nov 22 j 13:42 | 13°  53'34 | | max. Earth dist. | 39 Dec 21 j 18:30 | 26°  00'12 | 34.96164 AU |
| | | | | morning rise | 40 Jan 03 j 11:15 | 26°  25'30 | |
| conjunction | 33 Dec 07 j 12:22 | 14°  24'51 | 2°50'11 | retrograde | 40 Mar 31 j 15:56 | 28°  06'34 | |
| minimum elong | 33 Dec 07 j 12:29 | 14°  24'51 | 2°50'11 | min. Earth dist. | 40 Jun 18 j 10:49 | 26°  54'51 | 33.08129 AU |
| max. Earth dist. | 33 Dec 09 j 15:10 | 14°  29'19 | 33.57165 AU | opposition | 40 Jun 21 j 00:07 | 26°  51'09 | -0°54'54 |
| morning rise | 33 Dec 22 j 11:28 | 14°  56'11 | | direct | 40 Sep 09 j 14:53 | 25°  36'11 | |
| retrograde | 34 Mar 20 j 22:39 | 16°  42'52 | | evening set | 40 Dec 05 j 03:08 | 27°  14'43 | |
| min. Earth dist. | 34 Jun 07 j 08:48 | 15°  28'38 | 31.68252 AU | | | | |
| opposition | 34 Jun 09 j 13:22 | 15°  25'21 | 2°42'09 | conjunction | 40 Dec 20 j 06:51 | 27°  44'42 | -1°07'57 |
| direct | 34 Aug 28 j 23:53 | 14°  07'53 | | minimum elong | 40 Dec 20 j 06:48 | 27°  44'42 | 1°07'57 |
| evening set | 34 Nov 24 j 15:52 | 15°  52'35 | | max. Earth dist. | 40 Dec 22 j 20:11 | 27°  49'49 | 35.20290 AU |
| | | | | morning rise | 41 Jan 04 j 11:30 | 28°  14'47 | |
| conjunction | 34 Dec 09 j 16:43 | 16°  23'48 | 2°15'03 | retrograde | 41 Apr 02 j 16:27 | 29°  55'05 | |
| minimum elong | 34 Dec 09 j 16:49 | 16°  23'49 | 2°15'02 | min. Earth dist. | 41 Jun 20 j 12:18 | 28°  43'46 | 33.32370 AU |
| max. Earth dist. | 34 Dec 11 j 21:15 | 16°  28'23 | 33.79283 AU | opposition | 41 Jun 23 j 03:30 | 28°  39'58 | -1°29'17 |
| morning rise | 34 Dec 24 j 18:18 | 16°  55'05 | | direct | 41 Sep 11 j 18:46 | 27°  25'21 | |
| retrograde | 35 Mar 23 j 05:15 | 18°  40'42 | | evening set | 41 Dec 07 j 04:36 | 29°  03'02 | |
| min. Earth dist. | 35 Jun 09 j 14:21 | 17°  26'55 | 31.90567 AU | | | | |
| opposition | 35 Jun 11 j 20:45 | 17°  23'32 | 2°04'53 | conjunction | 41 Dec 22 j 07:03 | 29°  32'41 | -1°40'09 |
| direct | 35 Aug 31 j 06:33 | 16°  06'30 | | minimum elong | 41 Dec 22 j 06:59 | 29°  32'41 | 1°40'09 |
| evening set | 35 Nov 26 j 17:51 | 17°  50'03 | | max. Earth dist. | 41 Dec 24 j 21:30 | 29°  37'50 | 35.44574 AU |
| | | | | | 42 Jan 05 j 04:31 | 0°  | |
| conjunction | 35 Dec 11 j 20:36 | 18°  21'10 | 1°40'12 | morning rise | 42 Jan 06 j 10:42 | 0°  02'26 | |
| minimum elong | 35 Dec 11 j 20:40 | 18°  21'11 | 1°40'13 | retrograde | 42 Apr 04 j 18:06 | 1°  34'00 | |
| max. Earth dist. | 35 Dec 14 j 03:40 | 18°  25'56 | 34.01940 AU | min. Earth dist. | 42 Jun 22 j 14:19 | 0°  31'00 | 33.56816 AU |
| morning rise | 35 Dec 26 j 23:51 | 18°  05'21 | | opposition | 42 Jun 25 j 06:21 | 0°  27'10 | -2°03'05 |
| retrograde | 36 Mar 24 j 09:06 | 20°  36'57 | | | 42 Jul 14 j 15:07 | 30°  R  | |
| min. Earth dist. | 36 Jun 10 j 19:36 | 19°  23'37 | 32.13382 AU | direct | 42 Sep 13 j 19:50 | 29°  12'54 | |
| opposition | 36 Jun 13 j 03:34 | 19°  20'10 | 1°28'00 | | 42 Nov 10 j 18:59 | 0°  | |
| direct | 36 Sep 01 j 14:51 | 18°  03'34 | | evening set | 42 Dec 09 j 05:47 | 0°  34'47 | |
| evening set | 36 Nov 27 j 19:51 | 19°  46'00 | | | | | |
| | | | | conjunction | 42 Dec 24 j 06:45 | 1°  19'04 | -2°11'48 |
| conjunction | 36 Dec 12 j 23:38 | 20°  16'58 | 1°05'43 | minimum elong | 42 Dec 24 j 06:40 | 1°  19'04 | 2°11'49 |
| minimum elong | 36 Dec 12 j 23:40 | 20°  16'59 | 1°05'43 | max. Earth dist. | 42 Dec 26 j 22:53 | 1°  24'19 | 35.69061 AU |
| max. Earth dist. | 36 Dec 15 j 07:34 | 20°  21'46 | 34.25034 AU | morning rise | 43 Jan 08 j 08:40 | 1°  38'27 | |
| morning rise | 36 Dec 28 j 04:20 | 20°  48'01 | | retrograde | 43 Apr 06 j 16:39 | 3°  27'20 | |
| retrograde | 37 Mar 26 j 13:07 | 22°  31'39 | | min. Earth dist. | 43 Jun 24 j 15:12 | 2°  16'40 | 33.81482 AU |
| min. Earth dist. | 37 Jun 12 j 23:25 | 21°  18'48 | 32.36635 AU | opposition | 43 Jun 27 j 08:22 | 2°  12'48 | -2°36'17 |
| opposition | 37 Jun 15 j 09:44 | 21°  15'14 | 0°51'32 | direct | 43 Sep 15 j 23:38 | 0°  35'52 | |
| direct | 37 Sep 03 j 20:41 | 19°  59'04 | | evening set | 43 Dec 11 j 06:58 | 2°  35'00 | |
| evening set | 37 Nov 29 j 21:46 | 21°  40'27 | | | | | |
| | | | | conjunction | 43 Dec 26 j 05:44 | 3°  03'54 | -2°42'54 |
| conjunction | 37 Dec 15 j 02:23 | 22°  11'14 | 0°31'38 | minimum elong | 43 Dec 26 j 05:39 | 3°  03'54 | 2°42'54 |
| minimum elong | 37 Dec 15 j 02:24 | 22°  11'15 | 0°31'39 | max. Earth dist. | 43 Dec 28 j 22:19 | 3°  09'09 | 35.93781 AU |
| max. Earth dist. | 37 Dec 17 j 12:52 | 22°  16'13 | 34.48489 AU | morning rise | 44 Jan 10 j 05:50 | 3°  32'54 | |
| morning rise | 37 Dec 30 j 07:41 | 22°  42'06 | | retrograde | 44 Apr 07 j 17:02 | 5°  11'09 | |
| retrograde | 38 Mar 28 j 13:41 | 24°  24'50 | | min. Earth dist. | 44 Jun 25 j 14:51 | 4°  00'52 | 34.06437 AU |
| min. Earth dist. | 38 Jun 15 j 04:19 | 23°  12'21 | 32.60220 AU | opposition | 44 Jun 28 j 09:55 | 3°  56'55 | -3°08'50 |
| opposition | 38 Jun 17 j 15:05 | 23°  08'45 | 0°15'33 | direct | 44 Sep 17 j 01:07 | 2°  43'20 | |
| direct | 38 Sep 06 j 04:49 | 21°  53'01 | | evening set | 44 Dec 12 j 07:43 | 4°  18'47 | |
| desc. node | 38 Nov 24 j 19:53 | 23°  19'30 | | | | | |
| evening set | 38 Dec 01 j 23:45 | 23°  33'24 | | conjunction | 44 Dec 27 j 04:14 | 4°  47'17 | -3°13'24 |
| | | | | minimum elong | 44 Dec 27 j 04:07 | 4°  47'16 | 3°13'25 |
| conjunction | 38 Dec 17 j 04:27 | 24°  03'58 | -0°02'06 | max. Earth dist. | 44 Dec 29 j 23:13 | 4°  52'41 | 36.18776 AU |
| minimum elong | 38 Dec 17 j 04:26 | 24°  03'58 | 0°02'06 | morning rise | 45 Jan 11 j 01:50 | 5°  15'52 | |
| behind sun begin | 38 Dec 16 j 22:05 | 24°  03'27 | | retrograde | 45 Apr 09 j 14:18 | 6°  53'33 | |
| behind sun end | 38 Dec 17 j 10:47 | 24°  04'28 | | min. Earth dist. | 45 Jun 27 j 15:22 | 5°  43'35 | 34.31670 AU |
| max. Earth dist. | 38 Dec 19 j 15:08 | 24°  08'55 | 34.72225 AU | opposition | 45 Jun 30 j 10:52 | 5°  39'37 | -3°40'44 |
| morning rise | 39 Jan 01 j 10:05 | 24°  34'36 | | direct | 45 Sep 19 j 04:07 | 4°  26'24 | |
| retrograde | 39 Mar 30 j 16:06 | 26°  16'28 | | evening set | 45 Dec 14 j 08:35 | 6°  01'13 | |
| min. Earth dist. | 39 Jun 17 j 06:43 | 25°  04'27 | 32.84071 AU | | | | |
| opposition | 39 Jun 19 j 19:49 | 25°  00'44 | -0°19'57 | conjunction | 45 Dec 29 j 02:14 | 6°  29'17 | -3°43'19 |
| direct | 39 Sep 08 j 10:16 | 23°  45'23 | | minimum elong | 45 Dec 29 j 02:07 | 6°  29'17 | 3°43'19 |

| | | | | | | | |
|------------------|-------------------|-----------|-------------|------------------|-------------------|-----------|-------------|
| max. Earth dist. | 45 Dec 31 j 21:27 | 6°33'40" | 36.44037 AU | conjunction | 53 Jan 08 j 23:22 | 17°35'04" | -6°55'21" |
| morning rise | 46 Jan 12 j 21:11 | 6°35'28" | | minimum elong | 53 Jan 08 j 23:10 | 17°35'04" | 6°55'20" |
| retrograde | 46 Apr 11 j 12:10 | 8°33'43" | | max. Earth dist. | 53 Jan 11 j 23:21 | 17°35'14" | 38.23905 AU |
| min. Earth dist. | 46 Jun 29 j 13:10 | 7°32'50" | 34.57173 AU | morning rise | 53 Jan 22 j 13:42 | 18°31'52" | |
| opposition | 46 Jul 02 j 10:56 | 7°32'10" | -4°11'58" | retrograde | 53 Apr 22 j 09:51 | 19°35'00" | |
| direct | 46 Sep 21 j 04:29 | 6°30'8" | | min. Earth dist. | 53 Jul 10 j 20:40 | 18°34'29" | 36.38197 AU |
| evening set | 46 Dec 16 j 09:11 | 7°34'25" | | opposition | 53 Jul 13 j 22:33 | 18°33'38" | -7°31'32" |
| | | | | direct | 53 Oct 02 j 16:57 | 17°32'8" | |
| conjunction | 46 Dec 30 j 23:43 | 8°31'02" | -4°12'38" | evening set | 53 Dec 28 j 10:10 | 18°35'34" | |
| minimum elong | 46 Dec 30 j 23:34 | 8°31'01" | 4°12'37" | | | | |
| max. Earth dist. | 47 Jan 02 j 20:48 | 8°31'53" | 36.69527 AU | conjunction | 54 Jan 10 j 17:53 | 19°32'33" | -7°20'17" |
| morning rise | 47 Jan 14 j 15:33 | 8°33'74" | | minimum elong | 54 Jan 10 j 17:42 | 19°32'33" | 7°20'17" |
| retrograde | 47 Apr 13 j 08:07 | 10°31'42" | | max. Earth dist. | 54 Jan 13 j 18:43 | 19°32'90" | 38.49319 AU |
| min. Earth dist. | 47 Jul 01 j 12:53 | 9°30'51" | 34.82898 AU | morning rise | 54 Jan 24 j 03:00 | 19°34'74" | |
| opposition | 47 Jul 04 j 10:45 | 9°30'11" | -4°42'32" | retrograde | 54 Apr 24 j 02:42 | 21°32'22" | |
| direct | 47 Sep 23 j 04:57 | 7°34'84" | | min. Earth dist. | 54 Jul 12 j 17:30 | 20°31'45" | 36.63751 AU |
| evening set | 47 Dec 18 j 09:31 | 9°32'22" | | opposition | 54 Jul 15 j 18:42 | 20°31'05" | -7°57'19" |
| | | | | direct | 54 Oct 04 j 14:33 | 19°30'04" | |
| conjunction | 48 Jan 01 j 20:38 | 9°34'35" | -4°41'19" | evening set | 54 Dec 30 j 09:41 | 20°33'14" | |
| minimum elong | 48 Jan 01 j 20:29 | 9°34'34" | 4°41'19" | | | | |
| max. Earth dist. | 48 Jan 04 j 18:22 | 9°35'50" | 36.95208 AU | conjunction | 55 Jan 12 j 11:56 | 20°35'51" | -7°44'35" |
| morning rise | 48 Jan 16 j 08:57 | 10°31'65" | | minimum elong | 55 Jan 12 j 11:44 | 20°35'51" | 7°44'34" |
| retrograde | 48 Apr 14 j 05:26 | 11°35'30" | | max. Earth dist. | 55 Jan 15 j 13:01 | 21°30'04" | 38.74630 AU |
| min. Earth dist. | 48 Jul 02 j 10:27 | 10°34'19" | 35.08781 AU | morning rise | 55 Jan 25 j 15:22 | 21°31'84" | |
| opposition | 48 Jul 05 j 09:56 | 10°34'01" | -5°12'25" | retrograde | 55 Apr 25 j 20:01 | 22°35'24" | |
| direct | 48 Sep 24 j 03:41 | 9°32'80" | | min. Earth dist. | 55 Jul 14 j 12:15 | 21°34'60" | 36.89216 AU |
| evening set | 48 Dec 19 j 09:57 | 11°30'12" | | opposition | 55 Jul 17 j 14:20 | 21°34'15" | -8°22'26" |
| | | | | direct | 55 Oct 06 j 10:49 | 20°33'20" | |
| conjunction | 49 Jan 02 j 17:08 | 11°32'80" | -5°09'22" | evening set | 56 Jan 01 j 08:59 | 22°30'24" | |
| minimum elong | 49 Jan 02 j 16:59 | 11°32'80" | 5°09'22" | | | | |
| max. Earth dist. | 49 Jan 05 j 15:40 | 11°33'32" | 37.20995 AU | conjunction | 56 Jan 14 j 05:17 | 22°32'53" | -8°08'15" |
| morning rise | 49 Jan 17 j 01:48 | 11°35'47" | | minimum elong | 56 Jan 14 j 05:05 | 22°32'53" | 8°08'16" |
| retrograde | 49 Apr 16 j 03:43 | 13°33'04" | | max. Earth dist. | 56 Jan 17 j 06:31 | 22°33'10" | 38.99872 AU |
| min. Earth dist. | 49 Jul 04 j 08:44 | 12°32'13" | 35.34769 AU | morning rise | 56 Jan 27 j 03:02 | 22°34'83" | |
| opposition | 49 Jul 07 j 08:40 | 12°31'80" | -5°41'36" | retrograde | 56 Apr 26 j 15:01 | 24°32'25" | |
| direct | 49 Sep 26 j 00:07 | 11°30'62" | | min. Earth dist. | 56 Jul 15 j 07:07 | 23°31'52" | 37.14668 AU |
| evening set | 49 Dec 21 j 10:08 | 12°33'91" | | opposition | 56 Jul 18 j 09:41 | 23°31'14" | -8°46'51" |
| | | | | direct | 56 Oct 07 j 04:49 | 22°30'20" | |
| conjunction | 50 Jan 04 j 13:22 | 13°30'52" | -5°36'48" | evening set | 57 Jan 02 j 08:06 | 23°33'23" | |
| minimum elong | 50 Jan 04 j 13:12 | 13°30'52" | 5°36'49" | | | | |
| max. Earth dist. | 50 Jan 07 j 13:10 | 13°31'05" | 37.46836 AU | conjunction | 57 Jan 14 j 22:31 | 23°35'44" | -8°31'17" |
| morning rise | 50 Jan 18 j 17:47 | 13°33'13" | | minimum elong | 57 Jan 14 j 22:18 | 23°35'44" | 8°31'16" |
| retrograde | 50 Apr 18 j 00:21 | 15°30'71" | | max. Earth dist. | 57 Jan 18 j 01:12 | 24°30'02" | 39.25116 AU |
| min. Earth dist. | 50 Jul 06 j 06:34 | 13°35'02" | 35.60758 AU | morning rise | 57 Jan 27 j 14:02 | 24°31'71" | |
| opposition | 50 Jul 09 j 06:49 | 13°35'43" | -6°10'06" | retrograde | 57 Apr 28 j 08:25 | 25°35'05" | |
| direct | 50 Sep 27 j 23:11 | 12°34'33" | | min. Earth dist. | 57 Jul 17 j 01:42 | 24°34'43" | 37.40123 AU |
| evening set | 50 Dec 23 j 10:25 | 14°31'57" | | opposition | 57 Jul 20 j 04:20 | 24°34'02" | -9°10'34" |
| | | | | direct | 57 Oct 08 j 23:36 | 23°33'10" | |
| conjunction | 51 Jan 06 j 09:02 | 14°34'13" | -6°03'37" | evening set | 58 Jan 04 j 07:13 | 25°30'19" | |
| minimum elong | 51 Jan 06 j 08:51 | 14°34'13" | 6°03'37" | | | | |
| max. Earth dist. | 51 Jan 09 j 08:17 | 14°34'70" | 37.72632 AU | conjunction | 58 Jan 16 j 15:12 | 25°32'29" | -8°53'40" |
| morning rise | 51 Jan 20 j 09:09 | 15°30'72" | | minimum elong | 58 Jan 16 j 14:59 | 25°32'29" | 8°53'41" |
| retrograde | 51 Apr 19 j 22:20 | 16°34'23" | | max. Earth dist. | 58 Jan 19 j 17:21 | 25°32'26" | 39.50374 AU |
| min. Earth dist. | 51 Jul 08 j 03:13 | 15°33'47" | 35.86696 AU | morning rise | 58 Jan 29 j 00:31 | 25°34'44" | |
| opposition | 51 Jul 11 j 04:29 | 15°33'30" | -6°37'56" | retrograde | 58 Apr 30 j 02:55 | 27°31'81" | |
| direct | 51 Sep 29 j 19:59 | 14°31'93" | | min. Earth dist. | 58 Jul 18 j 18:35 | 26°31'21" | 37.65601 AU |
| evening set | 51 Dec 25 j 10:28 | 15°35'13" | | opposition | 58 Jul 21 j 22:36 | 26°30'80" | -9°33'37" |
| | | | | direct | 58 Oct 10 j 16:44 | 24°35'01" | |
| conjunction | 52 Jan 08 j 04:29 | 16°31'64" | -6°29'48" | evening set | 59 Jan 06 j 06:01 | 26°32'90" | |
| minimum elong | 52 Jan 08 j 04:19 | 16°31'64" | 6°29'48" | | | | |
| max. Earth dist. | 52 Jan 11 j 05:07 | 16°32'21" | 37.98335 AU | conjunction | 59 Jan 18 j 07:33 | 26°35'08" | -9°15'26" |
| morning rise | 52 Jan 21 j 23:46 | 16°34'15" | | minimum elong | 59 Jan 18 j 07:20 | 26°35'07" | 9°15'25" |
| retrograde | 52 Apr 20 j 16:55 | 18°31'65" | | max. Earth dist. | 59 Jan 21 j 11:08 | 26°35'39" | 39.75636 AU |
| min. Earth dist. | 52 Jul 09 j 01:16 | 17°30'91" | 36.12517 AU | morning rise | 59 Jan 30 j 10:15 | 27°31'17" | |
| opposition | 52 Jul 12 j 01:50 | 17°30'51" | -7°05'04" | retrograde | 59 May 01 j 17:10 | 28°34'42" | |
| direct | 52 Sep 30 j 18:21 | 15°35'43" | | min. Earth dist. | 59 Jul 20 j 13:09 | 27°38'54" | 37.91073 AU |
| evening set | 52 Dec 26 j 10:23 | 17°32'61" | | opposition | 59 Jul 23 j 16:31 | 27°33'44" | -9°55'58" |

| | | | | | |
|------------------|-------------------|--------------------------------------|------------------|-------------------|---------------------------------|
| direct | 59 Oct 12 j 12:08 | 26° $\overline{3}$ 26'01 | conjunction | 66 Jan 27 j 17:37 | 6° \approx 36'55 -11°30'45 |
| evening set | 60 Jan 08 j 04:50 | 27° $\overline{3}$ 55'55 | minimum elong | 66 Jan 27 j 17:24 | 6° \approx 36'54 11°30'45 |
| | | | max. Earth dist. | 66 Jan 30 j 20:53 | 6° \approx 42'12 41.48902 AU |
| conjunction | 60 Jan 19 j 23:35 | 28° $\overline{3}$ 16'21 -9°36'33 | morning rise | 66 Feb 06 j 15:49 | 6° \approx 53'34 |
| minimum elong | 60 Jan 19 j 23:22 | 28° $\overline{3}$ 16'20 9°36'34 | retrograde | 66 May 11 j 02:36 | 8° \approx 26'56 |
| max. Earth dist. | 60 Jan 23 j 02:59 | 28° $\overline{3}$ 21'51 40.00891 AU | min. Earth dist. | 66 Jul 30 j 08:46 | 7° \approx 22'46 39.65104 AU |
| morning rise | 60 Jan 31 j 19:25 | 28° $\overline{3}$ 36'53 | opposition | 66 Aug 02 j 11:17 | 7° \approx 18'46 -12°14'32 |
| | 60 Apr 03 j 23:19 | 0° \approx | direct | 66 Oct 22 j 08:31 | 6° \approx 11'58 |
| retrograde | 60 May 02 j 07:43 | 0° \approx 10'14 | evening set | 67 Jan 19 j 18:39 | 7° \approx 41'38 |
| | 60 May 31 j 06:59 | 30° \overline{R} $\overline{3}$ | | | |
| min. Earth dist. | 60 Jul 21 j 05:21 | 29° $\overline{3}$ 04'45 38.16512 AU | conjunction | 67 Jan 29 j 07:31 | 7° \approx 57'33 -11°47'48 |
| opposition | 60 Jul 24 j 09:59 | 29° $\overline{3}$ 00'32 -10°17'40 | minimum elong | 67 Jan 29 j 07:20 | 7° \approx 57'32 11°47'48 |
| direct | 60 Oct 13 j 07:08 | 27° $\overline{3}$ 52'06 | max. Earth dist. | 67 Feb 01 j 10:34 | 8° \approx 02'47 41.72601 AU |
| evening set | 61 Jan 09 j 03:28 | 29° $\overline{3}$ 21'54 | morning rise | 67 Feb 07 j 21:03 | 8° \approx 13'31 |
| | | | retrograde | 67 May 12 j 15:26 | 9° \approx 46'57 |
| conjunction | 61 Jan 20 j 15:11 | 29° $\overline{3}$ 41'43 -9°57'03 | min. Earth dist. | 67 Jul 31 j 23:16 | 8° \approx 42'59 39.88880 AU |
| minimum elong | 61 Jan 20 j 14:59 | 29° $\overline{3}$ 41'43 9°57'03 | opposition | 67 Aug 04 j 02:09 | 8° \approx 38'59 -12°31'55 |
| max. Earth dist. | 61 Jan 23 j 19:05 | 29° $\overline{3}$ 47'13 40.26074 AU | direct | 67 Oct 24 j 00:53 | 7° \approx 32'24 |
| | 61 Jan 31 j 05:16 | 0° \approx | evening set | 68 Jan 21 j 16:58 | 9° \approx 02'07 |
| morning rise | 61 Feb 01 j 04:08 | 0° \approx 01'38 | | | |
| retrograde | 61 May 04 j 00:18 | 1° \approx 34'56 | conjunction | 68 Jan 30 j 21:02 | 9° \approx 17'20 -12°04'17 |
| min. Earth dist. | 61 Jul 22 j 23:00 | 0° \approx 29'41 38.41865 AU | minimum elong | 68 Jan 30 j 20:50 | 9° \approx 17'19 12°04'17 |
| opposition | 61 Jul 26 j 03:11 | 0° \approx 25'31 -10°38'42 | max. Earth dist. | 68 Feb 02 j 23:35 | 9° \approx 22'30 41.96059 AU |
| | 61 Aug 15 j 01:04 | 30° \overline{R} $\overline{3}$ | morning rise | 68 Feb 09 j 01:55 | 9° \approx 32'37 |
| direct | 61 Oct 14 j 23:41 | 29° $\overline{3}$ 17'23 | retrograde | 68 May 13 j 07:15 | 11° \approx 06'08 |
| | 61 Dec 11 j 23:25 | 0° \approx | min. Earth dist. | 68 Aug 01 j 14:05 | 10° \approx 02'20 40.12466 AU |
| evening set | 62 Jan 11 j 02:06 | 0° \approx 47'06 | opposition | 68 Aug 04 j 16:50 | 9° \approx 58'22 -12°48'42 |
| | | | direct | 68 Oct 24 j 13:18 | 8° \approx 52'00 |
| conjunction | 62 Jan 22 j 06:43 | 1° \approx 06'18 -10°16'57 | evening set | 69 Jan 22 j 15:10 | 10° \approx 21'47 |
| minimum elong | 62 Jan 22 j 06:30 | 1° \approx 06'17 10°16'58 | | | |
| max. Earth dist. | 62 Jan 25 j 11:04 | 1° \approx 11'47 40.51139 AU | conjunction | 69 Jan 31 j 10:22 | 10° \approx 36'18 -12°20'13 |
| morning rise | 62 Feb 02 j 12:15 | 1° \approx 25'34 | minimum elong | 69 Jan 31 j 10:11 | 10° \approx 36'18 12°20'13 |
| retrograde | 62 May 05 j 15:33 | 2° \approx 58'51 | max. Earth dist. | 69 Feb 03 j 13:51 | 10° \approx 41'30 42.19350 AU |
| min. Earth dist. | 62 Jul 24 j 15:34 | 1° \approx 53'51 38.67048 AU | morning rise | 69 Feb 09 j 06:09 | 10° \approx 50'53 |
| opposition | 62 Jul 27 j 19:42 | 1° \approx 49'43 -10°59'05 | retrograde | 69 May 14 j 20:21 | 12° \approx 24'30 |
| direct | 62 Oct 16 j 16:29 | 0° \approx 41'53 | min. Earth dist. | 69 Aug 03 j 04:49 | 11° \approx 20'53 40.35880 AU |
| evening set | 63 Jan 13 j 00:49 | 2° \approx 11'33 | opposition | 69 Aug 06 j 07:03 | 11° \approx 16'57 -13°04'53 |
| | | | direct | 69 Oct 26 j 04:05 | 10° \approx 10'49 |
| conjunction | 63 Jan 23 j 21:50 | 2° \approx 30'06 -10°36'15 | evening set | 70 Jan 24 j 13:34 | 11° \approx 40'41 |
| minimum elong | 63 Jan 23 j 21:37 | 2° \approx 30'06 10°36'15 | | | |
| max. Earth dist. | 63 Jan 27 j 01:15 | 2° \approx 35'29 40.76003 AU | conjunction | 70 Feb 01 j 23:22 | 11° \approx 54'31 -12°35'35 |
| morning rise | 63 Feb 03 j 19:58 | 2° \approx 48'45 | minimum elong | 70 Feb 01 j 23:10 | 11° \approx 54'30 12°35'35 |
| retrograde | 63 May 07 j 09:22 | 4° \approx 22'01 | max. Earth dist. | 70 Feb 05 j 01:43 | 11° \approx 59'37 42.42493 AU |
| min. Earth dist. | 63 Jul 26 j 07:49 | 3° \approx 17'17 38.92018 AU | morning rise | 70 Feb 10 j 09:47 | 12° \approx 08'22 |
| opposition | 63 Jul 29 j 12:09 | 3° \approx 13'09 -11°18'51 | retrograde | 70 May 16 j 10:29 | 13° \approx 42'08 |
| direct | 63 Oct 18 j 06:40 | 2° \approx 05'36 | min. Earth dist. | 70 Aug 04 j 17:48 | 12° \approx 38'45 40.59162 AU |
| evening set | 64 Jan 14 j 23:13 | 3° \approx 35'15 | opposition | 70 Aug 07 j 20:49 | 12° \approx 34'48 -13°20'30 |
| | | | direct | 70 Oct 27 j 16:19 | 11° \approx 28'53 |
| conjunction | 64 Jan 25 j 12:41 | 3° \approx 53'10 -10°54'59 | evening set | 71 Jan 26 j 11:49 | 12° \approx 58'55 |
| minimum elong | 64 Jan 25 j 12:28 | 3° \approx 53'09 10°54'59 | | | |
| max. Earth dist. | 64 Jan 28 j 17:01 | 3° \approx 58'35 41.00612 AU | conjunction | 71 Feb 03 j 12:07 | 13° \approx 12'01 -12°50'24 |
| morning rise | 64 Feb 05 j 03:00 | 4° \approx 11'09 | minimum elong | 71 Feb 03 j 11:56 | 13° \approx 12'00 12°50'24 |
| retrograde | 64 May 07 j 23:59 | 5° \approx 44'27 | max. Earth dist. | 71 Feb 06 j 15:28 | 13° \approx 17'09 42.65500 AU |
| min. Earth dist. | 64 Jul 27 j 01:05 | 4° \approx 39'53 39.16693 AU | morning rise | 71 Feb 11 j 12:56 | 13° \approx 25'08 |
| opposition | 64 Jul 30 j 04:18 | 4° \approx 35'50 -11°38'00 | retrograde | 71 May 17 j 22:18 | 14° \approx 59'04 |
| direct | 64 Oct 18 j 23:22 | 3° \approx 28'33 | min. Earth dist. | 71 Aug 06 j 08:34 | 13° \approx 55'51 40.82300 AU |
| evening set | 65 Jan 15 j 21:53 | 4° \approx 58'11 | opposition | 71 Aug 09 j 10:31 | 13° \approx 51'57 -13°35'31 |
| | | | direct | 71 Oct 29 j 06:37 | 12° \approx 46'17 |
| conjunction | 65 Jan 26 j 03:19 | 5° \approx 15'27 -11°13'09 | evening set | 72 Jan 28 j 10:10 | 14° \approx 16'30 |
| minimum elong | 65 Jan 26 j 03:07 | 5° \approx 15'26 11°13'08 | | | |
| max. Earth dist. | 65 Jan 29 j 06:22 | 5° \approx 20'45 41.24920 AU | conjunction | 72 Feb 05 j 00:29 | 14° \approx 28'51 -13°04'41 |
| morning rise | 65 Feb 05 j 09:39 | 5° \approx 32'46 | minimum elong | 72 Feb 05 j 00:18 | 14° \approx 28'50 13°04'40 |
| retrograde | 65 May 09 j 14:39 | 7° \approx 06'05 | max. Earth dist. | 72 Feb 08 j 03:21 | 14° \approx 33'56 42.88370 AU |
| min. Earth dist. | 65 Jul 28 j 16:00 | 6° \approx 01'47 39.41055 AU | morning rise | 72 Feb 12 j 15:12 | 14° \approx 41'14 |
| opposition | 65 Jul 31 j 19:53 | 5° \approx 57'43 -11°56'34 | | 72 Feb 24 j 09:59 | 15° \approx |
| direct | 65 Oct 20 j 14:48 | 4° \approx 50'41 | retrograde | 72 May 18 j 08:44 | 16° \approx 15'23 |
| evening set | 66 Jan 17 j 20:19 | 6° \approx 20'20 | min. Earth dist. | 72 Aug 06 j 21:03 | 15° \approx 12'25 41.05271 AU |

| | | | | | |
|------------------|-------------------|----------------------|------------------|-------------------|----------------------|
| opposition | 72 Aug 09 j 23:50 | 15°08'30 -13°49'59 | minimum elong | 79 Feb 13 j 10:12 | 23°10'18 14°30'40 |
| | 72 Aug 16 j 18:12 | 15°08'30 | max. Earth dist. | 79 Feb 16 j 09:47 | 23°15'00 44.40202 AU |
| direct | 72 Oct 29 j 21:31 | 14°03'03 | morning rise | 79 Feb 17 j 09:15 | 23°16'33 |
| | 73 Jan 07 j 18:29 | 15°08'30 | retrograde | 79 May 27 j 17:31 | 24°53'20 |
| evening set | 73 Jan 29 j 08:45 | 15°33'29 | min. Earth dist. | 79 Aug 16 j 15:57 | 23°51'26 42.57095 AU |
| | | | opposition | 79 Aug 19 j 13:41 | 23°47'51 -15°16'45 |
| conjunction | 73 Feb 05 j 12:42 | 15°45'05 -13°18'25 | direct | 79 Nov 08 j 13:34 | 22°43'50 |
| minimum elong | 73 Feb 05 j 12:32 | 15°45'04 13°18'26 | evening set | 80 Feb 11 j 16:24 | 24°17'18 |
| max. Earth dist. | 73 Feb 08 j 15:18 | 15°50'07 43.11047 AU | | | |
| morning rise | 73 Feb 12 j 17:08 | 15°56'43 | conjunction | 80 Feb 14 j 20:56 | 24°22'17 -14°41'06 |
| retrograde | 73 May 19 j 21:12 | 17°31'06 | minimum elong | 80 Feb 14 j 20:49 | 24°22'17 14°41'05 |
| min. Earth dist. | 73 Aug 08 j 11:02 | 16°28'18 41.28038 AU | morning rise | 80 Feb 18 j 01:24 | 24°27'17 |
| opposition | 73 Aug 11 j 12:52 | 16°24'26 -14°03'53 | max. Earth dist. | 80 Feb 17 j 19:00 | 24°26'52 44.60348 AU |
| direct | 73 Oct 31 j 11:08 | 15°19'15 | retrograde | 80 May 28 j 06:39 | 26°04'50 |
| evening set | 74 Jan 31 j 07:39 | 16°49'55 | min. Earth dist. | 80 Aug 17 j 03:36 | 25°03'03 42.77252 AU |
| | | | opposition | 80 Aug 20 j 00:58 | 24°59'30 -15°27'13 |
| conjunction | 74 Feb 07 j 00:52 | 17°00'44 -13°31'39 | direct | 80 Nov 08 j 22:57 | 23°55'39 |
| minimum elong | 74 Feb 07 j 00:42 | 17°00'44 13°31'39 | evening set | 81 Feb 13 j 02:42 | 25°30'11 |
| max. Earth dist. | 74 Feb 10 j 03:48 | 17°05'47 43.33497 AU | | | |
| morning rise | 74 Feb 13 j 18:19 | 17°11'35 | conjunction | 81 Feb 15 j 07:35 | 25°33'37 -14°51'05 |
| retrograde | 74 May 21 j 10:11 | 18°46'15 | minimum elong | 81 Feb 15 j 07:26 | 25°33'37 14°51'05 |
| min. Earth dist. | 74 Aug 10 j 00:18 | 17°43'39 41.50522 AU | morning rise | 81 Feb 17 j 12:15 | 25°37'03 |
| opposition | 74 Aug 13 j 01:36 | 17°39'49 -14°17'15 | max. Earth dist. | 81 Feb 18 j 06:19 | 25°38'13 44.80196 AU |
| direct | 74 Nov 01 j 23:32 | 16°34'52 | retrograde | 81 May 29 j 17:41 | 27°15'42 |
| evening set | 75 Feb 02 j 06:50 | 18°05'50 | min. Earth dist. | 81 Aug 18 j 15:42 | 26°13'59 42.97120 AU |
| | | | opposition | 81 Aug 21 j 11:47 | 26°10'31 -15°37'13 |
| conjunction | 75 Feb 08 j 12:35 | 18°15'51 -13°44'23 | direct | 81 Nov 10 j 09:15 | 25°06'50 |
| minimum elong | 75 Feb 08 j 12:25 | 18°15'50 13°44'24 | | | |
| max. Earth dist. | 75 Feb 11 j 14:06 | 18°20'46 43.55637 AU | conjunction | 82 Feb 16 j 17:54 | 26°44'22 -15°00'36 |
| morning rise | 75 Feb 14 j 18:37 | 18°25'52 | minimum elong | 82 Feb 16 j 17:47 | 26°44'21 15°00'36 |
| retrograde | 75 May 23 j 00:34 | 20°00'52 | max. Earth dist. | 82 Feb 19 j 15:21 | 26°48'52 44.99795 AU |
| min. Earth dist. | 75 Aug 11 j 12:55 | 18°58'27 41.72677 AU | retrograde | 82 May 31 j 03:49 | 28°25'59 |
| opposition | 75 Aug 14 j 14:11 | 18°54'39 -14°30'07 | min. Earth dist. | 82 Aug 20 j 01:42 | 27°24'29 43.16748 AU |
| direct | 75 Nov 03 j 09:45 | 17°49'55 | opposition | 82 Aug 22 j 22:26 | 27°20'59 -15°46'44 |
| evening set | 76 Feb 04 j 06:35 | 19°21'13 | direct | 82 Nov 11 j 19:05 | 26°17'28 |
| | | | | | |
| conjunction | 76 Feb 10 j 00:22 | 19°30'23 -13°56'38 | conjunction | 83 Feb 18 j 03:52 | 27°54'34 -15°09'40 |
| minimum elong | 76 Feb 10 j 00:13 | 19°30'23 13°56'38 | minimum elong | 83 Feb 18 j 03:44 | 27°54'34 15°09'40 |
| max. Earth dist. | 76 Feb 13 j 02:13 | 19°35'18 43.77413 AU | max. Earth dist. | 83 Feb 21 j 01:24 | 27°59'03 45.19154 AU |
| morning rise | 76 Feb 15 j 18:20 | 19°39'33 | retrograde | 83 Jun 01 j 11:33 | 29°35'47 |
| retrograde | 76 May 23 j 11:35 | 21°14'55 | min. Earth dist. | 83 Aug 21 j 13:38 | 28°34'22 43.36142 AU |
| min. Earth dist. | 76 Aug 12 j 02:57 | 20°12'36 41.94430 AU | opposition | 83 Aug 24 j 09:01 | 28°30'56 -15°55'47 |
| opposition | 76 Aug 15 j 02:31 | 20°08'54 -14°42'29 | direct | 83 Nov 13 j 07:49 | 27°27'37 |
| direct | 76 Nov 03 j 22:30 | 19°04'23 | | | |
| evening set | 77 Feb 05 j 07:07 | 20°36'04 | conjunction | 84 Feb 19 j 13:52 | 29°04'18 -15°18'17 |
| | | | minimum elong | 84 Feb 19 j 13:46 | 29°04'18 15°18'18 |
| conjunction | 77 Feb 10 j 11:55 | 20°44'21 -14°08'26 | max. Earth dist. | 84 Feb 22 j 11:11 | 29°08'46 45.38299 AU |
| minimum elong | 77 Feb 10 j 11:46 | 20°44'20 14°08'26 | | 84 Mar 28 j 21:54 | 0°00'00 |
| max. Earth dist. | 77 Feb 13 j 12:14 | 20°49'08 43.98779 AU | retrograde | 84 Jun 01 j 20:03 | 0°45'07 |
| morning rise | 77 Feb 15 j 16:49 | 20°52'37 | | 84 Aug 08 j 11:12 | 30°08'30 |
| retrograde | 77 May 24 j 21:51 | 22°28'22 | min. Earth dist. | 84 Aug 21 j 23:41 | 29°43'53 43.55291 AU |
| min. Earth dist. | 77 Aug 13 j 14:51 | 21°26'14 42.15743 AU | opposition | 84 Aug 24 j 19:11 | 29°40'28 -16°04'22 |
| opposition | 77 Aug 16 j 14:32 | 21°22'32 -14°54'22 | direct | 84 Nov 13 j 19:49 | 28°37'20 |
| direct | 77 Nov 05 j 11:25 | 20°18'12 | | 85 Feb 11 j 01:39 | 0°00'00 |
| evening set | 78 Feb 07 j 08:30 | 21°50'22 | | | |
| | | | conjunction | 85 Feb 19 j 23:32 | 0°13'38 -15°26'28 |
| conjunction | 78 Feb 11 j 23:15 | 21°57'40 -14°19'46 | minimum elong | 85 Feb 19 j 23:26 | 0°13'37 15°26'28 |
| minimum elong | 78 Feb 11 j 23:07 | 21°57'39 14°19'45 | max. Earth dist. | 85 Feb 22 j 19:43 | 0°17'59 45.57185 AU |
| max. Earth dist. | 78 Feb 14 j 22:58 | 22°02'24 44.19692 AU | retrograde | 85 Jun 03 j 07:55 | 1°54'04 |
| morning rise | 78 Feb 16 j 14:05 | 22°04'58 | min. Earth dist. | 85 Aug 23 j 10:29 | 0°52'59 43.74174 AU |
| retrograde | 78 May 26 j 07:57 | 23°41'11 | opposition | 85 Aug 26 j 05:19 | 0°49'36 -16°12'30 |
| min. Earth dist. | 78 Aug 15 j 04:13 | 22°39'08 42.36619 AU | | 85 Oct 12 j 04:28 | 30°08'30 |
| opposition | 78 Aug 18 j 02:16 | 22°35'32 -15°05'48 | direct | 85 Nov 15 j 04:27 | 29°46'41 |
| direct | 78 Nov 07 j 00:24 | 21°31'21 | | 85 Dec 18 j 11:44 | 0°00'00 |
| evening set | 79 Feb 09 j 11:22 | 23°04'05 | | | |
| | | | conjunction | 86 Feb 21 j 09:14 | 1°12'35 -15°34'14 |
| conjunction | 79 Feb 13 j 10:21 | 23°10'19 -14°30'39 | minimum elong | 86 Feb 21 j 09:10 | 1°12'35 15°34'14 |

| | | | | | | | |
|------------------|-------------------|------------------------|-------------|------------------|--------------------|------------------------|-------------|
| max. Earth dist. | 86 Feb 24 j 05:49 | 1° ✕ 26'57 | 45.75781 AU | opposition | 94 Sep 05 j 14:41 | 10° ✕ 53'07 | -17°07'46 |
| retrograde | 86 Jun 04 j 18:20 | 3° ✕ 02'38 | | direct | 94 Nov 25 j 14:57 | 9° ✕ 51'27 | |
| min. Earth dist. | 86 Aug 24 j 21:27 | 2° ✕ 01'41 | 43.92720 AU | | | | |
| opposition | 86 Aug 27 j 15:02 | 1° ✕ 58'23 | -16°20'12 | conjunction | 95 Mar 03 j 16:50 | 11° ✕ 24'06 | -16°26'56 |
| direct | 86 Nov 16 j 13:45 | 0° ✕ 55'39 | | minimum elong | 95 Mar 03 j 16:49 | 11° ✕ 24'06 | 16°26'56 |
| | | | | max. Earth dist. | 95 Mar 06 j 05:10 | 11° ✕ 27'49 | 47.24725 AU |
| conjunction | 87 Feb 22 j 18:41 | 2° ✕ 31'11 | -15°41'35 | retrograde | 95 Jun 14 j 21:49 | 13° ✕ 00'49 | |
| minimum elong | 87 Feb 22 j 18:35 | 2° ✕ 31'11 | 15°41'34 | min. Earth dist. | 95 Sep 04 j 12:52 | 12° ✕ 00'40 | 45.40827 AU |
| max. Earth dist. | 87 Feb 25 j 13:27 | 2° ✕ 35'25 | 45.94031 AU | opposition | 95 Sep 06 j 22:53 | 11° ✕ 57'48 | -17°11'58 |
| retrograde | 87 Jun 06 j 05:45 | 4° ✕ 10'52 | | direct | 95 Nov 26 j 23:59 | 10° ✕ 56'16 | |
| min. Earth dist. | 87 Aug 26 j 07:08 | 3° ✕ 10'05 | 44.10894 AU | | | | |
| opposition | 87 Aug 29 j 00:42 | 3° ✕ 06'48 | -16°27'29 | conjunction | 96 Mar 04 j 00:51 | 12° ✕ 28'35 | -16°30'55 |
| direct | 87 Nov 17 j 20:48 | 2° ✕ 04'15 | | minimum elong | 96 Mar 04 j 00:49 | 12° ✕ 28'35 | 16°30'55 |
| | | | | max. Earth dist. | 96 Mar 06 j 13:29 | 12° ✕ 32'18 | 47.39601 AU |
| conjunction | 88 Feb 24 j 03:59 | 3° ✕ 39'26 | -15°48'32 | retrograde | 96 Jun 15 j 04:56 | 14° ✕ 04'59 | |
| minimum elong | 88 Feb 24 j 03:55 | 3° ✕ 39'26 | 15°48'33 | min. Earth dist. | 96 Sep 04 j 21:21 | 13° ✕ 04'56 | 45.55630 AU |
| max. Earth dist. | 88 Feb 26 j 22:36 | 3° ✕ 43'39 | 46.11867 AU | opposition | 96 Sep 07 j 06:47 | 13° ✕ 02'06 | -17°15'47 |
| retrograde | 88 Jun 06 j 14:33 | 5° ✕ 18'45 | | direct | 96 Nov 27 j 09:26 | 12° ✕ 00'43 | |
| min. Earth dist. | 88 Aug 26 j 18:51 | 4° ✕ 18'02 | 44.28621 AU | | | | |
| opposition | 88 Aug 29 j 10:19 | 4° ✕ 14'52 | -16°34'23 | conjunction | 97 Mar 05 j 08:44 | 13° ✕ 32'43 | -16°34'33 |
| direct | 88 Nov 18 j 06:15 | 3° ✕ 12'29 | | minimum elong | 97 Mar 05 j 08:45 | 13° ✕ 32'43 | 16°34'32 |
| | | | | max. Earth dist. | 97 Mar 07 j 19:39 | 13° ✕ 36'19 | 47.54212 AU |
| conjunction | 89 Feb 24 j 13:22 | 4° ✕ 47'18 | -15°55'08 | retrograde | 97 Jun 16 j 15:47 | 15° ✕ 08'49 | |
| minimum elong | 89 Feb 24 j 13:18 | 4° ✕ 47'18 | 15°55'07 | min. Earth dist. | 97 Sep 06 j 05:16 | 14° ✕ 08'54 | 45.70160 AU |
| max. Earth dist. | 89 Feb 27 j 06:48 | 4° ✕ 51'25 | 46.29247 AU | opposition | 97 Sep 08 j 14:27 | 14° ✕ 06'05 | -17°19'14 |
| retrograde | 89 Jun 07 j 20:33 | 6° ✕ 26'14 | | direct | 97 Nov 28 j 14:27 | 13° ✕ 04'50 | |
| min. Earth dist. | 89 Aug 28 j 04:11 | 5° ✕ 25'40 | 44.45857 AU | | | | |
| opposition | 89 Aug 30 j 19:26 | 5° ✕ 22'30 | -16°40'54 | conjunction | 98 Mar 06 j 16:36 | 14° ✕ 36'34 | -16°37'48 |
| direct | 89 Nov 19 j 18:27 | 4° ✕ 20'16 | | minimum elong | 98 Mar 06 j 16:34 | 14° ✕ 36'34 | 16°37'48 |
| | | | | max. Earth dist. | 98 Mar 09 j 03:38 | 14° ✕ 40'10 | 47.68523 AU |
| conjunction | 90 Feb 25 j 22:26 | 5° ✕ 54'42 | -16°01'21 | retrograde | 98 Jun 18 j 00:45 | 16° ✕ 12'23 | |
| minimum elong | 90 Feb 25 j 22:22 | 5° ✕ 54'42 | 16°01'21 | min. Earth dist. | 98 Sep 07 j 14:47 | 15° ✕ 12'31 | 45.84357 AU |
| max. Earth dist. | 90 Feb 28 j 14:11 | 5° ✕ 58'42 | 46.46131 AU | opposition | 98 Sep 09 j 22:09 | 15° ✕ 09'48 | -17°22'19 |
| retrograde | 90 Jun 09 j 05:37 | 7° ✕ 33'17 | | direct | 98 Nov 29 j 20:48 | 14° ✕ 08'43 | |
| min. Earth dist. | 90 Aug 29 j 14:52 | 6° ✕ 32'45 | 44.62612 AU | | | | |
| opposition | 90 Sep 01 j 04:38 | 6° ✕ 29'40 | -16°47'02 | conjunction | 99 Mar 08 j 00:12 | 15° ✕ 40'11 | -16°40'43 |
| direct | 90 Nov 21 j 04:45 | 5° ✕ 27'34 | | minimum elong | 99 Mar 08 j 00:13 | 15° ✕ 40'11 | 16°40'44 |
| | | | | max. Earth dist. | 99 Mar 10 j 10:04 | 15° ✕ 43'41 | 47.82491 AU |
| conjunction | 91 Feb 27 j 07:15 | 7° ✕ 01'37 | -16°07'13 | retrograde | 99 Jun 19 j 06:41 | 17° ✕ 15'42 | |
| minimum elong | 91 Feb 27 j 07:12 | 7° ✕ 01'37 | 16°07'12 | min. Earth dist. | 99 Sep 08 j 22:15 | 16° ✕ 16'00 | 45.98167 AU |
| max. Earth dist. | 91 Mar 01 j 23:05 | 7° ✕ 05'37 | 46.62554 AU | opposition | 99 Sep 11 j 05:39 | 16° ✕ 13'17 | -17°25'03 |
| retrograde | 91 Jun 10 j 14:52 | 8° ✕ 39'49 | | direct | 99 Dec 01 j 04:52 | 15° ✕ 12'20 | |
| min. Earth dist. | 91 Aug 31 j 00:53 | 7° ✕ 39'20 | 44.78910 AU | | | | |
| opposition | 91 Sep 02 j 13:31 | 7° ✕ 36'19 | -16°52'48 | conjunction | 100 Mar 08 j 07:51 | 16° ✕ 43'33 | -16°43'19 |
| direct | 91 Nov 22 j 13:56 | 6° ✕ 34'20 | | minimum elong | 100 Mar 08 j 07:51 | 16° ✕ 43'33 | 16°43'19 |
| | | | | max. Earth dist. | 100 Mar 10 j 16:17 | 16° ✕ 46'58 | 47.96033 AU |
| conjunction | 92 Feb 28 j 15:53 | 8° ✕ 08'00 | -16°12'42 | retrograde | 100 Jun 19 j 13:07 | 18° ✕ 18'49 | |
| minimum elong | 92 Feb 28 j 15:49 | 8° ✕ 08'00 | 16°12'43 | min. Earth dist. | 100 Sep 09 j 07:38 | 17° ✕ 19'09 | 46.11531 AU |
| max. Earth dist. | 92 Mar 02 j 05:55 | 8° ✕ 11'52 | 46.78569 AU | opposition | 100 Sep 11 j 13:06 | 17° ✕ 16'33 | -17°27'28 |
| retrograde | 92 Jun 11 j 01:29 | 9° ✕ 45'49 | | direct | 100 Dec 01 j 13:56 | 16° ✕ 15'44 | |
| min. Earth dist. | 92 Aug 31 j 09:36 | 8° ✕ 45'26 | 44.94839 AU | | | | |
| opposition | 92 Sep 02 j 22:08 | 8° ✕ 42'26 | -16°58'11 | conjunction | 101 Mar 09 j 15:37 | 17° ✕ 46'41 | -16°45'37 |
| direct | 92 Nov 22 j 20:38 | 7° ✕ 40'33 | | minimum elong | 101 Mar 09 j 15:39 | 17° ✕ 46'41 | 16°45'37 |
| | | | | max. Earth dist. | 101 Mar 11 j 23:39 | 17° ✕ 50'05 | 48.09107 AU |
| conjunction | 93 Mar 01 j 00:24 | 9° ✕ 13'52 | -16°17'50 | retrograde | 101 Jun 20 j 20:06 | 19° ✕ 21'42 | |
| minimum elong | 93 Mar 01 j 00:22 | 9° ✕ 13'52 | 16°17'50 | min. Earth dist. | 101 Sep 10 j 16:00 | 18° ✕ 22'06 | 46.24377 AU |
| max. Earth dist. | 93 Mar 03 j 14:30 | 9° ✕ 17'42 | 46.94234 AU | opposition | 101 Sep 12 j 20:22 | 18° ✕ 19'33 | -17°29'34 |
| retrograde | 93 Jun 12 j 08:35 | 10° ✕ 51'17 | | direct | 101 Dec 02 j 22:50 | 17° ✕ 18'52 | |
| min. Earth dist. | 93 Sep 01 j 19:45 | 9° ✕ 50'56 | 45.10438 AU | | | | |
| opposition | 93 Sep 04 j 06:37 | 9° ✕ 48'01 | -17°03'10 | | | | |
| direct | 93 Nov 24 j 05:26 | 8° ✕ 46'15 | | | | | |
| | | | | | | | |
| conjunction | 94 Mar 02 j 08:44 | 10° ✕ 19'13 | -16°22'34 | | | | |
| minimum elong | 94 Mar 02 j 08:41 | 10° ✕ 19'13 | 16°22'34 | | | | |
| max. Earth dist. | 94 Mar 04 j 21:58 | 10° ✕ 23'00 | 47.09612 AU | | | | |
| retrograde | 94 Jun 13 j 14:04 | 11° ✕ 56'16 | | | | | |
| min. Earth dist. | 94 Sep 03 j 03:34 | 10° ✕ 56'03 | 45.25756 AU | | | | |