



Astrodienst Ephemeris Tables for the year 2077

tropical zodiac

contains Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, True Node, Moon's Node, Lilith, Chiron

Programming
Dieter Koch and Alois Treindl
based on Swiss Ephemeris
Code D5EPH

ASTRODIENST EPHEMERIS for the year 2077

JANUARY 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♃ | ♄ | ♅ | ♆ | ♇ | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|------|-------|--------|------|--------|-------|------|--------|------|---|---|---|---|---|---|-----|
| F 1 | 6 45 11 | 11♁12'01 | 1♃42 | 18♁56 | 25♁4 | 12♁25 | 9♁49 | 3♁19 | 18♁47 | 25°R35 | 8♃59 | 16°R54 | 15♁45 | 6♁28 | 25°R18 | F 1 | | | | | | | |
| S 2 | 6 49 7 | 12°13'10 | 15°44 | 19°42 | 26°19 | 13°12 | 9°58 | 3°26 | 18°51 | 25°E33 | 8°59 | 16°D54 | 15°41 | 6°35 | 25°V18 | S 2 | | | | | | | |
| S 3 | 6 53 4 | 13°14'18 | 29°30 | 20°33 | 27°34 | 13°59 | 10° 7 | 3°33 | 18°54 | 25°31 | 9° 0 | 16°I55 | 15°38 | 6°42 | 25°17 | S 3 | | | | | | | |
| M 4 | 6 57 1 | 14°15'27 | 13♁0 | 21°28 | 28°50 | 14°46 | 10°16 | 3°40 | 18°58 | 25°30 | 9° 0 | 16°56 | 15°35 | 6°49 | 25°17 | M 4 | | | | | | | |
| T 5 | 7 0 57 | 15°16'35 | 26°15 | 22°26 | 0♁5 | 15°34 | 10°24 | 3°47 | 19° 1 | 25°28 | 9° 0 | 16°58 | 15°32 | 6°55 | 25°D17 | T 5 | | | | | | | |
| W 6 | 7 4 54 | 16°17'44 | 9♁16 | 23°28 | 1°20 | 16°21 | 10°33 | 3°54 | 19° 5 | 25°26 | 9° 0 | 16°59 | 15°29 | 7° 2 | 25°17 | W 6 | | | | | | | |
| T 7 | 7 8 50 | 17°18'52 | 22° 5 | 24°33 | 2°36 | 17° 8 | 10°41 | 4° 1 | 19° 8 | 25°25 | 9° 1 | 16°R59 | 15°26 | 7° 9 | 25°17 | T 7 | | | | | | | |
| F 8 | 7 12 47 | 18°19'59 | 4♁43 | 25°40 | 3°51 | 17°55 | 10°50 | 4° 8 | 19°12 | 25°23 | 9° 1 | 16°58 | 15°22 | 7°16 | 25°18 | F 8 | | | | | | | |
| S 9 | 7 16 43 | 19°21'07 | 17°10 | 26°50 | 5° 6 | 18°43 | 10°58 | 4°15 | 19°16 | 25°21 | 9° 2 | 16°55 | 15°19 | 7°22 | 25°18 | S 9 | | | | | | | |
| S 10 | 7 20 40 | 20°22'14 | 29°27 | 28° 2 | 6°21 | 19°30 | 11° 6 | 4°22 | 19°19 | 25°20 | 9° 2 | 16°50 | 15°16 | 7°29 | 25°18 | S 10 | | | | | | | |
| M11 | 7 24 37 | 21°23'21 | 11♁35 | 29°16 | 7°37 | 20°17 | 11°14 | 4°29 | 19°23 | 25°18 | 9° 2 | 16°44 | 15°13 | 7°36 | 25°18 | M11 | | | | | | | |
| T 12 | 7 28 33 | 22°24'28 | 23°36 | 0♁31 | 8°52 | 21° 5 | 11°22 | 4°36 | 19°26 | 25°16 | 9° 3 | 16°37 | 15°10 | 7°42 | 25°19 | T 12 | | | | | | | |
| W13 | 7 32 30 | 23°25'34 | 5♁31 | 1°48 | 10° 7 | 21°52 | 11°30 | 4°43 | 19°30 | 25°14 | 9° 3 | 16°30 | 15° 6 | 7°49 | 25°19 | W13 | | | | | | | |
| T 14 | 7 36 26 | 24°26'41 | 17°23 | 3° 7 | 11°23 | 22°39 | 11°37 | 4°49 | 19°33 | 25°13 | 9° 4 | 16°24 | 15° 3 | 7°56 | 25°20 | T 14 | | | | | | | |
| F 15 | 7 40 23 | 25°27'47 | 29°15 | 4°26 | 12°38 | 23°27 | 11°45 | 4°56 | 19°37 | 25°11 | 9° 4 | 16°19 | 15° 0 | 8° 3 | 25°20 | F 15 | | | | | | | |
| S 16 | 7 44 19 | 26°28'53 | 11♁10 | 5°47 | 13°53 | 24°14 | 11°52 | 5° 3 | 19°40 | 25° 9 | 9° 5 | 16°15 | 14°57 | 8° 9 | 25°21 | S 16 | | | | | | | |
| S 17 | 7 48 16 | 27°29'59 | 23°14 | 7° 9 | 15° 9 | 25° 1 | 11°59 | 5°10 | 19°44 | 25° 8 | 9° 6 | 16°D14 | 14°54 | 8°16 | 25°22 | S 17 | | | | | | | |
| M18 | 7 52 12 | 28°31'05 | 5♁30 | 8°32 | 16°24 | 25°48 | 12° 6 | 5°16 | 19°48 | 25° 6 | 9° 6 | 16°14 | 14°51 | 8°23 | 25°22 | M18 | | | | | | | |
| T 19 | 7 56 9 | 29°32'10 | 18° 4 | 9°56 | 17°39 | 26°36 | 12°13 | 5°23 | 19°51 | 25° 4 | 9° 7 | 16°15 | 14°47 | 8°29 | 25°23 | T 19 | | | | | | | |
| W20 | 8 0 6 | 0♁33'15 | 1♁1 | 11°21 | 18°55 | 27°23 | 12°20 | 5°30 | 19°55 | 25° 3 | 9° 7 | 16°17 | 14°44 | 8°36 | 25°24 | W20 | | | | | | | |
| T 21 | 8 4 2 | 1°34'20 | 14°23 | 12°47 | 20°10 | 28°10 | 12°26 | 5°36 | 19°58 | 25° 1 | 9° 8 | 16°R18 | 14°41 | 8°43 | 25°25 | T 21 | | | | | | | |
| F 22 | 8 7 59 | 2°35'24 | 28°13 | 14°13 | 21°25 | 28°58 | 12°33 | 5°43 | 20° 2 | 24°59 | 9° 9 | 16°17 | 14°38 | 8°50 | 25°26 | F 22 | | | | | | | |
| S 23 | 8 11 55 | 3°36'28 | 12♁31 | 15°40 | 22°41 | 29°45 | 12°39 | 5°50 | 20° 5 | 24°58 | 9° 9 | 16°14 | 14°35 | 8°56 | 25°27 | S 23 | | | | | | | |
| S 24 | 8 15 52 | 4°37'32 | 27°13 | 17° 8 | 23°56 | 0♁32 | 12°45 | 5°56 | 20° 9 | 24°56 | 9°10 | 16° 9 | 14°32 | 9° 3 | 25°28 | S 24 | | | | | | | |
| M25 | 8 19 48 | 5°38'35 | 12♁12 | 18°37 | 25°11 | 1°20 | 12°51 | 6° 3 | 20°12 | 24°54 | 9°11 | 16° 2 | 14°28 | 9°10 | 25°29 | M25 | | | | | | | |
| T 26 | 8 23 45 | 6°39'36 | 27°20 | 20° 6 | 26°27 | 2° 7 | 12°57 | 6° 9 | 20°16 | 24°53 | 9°12 | 15°54 | 14°25 | 9°17 | 25°30 | T 26 | | | | | | | |
| W27 | 8 27 41 | 7°40'37 | 12♁25 | 21°36 | 27°42 | 2°54 | 13° 3 | 6°15 | 20°19 | 24°51 | 9°12 | 15°46 | 14°22 | 9°23 | 25°31 | W27 | | | | | | | |
| T 28 | 8 31 38 | 8°41'37 | 27°18 | 23° 7 | 28°57 | 3°42 | 13° 8 | 6°22 | 20°23 | 24°49 | 9°13 | 15°39 | 14°19 | 9°30 | 25°33 | T 28 | | | | | | | |
| F 29 | 8 35 35 | 9°42'35 | 11♁53 | 24°39 | 0♁13 | 4°29 | 13°13 | 6°28 | 20°26 | 24°48 | 9°14 | 15°33 | 14°16 | 9°37 | 25°34 | F 29 | | | | | | | |
| S 30 | 8 39 31 | 10°43'33 | 26° 4 | 26°11 | 1°28 | 5°16 | 13°19 | 6°34 | 20°29 | 24°46 | 9°15 | 15°30 | 14°12 | 9°43 | 25°35 | S 30 | | | | | | | |
| S 31 | 8 43 28 | 11♁44'29 | 9♁51 | 27♁44 | 2♁43 | 6♁4 | 13♁24 | 6♁31 | 20♁33 | 24♁44 | 9♁16 | 15°D29 | 14♁9 | 9♁50 | 25°V37 | S 31 | | | | | | | |

Delta T = 85.61 sec

FEBRUARY 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♃ | ♄ | ♅ | ♆ | ♇ | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | Day |
|------|----------|----------|-------|-------|-------|-------|--------|------|-------|--------|------|--------|-------|-------|--------|------|---|---|---|---|---|---|-----|
| M 1 | 8 47 24 | 12♁45'24 | 23♁15 | 29♁17 | 3♁59 | 6♁51 | 13♁29 | 6♁47 | 20♁36 | 24°R43 | 9♃17 | 15°I30 | 14♁6 | 9♁57 | 25°V38 | M 1 | | | | | | | |
| T 2 | 8 51 21 | 13°46'17 | 6♁18 | 0♁51 | 5°14 | 7°38 | 13°33 | 6°53 | 20°39 | 24°E41 | 9°18 | 15°30 | 14° 3 | 10° 4 | 25°40 | T 2 | | | | | | | |
| W 3 | 8 55 17 | 14°47'09 | 19° 4 | 2°26 | 6°29 | 8°25 | 13°38 | 6°59 | 20°43 | 24°40 | 9°19 | 15°R31 | 14° 0 | 10°10 | 25°41 | W 3 | | | | | | | |
| T 4 | 8 59 14 | 15°48'00 | 1♁36 | 4° 2 | 7°44 | 9°12 | 13°42 | 7° 5 | 20°46 | 24°38 | 9°19 | 15°29 | 13°57 | 10°17 | 25°43 | T 4 | | | | | | | |
| F 5 | 9 3 10 | 16°48'50 | 13°57 | 5°38 | 9° 0 | 10° 0 | 13°46 | 7°11 | 20°49 | 24°37 | 9°20 | 15°25 | 13°53 | 10°24 | 25°45 | F 5 | | | | | | | |
| S 6 | 9 7 7 | 17°49'39 | 26° 9 | 7°15 | 10°15 | 10°47 | 13°50 | 7°17 | 20°53 | 24°35 | 9°21 | 15°19 | 13°50 | 10°31 | 25°47 | S 6 | | | | | | | |
| S 7 | 9 11 4 | 18°50'26 | 8♁14 | 8°53 | 11°30 | 11°34 | 13°54 | 7°23 | 20°56 | 24°33 | 9°22 | 15° 9 | 13°47 | 10°37 | 25°48 | S 7 | | | | | | | |
| M 8 | 9 15 0 | 19°51'11 | 20°14 | 10°32 | 12°45 | 12°21 | 13°58 | 7°29 | 20°59 | 24°32 | 9°23 | 14°58 | 13°44 | 10°44 | 25°50 | M 8 | | | | | | | |
| T 9 | 9 18 57 | 20°51'56 | 2♁10 | 12°11 | 14° 1 | 13° 8 | 14° 1 | 7°35 | 21° 2 | 24°30 | 9°24 | 14°45 | 13°41 | 10°51 | 25°52 | T 9 | | | | | | | |
| W10 | 9 22 53 | 21°52'39 | 14° 4 | 13°51 | 15°16 | 13°55 | 14° 5 | 7°40 | 21° 6 | 24°29 | 9°25 | 14°32 | 13°38 | 10°57 | 25°54 | W10 | | | | | | | |
| T 11 | 9 26 50 | 22°53'21 | 25°56 | 15°32 | 16°31 | 14°42 | 14° 8 | 7°46 | 21° 9 | 24°28 | 9°27 | 14°19 | 13°34 | 11° 4 | 25°56 | T 11 | | | | | | | |
| F 12 | 9 30 46 | 23°54'02 | 7♁48 | 17°14 | 17°46 | 15°30 | 14°11 | 7°52 | 21°12 | 24°26 | 9°28 | 14° 8 | 13°31 | 11°11 | 25°58 | F 12 | | | | | | | |
| S 13 | 9 34 43 | 24°54'42 | 19°44 | 18°57 | 19° 1 | 16°17 | 14°14 | 7°57 | 21°15 | 24°25 | 9°29 | 14° 0 | 13°28 | 11°18 | 26° 0 | S 13 | | | | | | | |
| S 14 | 9 38 39 | 25°55'20 | 1♁47 | 20°40 | 20°17 | 17° 4 | 14°16 | 8° 3 | 21°18 | 24°23 | 9°30 | 13°55 | 13°25 | 11°24 | 26° 2 | S 14 | | | | | | | |
| M15 | 9 42 36 | 26°55'58 | 14° 0 | 22°25 | 21°32 | 17°51 | 14°19 | 8° 8 | 21°21 | 24°22 | 9°31 | 13°52 | 13°22 | 11°31 | 26° 4 | M15 | | | | | | | |
| T 16 | 9 46 33 | 27°56'34 | 26°29 | 24°10 | 22°47 | 18°38 | 14°21 | 8°14 | 21°24 | 24°20 | 9°32 | 13°D52 | 13°18 | 11°38 | 26° 7 | T 16 | | | | | | | |
| W17 | 9 50 29 | 28°57'09 | 9♁19 | 25°56 | 24° 2 | 19°25 | 14°23 | 8°19 | 21°27 | 24°19 | 9°33 | 13°R52 | 13°15 | 11°44 | 26° 9 | W17 | | | | | | | |
| T 18 | 9 54 26 | 29°57'43 | 22°33 | 27°43 | 25°17 | 20°12 | 14°25 | 8°24 | 21°30 | 24°18 | 9°34 | 13°52 | 13°12 | 11°51 | 26°11 | T 18 | | | | | | | |
| F 19 | 9 58 22 | 0♁58'16 | 6♁16 | 29°31 | 26°32 | 20°58 | 14°27 | 8°30 | 21°33 | 24°17 | 9°36 | 13°50 | 13° 9 | 11°58 | 26°13 | F 19 | | | | | | | |
| S 20 | 10 2 19 | 1°58'47 | 20°29 | 1♁19 | 27°48 | 21°45 | 14°28 | 8°35 | 21°36 | 24°15 | 9°37 | 13°46 | 13° 6 | 12° 5 | 26°16 | S 20 | | | | | | | |
| S 21 | 10 6 15 | 2°59'17 | 5♁9 | 3° 9 | 29° 3 | 22°32 | 14°30 | 8°40 | 21°39 | 24°14 | 9°38 | 13°39 | 13° 3 | 12°11 | 26°18 | S 21 | | | | | | | |
| M22 | 10 10 12 | 3°59'46 | 20°13 | 4°59 | 0♁18 | 23°19 | 14°31 | 8°45 | 21°42 | 24°13 | 9°39 | 13°29 | 12°59 | 12°18 | 26°21 | M22 | | | | | | | |
| T 23 | 10 14 8 | 5° 0'13 | 5♁31 | 6°50 | 1°33 | 24° 6 | 14°32 | 8°50 | 21°45 | 24°12 | 9°40 | 13°18 | 12°56 | 12°25 | 26°23 | T 23 | | | | | | | |
| W24 | 10 18 5 | 6° 0'39 | 20°52 | 8°42 | 2°48 | 24°53 | 14°32 | 8°55 | 21°48 | 24°10 | 9°42 | 13° 7 | 12°53 | 12°32 | 26°26 | W24 | | | | | | | |
| T 25 | 10 22 5 | 7° 1'02 | 6♁4 | 10°35 | 4° 3 | 25°39 | 14°33 | 9° 0 | 21°51 | 24° 9 | 9°43 | 12°56 | 12°50 | 12°38 | 26°28 | T 25 | | | | | | | |
| F 26 | 10 25 58 | 8° 1'24 | 20°57 | 12°28 | 5°18 | 26°26 | 14°33 | 9° 4 | 21°53 | 24° 8 | 9°44 | 12°48 | 12°47 | 12°45 | 26°31 | F 26 | | | | | | | |
| S 27 | 10 29 55 | 9° 1'44 | 5♁24 | 14°22 | 6°33 | 27°13 | 14°34 | 9° 9 | 21°56 | 24° 7 | 9°45 | 12°42 | 12°43 | 12°52 | 26°34 | S 27 | | | | | | | |
| S 28 | 10 33 51 | 10♁2'02 | 19♁22 | 16♁16 | 7♁48 | 28♁0 | 14°R34 | 9♁14 | 21♁59 | 24♁6 | 9♁47 | 12♁39 | 12♁40 | 12♁58 | 26°V36 | S 28 | | | | | | | |

Delta T = 85.64 sec

ASTRODIENST EPHEMERIS for the year 2077

MARCH 2077

00:00 UT

Table with columns: Day, Sid.t, ☉, ☽, ♀, ♁, ♂, ♃, ♅, ♁, ♆, ♄, ♀, ♁, ♁, ♁, ♁, ♁, ♁, Day. Rows list dates from March 1 to 31 with planetary positions.

Delta T = 85.66 sec

APRIL 2077

00:00 UT

Table with columns: Day, Sid.t, ☉, ☽, ♀, ♁, ♂, ♃, ♅, ♁, ♆, ♄, ♀, ♁, ♁, ♁, ♁, ♁, Day. Rows list dates from April 1 to 30 with planetary positions.

Delta T = 85.69 sec

ASTRODIENST EPHEMERIS for the year 2077

MAY 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♃ | ♄ | ♅ | ♆ | ♇ | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | Day |
|------|----------|----------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|------|-------|------|------|---|---|---|---|---|---|-----|
| S 1 | 14 38 18 | 11♁16'57 | 22♈36 | 14♃41 | 24♁45 | 14♁53 | 9°R29 | 11°R 8 | 23°R20 | 23♄59 | 11♃14 | 8°R10 | 9♄23 | 19♃55 | 0♁6 | S 1 | | | | | | | |
| S 2 | 14 42 14 | 12°15'12 | 4♃31 | 15°35 | 25°59 | 15°37 | 9♄21 | 11♁7 | 23♁20 | 24° 0 | 11°16 | 8♄8 | 9°20 | 20° 2 | 0°10 | S 2 | | | | | | | |
| M 3 | 14 46 11 | 13°13'25 | 16°23 | 16°31 | 27°13 | 16°21 | 9°14 | 11° 6 | 23°19 | 24° 1 | 11°17 | 8° 5 | 9°17 | 20° 9 | 0°13 | M 3 | | | | | | | |
| T 4 | 14 50 7 | 14°11'35 | 28°16 | 17°31 | 28°27 | 17° 4 | 9° 6 | 11° 4 | 23°19 | 24° 2 | 11°18 | 8° 2 | 9°14 | 20°15 | 0°17 | T 4 | | | | | | | |
| W 5 | 14 54 4 | 15° 9'44 | 10♁13 | 18°34 | 29°40 | 17°48 | 8°58 | 11° 3 | 23°19 | 24° 3 | 11°19 | 7°58 | 9°11 | 20°22 | 0°21 | W 5 | | | | | | | |
| T 6 | 14 58 0 | 16° 7'51 | 22°17 | 19°39 | 0♄54 | 18°32 | 8°51 | 11° 1 | 23°18 | 24° 4 | 11°21 | 7°54 | 9° 7 | 20°29 | 0°24 | T 6 | | | | | | | |
| F 7 | 15 1 57 | 17° 5'57 | 4♄31 | 20°47 | 2° 8 | 19°15 | 8°43 | 11° 0 | 23°18 | 24° 5 | 11°22 | 7°51 | 9° 4 | 20°36 | 0°28 | F 7 | | | | | | | |
| S 8 | 15 5 53 | 18° 4'00 | 16°55 | 21°58 | 3°21 | 19°59 | 8°36 | 10°58 | 23°17 | 24° 6 | 11°23 | 7°49 | 9° 1 | 20°42 | 0°31 | S 8 | | | | | | | |
| S 9 | 15 9 50 | 19° 2'02 | 29°31 | 23°11 | 4°35 | 20°42 | 8°28 | 10°56 | 23°17 | 24° 8 | 11°24 | 7°48 | 8°58 | 20°49 | 0°35 | S 9 | | | | | | | |
| M10 | 15 13 46 | 20° 0'03 | 12♃19 | 24°27 | 5°49 | 21°26 | 8°21 | 10°54 | 23°16 | 24° 9 | 11°25 | 7°D48 | 8°55 | 20°56 | 0°38 | M10 | | | | | | | |
| T 11 | 15 17 43 | 20°58'02 | 25°20 | 25°45 | 7° 2 | 22° 9 | 8°14 | 10°52 | 23°15 | 24°10 | 11°27 | 7°48 | 8°52 | 21° 2 | 0°42 | T 11 | | | | | | | |
| W12 | 15 21 40 | 21°55'59 | 8♁34 | 27° 6 | 8°16 | 22°53 | 8° 6 | 10°50 | 23°15 | 24°11 | 11°28 | 7°49 | 8°48 | 21° 9 | 0°45 | W12 | | | | | | | |
| T 13 | 15 25 36 | 22°53'55 | 22° 3 | 28°28 | 9°29 | 23°36 | 7°59 | 10°48 | 23°14 | 24°12 | 11°29 | 7°51 | 8°45 | 21°16 | 0°48 | T 13 | | | | | | | |
| F 14 | 15 29 33 | 23°51'50 | 5♁44 | 29°53 | 10°43 | 24°19 | 7°52 | 10°46 | 23°13 | 24°14 | 11°30 | 7°52 | 8°42 | 21°23 | 0°52 | F 14 | | | | | | | |
| S 15 | 15 33 29 | 24°49'44 | 19°40 | 1♁21 | 11°56 | 25° 2 | 7°45 | 10°43 | 23°12 | 24°15 | 11°31 | 7°R52 | 8°39 | 21°29 | 0°55 | S 15 | | | | | | | |
| S 16 | 15 37 26 | 25°47'36 | 3♁48 | 2°50 | 13°10 | 25°46 | 7°38 | 10°41 | 23°11 | 24°16 | 11°32 | 7°52 | 8°36 | 21°36 | 0°59 | S 16 | | | | | | | |
| M17 | 15 41 22 | 26°45'28 | 18° 7 | 4°22 | 14°23 | 26°29 | 7°31 | 10°39 | 23°10 | 24°18 | 11°33 | 7°51 | 8°32 | 21°43 | 1° 2 | M17 | | | | | | | |
| T 18 | 15 45 19 | 27°43'18 | 2♃34 | 5°56 | 15°37 | 27°12 | 7°24 | 10°36 | 23° 9 | 24°19 | 11°35 | 7°51 | 8°29 | 21°49 | 1° 5 | T 18 | | | | | | | |
| W19 | 15 49 16 | 28°41'06 | 17° 5 | 7°32 | 16°50 | 27°55 | 7°17 | 10°33 | 23° 8 | 24°20 | 11°36 | 7°49 | 8°26 | 21°56 | 1° 9 | W19 | | | | | | | |
| T 20 | 15 53 12 | 29°38'54 | 1♁35 | 9°11 | 18° 3 | 28°38 | 7°11 | 10°31 | 23° 7 | 24°22 | 11°37 | 7°48 | 8°23 | 22° 3 | 1°12 | T 20 | | | | | | | |
| F 21 | 15 57 9 | 0♄36'41 | 15°57 | 10°51 | 19°17 | 29°21 | 7° 4 | 10°28 | 23° 6 | 24°23 | 11°38 | 7°48 | 8°20 | 22°10 | 1°15 | F 21 | | | | | | | |
| S 22 | 16 1 5 | 1°34'26 | 0♄8 | 12°34 | 20°30 | 0♄3 | 6°58 | 10°25 | 23° 5 | 24°25 | 11°39 | 7°47 | 8°17 | 22°16 | 1°19 | S 22 | | | | | | | |
| S 23 | 16 5 2 | 2°32'10 | 14° 2 | 14°18 | 21°43 | 0°46 | 6°51 | 10°22 | 23° 4 | 24°26 | 11°40 | 7°D47 | 8°13 | 22°23 | 1°22 | S 23 | | | | | | | |
| M24 | 16 8 58 | 3°29'53 | 27°36 | 16° 5 | 22°57 | 1°29 | 6°45 | 10°19 | 23° 2 | 24°28 | 11°41 | 7°48 | 8°10 | 22°30 | 1°25 | M24 | | | | | | | |
| T 25 | 16 12 55 | 4°27'34 | 10♁50 | 17°55 | 24°10 | 2°12 | 6°39 | 10°16 | 23° 1 | 24°29 | 11°42 | 7°48 | 8° 7 | 22°37 | 1°28 | T 25 | | | | | | | |
| W26 | 16 16 51 | 5°25'14 | 23°42 | 19°46 | 25°23 | 2°54 | 6°33 | 10°13 | 23° 0 | 24°31 | 11°43 | 7°48 | 8° 4 | 22°43 | 1°31 | W26 | | | | | | | |
| T 27 | 16 20 48 | 6°22'52 | 6♁16 | 21°39 | 26°36 | 3°37 | 6°27 | 10°10 | 22°58 | 24°32 | 11°44 | 7°48 | 8° 1 | 22°50 | 1°35 | T 27 | | | | | | | |
| F 28 | 16 24 45 | 7°20'29 | 18°33 | 23°35 | 27°50 | 4°19 | 6°21 | 10° 6 | 22°57 | 24°34 | 11°45 | 7°49 | 7°58 | 22°57 | 1°38 | F 28 | | | | | | | |
| S 29 | 16 28 41 | 8°18'05 | 0♄38 | 25°32 | 29° 3 | 5° 2 | 6°16 | 10° 3 | 22°56 | 24°36 | 11°45 | 7°R49 | 7°54 | 23° 3 | 1°41 | S 29 | | | | | | | |
| S 30 | 16 32 38 | 9°15'39 | 12°34 | 27°32 | 0♁16 | 5°44 | 6°10 | 9°59 | 22°54 | 24°37 | 11°46 | 7°D49 | 7°51 | 23°10 | 1°44 | S 30 | | | | | | | |
| M31 | 16 36 34 | 10♄13'11 | 24♃28 | 29♁33 | 1♁29 | 6♄27 | 6♄5 | 9♁56 | 22♁53 | 24♁39 | 11♃47 | 7♄49 | 7♄48 | 23♃17 | 1♁47 | M31 | | | | | | | |

Delta T = 85.72 sec

JUNE 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♃ | ♄ | ♅ | ♆ | ♇ | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | Day |
|------|----------|----------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|------|-------|------|------|---|---|---|---|---|---|-----|
| T 1 | 16 40 31 | 11♄10'42 | 6♁22 | 1♄37 | 2♁42 | 7♄9 | 6°R 0 | 9°R52 | 22°R51 | 24♁41 | 11♃48 | 7♄49 | 7♄45 | 23♃24 | 1♁50 | T 1 | | | | | | | |
| W 2 | 16 44 27 | 12° 8'12 | 18°21 | 3°42 | 3°55 | 7°51 | 5♄55 | 9♁49 | 22♁49 | 24°42 | 11°49 | 7°49 | 7°42 | 23°30 | 1°53 | W 2 | | | | | | | |
| T 3 | 16 48 24 | 13° 5'41 | 0♄30 | 5°49 | 5° 8 | 8°33 | 5°50 | 9°45 | 22°48 | 24°44 | 11°50 | 7°50 | 7°38 | 23°37 | 1°56 | T 3 | | | | | | | |
| F 4 | 16 52 20 | 14° 3'09 | 12°51 | 7°57 | 6°21 | 9°16 | 5°45 | 9°41 | 22°46 | 24°46 | 11°51 | 7°50 | 7°35 | 23°44 | 1°59 | F 4 | | | | | | | |
| S 5 | 16 56 17 | 15° 0'35 | 25°27 | 10° 6 | 7°34 | 9°58 | 5°41 | 9°38 | 22°44 | 24°48 | 11°51 | 7°51 | 7°32 | 23°50 | 2° 2 | S 5 | | | | | | | |
| S 6 | 17 0 14 | 15°58'01 | 8♃19 | 12°17 | 8°47 | 10°40 | 5°36 | 9°34 | 22°43 | 24°50 | 11°52 | 7°R51 | 7°29 | 23°57 | 2° 4 | S 6 | | | | | | | |
| M 7 | 17 4 10 | 16°55'25 | 21°28 | 14°28 | 10° 0 | 11°22 | 5°32 | 9°30 | 22°41 | 24°51 | 11°53 | 7°51 | 7°26 | 24° 4 | 2° 7 | M 7 | | | | | | | |
| T 8 | 17 8 7 | 17°52'49 | 4♁53 | 16°40 | 11°13 | 12° 4 | 5°28 | 9°26 | 22°39 | 24°53 | 11°54 | 7°50 | 7°23 | 24°11 | 2°10 | T 8 | | | | | | | |
| W 9 | 17 12 3 | 18°50'12 | 18°33 | 18°52 | 12°26 | 12°46 | 5°24 | 9°22 | 22°37 | 24°55 | 11°54 | 7°49 | 7°19 | 24°17 | 2°13 | W 9 | | | | | | | |
| T 10 | 17 16 0 | 19°47'34 | 2♁26 | 21° 4 | 13°39 | 13°28 | 5°20 | 9°18 | 22°35 | 24°57 | 11°55 | 7°47 | 7°16 | 24°24 | 2°16 | T 10 | | | | | | | |
| F 11 | 17 19 56 | 20°44'56 | 16°28 | 23°16 | 14°51 | 14° 9 | 5°16 | 9°14 | 22°33 | 24°59 | 11°56 | 7°46 | 7°13 | 24°31 | 2°18 | F 11 | | | | | | | |
| S 12 | 17 23 53 | 21°42'17 | 0♁37 | 25°27 | 16° 4 | 14°51 | 5°13 | 9°10 | 22°32 | 25° 1 | 11°56 | 7°45 | 7°10 | 24°37 | 2°21 | S 12 | | | | | | | |
| S 13 | 17 27 49 | 22°39'37 | 14°50 | 27°37 | 17°17 | 15°33 | 5°10 | 9° 6 | 22°30 | 25° 3 | 11°57 | 7°44 | 7° 7 | 24°44 | 2°23 | S 13 | | | | | | | |
| M14 | 17 31 46 | 23°36'57 | 29° 4 | 29°47 | 18°30 | 16°15 | 5° 6 | 9° 2 | 22°28 | 25° 5 | 11°57 | 7°D44 | 7° 4 | 24°51 | 2°26 | M14 | | | | | | | |
| T 15 | 17 35 43 | 24°34'17 | 13♃17 | 1♁55 | 19°42 | 16°56 | 5° 4 | 8°58 | 22°26 | 25° 7 | 11°58 | 7°45 | 7° 0 | 24°58 | 2°29 | T 15 | | | | | | | |
| W16 | 17 39 39 | 25°31'36 | 27°26 | 4° 2 | 20°55 | 17°38 | 5° 1 | 8°53 | 22°23 | 25° 9 | 11°59 | 7°46 | 6°57 | 25° 4 | 2°31 | W16 | | | | | | | |
| T 17 | 17 43 36 | 26°28'55 | 11♁29 | 6° 7 | 22° 8 | 18°19 | 4°58 | 8°49 | 22°21 | 25°11 | 11°59 | 7°47 | 6°54 | 25°11 | 2°34 | T 17 | | | | | | | |
| F 18 | 17 47 32 | 27°26'14 | 25°24 | 8°11 | 23°20 | 19° 1 | 4°56 | 8°45 | 22°19 | 25°13 | 12° 0 | 7°48 | 6°51 | 25°18 | 2°36 | F 18 | | | | | | | |
| S 19 | 17 51 29 | 28°23'32 | 9♄9 | 10°12 | 24°33 | 19°42 | 4°53 | 8°41 | 22°17 | 25°15 | 12° 0 | 7°R48 | 6°48 | 25°24 | 2°38 | S 19 | | | | | | | |
| S 20 | 17 55 25 | 29°20'50 | 22°40 | 12°12 | 25°45 | 20°24 | 4°51 | 8°36 | 22°15 | 25°17 | 12° 1 | 7°48 | 6°44 | 25°31 | 2°41 | S 20 | | | | | | | |
| M21 | 17 59 22 | 0♁18'08 | 5♁58 | 14° 9 | 26°58 | 21° 5 | 4°49 | 8°32 | 22°13 | 25°19 | 12° 1 | 7°46 | 6°41 | 25°38 | 2°43 | M21 | | | | | | | |
| T 22 | 18 3 18 | 1°15'25 | 18°59 | 16° 5 | 28°10 | 21°46 | 4°48 | 8°28 | 22°11 | 25°21 | 12° 2 | 7°43 | 6°38 | 25°45 | 2°45 | T 22 | | | | | | | |
| W23 | 18 7 15 | 2°12'41 | 1♁44 | 17°58 | 29°23 | 22°28 | 4°46 | 8°23 | 22° 8 | 25°23 | 12° 2 | 7°40 | 6°35 | 25°51 | 2°47 | W23 | | | | | | | |
| T 24 | 18 11 12 | 3° 9'57 | 14°14 | 19°49 | 0♄35 | 23° 9 | 4°45 | 8°19 | 22° 6 | 25°25 | 12° 2 | 7°36 | 6°32 | 25°58 | 2°50 | T 24 | | | | | | | |
| F 25 | 18 15 8 | 4° 7'13 | 26°29 | 21°38 | 1°48 | 23°50 | 4°44 | 8°14 | 22° 4 | 25°27 | 12° 3 | 7°32 | 6°29 | 26° 5 | 2°52 | F 25 | | | | | | | |
| S 26 | 18 19 5 | 5° 4'27 | 8♃34 | 23°25 | 3° 0 | 24°31 | 4°43 | 8°10 | 22° 2 | 25°29 | 12° 3 | 7°28 | 6°25 | 26°12 | 2°54 | S 26 | | | | | | | |
| S 27 | 18 23 1 | 6° 1'41 | 20°30 | 25° 9 | 4°12 | 25°12 | 4°42 | 8° 6 | 21°59 | 25°31 | 12° 3 | 7°26 | 6°22 | 26°18 | 2°56 | S 27 | | | | | | | |
| M28 | 18 26 58 | 6°58'55 | 2♁23 | 26°51 | 5°25 | 25°53 | 4°41 | 8° 1 | 21°57 | 25°33 | 12° 4 | 7°D25 | 6°19 | 26°25 | 2°58 | M28 | | | | | | | |
| T 29 | 18 30 54 | 7°56'08 | 14°17 | 28°31 | 6°37 | 26°34 | 4°41 | 7°57 | 21°55 | 25°35 | 12° 4 | 7°25 | 6°16 | 26°32 | 3° 0 | T 29 | | | | | | | |
| W30 | 18 34 51 | 8♁53'21 | 26♁16 | 0♄9 | 7♄49 | 27♄15 | 4♄40 | 7♁52 | 21♁53 | 25♁38 | 12♃4 | 7♄26 | 6♄13 | 26♃38 | 3♁2 | W30 | | | | | | | |

Delta T = 85.75 sec

ASTRODIENST EPHEMERIS for the year 2077

SEPTEMBER 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|------|-------|------|-----|
| W 1 | 22 43 14 | 9♈13'40 | 14♋59 | 21♎14 | 21♏52 | 8♌46 | 9♉51 | 4°R40 | 19°R40 | 27♄51 | 11°R39 | 2°R44 | 2♋53 | 3♌41 | 3°R20 | W 1 | |
| T 2 | 22 47 11 | 10°11'42 | 29°55 | 22°28 | 23° 0 | 9°24 | 10° 1 | 4♁40 | 19♁39 | 27°52 | 11°R38 | 2♋33 | 2°49 | 3°48 | 3♁17 | T 2 | |
| F 3 | 22 51 7 | 11° 9'45 | 15♉ 5 | 23°49 | 24° 7 | 10° 2 | 10°10 | 4°39 | 19°38 | 27°54 | 11°37 | 2°22 | 2°46 | 3°54 | 3°17 | F 3 | |
| S 4 | 22 55 4 | 12° 7'50 | 0♈20 | 25°15 | 25°15 | 10°40 | 10°20 | 4°39 | 19°37 | 27°56 | 11°36 | 2°12 | 2°43 | 4° 1 | 3°16 | S 4 | |
| S 5 | 22 59 0 | 13° 5'57 | 15°27 | 26°45 | 26°23 | 11°19 | 10°29 | 4°38 | 19°36 | 27°58 | 11°35 | 2° 4 | 2°40 | 4° 8 | 3°14 | S 5 | |
| M 6 | 23 2 57 | 14° 4'05 | 0♁19 | 28°20 | 27°30 | 11°57 | 10°39 | 4°38 | 19°35 | 27°59 | 11°34 | 1°59 | 2°37 | 4°15 | 3°13 | M 6 | |
| T 7 | 23 6 53 | 15° 2'16 | 14°48 | 29°59 | 28°38 | 12°35 | 10°49 | 4°38 | 19°33 | 28° 1 | 11°33 | 1°56 | 2°33 | 4°21 | 3°11 | T 7 | |
| W 8 | 23 10 50 | 16° 0'29 | 28°53 | 1♈42 | 29°45 | 13°13 | 10°59 | 4°D38 | 19°32 | 28° 3 | 11°32 | 1°D55 | 2°30 | 4°28 | 3° 9 | W 8 | |
| T 9 | 23 14 46 | 16°58'43 | 12♋32 | 3°27 | 0♈52 | 13°51 | 11° 9 | 4°38 | 19°32 | 28° 4 | 11°31 | 1°R55 | 2°27 | 4°35 | 3° 8 | T 9 | |
| F 10 | 23 18 43 | 17°57'00 | 25°48 | 5°15 | 1°59 | 14°29 | 11°19 | 4°38 | 19°31 | 28° 6 | 11°30 | 1°55 | 2°24 | 4°41 | 3° 6 | F 10 | |
| S 11 | 23 22 40 | 18°55'19 | 8♄43 | 7° 4 | 3° 6 | 15° 7 | 11°29 | 4°38 | 19°30 | 28° 7 | 11°29 | 1°53 | 2°21 | 4°48 | 3° 4 | S 11 | |
| S 12 | 23 26 36 | 19°53'40 | 21°22 | 8°55 | 4°13 | 15°44 | 11°39 | 4°39 | 19°29 | 28° 9 | 11°28 | 1°49 | 2°18 | 4°55 | 3° 2 | S 12 | |
| M13 | 23 30 33 | 20°52'03 | 3♌48 | 10°47 | 5°19 | 16°22 | 11°49 | 4°39 | 19°28 | 28°10 | 11°27 | 1°43 | 2°14 | 5° 1 | 3° 1 | M13 | |
| T 14 | 23 34 29 | 21°50'28 | 16° 3 | 12°40 | 6°26 | 17° 0 | 12° 0 | 4°40 | 19°27 | 28°12 | 11°26 | 1°34 | 2°11 | 5° 8 | 2°59 | T 14 | |
| W15 | 23 38 26 | 22°48'55 | 28° 9 | 14°33 | 7°32 | 17°38 | 12°10 | 4°40 | 19°27 | 28°13 | 11°25 | 1°22 | 2° 8 | 5°15 | 2°57 | W15 | |
| T 16 | 23 42 22 | 23°47'24 | 10♈10 | 16°27 | 8°38 | 18°15 | 12°21 | 4°41 | 19°26 | 28°15 | 11°24 | 1°10 | 2° 5 | 5°22 | 2°55 | T 16 | |
| F 17 | 23 46 19 | 24°45'55 | 22° 5 | 18°20 | 9°44 | 18°53 | 12°32 | 4°42 | 19°26 | 28°16 | 11°22 | 0°57 | 2° 2 | 5°28 | 2°53 | F 17 | |
| S 18 | 23 50 15 | 25°44'27 | 3♄57 | 20°14 | 10°50 | 19°31 | 12°43 | 4°43 | 19°25 | 28°18 | 11°21 | 0°45 | 1°59 | 5°35 | 2°51 | S 18 | |
| S 19 | 23 54 12 | 26°43'02 | 15°47 | 22° 7 | 11°55 | 20° 8 | 12°53 | 4°44 | 19°25 | 28°19 | 11°20 | 0°35 | 1°55 | 5°42 | 2°48 | S 19 | |
| M20 | 23 58 8 | 27°41'38 | 27°36 | 23°59 | 13° 1 | 20°46 | 13° 4 | 4°45 | 19°24 | 28°20 | 11°19 | 0°28 | 1°52 | 5°48 | 2°46 | M20 | |
| T 21 | 0 2 5 | 28°40'17 | 9♉28 | 25°51 | 14° 6 | 21°23 | 13°15 | 4°46 | 19°24 | 28°22 | 11°18 | 0°23 | 1°49 | 5°55 | 2°44 | T 21 | |
| W22 | 0 6 2 | 29°38'57 | 21°25 | 27°42 | 15°11 | 22° 1 | 13°27 | 4°48 | 19°23 | 28°23 | 11°17 | 0°21 | 1°46 | 6° 2 | 2°42 | W22 | |
| T 23 | 0 9 58 | 0♁37'38 | 3♁31 | 29°32 | 16°16 | 22°38 | 13°38 | 4°49 | 19°23 | 28°24 | 11°16 | 0°D20 | 1°43 | 6° 8 | 2°40 | T 23 | |
| F 24 | 0 13 55 | 1°36'22 | 15°51 | 1♁21 | 17°20 | 23°16 | 13°49 | 4°51 | 19°23 | 28°25 | 11°14 | 0°21 | 1°39 | 6°15 | 2°37 | F 24 | |
| S 25 | 0 17 51 | 2°35'07 | 28°29 | 3°10 | 18°25 | 23°53 | 14° 0 | 4°52 | 19°23 | 28°26 | 11°13 | 0°R22 | 1°36 | 6°22 | 2°35 | S 25 | |
| S 26 | 0 21 48 | 3°33'54 | 11♁30 | 4°58 | 19°29 | 24°30 | 14°12 | 4°54 | 19°23 | 28°28 | 11°12 | 0°22 | 1°33 | 6°29 | 2°33 | S 26 | |
| M27 | 0 25 44 | 4°32'43 | 24°57 | 6°45 | 20°33 | 25° 7 | 14°23 | 4°56 | 19°23 | 28°29 | 11°11 | 0°20 | 1°30 | 6°35 | 2°30 | M27 | |
| T 28 | 0 29 41 | 5°31'34 | 8♋54 | 8°30 | 21°37 | 25°45 | 14°35 | 4°58 | 19°D23 | 28°30 | 11°10 | 0°16 | 1°27 | 6°42 | 2°28 | T 28 | |
| W29 | 0 33 37 | 6°30'26 | 23°19 | 10°15 | 22°40 | 26°22 | 14°46 | 5° 0 | 19°23 | 28°31 | 11° 9 | 0°10 | 1°24 | 6°49 | 2°25 | W29 | |
| T 30 | 0 37 34 | 7♁29'19 | 8♈10 | 11♁59 | 23♉44 | 26♊59 | 14♉58 | 5♁ 2 | 19♁23 | 28♁32 | 11°R 7 | 0°II 2 | 1°II20 | 6♁55 | 2♁23 | T 30 | |

Delta T = 85.83 sec

OCTOBER 2077

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|------|-------|--------|--------|--------|-------|-------|-------|------|-----|
| F 1 | 0 41 31 | 8♁28'15 | 23♈20 | 13♎43 | 24♉47 | 27♊36 | 15♉10 | 5♁ 4 | 19♁23 | 28♁33 | 11°R 6 | 29°R54 | 1♋17 | 7♌ 2 | 2°R20 | F 1 | |
| S 2 | 0 45 27 | 9°27'13 | 8♈39 | 15°25 | 25°49 | 28°13 | 15°22 | 5° 6 | 19°23 | 28°34 | 11°R 5 | 29°R47 | 1°14 | 7° 9 | 2°R18 | S 2 | |
| S 3 | 0 49 24 | 10°26'12 | 23°55 | 17° 6 | 26°52 | 28°50 | 15°33 | 5° 9 | 19°23 | 28°35 | 11° 4 | 29°41 | 1°11 | 7°15 | 2°15 | S 3 | |
| M 4 | 0 53 20 | 11°25'14 | 8♁58 | 18°47 | 27°54 | 29°27 | 15°45 | 5°11 | 19°23 | 28°36 | 11° 3 | 29°37 | 1° 8 | 7°22 | 2°13 | M 4 | |
| T 5 | 0 57 17 | 12°24'18 | 23°41 | 20°27 | 28°56 | 0♈ 4 | 15°57 | 5°14 | 19°24 | 28°37 | 11° 2 | 29°D35 | 1° 4 | 7°29 | 2°10 | T 5 | |
| W 6 | 1 1 13 | 13°23'24 | 7♋57 | 22° 5 | 29°58 | 0°41 | 16° 9 | 5°16 | 19°24 | 28°38 | 11° 0 | 29°35 | 1° 1 | 7°36 | 2° 7 | W 6 | |
| T 7 | 1 5 10 | 14°22'32 | 21°46 | 23°43 | 0♁59 | 1°18 | 16°21 | 5°19 | 19°25 | 28°38 | 10°59 | 29°37 | 0°58 | 7°42 | 2° 5 | T 7 | |
| F 8 | 1 9 6 | 15°21'43 | 5♁ 8 | 25°21 | 2° 0 | 1°54 | 16°34 | 5°22 | 19°25 | 28°39 | 10°58 | 29°38 | 0°55 | 7°49 | 2° 2 | F 8 | |
| S 9 | 1 13 3 | 16°20'57 | 18° 6 | 26°57 | 3° 1 | 2°31 | 16°46 | 5°25 | 19°26 | 28°40 | 10°57 | 29°R38 | 0°52 | 7°56 | 2° 0 | S 9 | |
| S 10 | 1 17 0 | 17°20'12 | 0♁43 | 28°33 | 4° 1 | 3° 8 | 16°58 | 5°28 | 19°26 | 28°41 | 10°56 | 29°37 | 0°49 | 8° 2 | 1°57 | S 10 | |
| M11 | 1 20 56 | 18°19'30 | 13° 4 | 0♈ 8 | 5° 1 | 3°45 | 17°10 | 5°31 | 19°27 | 28°41 | 10°55 | 29°34 | 0°45 | 8° 9 | 1°54 | M11 | |
| T 12 | 1 24 53 | 19°18'50 | 25°13 | 1°42 | 6° 1 | 4°21 | 17°23 | 5°34 | 19°28 | 28°42 | 10°53 | 29°30 | 0°42 | 8°16 | 1°51 | T 12 | |
| W13 | 1 28 49 | 20°18'12 | 7♈13 | 3°16 | 7° 0 | 4°58 | 17°35 | 5°37 | 19°28 | 28°43 | 10°52 | 29°23 | 0°39 | 8°22 | 1°49 | W13 | |
| T 14 | 1 32 46 | 21°17'37 | 19° 7 | 4°49 | 7°59 | 5°34 | 17°48 | 5°41 | 19°29 | 28°43 | 10°51 | 29°16 | 0°36 | 8°29 | 1°46 | T 14 | |
| F 15 | 1 36 42 | 22°17'03 | 0♁58 | 6°21 | 8°58 | 6°11 | 18° 0 | 5°44 | 19°30 | 28°44 | 10°50 | 29° 9 | 0°33 | 8°36 | 1°43 | F 15 | |
| S 16 | 1 40 39 | 23°16'32 | 12°48 | 7°52 | 9°56 | 6°47 | 18°13 | 5°48 | 19°31 | 28°44 | 10°49 | 29° 2 | 0°30 | 8°42 | 1°40 | S 16 | |
| S 17 | 1 44 35 | 24°16'03 | 24°40 | 9°23 | 10°53 | 7°24 | 18°25 | 5°51 | 19°32 | 28°45 | 10°48 | 28°57 | 0°26 | 8°49 | 1°38 | S 17 | |
| M18 | 1 48 32 | 25°15'36 | 6♉34 | 10°53 | 11°51 | 8° 0 | 18°38 | 5°55 | 19°33 | 28°45 | 10°47 | 28°53 | 0°23 | 8°56 | 1°35 | M18 | |
| T 19 | 1 52 29 | 26°15'11 | 18°32 | 12°23 | 12°47 | 8°36 | 18°50 | 5°59 | 19°34 | 28°46 | 10°45 | 28°51 | 0°20 | 9° 3 | 1°32 | T 19 | |
| W20 | 1 56 25 | 27°14'47 | 0♁37 | 13°51 | 13°44 | 9°12 | 19° 3 | 6° 3 | 19°35 | 28°46 | 10°44 | 28°D50 | 0°17 | 9° 9 | 1°29 | W20 | |
| T 21 | 2 0 22 | 28°14'26 | 12°52 | 15°19 | 14°40 | 9°49 | 19°16 | 6° 7 | 19°36 | 28°47 | 10°43 | 28°51 | 0°14 | 9°16 | 1°26 | T 21 | |
| F 22 | 2 4 18 | 29°14'07 | 25°18 | 16°47 | 15°35 | 10°25 | 19°29 | 6°11 | 19°37 | 28°47 | 10°42 | 28°53 | 0°10 | 9°23 | 1°23 | F 22 | |
| S 23 | 2 8 15 | 0♈13'49 | 8♁ 0 | 18°13 | 16°30 | 11° 1 | 19°42 | 6°15 | 19°38 | 28°47 | 10°41 | 28°54 | 0° 7 | 9°29 | 1°21 | S 23 | |
| S 24 | 2 12 11 | 1°13'33 | 21° 0 | 19°39 | 17°24 | 11°37 | 19°54 | 6°19 | 19°40 | 28°48 | 10°40 | 28°56 | 0° 4 | 9°36 | 1°18 | S 24 | |
| M25 | 2 16 8 | 2°13'19 | 4♋23 | 21° 5 | 18°17 | 12°13 | 20° 7 | 6°23 | 19°41 | 28°48 | 10°39 | 28°R56 | 0° 1 | 9°43 | 1°15 | M25 | |
| T 26 | 2 20 4 | 3°13'06 | 18° 9 | 22°29 | 19°10 | 12°49 | 20°20 | 6°27 | 19°42 | 28°48 | 10°38 | 28°55 | 29♁58 | 9°49 | 1°12 | T 26 | |
| W27 | 2 24 1 | 4°12'55 | 2♈20 | 23°53 | 20° 3 | 13°25 | 20°33 | 6°32 | 19°44 | 28°48 | 10°37 | 28°53 | 29°55 | 9°56 | 1° 9 | W27 | |
| T 28 | 2 27 58 | 5°12'46 | 16°54 | 25°15 | 20°54 | 14° 1 | 20°46 | 6°36 | 19°45 | 28°48 | 10°36 | 28°50 | 29°51 | 10° 3 | 1° 6 | T 28 | |
| F 29 | 2 31 54 | 6°12'38 | 1°R47 | 26°37 | 21°45 | 14°36 | 20°59 | 6°41 | 19°47 | 28°48 | 10°35 | 28°47 | 29°48 | 10° 9 | 1° 4 | F 29 | |
| S 30 | 2 35 51 | 7°12'32 | 16°52 | 27°58 | 22°36 | 15°12 | 21°12 | 6°45 | 19°48 | 28°48 | 10°33 | 28°44 | 29°45 | 10°16 | 1° 1 | S 30 | |
| S 31 | 2 39 47 | 8♉12'28 | 1♁59 | 29♉18 | 23♁25 | 15♎48 | 21♉25 | 6♁50 | 19♁50 | 28°R49 | 10°R32 | 28♁42 | 29♁42 | 10♁23 | 0♁58 | S 31 | |

Delta T = 85.86 sec

ASTRODIENST EPHEMERIS for the year 2077

NOVEMBER 2077

00:00 UT

| Day | Sid.t | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | ♈ | ♉ | Day |
|------|---------|----------|--------|--------|-------|-------|--------|------|-------|--------|--------|--------|-------|-------|--------|------|
| M 1 | 2 43 44 | 9♉12'26 | 17♈ 0 | 0♊36 | 24♋14 | 16♌23 | 21♍38 | 6♎55 | 19♏52 | 28°R49 | 10°R31 | 28°R41 | 29♐39 | 10♑30 | 0°R55 | M 1 |
| T 2 | 2 47 40 | 10°12'25 | 1♈45 | 1°54 | 25° 2 | 16°59 | 21°51 | 7° 0 | 19°53 | 28°R48 | 10°R30 | 28°D40 | 29°36 | 10°36 | 0♊52 | T 2 |
| W 3 | 2 51 37 | 11°12'27 | 1♈ 9 | 3°10 | 25°49 | 17°34 | 22° 5 | 7° 5 | 19°55 | 28°R48 | 10°R29 | 28°R41 | 29°32 | 10°43 | 0°50 | W 3 |
| T 4 | 2 55 33 | 12°12'31 | 0♈ 7 | 4°24 | 26°35 | 18°10 | 22°18 | 7°10 | 19°57 | 28°R48 | 10°R28 | 28°R42 | 29°29 | 10°50 | 0°47 | T 4 |
| F 5 | 2 59 30 | 13°12'37 | 13°38 | 5°37 | 27°20 | 18°45 | 22°31 | 7°15 | 19°59 | 28°R48 | 10°R28 | 28°R43 | 29°26 | 10°56 | 0°44 | F 5 |
| S 6 | 3 3 27 | 14°12'45 | 26°43 | 6°48 | 28° 5 | 19°21 | 22°44 | 7°20 | 20° 1 | 28°R48 | 10°R27 | 28°R44 | 29°23 | 11° 3 | 0°41 | S 6 |
| S 7 | 3 7 23 | 15°12'55 | 9♈25 | 7°57 | 28°48 | 19°56 | 22°57 | 7°25 | 20° 3 | 28°R48 | 10°R26 | 28°R45 | 29°20 | 11°10 | 0°39 | S 7 |
| M 8 | 3 11 20 | 16°13'07 | 21°48 | 9° 4 | 29°31 | 20°31 | 23°10 | 7°30 | 20° 5 | 28°R48 | 10°R25 | 28°R45 | 29°16 | 11°16 | 0°36 | M 8 |
| T 9 | 3 15 16 | 17°13'21 | 3♈56 | 10° 8 | 0♊12 | 21° 6 | 23°24 | 7°35 | 20° 7 | 28°R47 | 10°R24 | 28°R45 | 29°13 | 11°23 | 0°33 | T 9 |
| W10 | 3 19 13 | 18°13'37 | 15°54 | 11°10 | 0°52 | 21°41 | 23°37 | 7°41 | 20° 9 | 28°R47 | 10°R23 | 28°R43 | 29°10 | 11°30 | 0°31 | W10 |
| T 11 | 3 23 9 | 19°13'55 | 27°45 | 12° 8 | 1°31 | 22°17 | 23°50 | 7°46 | 20°11 | 28°R47 | 10°R22 | 28°R42 | 29° 7 | 11°36 | 0°28 | T 11 |
| F 12 | 3 27 6 | 20°14'15 | 9♊35 | 13° 2 | 2° 9 | 22°52 | 24° 3 | 7°52 | 20°13 | 28°R46 | 10°R21 | 28°R41 | 29° 4 | 11°43 | 0°25 | F 12 |
| S 13 | 3 31 2 | 21°14'36 | 21°26 | 13°53 | 2°46 | 23°26 | 24°17 | 7°57 | 20°15 | 28°R46 | 10°R20 | 28°R40 | 29° 1 | 11°50 | 0°23 | S 13 |
| S 14 | 3 34 59 | 22°15'00 | 3♌21 | 14°39 | 3°21 | 24° 1 | 24°30 | 8° 3 | 20°18 | 28°R45 | 10°R19 | 28°R39 | 28°57 | 11°56 | 0°20 | S 14 |
| M15 | 3 38 56 | 23°15'25 | 15°22 | 15°20 | 3°55 | 24°36 | 24°43 | 8° 8 | 20°20 | 28°R45 | 10°R19 | 28°R38 | 28°54 | 12° 3 | 0°18 | M15 |
| T 16 | 3 42 52 | 24°15'52 | 27°32 | 15°55 | 4°27 | 25°11 | 24°57 | 8°14 | 20°22 | 28°R44 | 10°R18 | 28°D38 | 28°51 | 12°10 | 0°15 | T 16 |
| W17 | 3 46 49 | 25°16'21 | 9♊51 | 16°24 | 4°58 | 25°46 | 25°10 | 8°20 | 20°24 | 28°R44 | 10°R17 | 28°R38 | 28°48 | 12°17 | 0°13 | W17 |
| T 18 | 3 50 45 | 26°16'51 | 22°21 | 16°46 | 5°28 | 26°20 | 25°23 | 8°26 | 20°27 | 28°R43 | 10°R16 | 28°R38 | 28°45 | 12°23 | 0°10 | T 18 |
| F 19 | 3 54 42 | 27°17'23 | 5♋ 4 | 17° 0 | 5°56 | 26°55 | 25°36 | 8°32 | 20°29 | 28°R43 | 10°R16 | 28°R39 | 28°42 | 12°30 | 0° 8 | F 19 |
| S 20 | 3 58 38 | 28°17'56 | 18° 0 | 17°R 6 | 6°22 | 27°29 | 25°50 | 8°37 | 20°32 | 28°R42 | 10°R15 | 28°R39 | 28°38 | 12°37 | 0° 5 | S 20 |
| S 21 | 4 2 35 | 29°18'30 | 1♌11 | 17° 2 | 6°47 | 28° 3 | 26° 3 | 8°43 | 20°34 | 28°R41 | 10°R14 | 28°R39 | 28°35 | 12°43 | 0° 3 | S 21 |
| M22 | 4 6 31 | 0♊19'06 | 14°38 | 16°48 | 7° 9 | 28°38 | 26°16 | 8°49 | 20°37 | 28°R41 | 10°R13 | 28°R39 | 28°32 | 12°50 | 0° 0 | M22 |
| T 23 | 4 10 28 | 1°19'43 | 28°21 | 16°24 | 7°30 | 29°12 | 26°30 | 8°56 | 20°39 | 28°R40 | 10°R13 | 28°D39 | 28°29 | 12°57 | 29°V58 | T 23 |
| W24 | 4 14 25 | 2°20'20 | 12♈21 | 15°49 | 7°49 | 29°46 | 26°43 | 9° 2 | 20°42 | 28°R39 | 10°R12 | 28°R39 | 28°26 | 13° 3 | 29°56 | W24 |
| T 25 | 4 18 21 | 3°20'59 | 26°37 | 15° 3 | 8° 6 | 0♊20 | 26°56 | 9° 8 | 20°45 | 28°R38 | 10°R11 | 28°R39 | 28°22 | 13°10 | 29°54 | T 25 |
| F 26 | 4 22 18 | 4°21'39 | 11°V 6 | 14° 7 | 8°21 | 0°54 | 27° 9 | 9°14 | 20°47 | 28°R38 | 10°R11 | 28°R39 | 28°19 | 13°17 | 29°51 | F 26 |
| S 27 | 4 26 14 | 5°22'20 | 25°45 | 13° 2 | 8°34 | 1°28 | 27°23 | 9°20 | 20°50 | 28°R37 | 10°R10 | 28°R40 | 28°16 | 13°23 | 29°49 | S 27 |
| S 28 | 4 30 11 | 6°23'02 | 10♋28 | 11°50 | 8°45 | 2° 2 | 27°36 | 9°27 | 20°53 | 28°R36 | 10°R10 | 28°R40 | 28°13 | 13°30 | 29°47 | S 28 |
| M29 | 4 34 7 | 7°23'46 | 25° 9 | 10°31 | 8°53 | 2°36 | 27°49 | 9°33 | 20°56 | 28°R35 | 10° 9 | 28°R41 | 28°10 | 13°37 | 29°45 | M29 |
| T 30 | 4 38 4 | 8°24'30 | 9♈41 | 9♊ 9 | 8♋59 | 3♌ 9 | 28°R 2 | 9°39 | 20°59 | 28°R34 | 10°V 9 | 28°R41 | 28° 7 | 13°43 | 29°V43 | T 30 |

Delta T = 85.89 sec

DECEMBER 2077

00:00 UT

| Day | Sid.t | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ | ♈ | ♉ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|--------|------|
| W 1 | 4 42 0 | 9♊25'16 | 23♈58 | 7°R47 | 9♋ 3 | 3♌43 | 28♍15 | 9♎46 | 21♏ 1 | 28°R33 | 10°R 8 | 28°R40 | 28♐ 3 | 13♑50 | 29°R41 | W 1 |
| T 2 | 4 45 57 | 10°26'03 | 7♈55 | 6♊26 | 9°R 4 | 4°16 | 28°29 | 9°52 | 21° 4 | 28°R32 | 10°V 8 | 28°R39 | 28° 0 | 13°57 | 29°V39 | T 2 |
| F 3 | 4 49 54 | 11°26'52 | 21°29 | 5°11 | 9° 3 | 4°50 | 28°42 | 9°59 | 21° 7 | 28°R31 | 10° 7 | 28°R37 | 27°57 | 14° 4 | 29°37 | F 3 |
| S 4 | 4 53 50 | 12°27'42 | 4♈40 | 4° 3 | 9° 0 | 5°23 | 28°55 | 10° 5 | 21°10 | 28°R30 | 10° 7 | 28°R35 | 27°54 | 14°10 | 29°35 | S 4 |
| S 5 | 4 57 47 | 13°28'33 | 17°27 | 3° 3 | 8°54 | 5°57 | 29° 8 | 10°12 | 21°13 | 28°R29 | 10° 6 | 28°R33 | 27°51 | 14°17 | 29°33 | S 5 |
| M 6 | 5 1 43 | 14°29'25 | 29°54 | 2°14 | 8°45 | 6°30 | 29°21 | 10°18 | 21°16 | 28°R28 | 10° 6 | 28°R32 | 27°48 | 14°24 | 29°31 | M 6 |
| T 7 | 5 5 40 | 15°30'19 | 12♈ 5 | 1°37 | 8°34 | 7° 3 | 29°34 | 10°25 | 21°19 | 28°R27 | 10° 5 | 28°D31 | 27°44 | 14°30 | 29°30 | T 7 |
| W 8 | 5 9 36 | 16°31'14 | 24° 4 | 1°10 | 8°21 | 7°36 | 29°47 | 10°32 | 21°22 | 28°R26 | 10° 5 | 28°R31 | 27°41 | 14°37 | 29°28 | W 8 |
| T 9 | 5 13 33 | 17°32'10 | 5♌56 | 0°55 | 8° 5 | 8° 9 | 0♊ 0 | 10°38 | 21°25 | 28°R24 | 10° 5 | 28°R32 | 27°38 | 14°44 | 29°26 | T 9 |
| F 10 | 5 17 29 | 18°33'07 | 17°45 | 0°D51 | 7°47 | 8°41 | 0°13 | 10°45 | 21°28 | 28°R23 | 10° 4 | 28°R34 | 27°35 | 14°50 | 29°24 | F 10 |
| S 11 | 5 21 26 | 19°34'06 | 29°37 | 0°57 | 7°26 | 9°14 | 0°26 | 10°52 | 21°31 | 28°R22 | 10° 4 | 28°R36 | 27°32 | 14°57 | 29°23 | S 11 |
| S 12 | 5 25 23 | 20°35'06 | 11♌35 | 1°13 | 7° 4 | 9°47 | 0°39 | 10°59 | 21°35 | 28°R21 | 10° 4 | 28°R37 | 27°28 | 15° 4 | 29°21 | S 12 |
| M13 | 5 29 19 | 21°36'06 | 23°44 | 1°37 | 6°39 | 10°19 | 0°52 | 11° 5 | 21°38 | 28°R19 | 10° 3 | 28°R38 | 27°25 | 15°10 | 29°20 | M13 |
| T 14 | 5 33 16 | 22°37'08 | 6♊ 5 | 2° 9 | 6°12 | 10°52 | 1° 5 | 11°12 | 21°41 | 28°R18 | 10° 3 | 28°R38 | 27°22 | 15°17 | 29°18 | T 14 |
| W15 | 5 37 12 | 23°38'11 | 18°41 | 2°48 | 5°43 | 11°24 | 1°18 | 11°19 | 21°44 | 28°R17 | 10° 3 | 28°R37 | 27°19 | 15°24 | 29°17 | W15 |
| T 16 | 5 41 9 | 24°39'14 | 1♋32 | 3°33 | 5°13 | 11°56 | 1°31 | 11°26 | 21°48 | 28°R16 | 10° 3 | 28°R34 | 27°16 | 15°30 | 29°16 | T 16 |
| F 17 | 5 45 5 | 25°40'18 | 14°38 | 4°24 | 4°41 | 12°28 | 1°43 | 11°33 | 21°51 | 28°R14 | 10° 3 | 28°R30 | 27°13 | 15°37 | 29°14 | F 17 |
| S 18 | 5 49 2 | 26°41'23 | 27°59 | 5°20 | 4° 8 | 13° 0 | 1°56 | 11°40 | 21°54 | 28°R13 | 10° 2 | 28°R25 | 27° 9 | 15°44 | 29°13 | S 18 |
| S 19 | 5 52 59 | 27°42'28 | 11♌32 | 6°19 | 3°33 | 13°32 | 2° 9 | 11°47 | 21°57 | 28°R11 | 10° 2 | 28°R21 | 27° 6 | 15°50 | 29°12 | S 19 |
| M20 | 5 56 55 | 28°43'34 | 25°16 | 7°23 | 2°58 | 14° 4 | 2°21 | 11°54 | 22° 1 | 28°R10 | 10° 2 | 28°R16 | 27° 3 | 15°57 | 29°11 | M20 |
| T 21 | 6 0 52 | 29°44'39 | 9♈ 9 | 8°29 | 2°22 | 14°35 | 2°34 | 12° 1 | 22° 4 | 28° 9 | 10° 2 | 28°R13 | 27° 0 | 16° 4 | 29°10 | T 21 |
| W22 | 6 4 48 | 0♋45'45 | 23°10 | 9°39 | 1°46 | 15° 7 | 2°46 | 12° 8 | 22° 7 | 28° 7 | 10° 2 | 28°R12 | 26°57 | 16°10 | 29° 9 | W22 |
| T 23 | 6 8 45 | 1°46'52 | 7°V17 | 10°51 | 1° 9 | 15°38 | 2°59 | 12°15 | 22°11 | 28° 6 | 10° 2 | 28°D12 | 26°54 | 16°17 | 29° 8 | T 23 |
| F 24 | 6 12 41 | 2°47'58 | 21°28 | 12° 5 | 0°32 | 16° 9 | 3°11 | 12°22 | 22°14 | 28° 4 | 10°D 2 | 28°R13 | 26°50 | 16°24 | 29° 7 | F 24 |
| S 25 | 6 16 38 | 3°49'04 | 5♋41 | 13°22 | 29♋56 | 16°40 | 3°24 | 12°29 | 22°18 | 28° 3 | 10° 2 | 28°R14 | 26°47 | 16°30 | 29° 6 | S 25 |
| S 26 | 6 20 34 | 4°50'11 | 19°56 | 14°39 | 29°21 | 17°11 | 3°36 | 12°36 | 22°21 | 28° 1 | 10° 2 | 28°R15 | 26°44 | 16°37 | 29° 5 | S 26 |
| M27 | 6 24 31 | 5°51'18 | 4♈ 8 | 15°59 | 28°46 | 17°42 | 3°48 | 12°43 | 22°25 | 28° 0 | 10° 2 | 28°R15 | 26°41 | 16°44 | 29° 4 | M27 |
| T 28 | 6 28 28 | 6°52'24 | 18°14 | 17°20 | 28°12 | 18°13 | 4° 1 | 12°50 | 22°28 | 27°58 | 10° 2 | 28°R14 | 26°38 | 16°51 | 29° 4 | T 28 |
| W29 | 6 32 24 | 7°53'32 | 2♈10 | 18°41 | 27°40 | 18°43 | 4°13 | 12°57 | 22°31 | 27°57 | 10° 2 | 28°R10 | 26°34 | 16°57 | 29° 3 | W29 |
| T 30 | 6 36 21 | 8°54'39 | 15°52 | 20° 4 | 27° 9 | 19°14 | 4°25 | 13° 4 | 22°35 | 27°55 | 10° 3 | 28° 5 | 26°31 | 17° 4 | 29° 3 | T 30 |
| F 31 | 6 40 17 | 9♋55'47 | 29♈18 | 21♋28 | 26♋40 | 19♌44 | 4°37 | 13♎11 | 22♏38 | 27°53 | 10°V 3 | 27♐57 | 26♑28 | 17°11 | 29°V 2 | F 31 |

Delta T = 85.92 sec