



Astrodienst Ephemeris Tables for the year 2216

tropical geocentric 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 2216
geocentric

JANUARY 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|------|
| M 1 | 6 38 40 | 9°25'55 | 15°34 | 19°33 | 14°49 | 17°15 | 1°R52 | 5°39 | 13°R28 | 28°R44 | 26°R23 | 27°59 | 27°27 | 22°13 | 23°3 | M 1 |
| T 2 | 6 42 36 | 10°27'02 | 27°23 | 20°54 | 16° 4 | 18° 1 | 1°L45 | 5°41 | 13°R27 | 28°R43 | 26°R23 | 28° 0 | 27°24 | 22°19 | 23° 4 | T 2 |
| W 3 | 6 46 33 | 11°28'10 | 9°15 | 22°16 | 17°19 | 18°48 | 1°38 | 5°42 | 13°26 | 28°42 | 26°23 | 28° 1 | 27°21 | 22°26 | 23° 6 | W 3 |
| T 4 | 6 50 29 | 12°29'17 | 21°15 | 23°39 | 18°34 | 19°34 | 1°31 | 5°44 | 13°25 | 28°41 | 26°23 | 28° 2 | 27°18 | 22°33 | 23° 8 | T 4 |
| F 5 | 6 54 26 | 13°30'24 | 3°23 | 25° 3 | 19°49 | 20°20 | 1°24 | 5°45 | 13°24 | 28°40 | 26°23 | 28°R 2 | 27°15 | 22°39 | 23° 9 | F 5 |
| S 6 | 6 58 23 | 14°31'32 | 15°43 | 26°28 | 21° 4 | 21° 6 | 1°16 | 5°46 | 13°24 | 28°39 | 26°22 | 28° 1 | 27°12 | 22°46 | 23°11 | S 6 |
| S 7 | 7 2 19 | 15°32'39 | 28°15 | 27°54 | 22°19 | 21°53 | 1° 9 | 5°47 | 13°23 | 28°38 | 26°22 | 28° 0 | 27° 8 | 22°53 | 23°13 | S 7 |
| M 8 | 7 6 16 | 16°33'46 | 11°0 | 29°20 | 23°34 | 22°39 | 1° 1 | 5°48 | 13°22 | 28°36 | 26°22 | 27°57 | 27° 5 | 22°59 | 23°15 | M 8 |
| T 9 | 7 10 12 | 17°34'54 | 23°58 | 0°348 | 24°49 | 23°26 | 0°54 | 5°49 | 13°20 | 28°35 | 26°22 | 27°54 | 27° 2 | 23° 6 | 23°17 | T 9 |
| W10 | 7 14 9 | 18°36'02 | 7°R 9 | 2°15 | 26° 4 | 24°12 | 0°46 | 5°49 | 13°19 | 28°35 | 26°21 | 27°51 | 26°59 | 23°13 | 23°19 | W10 |
| T 11 | 7 18 5 | 19°37'10 | 20°34 | 3°43 | 27°19 | 24°59 | 0°38 | 5°50 | 13°18 | 28°34 | 26°21 | 27°48 | 26°56 | 23°19 | 23°21 | T 11 |
| F 12 | 7 22 2 | 20°38'17 | 4°12 | 5°12 | 28°34 | 25°45 | 0°30 | 5°50 | 13°17 | 28°33 | 26°20 | 27°46 | 26°52 | 23°26 | 23°23 | F 12 |
| S 13 | 7 25 58 | 21°39'26 | 18° 2 | 6°42 | 29°49 | 26°32 | 0°22 | 5°51 | 13°16 | 28°32 | 26°20 | 27°D45 | 26°49 | 23°33 | 23°25 | S 13 |
| S 14 | 7 29 55 | 22°40'34 | 2°R 5 | 8°12 | 1°3 | 27°18 | 0°14 | 5°51 | 13°14 | 28°31 | 26°20 | 27°46 | 26°46 | 23°39 | 23°27 | S 14 |
| M15 | 7 33 52 | 23°41'42 | 16°19 | 9°42 | 2°19 | 28° 5 | 0° 6 | 5°51 | 13°13 | 28°30 | 26°19 | 27°47 | 26°43 | 23°46 | 23°29 | M15 |
| T 16 | 7 37 48 | 24°42'51 | 0°43 | 11°13 | 3°34 | 28°52 | 29°58 | 5°R51 | 13°12 | 28°29 | 26°18 | 27°48 | 26°40 | 23°53 | 23°31 | T 16 |
| W17 | 7 41 45 | 25°43'59 | 15°12 | 12°44 | 4°49 | 29°38 | 29°50 | 5°51 | 13°10 | 28°29 | 26°18 | 27°50 | 26°37 | 23°59 | 23°34 | W17 |
| T 18 | 7 45 41 | 26°45'08 | 29°43 | 14°16 | 6° 4 | 0°25 | 29°42 | 5°51 | 13° 9 | 28°28 | 26°17 | 27°R50 | 26°33 | 24° 6 | 23°36 | T 18 |
| F 19 | 7 49 38 | 27°46'16 | 14°31 | 15°48 | 7°19 | 1°12 | 29°34 | 5°51 | 13° 7 | 28°27 | 26°17 | 27°49 | 26°30 | 24°13 | 23°39 | F 19 |
| S 20 | 7 53 34 | 28°47'24 | 28°30 | 17°21 | 8°34 | 1°59 | 29°26 | 5°50 | 13° 5 | 28°26 | 26°16 | 27°46 | 26°27 | 24°19 | 23°41 | S 20 |
| S 21 | 7 57 31 | 29°48'31 | 12°35 | 18°55 | 9°49 | 2°46 | 29°18 | 5°50 | 13° 4 | 28°26 | 26°15 | 27°42 | 26°24 | 24°26 | 23°43 | S 21 |
| M22 | 8 1 28 | 0°49'38 | 26°20 | 20°29 | 11° 4 | 3°33 | 29°10 | 5°49 | 13° 2 | 28°25 | 26°15 | 27°37 | 26°21 | 24°33 | 23°46 | M22 |
| T 23 | 8 5 24 | 1°50'44 | 9°44 | 22° 3 | 12°19 | 4°19 | 29° 2 | 5°49 | 13° 0 | 28°25 | 26°14 | 27°31 | 26°18 | 24°39 | 23°48 | T 23 |
| W24 | 8 9 21 | 2°51'49 | 22°45 | 23°38 | 13°34 | 5° 6 | 28°54 | 5°48 | 12°59 | 28°24 | 26°13 | 27°25 | 26°14 | 24°46 | 23°51 | W24 |
| T 25 | 8 13 17 | 3°52'53 | 5°R24 | 25°13 | 14°49 | 5°53 | 28°46 | 5°47 | 12°57 | 28°24 | 26°12 | 27°21 | 26°11 | 24°53 | 23°54 | T 25 |
| F 26 | 8 17 14 | 4°53'57 | 17°44 | 26°49 | 16° 5 | 6°40 | 28°38 | 5°46 | 12°55 | 28°23 | 26°11 | 27°17 | 26° 8 | 24°59 | 23°56 | F 26 |
| S 27 | 8 21 10 | 5°54'59 | 29°49 | 28°26 | 17°20 | 7°27 | 28°30 | 5°45 | 12°53 | 28°23 | 26°10 | 27°16 | 26° 5 | 25° 6 | 23°59 | S 27 |
| S 28 | 8 25 7 | 6°56'01 | 11°44 | 0°3 | 18°35 | 8°14 | 28°22 | 5°43 | 12°51 | 28°22 | 26°10 | 27°D15 | 26° 2 | 25°13 | 24° 2 | S 28 |
| M29 | 8 29 3 | 7°57'02 | 23°33 | 1°41 | 19°50 | 9° 1 | 28°14 | 5°42 | 12°49 | 28°22 | 26° 9 | 27°17 | 25°58 | 25°19 | 24° 5 | M29 |
| T 30 | 8 33 0 | 8°58'01 | 5°R22 | 3°19 | 21° 5 | 9°48 | 28° 6 | 5°40 | 12°47 | 28°22 | 26° 8 | 27°18 | 25°55 | 25°26 | 24° 7 | T 30 |
| W31 | 8 36 57 | 9°59'00 | 17°R17 | 4°58 | 22°30 | 10°36 | 27°59 | 5°39 | 12°45 | 28°R21 | 26°R 7 | 27°R20 | 25°R52 | 25°R33 | 24°R10 | W31 |

Delta T = 179.48 sec

FEBRUARY 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|------|
| T 1 | 8 40 53 | 10°59'58 | 29°R20 | 6°38 | 23°35 | 11°23 | 27°R51 | 5°R37 | 12°R43 | 28°R21 | 26°R 6 | 27°R20 | 25°R49 | 25°R39 | 24°R13 | T 1 |
| F 2 | 8 44 50 | 12° 0'54 | 11°37 | 8°18 | 24°50 | 12°10 | 27°43 | 5°35 | 12°R41 | 28°R21 | 26°R 5 | 27°R19 | 25°46 | 25°46 | 24°16 | F 2 |
| S 3 | 8 48 46 | 13° 1'50 | 24° 9 | 9°59 | 26° 5 | 12°57 | 27°36 | 5°34 | 12°39 | 28°21 | 26° 4 | 27°16 | 25°43 | 25°53 | 24°19 | S 3 |
| S 4 | 8 52 43 | 14° 2'44 | 6°R59 | 11°41 | 27°20 | 13°44 | 27°28 | 5°32 | 12°37 | 28°20 | 26° 3 | 27°10 | 25°39 | 25°59 | 24°22 | S 4 |
| M 5 | 8 56 39 | 15° 3'37 | 20° 7 | 13°23 | 28°35 | 14°31 | 27°21 | 5°30 | 12°34 | 28°20 | 26° 1 | 27° 3 | 25°36 | 26° 6 | 24°25 | M 5 |
| T 6 | 9 0 36 | 16° 4'30 | 3°R30 | 15° 6 | 29°51 | 15°18 | 27°14 | 5°27 | 12°32 | 28°20 | 26° 0 | 26°54 | 25°33 | 26°13 | 24°28 | T 6 |
| W 7 | 9 4 32 | 17° 5'21 | 17° 8 | 16°50 | 1°6 | 16° 6 | 27° 6 | 5°25 | 12°30 | 28°20 | 25°59 | 26°45 | 25°30 | 26°19 | 24°31 | W 7 |
| T 8 | 9 8 29 | 18° 6'11 | 0°57 | 18°34 | 2°21 | 16°53 | 26°59 | 5°23 | 12°27 | 28°D20 | 25°58 | 26°37 | 25°27 | 26°26 | 24°34 | T 8 |
| F 9 | 9 12 26 | 19° 7'01 | 14°54 | 20°20 | 3°36 | 17°40 | 26°52 | 5°20 | 12°25 | 28°20 | 25°57 | 26°31 | 25°24 | 26°33 | 24°37 | F 9 |
| S 10 | 9 16 22 | 20° 7'49 | 28°56 | 22° 5 | 4°51 | 18°27 | 26°45 | 5°18 | 12°23 | 28°20 | 25°56 | 26°26 | 25°20 | 26°39 | 24°41 | S 10 |
| S 11 | 9 20 19 | 21° 8'37 | 13°R 1 | 23°52 | 6° 6 | 19°15 | 26°39 | 5°15 | 12°20 | 28°20 | 25°54 | 26°24 | 25°17 | 26°46 | 24°44 | S 11 |
| M12 | 9 24 15 | 22° 9'24 | 27° 8 | 25°39 | 7°21 | 20° 2 | 26°32 | 5°12 | 12°18 | 28°20 | 25°53 | 26°D24 | 25°14 | 26°53 | 24°47 | M12 |
| T 13 | 9 28 12 | 23°10'10 | 11°R14 | 27°27 | 8°36 | 20°49 | 26°25 | 5°10 | 12°16 | 28°20 | 25°52 | 26°R25 | 25°11 | 26°59 | 24°50 | T 13 |
| W14 | 9 32 8 | 24°10'55 | 25°20 | 29°15 | 9°51 | 21°37 | 26°19 | 5° 7 | 12°13 | 28°21 | 25°51 | 26°R25 | 25° 8 | 27° 6 | 24°54 | W14 |
| T 15 | 9 36 5 | 25°11'40 | 9°R24 | 1°4 | 11° 6 | 22°24 | 26°13 | 5° 4 | 12°11 | 28°21 | 25°49 | 26°25 | 25° 4 | 27°13 | 24°57 | T 15 |
| F 16 | 9 40 1 | 26°12'23 | 23°24 | 2°53 | 12°21 | 23°11 | 26° 7 | 5° 1 | 12° 8 | 28°21 | 25°48 | 26°22 | 25° 1 | 27°19 | 25° 0 | F 16 |
| S 17 | 9 43 58 | 27°13'04 | 7°R17 | 4°43 | 13°36 | 23°59 | 26° 1 | 4°57 | 12° 6 | 28°21 | 25°47 | 26°16 | 24°58 | 27°26 | 25° 4 | S 17 |
| S 18 | 9 47 55 | 28°13'45 | 20°59 | 6°32 | 14°51 | 24°46 | 25°55 | 4°54 | 12° 3 | 28°22 | 25°45 | 26° 7 | 24°55 | 27°33 | 25° 7 | S 18 |
| M19 | 9 51 51 | 29°14'24 | 4°R28 | 8°22 | 16° 7 | 25°33 | 25°49 | 4°51 | 12° 1 | 28°22 | 25°44 | 25°57 | 24°52 | 27°39 | 25°10 | M19 |
| T 20 | 9 55 48 | 0°15'02 | 17°41 | 10°12 | 17°22 | 26°21 | 25°44 | 4°47 | 11°58 | 28°22 | 25°42 | 25°45 | 24°49 | 27°46 | 25°14 | T 20 |
| W21 | 9 59 44 | 1°15'38 | 0°R35 | 12° 1 | 18°37 | 27° 8 | 25°38 | 4°44 | 11°56 | 28°23 | 25°41 | 25°34 | 24°45 | 27°53 | 25°17 | W21 |
| T 22 | 10 3 41 | 2°16'12 | 13°12 | 13°50 | 19°52 | 27°55 | 25°33 | 4°40 | 11°53 | 28°23 | 25°40 | 25°23 | 24°42 | 27°59 | 25°21 | T 22 |
| F 23 | 10 7 37 | 3°16'45 | 25°31 | 15°38 | 21° 7 | 28°43 | 25°28 | 4°37 | 11°50 | 28°24 | 25°38 | 25°14 | 24°39 | 28° 6 | 25°24 | F 23 |
| S 24 | 10 11 34 | 4°17'16 | 7°R36 | 17°25 | 22°22 | 29°30 | 25°23 | 4°33 | 11°48 | 28°24 | 25°37 | 25° 9 | 24°36 | 28°13 | 25°28 | S 24 |
| S 25 | 10 15 30 | 5°17'45 | 19°31 | 19°10 | 23°37 | 0°R18 | 25°18 | 4°29 | 11°45 | 28°25 | 25°35 | 25° 5 | 24°33 | 28°19 | 25°31 | S 25 |
| M26 | 10 19 27 | 6°18'13 | 1°R20 | 20°53 | 24°52 | 1° 5 | 25°14 | 4°26 | 11°43 | 28°25 | 25°34 | 25° 4 | 24°30 | 28°26 | 25°35 | M26 |
| T 27 | 10 23 23 | 7°18'38 | 13° 9 | 22°34 | 26° 7 | 1°52 | 25° 9 | 4°22 | 11°40 | 28°26 | 25°32 | 25°D 4 | 24°26 | 28°33 | 25°38 | T 27 |
| W28 | 10 27 20 | 8°19'02 | 25° 2 | 24°12 | 27°22 | 2°40 | 25° 5 | 4°18 | 11°37 | 28°27 | 25°31 | 25°R 4 | 24°23 | 28°39 | 25°42 | W28 |
| T 29 | 10 31 17 | 9°19'24 | 7°R 7 | 25°R46 | 28°R37 | 3°R27 | 25°R 1 | 4°14 | 11°R35 | 28°R27 | 25°R29 | 25°R 3 | 24°R20 | 28°R46 | 25°R45 | T 29 |

Delta T = 179.57 sec

ASTRODIENST EPHEMERIS for the year 2216

geocentric

MARCH 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|
| F 1 | 10 35 13 | 10 ^h 19'44 | 19 ^h 27' | 27 ^h 17' | 29 ^h 52' | 4 ^h 15' | 24 ^h 57' | 4 ^h 10' | 11 ^h 32' | 28 ^h 28' | 25 ^h 28' | 25 ^h 01' | 24 ^h 17' | 28 ^h 53' | 25 ^h 49' | F 1 |
| S 2 | 10 39 10 | 11 ^h 20'02 | 2 ^h 07' | 28 ^h 42' | 1 ^h 07' | 5 ^h 02' | 24 ^h 54' | 4 ^h 05' | 11 ^h 30' | 28 ^h 29' | 25 ^h 26' | 24 ^h 56' | 24 ^h 14' | 28 ^h 59' | 25 ^h 53' | S 2 |
| S 3 | 10 43 6 | 12 ^h 20'18 | 15 ^h 09' | 0 ^h 03' | 2 ^h 21' | 5 ^h 49' | 24 ^h 50' | 4 ^h 01' | 11 ^h 27' | 28 ^h 30' | 25 ^h 24' | 24 ^h 48' | 24 ^h 10' | 29 ^h 06' | 25 ^h 56' | S 3 |
| M 4 | 10 47 3 | 13 ^h 20'32 | 28 ^h 34' | 1 ^h 17' | 3 ^h 36' | 6 ^h 37' | 24 ^h 47' | 3 ^h 57' | 11 ^h 24' | 28 ^h 31' | 25 ^h 23' | 24 ^h 38' | 24 ^h 07' | 29 ^h 12' | 26 ^h 00' | M 4 |
| T 5 | 10 50 59 | 14 ^h 20'44 | 12 ^h 20' | 2 ^h 25' | 4 ^h 51' | 7 ^h 24' | 24 ^h 44' | 3 ^h 53' | 11 ^h 22' | 28 ^h 31' | 25 ^h 21' | 24 ^h 26' | 24 ^h 04' | 29 ^h 19' | 26 ^h 03' | T 5 |
| W 6 | 10 54 56 | 15 ^h 20'55 | 26 ^h 25' | 3 ^h 26' | 6 ^h 06' | 8 ^h 11' | 24 ^h 41' | 3 ^h 48' | 11 ^h 19' | 28 ^h 32' | 25 ^h 20' | 24 ^h 14' | 24 ^h 01' | 29 ^h 26' | 26 ^h 07' | W 6 |
| T 7 | 10 58 52 | 16 ^h 21'03 | 10 ^h 42' | 4 ^h 19' | 7 ^h 21' | 8 ^h 59' | 24 ^h 38' | 3 ^h 44' | 11 ^h 16' | 28 ^h 33' | 25 ^h 18' | 24 ^h 02' | 23 ^h 58' | 29 ^h 32' | 26 ^h 11' | T 7 |
| F 8 | 11 2 49 | 17 ^h 21'10 | 25 ^h 06' | 5 ^h 05' | 8 ^h 36' | 9 ^h 46' | 24 ^h 36' | 3 ^h 40' | 11 ^h 14' | 28 ^h 34' | 25 ^h 17' | 23 ^h 53' | 23 ^h 55' | 29 ^h 39' | 26 ^h 14' | F 8 |
| S 9 | 11 6 46 | 18 ^h 21'16 | 9 ^h 31' | 5 ^h 41' | 9 ^h 51' | 10 ^h 33' | 24 ^h 33' | 3 ^h 35' | 11 ^h 11' | 28 ^h 35' | 25 ^h 15' | 23 ^h 46' | 23 ^h 51' | 29 ^h 46' | 26 ^h 18' | S 9 |
| S 10 | 11 10 42 | 19 ^h 21'20 | 23 ^h 52' | 6 ^h 09' | 11 ^h 06' | 11 ^h 21' | 24 ^h 31' | 3 ^h 31' | 11 ^h 09' | 28 ^h 36' | 25 ^h 13' | 23 ^h 42' | 23 ^h 48' | 29 ^h 52' | 26 ^h 22' | S 10 |
| M 11 | 11 14 39 | 20 ^h 21'23 | 8 ^h 07' | 6 ^h 28' | 12 ^h 21' | 12 ^h 08' | 24 ^h 29' | 3 ^h 26' | 11 ^h 06' | 28 ^h 37' | 25 ^h 12' | 23 ^h 40' | 23 ^h 45' | 29 ^h 59' | 26 ^h 25' | M 11 |
| T 12 | 11 18 35 | 21 ^h 21'24 | 22 ^h 11' | 6 ^h 38' | 13 ^h 35' | 12 ^h 55' | 24 ^h 27' | 3 ^h 22' | 11 ^h 03' | 28 ^h 38' | 25 ^h 10' | 23 ^h 40' | 23 ^h 42' | 0 ^h 02' | 26 ^h 29' | T 12 |
| W 13 | 11 22 32 | 22 ^h 21'23 | 6 ^h 37' | 6 ^h 39' | 14 ^h 50' | 13 ^h 43' | 24 ^h 26' | 3 ^h 17' | 11 ^h 01' | 28 ^h 39' | 25 ^h 09' | 23 ^h 40' | 23 ^h 39' | 0 ^h 12' | 26 ^h 33' | W 13 |
| T 14 | 11 26 28 | 23 ^h 21'21 | 19 ^h 53' | 6 ^h 31' | 16 ^h 05' | 14 ^h 30' | 24 ^h 24' | 3 ^h 13' | 10 ^h 58' | 28 ^h 41' | 25 ^h 07' | 23 ^h 38' | 23 ^h 35' | 0 ^h 19' | 26 ^h 36' | T 14 |
| F 15 | 11 30 25 | 24 ^h 21'17 | 3 ^h 30' | 6 ^h 14' | 17 ^h 20' | 15 ^h 17' | 24 ^h 23' | 3 ^h 08' | 10 ^h 56' | 28 ^h 42' | 25 ^h 05' | 23 ^h 34' | 23 ^h 32' | 0 ^h 26' | 26 ^h 40' | F 15 |
| S 16 | 11 34 21 | 25 ^h 21'11 | 16 ^h 57' | 5 ^h 49' | 18 ^h 35' | 16 ^h 05' | 24 ^h 22' | 3 ^h 03' | 10 ^h 53' | 28 ^h 43' | 25 ^h 04' | 23 ^h 27' | 23 ^h 29' | 0 ^h 32' | 26 ^h 44' | S 16 |
| S 17 | 11 38 18 | 26 ^h 21'04 | 0 ^h 15' | 5 ^h 17' | 19 ^h 50' | 16 ^h 52' | 24 ^h 21' | 2 ^h 59' | 10 ^h 51' | 28 ^h 44' | 25 ^h 02' | 23 ^h 18' | 23 ^h 26' | 0 ^h 39' | 26 ^h 48' | S 17 |
| M 18 | 11 42 15 | 27 ^h 20'55 | 13 ^h 20' | 4 ^h 38' | 21 ^h 04' | 17 ^h 39' | 24 ^h 21' | 2 ^h 54' | 10 ^h 48' | 28 ^h 45' | 25 ^h 00' | 23 ^h 05' | 23 ^h 23' | 0 ^h 46' | 26 ^h 51' | M 18 |
| T 19 | 11 46 11 | 28 ^h 20'44 | 26 ^h 14' | 3 ^h 54' | 22 ^h 19' | 18 ^h 26' | 24 ^h 20' | 2 ^h 49' | 10 ^h 46' | 28 ^h 47' | 24 ^h 59' | 22 ^h 52' | 23 ^h 20' | 0 ^h 52' | 26 ^h 55' | T 19 |
| W 20 | 11 50 8 | 29 ^h 20'31 | 8 ^h 04' | 3 ^h 05' | 23 ^h 34' | 19 ^h 13' | 24 ^h 20' | 2 ^h 44' | 10 ^h 43' | 28 ^h 48' | 24 ^h 57' | 22 ^h 38' | 23 ^h 16' | 0 ^h 59' | 26 ^h 59' | W 20 |
| T 21 | 11 54 4 | 0 ^h 20'16 | 21 ^h 20' | 2 ^h 13' | 24 ^h 49' | 20 ^h 01' | 24 ^h 20' | 2 ^h 40' | 10 ^h 41' | 28 ^h 49' | 24 ^h 56' | 22 ^h 25' | 23 ^h 13' | 1 ^h 06' | 27 ^h 02' | T 21 |
| F 22 | 11 58 1 | 1 ^h 19'58 | 3 ^h 32' | 1 ^h 18' | 26 ^h 03' | 20 ^h 48' | 24 ^h 20' | 2 ^h 35' | 10 ^h 38' | 28 ^h 51' | 24 ^h 54' | 22 ^h 15' | 23 ^h 10' | 1 ^h 12' | 27 ^h 06' | F 22 |
| S 23 | 12 1 57 | 2 ^h 19'39 | 15 ^h 34' | 0 ^h 23' | 27 ^h 18' | 21 ^h 35' | 24 ^h 21' | 2 ^h 30' | 10 ^h 36' | 28 ^h 52' | 24 ^h 52' | 22 ^h 07' | 23 ^h 07' | 1 ^h 19' | 27 ^h 10' | S 23 |
| S 24 | 12 5 54 | 3 ^h 19'18 | 27 ^h 26' | 29 ^h 27' | 28 ^h 33' | 22 ^h 22' | 24 ^h 21' | 2 ^h 26' | 10 ^h 34' | 28 ^h 53' | 24 ^h 51' | 22 ^h 02' | 23 ^h 04' | 1 ^h 26' | 27 ^h 13' | S 24 |
| M 25 | 12 9 50 | 4 ^h 18'54 | 9 ^h 11' | 28 ^h 33' | 29 ^h 47' | 23 ^h 09' | 24 ^h 22' | 2 ^h 21' | 10 ^h 31' | 28 ^h 55' | 24 ^h 49' | 22 ^h 00' | 23 ^h 01' | 1 ^h 32' | 27 ^h 17' | M 25 |
| T 26 | 12 13 47 | 5 ^h 18'29 | 21 ^h 02' | 27 ^h 41' | 1 ^h 07' | 23 ^h 56' | 24 ^h 23' | 2 ^h 16' | 10 ^h 29' | 28 ^h 56' | 24 ^h 48' | 21 ^h 59' | 22 ^h 57' | 1 ^h 39' | 27 ^h 21' | T 26 |
| W 27 | 12 17 44 | 6 ^h 18'01 | 2 ^h 54' | 26 ^h 53' | 2 ^h 17' | 24 ^h 43' | 24 ^h 24' | 2 ^h 11' | 10 ^h 27' | 28 ^h 58' | 24 ^h 46' | 21 ^h 59' | 22 ^h 54' | 1 ^h 46' | 27 ^h 24' | W 27 |
| T 28 | 12 21 40 | 7 ^h 17'30 | 14 ^h 58' | 26 ^h 08' | 3 ^h 31' | 25 ^h 31' | 24 ^h 25' | 2 ^h 07' | 10 ^h 24' | 28 ^h 59' | 24 ^h 45' | 21 ^h 59' | 22 ^h 51' | 1 ^h 52' | 27 ^h 28' | T 28 |
| F 29 | 12 25 37 | 8 ^h 16'58 | 27 ^h 17' | 25 ^h 29' | 4 ^h 46' | 26 ^h 18' | 24 ^h 27' | 2 ^h 02' | 10 ^h 22' | 29 ^h 01' | 24 ^h 43' | 21 ^h 57' | 22 ^h 48' | 1 ^h 59' | 27 ^h 32' | F 29 |
| S 30 | 12 29 33 | 9 ^h 16'23 | 9 ^h 57' | 24 ^h 54' | 6 ^h 01' | 27 ^h 05' | 24 ^h 29' | 1 ^h 57' | 10 ^h 20' | 29 ^h 03' | 24 ^h 41' | 21 ^h 54' | 22 ^h 45' | 2 ^h 06' | 27 ^h 35' | S 30 |
| S 31 | 12 33 30 | 10 ^h 15'46 | 23 ^h 02' | 24 ^h 25' | 7 ^h 15' | 27 ^h 52' | 24 ^h 31' | 1 ^h 53' | 10 ^h 18' | 29 ^h 04' | 24 ^h 40' | 21 ^h 47' | 22 ^h 41' | 2 ^h 12' | 27 ^h 39' | S 31 |

Delta T = 179.66 sec

APRIL 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|--------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|------|
| M 1 | 12 37 26 | 11°15'06 | 6°34 | 24°R 1 | 8°Y30 | 28°X38 | 24°33 | 1°R48 | 10°R16 | 29°6 | 24°R38 | 21°R39 | 22°X38 | 2°II19 | 27°X43 | M 1 |
| T 2 | 12 41 23 | 12°14'24 | 20°32 | 23°X44 | 9°44 | 29°25 | 24°35 | 1°43 | 10°14 | 29°7 | 24°37 | 21°X29 | 22°35 | 2°25 | 27°46 | T 2 |
| W 3 | 12 45 19 | 13°13'40 | 4°54 | 23°32 | 10°59 | 0°Y12 | 24°37 | 1°39 | 10°11 | 29°9 | 24°35 | 21°18 | 22°32 | 2°32 | 27°50 | W 3 |
| T 4 | 12 49 16 | 14°12'54 | 19°33 | 23°26 | 12°13 | 0°59 | 24°40 | 1°34 | 10°9 | 29°11 | 24°34 | 21°8 | 22°29 | 2°39 | 27°53 | T 4 |
| F 5 | 12 53 12 | 15°12'06 | 4°12 | 23°D26 | 13°28 | 1°46 | 24°43 | 1°30 | 10°7 | 29°13 | 24°32 | 20°59 | 22°26 | 2°45 | 27°57 | F 5 |
| S 6 | 12 57 9 | 16°11'16 | 19°13 | 23°31 | 14°42 | 2°33 | 24°46 | 1°25 | 10°5 | 29°14 | 24°31 | 20°53 | 22°22 | 2°52 | 28°1 | S 6 |
| S 7 | 13 1 6 | 17°10'25 | 3°X58 | 23°41 | 15°57 | 3°20 | 24°49 | 1°21 | 10°4 | 29°16 | 24°29 | 20°50 | 22°19 | 2°59 | 28°4 | S 7 |
| M 8 | 13 5 2 | 18°9'32 | 18°30 | 23°57 | 17°11 | 4°6 | 24°52 | 1°16 | 10°2 | 29°18 | 24°28 | 20°D49 | 22°16 | 3°5 | 28°8 | M 8 |
| T 9 | 13 8 59 | 19°8'36 | 2°X47 | 24°17 | 18°26 | 4°53 | 24°56 | 1°12 | 10°0 | 29°20 | 24°26 | 20°49 | 22°13 | 3°12 | 28°11 | T 9 |
| W 10 | 13 12 55 | 20°7'40 | 16°46 | 24°43 | 19°40 | 5°40 | 25°0 | 1°8 | 9°58 | 29°21 | 24°25 | 20°R50 | 22°10 | 3°19 | 28°15 | W 10 |
| T 11 | 13 16 52 | 21°6'41 | 0°X29 | 25°12 | 20°55 | 6°26 | 25°3 | 1°3 | 9°56 | 29°23 | 24°24 | 20°49 | 22°7 | 3°25 | 28°18 | T 11 |
| F 12 | 13 20 48 | 22°5'41 | 13°55 | 25°46 | 22°9 | 7°13 | 25°7 | 0°59 | 9°54 | 29°25 | 24°22 | 20°47 | 22°3 | 3°32 | 28°22 | F 12 |
| S 13 | 13 24 45 | 23°4'39 | 27°6 | 26°25 | 23°23 | 8°0 | 25°12 | 0°55 | 9°53 | 29°27 | 24°21 | 20°42 | 22°0 | 3°39 | 28°25 | S 13 |
| S 14 | 13 28 41 | 24°3'35 | 10°X4 | 27°6 | 24°38 | 8°46 | 25°16 | 0°51 | 9°51 | 29°29 | 24°19 | 20°36 | 21°57 | 3°45 | 28°28 | S 14 |
| M 15 | 13 32 38 | 25°2'29 | 22°49 | 27°52 | 25°52 | 9°33 | 25°21 | 0°47 | 9°49 | 29°31 | 24°18 | 20°27 | 21°54 | 3°52 | 28°32 | M 15 |
| T 16 | 13 36 35 | 26°1'21 | 5°Y23 | 28°41 | 27°6 | 10°19 | 25°25 | 0°42 | 9°48 | 29°33 | 24°17 | 20°17 | 21°51 | 3°59 | 28°35 | T 16 |
| W 17 | 13 40 31 | 27°0'12 | 17°45 | 29°33 | 28°21 | 11°6 | 25°30 | 0°38 | 9°46 | 29°35 | 24°15 | 20°7 | 21°47 | 4°5 | 28°38 | W 17 |
| T 18 | 13 44 28 | 27°59'00 | 29°58 | 0°Y28 | 29°35 | 11°52 | 25°35 | 0°35 | 9°45 | 29°37 | 24°14 | 19°57 | 21°44 | 4°12 | 28°42 | T 18 |
| F 19 | 13 48 24 | 28°57'47 | 12°X1 | 1°27 | 0°X49 | 12°39 | 25°41 | 0°31 | 9°43 | 29°39 | 24°13 | 19°49 | 21°41 | 4°19 | 28°45 | F 19 |
| S 20 | 13 52 21 | 29°56'32 | 23°56 | 2°28 | 2°4 | 13°25 | 25°46 | 0°27 | 9°42 | 29°41 | 24°12 | 19°44 | 21°38 | 4°25 | 28°48 | S 20 |
| S 21 | 13 56 17 | 0°X55'14 | 5°II45 | 3°31 | 3°18 | 14°11 | 25°51 | 0°23 | 9°41 | 29°43 | 24°10 | 19°41 | 21°35 | 4°32 | 28°52 | S 21 |
| M 22 | 14 0 14 | 1°53'55 | 17°31 | 4°38 | 4°32 | 14°58 | 25°57 | 0°19 | 9°39 | 29°45 | 24°9 | 19°D39 | 21°32 | 4°39 | 28°55 | M 22 |
| T 23 | 14 4 10 | 2°52'33 | 29°19 | 5°47 | 5°46 | 15°44 | 26°3 | 0°16 | 9°38 | 29°47 | 24°8 | 19°40 | 21°28 | 4°45 | 28°58 | T 23 |
| W 24 | 14 8 7 | 3°51'10 | 11°51 | 6°58 | 7°1 | 16°30 | 26°9 | 0°12 | 9°37 | 29°49 | 24°7 | 19°41 | 21°25 | 4°52 | 29°1 | W 24 |
| T 25 | 14 12 4 | 4°49'44 | 23°14 | 8°12 | 8°15 | 17°16 | 26°15 | 0°9 | 9°36 | 29°51 | 24°6 | 19°42 | 21°22 | 4°58 | 29°4 | T 25 |
| F 26 | 14 16 0 | 5°48'16 | 5°X31 | 9°27 | 9°29 | 18°3 | 26°21 | 0°5 | 9°35 | 29°53 | 24°5 | 19°R43 | 21°19 | 5°5 | 29°8 | F 26 |
| S 27 | 14 19 57 | 6°46'46 | 18°8 | 10°45 | 10°43 | 18°49 | 26°28 | 0°2 | 9°33 | 29°55 | 24°3 | 19°42 | 21°16 | 5°12 | 29°11 | S 27 |
| S 28 | 14 23 53 | 7°45'13 | 1°10 | 12°5 | 11°57 | 19°35 | 26°34 | 29°10 | 9°32 | 29°57 | 24°2 | 19°40 | 21°12 | 5°18 | 29°14 | S 28 |
| M 29 | 14 27 50 | 8°43'39 | 14°39 | 13°28 | 13°11 | 20°21 | 26°41 | 29°56 | 9°31 | 29°59 | 24°1 | 19°36 | 21°9 | 5°25 | 29°17 | M 29 |
| T 30 | 14 31 46 | 9°X42'02 | 28°10 | 14°Y52 | 14°X25 | 21°Y7 | 26°X48 | 29°10 | 9°31 | 0°II1 | 24°10 | 19°X31 | 21°X6 | 5°II32 | 29°X20 | T 30 |

ASTRODIENST EPHEMERIS for the year 2216

geocentric

MAY 2216

00:00 UT

| Day | Sid.t | ☉ | ☾ | ♂ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------|--------|---------|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|------|
| W 1 | 14 35 43 | 10♂40'23 | 13♂ 2 | 16♂18 | 15♂39 | 21♂53 | 26♂55 | 29♂R50 | 9♂R30 | 0♂II 4 | 23♂R59 | 19♂R25 | 21♂ 3 | 5♂II38 | 29♂K23 | W 1 |
| T 2 | 14 39 39 | 11°38'43 | 27°49 | 17°46 | 16°53 | 22°38 | 27° 2 | 29♂47 | 9♂29 | 0° 6 | 23♂58 | 19♂19 | 21° 0 | 5°45 | 29°26 | T 2 |
| F 3 | 14 43 36 | 12°37'00 | 12♂52 | 19°16 | 18° 7 | 23°24 | 27° 9 | 29°44 | 9°28 | 0° 8 | 23°57 | 19°14 | 20°57 | 5°52 | 29°29 | F 3 |
| S 4 | 14 47 33 | 13°35'16 | 28° 0 | 20°48 | 19°21 | 24°10 | 27°17 | 29°41 | 9°27 | 0°10 | 23°56 | 19°11 | 20°53 | 5°58 | 29°31 | S 4 |
| S 5 | 14 51 29 | 14°33'30 | 13♂ 5 | 22°22 | 20°35 | 24°56 | 27°24 | 29°38 | 9°27 | 0°12 | 23°56 | 19°D10 | 20°50 | 6° 5 | 29°34 | S 5 |
| M 6 | 14 55 26 | 15°31'43 | 27°57 | 23°58 | 21°49 | 25°42 | 27°32 | 29°36 | 9°26 | 0°14 | 23°55 | 19°10 | 20°47 | 6°12 | 29°37 | M 6 |
| T 7 | 14 59 22 | 16°29'54 | 12♂32 | 25°36 | 23° 3 | 26°27 | 27°40 | 29°33 | 9°26 | 0°17 | 23°54 | 19°11 | 20°44 | 6°18 | 29°40 | T 7 |
| W 8 | 15 3 19 | 17°28'04 | 26°44 | 27°15 | 24°17 | 27°13 | 27°48 | 29°31 | 9°25 | 0°19 | 23°53 | 19°12 | 20°41 | 6°25 | 29°43 | W 8 |
| T 9 | 15 7 15 | 18°26'12 | 10♂34 | 28°57 | 25°31 | 27°58 | 27°56 | 29°29 | 9°25 | 0°21 | 23°52 | 19°13 | 20°38 | 6°32 | 29°45 | T 9 |
| F 10 | 15 11 12 | 19°24'19 | 24° 0 | 0♂40 | 26°45 | 28°44 | 28° 4 | 29°27 | 9°24 | 0°23 | 23°51 | 19°R14 | 20°34 | 6°38 | 29°48 | F 10 |
| S 11 | 15 15 8 | 20°22'24 | 7♂ 7 | 2°25 | 27°59 | 29°29 | 28°12 | 29°24 | 9°24 | 0°25 | 23°51 | 19°13 | 20°31 | 6°45 | 29°51 | S 11 |
| S 12 | 15 19 5 | 21°20'28 | 19°55 | 4°12 | 29°13 | 0♂15 | 28°21 | 29°22 | 9°24 | 0°28 | 23°50 | 19°10 | 20°28 | 6°52 | 29°53 | S 12 |
| M13 | 15 23 2 | 22°18'31 | 2♂27 | 6° 2 | 0♂II27 | 1° 0 | 28°29 | 29°20 | 9°23 | 0°30 | 23°49 | 19° 7 | 20°25 | 6°58 | 29°56 | M13 |
| T 14 | 15 26 58 | 23°16'32 | 14°46 | 7°52 | 1°41 | 1°46 | 28°38 | 29°19 | 9°23 | 0°32 | 23°49 | 19° 3 | 20°22 | 7° 5 | 29°58 | T 14 |
| W15 | 15 30 55 | 24°14'32 | 26°55 | 9°45 | 2°55 | 2°31 | 28°47 | 29°17 | 9°23 | 0°34 | 23°48 | 18°58 | 20°18 | 7°11 | 0♂Y 1 | W15 |
| T 16 | 15 34 51 | 25°12'30 | 8♂55 | 11°40 | 4° 9 | 3°16 | 28°56 | 29°15 | 9°23 | 0°37 | 23°47 | 18°54 | 20°15 | 7°18 | 0° 3 | T 16 |
| F 17 | 15 38 48 | 26°10'27 | 20°49 | 13°37 | 5°22 | 4° 1 | 29° 5 | 29°14 | 9°D23 | 0°39 | 23°47 | 18°51 | 20°12 | 7°25 | 0° 6 | F 17 |
| S 18 | 15 42 44 | 27° 8'23 | 2♂II39 | 15°35 | 6°36 | 4°47 | 29°14 | 29°12 | 9°23 | 0°41 | 23°46 | 18°49 | 20° 9 | 7°31 | 0° 8 | S 18 |
| S 19 | 15 46 41 | 28° 6'17 | 14°26 | 17°35 | 7°50 | 5°32 | 29°23 | 29°11 | 9°23 | 0°43 | 23°46 | 18°D48 | 20° 6 | 7°38 | 0°10 | S 19 |
| M20 | 15 50 37 | 29° 4'09 | 26°13 | 19°37 | 9° 4 | 6°17 | 29°32 | 29°10 | 9°23 | 0°46 | 23°45 | 18°48 | 20° 3 | 7°45 | 0°13 | M20 |
| T 21 | 15 54 34 | 0♂II 2 | 8♂ 3 | 21°41 | 10°18 | 7° 2 | 29°42 | 29° 8 | 9°23 | 0°48 | 23°45 | 18°49 | 19°59 | 7°51 | 0°15 | T 21 |
| W22 | 15 58 31 | 0°59'50 | 19°59 | 23°46 | 11°31 | 7°47 | 29°51 | 29° 7 | 9°24 | 0°50 | 23°44 | 18°51 | 19°56 | 7°58 | 0°17 | W22 |
| T 23 | 16 2 27 | 1°57'37 | 2♂ 4 | 25°53 | 12°45 | 8°32 | 0♂ 1 | 29° 6 | 9°24 | 0°52 | 23°44 | 18°52 | 19°53 | 8° 5 | 0°19 | T 23 |
| F 24 | 16 6 24 | 2°55'23 | 14°23 | 28° 1 | 13°59 | 9°16 | 0°11 | 29° 6 | 9°24 | 0°55 | 23°44 | 18°53 | 19°50 | 8°11 | 0°21 | F 24 |
| S 25 | 16 10 20 | 3°53'08 | 26°59 | 0♂II10 | 15°12 | 10° 1 | 0°20 | 29° 5 | 9°25 | 0°57 | 23°43 | 18°54 | 19°47 | 8°18 | 0°23 | S 25 |
| S 26 | 16 14 17 | 4°50'51 | 9♂58 | 2°21 | 16°26 | 10°46 | 0°30 | 29° 4 | 9°25 | 0°59 | 23°43 | 18°R54 | 19°44 | 8°25 | 0°25 | S 26 |
| M27 | 16 18 13 | 5°48'32 | 23°20 | 4°32 | 17°40 | 11°31 | 0°40 | 29° 4 | 9°26 | 1° 1 | 23°43 | 18°54 | 19°40 | 8°31 | 0°27 | M27 |
| T 28 | 16 22 10 | 6°46'12 | 7♂10 | 6°43 | 18°53 | 12°15 | 0°50 | 29° 3 | 9°26 | 1° 4 | 23°43 | 18°53 | 19°37 | 8°38 | 0°29 | T 28 |
| W29 | 16 26 6 | 7°43'50 | 21°26 | 8°55 | 20° 7 | 13° 0 | 1° 1 | 29° 3 | 9°27 | 1° 6 | 23°42 | 18°51 | 19°34 | 8°45 | 0°31 | W29 |
| T 30 | 16 30 3 | 8°41'27 | 6♂ 7 | 11° 7 | 21°21 | 13°44 | 1°11 | 29° 3 | 9°27 | 1° 8 | 23°42 | 18°50 | 19°31 | 8°51 | 0°33 | T 30 |
| F 31 | 16 34 0 | 9♂II39'02 | 21♂ 6 | 13♂II18 | 22♂II34 | 14♂829 | 1♂II21 | 29♂ 3 | 9♂28 | 1♂II10 | 23♂42 | 18♂49 | 19♂28 | 8♂II58 | 0♂Y35 | F 31 |

Delta T = 179.84 sec

JUNE 2216

00:00 UT

| Day | Sid.t | ☉ | ☾ | ♂ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|------------|---------|---------|---------|--------|--------|--------|-------|--------|--------|--------|-------|---------|-------|------|
| S 1 | 16 37 56 | 10♂II36'36 | 6♂17 | 15♂II29 | 23♂II48 | 15♂813 | 1♂II32 | 29°D 3 | 9♂29 | 1♂II13 | 23°R42 | 18°R48 | 19♂24 | 9♂II 4 | 0♂Y36 | S 1 |
| S 2 | 16 41 53 | 11°34'09 | 21°29 | 17°40 | 25° 1 | 15°57 | 1°42 | 29♂ 3 | 9°30 | 1°15 | 23♂42 | 18°D48 | 19°21 | 9°11 | 0°38 | S 2 |
| M 3 | 16 45 49 | 12°31'44 | 6♂34 | 19°49 | 26°15 | 16°42 | 1°53 | 29° 3 | 9°31 | 1°17 | 23°42 | 18♂49 | 19°18 | 9°18 | 0°40 | M 3 |
| T 4 | 16 49 46 | 13°29'13 | 21°22 | 21°56 | 27°28 | 17°26 | 2° 4 | 29° 3 | 9°32 | 1°19 | 23°D42 | 18°49 | 19°15 | 9°24 | 0°41 | T 4 |
| W 5 | 16 53 42 | 14°26'43 | 5♂49 | 24° 3 | 28°42 | 18°10 | 2°15 | 29° 3 | 9°33 | 1°21 | 23°42 | 18°49 | 19°12 | 9°31 | 0°43 | W 5 |
| T 6 | 16 57 39 | 15°24'12 | 19°50 | 26° 7 | 29°55 | 18°54 | 2°25 | 29° 4 | 9°34 | 1°24 | 23°42 | 18°50 | 19° 9 | 9°38 | 0°44 | T 6 |
| F 7 | 17 1 35 | 16°21'41 | 3♂24 | 28°10 | 1♂ 9 | 19°38 | 2°36 | 29° 5 | 9°35 | 1°26 | 23°42 | 18°50 | 19° 5 | 9°44 | 0°46 | F 7 |
| S 8 | 17 5 32 | 17°19'08 | 16°34 | 0♂II11 | 2°22 | 20°22 | 2°47 | 29° 5 | 9°36 | 1°28 | 23°42 | 18°R50 | 19° 2 | 9°51 | 0°47 | S 8 |
| S 9 | 17 9 29 | 18°16'36 | 29°20 | 2° 9 | 3°36 | 21° 6 | 2°59 | 29° 6 | 9°37 | 1°30 | 23°42 | 18°50 | 18°59 | 9°58 | 0°48 | S 9 |
| M10 | 17 13 25 | 19°14'02 | 11♂Y48 | 4° 5 | 4°49 | 21°50 | 3°10 | 29° 7 | 9°38 | 1°32 | 23°42 | 18°D50 | 18°56 | 10° 4 | 0°50 | M10 |
| T 11 | 17 17 22 | 20°11'28 | 24° 0 | 5°59 | 6° 3 | 22°34 | 3°21 | 29° 8 | 9°40 | 1°35 | 23°43 | 18°50 | 18°53 | 10°11 | 0°51 | T 11 |
| W12 | 17 21 18 | 21° 8'53 | 6♂ 0 | 7°50 | 7°16 | 23°18 | 3°32 | 29° 9 | 9°41 | 1°37 | 23°43 | 18°50 | 18°50 | 10°18 | 0°52 | W12 |
| T 13 | 17 25 15 | 22° 6'18 | 17°53 | 9°39 | 8°30 | 24° 2 | 3°44 | 29°10 | 9°42 | 1°39 | 23°43 | 18°51 | 18°46 | 10°24 | 0°53 | T 13 |
| F 14 | 17 29 11 | 23° 3'42 | 29°42 | 11°26 | 9°43 | 24°45 | 3°55 | 29°11 | 9°44 | 1°41 | 23°44 | 18°51 | 18°43 | 10°31 | 0°54 | F 14 |
| S 15 | 17 33 8 | 24° 1'05 | 11♂II28 | 13°10 | 10°56 | 25°29 | 4° 7 | 29°13 | 9°45 | 1°43 | 23°44 | 18°51 | 18°40 | 10°38 | 0°55 | S 15 |
| S 16 | 17 37 5 | 24°58'28 | 23°16 | 14°51 | 12°10 | 26°13 | 4°18 | 29°14 | 9°47 | 1°45 | 23°44 | 18°R51 | 18°37 | 10°44 | 0°56 | S 16 |
| M17 | 17 41 1 | 25°55'50 | 5♂ 7 | 16°30 | 13°23 | 26°56 | 4°30 | 29°16 | 9°48 | 1°47 | 23°45 | 18°51 | 18°34 | 10°51 | 0°57 | M17 |
| T 18 | 17 44 58 | 26°53'12 | 17° 4 | 18° 6 | 14°36 | 27°40 | 4°42 | 29°18 | 9°50 | 1°49 | 23°45 | 18°50 | 18°30 | 10°57 | 0°58 | T 18 |
| W19 | 17 48 54 | 27°50'32 | 29° 8 | 19°39 | 15°50 | 28°23 | 4°53 | 29°19 | 9°52 | 1°51 | 23°46 | 18°49 | 18°27 | 11° 4 | 0°59 | W19 |
| T 20 | 17 52 51 | 28°47'52 | 11♂II23 | 21°10 | 17° 3 | 29° 6 | 5° 5 | 29°21 | 9°53 | 1°54 | 23°46 | 18°48 | 18°24 | 11°11 | 1° 0 | T 20 |
| F 21 | 17 56 47 | 29°45'11 | 23°50 | 22°39 | 18°16 | 29°50 | 5°17 | 29°23 | 9°55 | 1°56 | 23°47 | 18°47 | 18°21 | 11°17 | 1° 1 | F 21 |
| S 22 | 18 0 44 | 0♂42'29 | 6♂32 | 24° 4 | 19°30 | 0♂II33 | 5°29 | 29°25 | 9°57 | 1°58 | 23°47 | 18°45 | 18°18 | 11°24 | 1° 1 | S 22 |
| S 23 | 18 4 40 | 1°39'46 | 19°31 | 25°27 | 20°43 | 1°16 | 5°41 | 29°28 | 9°59 | 2° 0 | 23°48 | 18°45 | 18°15 | 11°31 | 1° 2 | S 23 |
| M24 | 18 8 37 | 2°37'03 | 2♂50 | 26°47 | 21°56 | 1°59 | 5°53 | 29°30 | 10° 1 | 2° 2 | 23°48 | 18°D44 | 18°11 | 11°37 | 1° 2 | M24 |
| T 25 | 18 12 34 | 3°34'19 | 16°32 | 28° 5 | 23° 9 | 2°42 | 6° 5 | 29°32 | 10° 3 | 2° 4 | 23°49 | 18°45 | 18° 8 | 11°44 | 1° 3 | T 25 |
| W26 | 18 16 30 | 4°31'34 | 0♂II36 | 29°19 | 24°23 | 3°25 | 6°17 | 29°35 | 10° 5 | 2° 6 | 23°50 | 18°45 | 18° 5 | 11°51 | 1° 3 | W26 |
| T 27 | 18 20 27 | 5°28'48 | 15° 1 | 0♂II31 | 25°36 | 4° 8 | 6°30 | 29°37 | 10° 7 | 2° 8 | 23°50 | 18°47 | 18° 2 | 11°57 | 1° 4 | T 27 |
| F 28 | 18 24 23 | 6°26'02 | 29°45 | 1°39 | 26°49 | 4°51 | 6°42 | 29°40 | 10° 9 | 2° 9 | 23°51 | 18°48 | 17°59 | 12° 4 | 1° 4 | F 28 |
| S 29 | 18 28 20 | 7°23'16 | 14♂43 | 2°45 | 28° 2 | 5°33 | 6°54 | 29°43 | 10°11 | 2°11 | 23°52 | 18°R48 | 17°56 | 12°11 | 1° 4 | S 29 |
| S 30 | 18 32 16 | 8♂II20'29 | 29♂48 | 3♂II48 | 29♂15 | 6♂II16 | 7♂II 7 | 29♂46 | 10♂13 | 2♂II13 | 23♂53 | 18♂48 | 17♂52 | 12♂II17 | 1♂Y 5 | S 30 |

Delta T = 179.93 sec

ASTRODIENST EPHEMERIS for the year 2216

geocentric

JULY 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|---------|-------|--------|-------|-------|-------|-------|-------|------|-------|--------|-------|-------|------|------|
| M 1 | 18 36 13 | 9♉1741 | 14♊50 | 4♋47 | 0♌28 | 6♍59 | 7♎19 | 29♏49 | 10♐16 | 2♑15 | 23♒54 | 18♓47 | 17♓49 | 12♑24 | 1♒5 | M 1 |
| T 2 | 18 40 9 | 10♐1454 | 29♏41 | 5♋43 | 1♌41 | 7♍41 | 7♎31 | 29♏52 | 10♐18 | 2♑17 | 23♒54 | 18♓45 | 17♓46 | 12♑31 | 1♒5 | T 2 |
| W 3 | 18 44 6 | 11♐1206 | 14♊44 | 6♋36 | 2♌54 | 8♍24 | 7♎44 | 29♏55 | 10♐20 | 2♑19 | 23♒55 | 18♓42 | 17♓43 | 12♑37 | 1♒5 | W 3 |
| T 4 | 18 48 3 | 12♐918 | 28♏22 | 7♋25 | 4♌7 | 9♍6 | 7♎57 | 29♏58 | 10♐22 | 2♑21 | 23♒56 | 18♓39 | 17♓40 | 12♑44 | 1♒5 | T 4 |
| F 5 | 18 51 59 | 13♐631 | 12♊4 | 8♋10 | 5♌20 | 9♍49 | 8♎9 | 0♌1 | 10♐25 | 2♑23 | 23♒57 | 18♓36 | 17♓36 | 12♑50 | 1♒5 | F 5 |
| S 6 | 18 55 56 | 14♐343 | 25♏19 | 8♋52 | 6♌33 | 10♍31 | 8♎22 | 0♌5 | 10♐27 | 2♑24 | 23♒58 | 18♓34 | 17♓33 | 12♑57 | 1♒5 | S 6 |
| S 7 | 18 59 52 | 15♐055 | 8♒8 | 9♋30 | 7♌46 | 11♍14 | 8♎34 | 0♌8 | 10♐30 | 2♑26 | 23♒59 | 18♓32 | 17♓30 | 13♑4 | 1♒5 | S 7 |
| M 8 | 19 3 49 | 15♐5808 | 20♓36 | 10♋4 | 8♌59 | 11♍56 | 8♎47 | 0♌12 | 10♐32 | 2♑28 | 24♑0 | 18♓32 | 17♓27 | 13♑10 | 1♒5 | M 8 |
| T 9 | 19 7 45 | 16♐5521 | 2♊47 | 10♋34 | 10♌12 | 12♍38 | 9♎0 | 0♌15 | 10♐35 | 2♑30 | 24♑1 | 18♓33 | 17♓24 | 13♑17 | 1♒4 | T 9 |
| W10 | 19 11 42 | 17♐5235 | 14♋45 | 11♌0 | 11♌25 | 13♍20 | 9♎12 | 0♌19 | 10♐37 | 2♑31 | 24♑2 | 18♓35 | 17♓21 | 13♑24 | 1♒4 | W10 |
| T 11 | 19 15 38 | 18♐4948 | 26♓35 | 11♌22 | 12♍38 | 14♌2 | 9♎25 | 0♌23 | 10♐40 | 2♑33 | 24♑3 | 18♓36 | 17♓17 | 13♑30 | 1♒4 | T 11 |
| F 12 | 19 19 35 | 19♐4702 | 8♑22 | 11♌39 | 13♍51 | 14♌44 | 9♎38 | 0♌27 | 10♐43 | 2♑35 | 24♑5 | 18♓38 | 17♓14 | 13♑37 | 1♒3 | F 12 |
| S 13 | 19 23 32 | 20♐4417 | 20♑9 | 11♌51 | 15♌4 | 15♍26 | 9♎51 | 0♌31 | 10♐45 | 2♑36 | 24♑6 | 18♓38 | 17♓11 | 13♑44 | 1♒3 | S 13 |
| S 14 | 19 27 28 | 21♐4131 | 2♓1 | 11♌59 | 16♌17 | 16♍8 | 10♌4 | 0♌35 | 10♐48 | 2♑38 | 24♑7 | 18♓37 | 17♓8 | 13♑50 | 1♒2 | S 14 |
| M15 | 19 31 25 | 22♐3846 | 13♓59 | 12♌R 2 | 17♍30 | 16♍50 | 10♌17 | 0♌39 | 10♐51 | 2♑40 | 24♑8 | 18♓35 | 17♓5 | 13♑57 | 1♒2 | M15 |
| T 16 | 19 35 21 | 23♐3601 | 26♑6 | 12♌0 | 18♌42 | 17♍31 | 10♌30 | 0♌43 | 10♐54 | 2♑41 | 24♑9 | 18♓31 | 17♓2 | 14♑4 | 1♒1 | T 16 |
| W17 | 19 39 18 | 24♐3316 | 8♑24 | 11♌53 | 19♓55 | 18♌13 | 10♌43 | 0♌47 | 10♐57 | 2♑43 | 24♑11 | 18♓25 | 16♓58 | 14♑10 | 1♒1 | W17 |
| T 18 | 19 43 14 | 25♐3032 | 20♓53 | 11♌42 | 21♌8 | 18♓55 | 10♌56 | 0♌52 | 11♌0 | 2♑44 | 24♑12 | 18♓19 | 16♓55 | 14♑17 | 1♒0 | T 18 |
| F 19 | 19 47 11 | 26♐2747 | 3♑35 | 11♌26 | 22♌21 | 19♍36 | 11♌9 | 0♌56 | 11♌2 | 2♑46 | 24♑13 | 18♓13 | 16♓52 | 14♑23 | 0♓59 | F 19 |
| S 20 | 19 51 7 | 27♐2503 | 16♓31 | 11♌6 | 23♍33 | 20♌18 | 11♌22 | 1♌1 | 11♌5 | 2♑47 | 24♑15 | 18♓7 | 16♓49 | 14♑30 | 0♓58 | S 20 |
| S 21 | 19 55 4 | 28♐2219 | 29♑40 | 10♌41 | 24♌46 | 20♓59 | 11♌35 | 1♌5 | 11♌8 | 2♑49 | 24♑16 | 18♓2 | 16♓46 | 14♑37 | 0♓57 | S 21 |
| M22 | 19 59 1 | 29♐1935 | 13♑4 | 10♌13 | 25♓59 | 21♌40 | 11♌48 | 1♌10 | 11♌11 | 2♑50 | 24♑18 | 17♓59 | 16♓42 | 14♑43 | 0♓56 | M22 |
| T 23 | 20 2 57 | 0♌1651 | 26♋43 | 9♌40 | 27♌11 | 22♍22 | 12♌1 | 1♌15 | 11♌14 | 2♑52 | 24♑19 | 17♓D58 | 16♓39 | 14♑50 | 0♓55 | T 23 |
| W24 | 20 6 54 | 1♌1408 | 10♌38 | 9♌5 | 28♌24 | 23♌3 | 12♌14 | 1♌19 | 11♌17 | 2♑53 | 24♑20 | 17♓58 | 16♓36 | 14♑57 | 0♓54 | W24 |
| T 25 | 20 10 50 | 2♌1124 | 24♑9 | 8♌27 | 29♍37 | 23♌44 | 12♌27 | 1♌24 | 11♌21 | 2♑54 | 24♑22 | 18♓0 | 16♓33 | 15♑3 | 0♓53 | T 25 |
| F 26 | 20 14 47 | 3♌841 | 9♒15 | 7♌46 | 0♌49 | 24♌25 | 12♌40 | 1♌29 | 11♌24 | 2♑56 | 24♑23 | 18♓1 | 16♓30 | 15♑10 | 0♓52 | F 26 |
| S 27 | 20 18 43 | 4♌558 | 23♓52 | 7♌5 | 2♌2 | 25♌6 | 12♌53 | 1♌34 | 11♌27 | 2♑57 | 24♑25 | 18♓R 1 | 16♓27 | 15♑17 | 0♓51 | S 27 |
| S 28 | 20 22 40 | 5♌316 | 8♓36 | 6♌22 | 3♌14 | 25♌47 | 13♌7 | 1♌39 | 11♌30 | 2♑58 | 24♑27 | 17♓59 | 16♓23 | 15♑23 | 0♓50 | S 28 |
| M29 | 20 26 36 | 6♌034 | 23♓22 | 5♌40 | 4♌27 | 26♌28 | 13♌20 | 1♌45 | 11♌33 | 2♑59 | 24♑28 | 17♓55 | 16♓20 | 15♑30 | 0♓48 | M29 |
| T 30 | 20 30 33 | 6♓5752 | 8♒1 | 4♌58 | 5♌39 | 27♌9 | 13♌33 | 1♌50 | 11♌37 | 3♌1 | 24♑30 | 17♓50 | 16♓17 | 15♑37 | 0♓47 | T 30 |
| W31 | 20 34 30 | 7♌55512 | 22♒27 | 4♌18 | 6♌52 | 27♌50 | 13♌46 | 1♌55 | 11♌40 | 3♌2 | 24♑31 | 17♓42 | 16♓14 | 15♑43 | 0♓46 | W31 |

Delta T = 180.02 sec

AUGUST 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|---------|--------|-------|-------|-------|-------|------|-------|------|-------|--------|-------|-------|-------|------|
| T 1 | 20 38 26 | 8♌5231 | 6♋33 | 3♌R40 | 8♌4 | 28♌30 | 13♌59 | 2♌0 | 11♌43 | 3♌3 | 24♑33 | 17♓R34 | 16♓11 | 15♑50 | 0♓R44 | T 1 |
| F 2 | 20 42 23 | 9♌4952 | 20♌15 | 3♌5 | 9♌16 | 29♌11 | 14♌12 | 2♌6 | 11♌46 | 3♌4 | 24♑35 | 17♓27 | 16♓8 | 15♑57 | 0♓Y43 | F 2 |
| S 3 | 20 46 19 | 10♌4714 | 3♒32 | 2♌34 | 10♌28 | 29♌51 | 14♌26 | 2♌11 | 11♌50 | 3♌5 | 24♑36 | 17♓20 | 16♓4 | 16♑3 | 0♓41 | S 3 |
| S 4 | 20 50 16 | 11♌4437 | 16♌23 | 2♌7 | 11♌41 | 0♓32 | 14♌39 | 2♌17 | 11♌53 | 3♌6 | 24♑38 | 17♓15 | 16♓1 | 16♑10 | 0♓40 | S 4 |
| M 5 | 20 54 12 | 12♌4200 | 28♓53 | 1♌45 | 12♓53 | 1♌12 | 14♌52 | 2♌23 | 11♌56 | 3♌7 | 24♑40 | 17♓12 | 15♓58 | 16♑16 | 0♓38 | M 5 |
| T 6 | 20 58 9 | 13♌3925 | 11♌8 4 | 1♌28 | 14♌5 | 1♌53 | 15♌5 | 2♌28 | 12♌0 | 3♌8 | 24♑41 | 17♓D11 | 15♓55 | 16♑23 | 0♓37 | T 6 |
| W 7 | 21 2 5 | 14♌3652 | 23♌3 | 1♌17 | 15♌17 | 2♌33 | 15♌19 | 2♌34 | 12♌3 | 3♌9 | 24♑43 | 17♓11 | 15♓52 | 16♑30 | 0♓35 | W 7 |
| T 8 | 21 6 2 | 15♌3419 | 4♑53 | 1♌D12 | 16♌30 | 3♌13 | 15♌32 | 2♌40 | 12♌7 | 3♌10 | 24♑45 | 17♓12 | 15♓48 | 16♑36 | 0♓33 | T 8 |
| F 9 | 21 9 59 | 16♌3147 | 16♌40 | 1♌13 | 17♌42 | 3♌53 | 15♌45 | 2♌46 | 12♌10 | 3♌11 | 24♑47 | 17♓R12 | 15♓45 | 16♑43 | 0♓31 | F 9 |
| S 10 | 21 13 55 | 17♌2917 | 28♓30 | 1♌21 | 18♓54 | 4♌33 | 15♓58 | 2♌51 | 12♌14 | 3♌12 | 24♑49 | 17♓12 | 15♓42 | 16♑50 | 0♓30 | S 10 |
| S 11 | 21 17 52 | 18♌2648 | 10♓26 | 1♌35 | 20♌6 | 5♌13 | 16♌11 | 2♌57 | 12♌17 | 3♌13 | 24♑50 | 17♓9 | 15♓39 | 16♑56 | 0♓28 | S 11 |
| M12 | 21 21 48 | 19♌2420 | 22♓32 | 1♌56 | 21♌18 | 5♌53 | 16♌25 | 3♌3 | 12♌21 | 3♌14 | 24♑52 | 17♓4 | 15♓36 | 17♑3 | 0♓26 | M12 |
| T 13 | 21 25 45 | 20♌2154 | 4♌52 | 2♌24 | 22♓30 | 6♌33 | 16♌38 | 3♌9 | 12♌24 | 3♌15 | 24♑54 | 16♓56 | 15♓33 | 17♑10 | 0♓24 | T 13 |
| W14 | 21 29 41 | 21♌1928 | 17♓25 | 2♌59 | 23♑42 | 7♌13 | 16♌51 | 3♌16 | 12♌28 | 3♌15 | 24♑56 | 16♓47 | 15♓29 | 17♑16 | 0♓22 | W14 |
| T 15 | 21 33 38 | 22♌1704 | 0♌14 | 3♌41 | 24♑54 | 7♓53 | 17♌4 | 3♌22 | 12♌32 | 3♌16 | 24♑58 | 16♓36 | 15♓26 | 17♑23 | 0♓20 | T 15 |
| F 16 | 21 37 34 | 23♌1440 | 13♌16 | 4♌29 | 26♌6 | 8♌32 | 17♌18 | 3♌28 | 12♌35 | 3♌17 | 25♌0 | 16♓24 | 15♓23 | 17♑30 | 0♓18 | F 16 |
| S 17 | 21 41 31 | 24♌1218 | 26♓32 | 5♌24 | 27♌17 | 9♌12 | 17♌31 | 3♌34 | 12♌39 | 3♌17 | 25♌2 | 16♓14 | 15♓20 | 17♑36 | 0♓16 | S 17 |
| S 18 | 21 45 28 | 25♌956 | 10♌0 | 6♌25 | 28♓29 | 9♌52 | 17♌44 | 3♌41 | 12♌42 | 3♌18 | 25♌4 | 16♓5 | 15♓17 | 17♑43 | 0♓14 | S 18 |
| M19 | 21 49 24 | 26♌736 | 23♓38 | 7♌32 | 29♑41 | 10♌31 | 17♓57 | 3♌47 | 12♌46 | 3♌19 | 25♌6 | 15♓59 | 15♓13 | 17♑49 | 0♓11 | M19 |
| T 20 | 21 53 21 | 27♌517 | 7♌26 | 8♌45 | 0♌53 | 11♌10 | 18♌10 | 3♌53 | 12♌50 | 3♌19 | 25♌8 | 15♓55 | 15♓10 | 17♑56 | 0♓9 | T 20 |
| W21 | 21 57 17 | 28♌259 | 21♓22 | 10♌4 | 2♌4 | 11♓50 | 18♌23 | 4♌0 | 12♌53 | 3♌20 | 25♌10 | 15♓54 | 15♓7 | 18♓3 | 0♓7 | W21 |
| T 22 | 22 1 14 | 29♌041 | 5♒25 | 11♓28 | 3♌16 | 12♓29 | 18♌36 | 4♌6 | 12♌57 | 3♌20 | 25♌12 | 15♓D54 | 15♓4 | 18♓9 | 0♓5 | T 22 |
| F 23 | 22 5 10 | 29♓5825 | 19♓37 | 12♓57 | 4♌28 | 13♌8 | 18♌49 | 4♌13 | 13♌1 | 3♌21 | 25♌14 | 15♓R54 | 15♓1 | 18♓16 | 0♓2 | F 23 |
| S 24 | 22 9 7 | 0♌5610 | 3♓54 | 14♌31 | 5♌39 | 13♑47 | 19♌3 | 4♌19 | 13♌4 | 3♌21 | 25♌16 | 15♓53 | 14♓58 | 18♓23 | 0♓0 | S 24 |
| S 25 | 22 13 3 | 1♓5356 | 18♌15 | 16♌9 | 6♓51 | 14♌26 | 19♌16 | 4♌26 | 13♌8 | 3♌22 | 25♌18 | 15♓50 | 14♓54 | 18♓29 | 29♒58 | S 25 |
| M26 | 22 17 0 | 2♓5143 | 2♒35 | 17♓52 | 8♌2 | 15♌5 | 19♓29 | 4♌33 | 13♌12 | 3♌22 | 25♌20 | 15♓44 | 14♓51 | 18♓36 | 29♓55 | M26 |
| T 27 | 22 20 57 | 3♌4931 | 16♓52 | 19♓37 | 9♌13 | 15♓44 | 19♓42 | 4♌39 | 13♌16 | 3♌22 | 25♌22 | 15♓36 | 14♓48 | 18♓43 | 29♓53 | T 27 |
| W28 | 22 24 53 | 4♌4721 | 0♒58 | 21♓25 | 10♓25 | 16♓23 | 19♓55 | 4♌46 | 13♌19 | 3♌23 | 25♌24 | 15♓25 | 14♓45 | 18♓49 | 29♓51 | W28 |
| T 29 | 22 28 50 | 5♌4512 | 14♓50 | 23♌16 | 11♓36 | 17♌1 | 20♓8 | 4♌53 | 13♌23 | 3♌23 | 25♌26 | 15♓13 | 14♓42 | 18♓56 | 29♓48 | T 29 |
| F 30 | 22 32 46 | 6♌4304 | 28♓22 | 25♌10 | 12♓47 | 17♓40 | 20♓21 | 5♌0 | 13♓27 | 3♌23 | 25♓28 | 15♓1 | 14♓39 | 19♓3 | 29♓46 | F 30 |
| S 31 | 22 36 43 | 7♌4058 | 11♒33 | 27♌4 | 13♓59 | 18♓19 | 20♌33 | 5♌7 | 13♌31 | 3♌24 | 25♌30 | 14♓51 | 14♓35 | 19♒9 | 29♒43 | S 31 |

Delta T = 180.11 sec

ASTRODIENST EPHEMERIS for the year 2216

geocentric

SEPTEMBER 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------------------|----------------------|--------------------|----------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|------|
| S 1 | 22 40 39 | 8 ^h 38'54 | 24 ^h 22 | 29 ^h 0 | 15 ^h 10 | 18 ^h 57 | 20 ^h 46 | 5 ^h 13 | 13 ^h 34 | 3 ^h 24 | 25 ^h 32 | 14 ^h 42 | 14 ^h 32 | 19 ^h 16 | 29 ^h 41 | S 1 |
| M 2 | 22 44 36 | 9 ^h 36'52 | 6 ^h 50 | 0 ^h 57 | 16 ^h 21 | 19 ^h 35 | 20 ^h 59 | 5 ^h 20 | 13 ^h 38 | 3 ^h 24 | 25 ^h 35 | 14 ^h 37 | 14 ^h 29 | 19 ^h 22 | 29 ^h 38 | M 2 |
| T 3 | 22 48 32 | 10 ^h 34'51 | 19 ^h 2 | 2 ^h 55 | 17 ^h 32 | 20 ^h 14 | 21 ^h 12 | 5 ^h 27 | 13 ^h 42 | 3 ^h 24 | 25 ^h 37 | 14 ^h 33 | 14 ^h 26 | 19 ^h 29 | 29 ^h 35 | T 3 |
| W 4 | 22 52 29 | 11 ^h 32'53 | 1 ^h 11 0 | 4 ^h 53 | 18 ^h 43 | 20 ^h 52 | 21 ^h 25 | 5 ^h 34 | 13 ^h 46 | 3 ^h 24 | 25 ^h 39 | 14 ^h 32 | 14 ^h 23 | 19 ^h 36 | 29 ^h 33 | W 4 |
| T 5 | 22 56 26 | 12 ^h 30'56 | 12 ^h 50 | 6 ^h 51 | 19 ^h 54 | 21 ^h 30 | 21 ^h 38 | 5 ^h 41 | 13 ^h 49 | 3 ^h 24 | 25 ^h 41 | 14 ^h 32 | 14 ^h 19 | 19 ^h 42 | 29 ^h 30 | T 5 |
| F 6 | 23 0 22 | 13 ^h 29'01 | 24 ^h 38 | 8 ^h 49 | 21 ^h 5 | 22 ^h 8 | 21 ^h 50 | 5 ^h 48 | 13 ^h 53 | 3 ^h R24 | 25 ^h 43 | 14 ^h 32 | 14 ^h 16 | 19 ^h 49 | 29 ^h 28 | F 6 |
| S 7 | 23 4 19 | 14 ^h 27'08 | 6 ^h 30 | 10 ^h 46 | 22 ^h 16 | 22 ^h 46 | 22 ^h 3 | 5 ^h 55 | 13 ^h 57 | 3 ^h 24 | 25 ^h 45 | 14 ^h 30 | 14 ^h 13 | 19 ^h 56 | 29 ^h 25 | S 7 |
| S 8 | 23 8 15 | 15 ^h 25'17 | 18 ^h 29 | 12 ^h 43 | 23 ^h 26 | 23 ^h 24 | 22 ^h 16 | 6 ^h 3 | 14 ^h 1 | 3 ^h 24 | 25 ^h 48 | 14 ^h 27 | 14 ^h 10 | 20 ^h 2 | 29 ^h 22 | S 8 |
| M 9 | 23 12 12 | 16 ^h 23'28 | 0 ^h 42 | 14 ^h 39 | 24 ^h 37 | 24 ^h 2 | 22 ^h 28 | 6 ^h 10 | 14 ^h 5 | 3 ^h 24 | 25 ^h 50 | 14 ^h 22 | 14 ^h 7 | 20 ^h 9 | 29 ^h 20 | M 9 |
| T 10 | 23 16 8 | 17 ^h 21'40 | 13 ^h 10 | 16 ^h 34 | 25 ^h 48 | 24 ^h 40 | 22 ^h 41 | 6 ^h 17 | 14 ^h 8 | 3 ^h 24 | 25 ^h 52 | 14 ^h 13 | 14 ^h 4 | 20 ^h 16 | 29 ^h 17 | T 10 |
| W11 | 23 20 5 | 18 ^h 19'55 | 25 ^h 58 | 18 ^h 29 | 26 ^h 58 | 25 ^h 18 | 22 ^h 53 | 6 ^h 24 | 14 ^h 12 | 3 ^h 24 | 25 ^h 54 | 14 ^h 3 | 14 ^h 0 | 20 ^h 22 | 29 ^h 14 | W11 |
| T 12 | 23 24 1 | 19 ^h 18'11 | 9 ^h 11 4 | 20 ^h 22 | 28 ^h 9 | 25 ^h 55 | 23 ^h 6 | 6 ^h 31 | 14 ^h 16 | 3 ^h 24 | 25 ^h 56 | 13 ^h 50 | 13 ^h 57 | 20 ^h 29 | 29 ^h 11 | T 12 |
| F 13 | 23 27 58 | 20 ^h 16'29 | 22 ^h 29 | 22 ^h 15 | 29 ^h 19 | 26 ^h 33 | 23 ^h 18 | 6 ^h 38 | 14 ^h 20 | 3 ^h 23 | 25 ^h 58 | 13 ^h 38 | 13 ^h 54 | 20 ^h 36 | 29 ^h 9 | F 13 |
| S 14 | 23 31 54 | 21 ^h 14'49 | 6 ^h 9 | 24 ^h 6 | 0 ^h 130 | 27 ^h 10 | 23 ^h 31 | 6 ^h 46 | 14 ^h 23 | 3 ^h 23 | 26 ^h 1 | 13 ^h 26 | 13 ^h 51 | 20 ^h 42 | 29 ^h 6 | S 14 |
| S 15 | 23 35 51 | 22 ^h 13'11 | 20 ^h 2 | 25 ^h 57 | 1 ^h 40 | 27 ^h 48 | 23 ^h 43 | 6 ^h 53 | 14 ^h 27 | 3 ^h 23 | 26 ^h 3 | 13 ^h 16 | 13 ^h 48 | 20 ^h 49 | 29 ^h 3 | S 15 |
| M16 | 23 39 48 | 23 ^h 11'34 | 4 ^h 11 3 | 27 ^h 46 | 2 ^h 51 | 28 ^h 25 | 23 ^h 56 | 7 ^h 0 | 14 ^h 31 | 3 ^h 22 | 26 ^h 5 | 13 ^h 9 | 13 ^h 45 | 20 ^h 56 | 29 ^h 0 | M16 |
| T 17 | 23 43 44 | 24 ^h 9'59 | 18 ^h 9 | 29 ^h 34 | 4 ^h 1 | 29 ^h 2 | 24 ^h 8 | 7 ^h 7 | 14 ^h 35 | 3 ^h 22 | 26 ^h 7 | 13 ^h 5 | 13 ^h 41 | 21 ^h 2 | 28 ^h 58 | T 17 |
| W18 | 23 47 41 | 25 ^h 8'26 | 2 ^h 17 | 1 ^h 21 | 5 ^h 11 | 29 ^h 39 | 24 ^h 20 | 7 ^h 15 | 14 ^h 38 | 3 ^h 22 | 26 ^h 9 | 13 ^h 3 | 13 ^h 38 | 21 ^h 9 | 28 ^h 55 | W18 |
| T 19 | 23 51 37 | 26 ^h 6'54 | 16 ^h 25 | 3 ^h 7 | 6 ^h 21 | 0 ^h 16 | 24 ^h 32 | 7 ^h 22 | 14 ^h 42 | 3 ^h 21 | 26 ^h 12 | 13 ^h D 2 | 13 ^h 35 | 21 ^h 15 | 28 ^h 52 | T 19 |
| F 20 | 23 55 34 | 27 ^h 5'24 | 0 ^h 32 | 4 ^h 52 | 7 ^h 31 | 0 ^h 53 | 24 ^h 44 | 7 ^h 29 | 14 ^h 46 | 3 ^h 21 | 26 ^h 14 | 13 ^h R 2 | 13 ^h 32 | 21 ^h 22 | 28 ^h 49 | F 20 |
| S 21 | 23 59 30 | 28 ^h 3'56 | 14 ^h 37 | 6 ^h 36 | 8 ^h 41 | 1 ^h 30 | 24 ^h 56 | 7 ^h 37 | 14 ^h 49 | 3 ^h 20 | 26 ^h 16 | 13 ^h 2 | 13 ^h 29 | 21 ^h 29 | 28 ^h 46 | S 21 |
| S 22 | 0 3 27 | 29 ^h 2'28 | 28 ^h 38 | 8 ^h 19 | 9 ^h 51 | 2 ^h 7 | 25 ^h 8 | 7 ^h 44 | 14 ^h 53 | 3 ^h 20 | 26 ^h 18 | 12 ^h 59 | 13 ^h 25 | 21 ^h 35 | 28 ^h 44 | S 22 |
| M23 | 0 7 23 | 0 ^h 1'03 | 12 ^h 36 | 10 ^h 1 | 11 ^h 1 | 2 ^h 43 | 25 ^h 20 | 7 ^h 51 | 14 ^h 57 | 3 ^h 19 | 26 ^h 20 | 12 ^h 53 | 13 ^h 22 | 21 ^h 42 | 28 ^h 41 | M23 |
| T 24 | 0 11 20 | 0 ^h 59'39 | 26 ^h 26 | 11 ^h 41 | 12 ^h 11 | 3 ^h 20 | 25 ^h 32 | 7 ^h 59 | 15 ^h 1 | 3 ^h 19 | 26 ^h 23 | 12 ^h 45 | 13 ^h 19 | 21 ^h 49 | 28 ^h 38 | T 24 |
| W25 | 0 15 17 | 1 ^h 58'17 | 10 ^h 11 7 | 13 ^h 21 | 13 ^h 20 | 3 ^h 56 | 25 ^h 44 | 8 ^h 6 | 15 ^h 4 | 3 ^h 18 | 26 ^h 25 | 12 ^h 35 | 13 ^h 16 | 21 ^h 55 | 28 ^h 35 | W25 |
| T 26 | 0 19 13 | 2 ^h 56'57 | 23 ^h 36 | 15 ^h 0 | 14 ^h 30 | 4 ^h 33 | 25 ^h 56 | 8 ^h 14 | 15 ^h 8 | 3 ^h 18 | 26 ^h 27 | 12 ^h 23 | 13 ^h 13 | 22 ^h 2 | 28 ^h 33 | T 26 |
| F 27 | 0 23 10 | 3 ^h 55'38 | 6 ^h 49 | 16 ^h 38 | 15 ^h 39 | 5 ^h 9 | 26 ^h 7 | 8 ^h 21 | 15 ^h 11 | 3 ^h 17 | 26 ^h 29 | 12 ^h 12 | 13 ^h 10 | 22 ^h 9 | 28 ^h 30 | F 27 |
| S 28 | 0 27 6 | 4 ^h 54'22 | 19 ^h 46 | 18 ^h 14 | 16 ^h 49 | 5 ^h 45 | 26 ^h 19 | 8 ^h 28 | 15 ^h 15 | 3 ^h 16 | 26 ^h 31 | 12 ^h 1 | 13 ^h 6 | 22 ^h 15 | 28 ^h 27 | S 28 |
| S 29 | 0 31 3 | 5 ^h 53'07 | 2 ^h 25 | 19 ^h 50 | 17 ^h 58 | 6 ^h 21 | 26 ^h 31 | 8 ^h 36 | 15 ^h 19 | 3 ^h 16 | 26 ^h 34 | 11 ^h 53 | 13 ^h 3 | 22 ^h 22 | 28 ^h 24 | S 29 |
| M30 | 0 34 59 | 6 ^h 51'55 | 14 ^h 48 | 21 ^h 25 | 19 ^h 11 7 | 6 ^h 57 | 26 ^h 42 | 8 ^h 43 | 15 ^h 22 | 3 ^h 15 | 26 ^h 36 | 11 ^h 47 | 13 ^h 0 | 22 ^h 29 | 28 ^h 22 | M30 |

Delta T = 180.20 sec

OCTOBER 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|------|
| T 1 | 0 38 56 | 7♂50'45 | 26♂55 | 22♂59 | 20♂16 | 7♂33 | 26♂54 | 8♂51 | 15♂26 | 3♂R14 | 26♂38 | 11♂R44 | 12♂57 | 22♂35 | 28♂R19 | T 1 |
| W 2 | 0 42 52 | 8°49'37 | 8♂52 | 24°32 | 21°25 | 8° 9 | 27° 5 | 8°58 | 15°29 | 3♂13 | 26°40 | 11°D43 | 12°54 | 22°42 | 28♂16 | W 2 |
| T 3 | 0 46 49 | 9°48'32 | 20°42 | 26° 5 | 22°34 | 8°45 | 27°16 | 9° 5 | 15°33 | 3°12 | 26°42 | 11♂43 | 12°50 | 22°48 | 28°13 | T 3 |
| F 4 | 0 50 46 | 10°47'28 | 2♂30 | 27°36 | 23°43 | 9°21 | 27°27 | 9°13 | 15°36 | 3°11 | 26°44 | 11°44 | 12°47 | 22°55 | 28°11 | F 4 |
| S 5 | 0 54 42 | 11°46'27 | 14°21 | 29° 6 | 24°52 | 9°56 | 27°39 | 9°20 | 15°40 | 3°11 | 26°47 | 11♂R44 | 12°44 | 23° 2 | 28° 8 | S 5 |
| S 6 | 0 58 39 | 12°45'28 | 26°21 | 0♂36 | 26° 1 | 10°31 | 27°50 | 9°28 | 15°43 | 3°10 | 26°49 | 11°43 | 12°41 | 23° 8 | 28° 5 | S 6 |
| M 7 | 1 2 35 | 13°44'32 | 8♂35 | 2° 5 | 27° 9 | 11° 7 | 28° 1 | 9°35 | 15°47 | 3° 9 | 26°51 | 11°40 | 12°38 | 23°15 | 28° 3 | M 7 |
| T 8 | 1 6 32 | 14°43'37 | 21° 7 | 3°33 | 28°18 | 11°42 | 28°12 | 9°43 | 15°50 | 3° 8 | 26°53 | 11°34 | 12°35 | 23°22 | 28° 0 | T 8 |
| W 9 | 1 10 28 | 15°42'45 | 4♂11 | 4°59 | 29°26 | 12°17 | 28°22 | 9°50 | 15°54 | 3° 7 | 26°55 | 11°27 | 12°31 | 23°28 | 27°57 | W 9 |
| T 10 | 1 14 25 | 16°41'55 | 17°18 | 6°25 | 0♂34 | 12°52 | 28°33 | 9°57 | 15°57 | 3° 6 | 26°57 | 11°18 | 12°28 | 23°35 | 27°55 | T 10 |
| F 11 | 1 18 21 | 17°41'07 | 0♂58 | 7°51 | 1°42 | 13°27 | 28°44 | 10° 5 | 16° 0 | 3° 5 | 26°59 | 11° 9 | 12°25 | 23°42 | 27°52 | F 11 |
| S 12 | 1 22 18 | 18°40'22 | 14°59 | 9°15 | 2°50 | 14° 2 | 28°54 | 10°12 | 16° 4 | 3° 4 | 27° 1 | 11° 0 | 12°22 | 23°48 | 27°50 | S 12 |
| S 13 | 1 26 15 | 19°39'38 | 29°16 | 10°38 | 3°58 | 14°36 | 29° 5 | 10°19 | 16° 7 | 3° 2 | 27° 4 | 10°53 | 12°19 | 23°55 | 27°47 | S 13 |
| M14 | 1 30 11 | 20°38'57 | 13♂43 | 12° 0 | 5° 6 | 15°11 | 29°15 | 10°27 | 16°10 | 3° 1 | 27° 6 | 10°48 | 12°16 | 24° 2 | 27°45 | M14 |
| T 15 | 1 34 8 | 21°38'17 | 28°15 | 13°21 | 6°14 | 15°45 | 29°26 | 10°34 | 16°14 | 3° 0 | 27° 8 | 10°45 | 12°12 | 24° 8 | 27°42 | T 15 |
| W16 | 1 38 4 | 22°37'39 | 12♂45 | 14°41 | 7°21 | 16°20 | 29°36 | 10°41 | 16°17 | 2°59 | 27°10 | 10°D44 | 12° 9 | 24°15 | 27°40 | W16 |
| T 17 | 1 42 1 | 23°37'04 | 27°10 | 16° 0 | 8°29 | 16°54 | 29°46 | 10°49 | 16°20 | 2°58 | 27°12 | 10°45 | 12° 6 | 24°22 | 27°37 | T 17 |
| F 18 | 1 45 57 | 24°36'29 | 11♂26 | 17°18 | 9°36 | 17°28 | 29°56 | 10°56 | 16°23 | 2°57 | 27°14 | 10°46 | 12° 3 | 24°28 | 27°35 | F 18 |
| S 19 | 1 49 54 | 25°35'57 | 25°31 | 18°34 | 10°43 | 18° 2 | 0♂6 | 11° 3 | 16°26 | 2°55 | 27°16 | 10°R47 | 12° 0 | 24°35 | 27°32 | S 19 |
| S 20 | 1 53 50 | 26°35'26 | 9♂24 | 19°49 | 11°50 | 18°36 | 0°16 | 11°11 | 16°30 | 2°54 | 27°18 | 10°46 | 11°56 | 24°41 | 27°30 | S 20 |
| M21 | 1 57 47 | 27°34'57 | 23° 6 | 21° 2 | 12°57 | 19° 9 | 0°25 | 11°18 | 16°33 | 2°53 | 27°20 | 10°43 | 11°53 | 24°48 | 27°28 | M21 |
| T 22 | 2 1 44 | 28°34'29 | 6♂35 | 22°14 | 14° 3 | 19°43 | 0°35 | 11°25 | 16°36 | 2°51 | 27°22 | 10°39 | 11°50 | 24°55 | 27°25 | T 22 |
| W23 | 2 5 40 | 29°34'04 | 19°52 | 23°24 | 15°10 | 20°16 | 0°45 | 11°32 | 16°39 | 2°50 | 27°24 | 10°33 | 11°47 | 25° 1 | 27°23 | W23 |
| T 24 | 2 9 37 | 0♂33'40 | 2♂56 | 24°32 | 16°16 | 20°49 | 0°54 | 11°39 | 16°42 | 2°49 | 27°26 | 10°26 | 11°44 | 25° 8 | 27°21 | T 24 |
| F 25 | 2 13 33 | 1°33'18 | 15°47 | 25°38 | 17°22 | 21°23 | 1° 3 | 11°47 | 16°45 | 2°47 | 27°27 | 10°19 | 11°41 | 25°15 | 27°19 | F 25 |
| S 26 | 2 17 30 | 2°32'57 | 28°25 | 26°42 | 18°28 | 21°56 | 1°13 | 11°54 | 16°48 | 2°46 | 27°29 | 10°13 | 11°37 | 25°21 | 27°17 | S 26 |
| S 27 | 2 21 26 | 3°32'39 | 10♂49 | 27°43 | 19°34 | 22°29 | 1°22 | 12° 1 | 16°50 | 2°44 | 27°31 | 10° 8 | 11°34 | 25°28 | 27°15 | S 27 |
| M28 | 2 25 23 | 4°32'23 | 23° 2 | 28°41 | 20°39 | 23° 1 | 1°31 | 12° 8 | 16°53 | 2°43 | 27°33 | 10° 4 | 11°31 | 25°35 | 27°12 | M28 |
| T 29 | 2 29 19 | 5°32'09 | 5♂13 | 29°36 | 21°45 | 23°34 | 1°39 | 12°15 | 16°56 | 2°42 | 27°35 | 10°D 3 | 11°28 | 25°41 | 27°10 | T 29 |
| W30 | 2 33 16 | 6°31'57 | 16°57 | 0♂28 | 22°50 | 24° 6 | 1°48 | 12°22 | 16°59 | 2°40 | 27°37 | 10° 3 | 11°25 | 25°48 | 27° 8 | W30 |
| T 31 | 2 37 12 | 7♂31'47 | 28♂45 | 1♂16 | 23♂55 | 24♂39 | 1♂57 | 12♂29 | 17♂ 2 | 2♂39 | 27♂39 | 10♂ 4 | 11♂22 | 25♂55 | 27♂ 6 | T 31 |

ASTRODIENST EPHEMERIS for the year 2216
geocentric

NOVEMBER 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|--------|--------|-------|-------|------|-------|-------|------|-------|--------|-------|-------|-------|------|
| F 1 | 2 41 9 | 8♉31'40 | 10♊32 | 2♈0 | 24♈59 | 25♉11 | 2♉5 | 12♊36 | 17♉4 | 2♉37 | 27♉40 | 10♈6 | 11♈18 | 26♉1 | 27♉5 | F 1 |
| S 2 | 2 45 6 | 9°31'34 | 22°22 | 2°39 | 26°4 | 25°43 | 2°14 | 12°43 | 17°7 | 2♉36 | 27°42 | 10°8 | 11°15 | 26°8 | 27♈3 | S 2 |
| S 3 | 2 49 2 | 10°31'31 | 4♉21 | 3°13 | 27°8 | 26°15 | 2°22 | 12°50 | 17°10 | 2°34 | 27°44 | 10°9 | 11°12 | 26°15 | 27°1 | S 3 |
| M 4 | 2 52 59 | 11°31'29 | 16°33 | 3°41 | 28°12 | 26°47 | 2°30 | 12°56 | 17°12 | 2°33 | 27°46 | 10°R 9 | 11°9 | 26°21 | 26°59 | M 4 |
| T 5 | 2 56 55 | 12°31'30 | 29°3 | 4°2 | 29°16 | 27°18 | 2°38 | 13°3 | 17°15 | 2°31 | 27°47 | 10°8 | 11°6 | 26°28 | 26°57 | T 5 |
| W 6 | 3 0 52 | 13°31'33 | 11♉55 | 4°17 | 0♉19 | 27°49 | 2°46 | 13°10 | 17°17 | 2°29 | 27°49 | 10°5 | 11°2 | 26°35 | 26°56 | W 6 |
| T 7 | 3 4 48 | 14°31'38 | 25°12 | 4°R24 | 1°23 | 28°21 | 2°54 | 13°17 | 17°20 | 2°28 | 27°51 | 10°2 | 10°59 | 26°41 | 26°54 | T 7 |
| F 8 | 3 8 45 | 15°31'45 | 8♊56 | 4°23 | 2°26 | 28°52 | 3°1 | 13°23 | 17°22 | 2°26 | 27°52 | 9°58 | 10°56 | 26°48 | 26°52 | F 8 |
| S 9 | 3 12 41 | 16°31'54 | 23°5 | 4°13 | 3°28 | 29°23 | 3°9 | 13°30 | 17°24 | 2°25 | 27°54 | 9°55 | 10°53 | 26°54 | 26°51 | S 9 |
| S 10 | 3 16 38 | 17°32'05 | 7♉36 | 3°53 | 4°31 | 29°53 | 3°16 | 13°37 | 17°27 | 2°23 | 27°55 | 9°52 | 10°50 | 27°1 | 26°49 | S 10 |
| M11 | 3 20 35 | 18°32'18 | 22°23 | 3°24 | 5°33 | 0♉24 | 3°23 | 13°43 | 17°29 | 2°21 | 27°57 | 9°50 | 10°47 | 27°8 | 26°48 | M11 |
| T 12 | 3 24 31 | 19°32'33 | 7♈19 | 2°45 | 6°35 | 0°54 | 3°30 | 13°50 | 17°31 | 2°20 | 27°59 | 9°D49 | 10°43 | 27°14 | 26°46 | T 12 |
| W13 | 3 28 28 | 20°32'50 | 22°15 | 1°56 | 7°36 | 1°25 | 3°37 | 13°56 | 17°34 | 2°18 | 28°0 | 9°49 | 10°40 | 27°21 | 26°45 | W13 |
| T 14 | 3 32 24 | 21°33'08 | 7♈4 | 0°58 | 8°37 | 1°55 | 3°44 | 14°3 | 17°36 | 2°16 | 28°2 | 9°51 | 10°37 | 27°28 | 26°44 | T 14 |
| F 15 | 3 36 21 | 22°33'27 | 21°39 | 29♉52 | 9°38 | 2°24 | 3°50 | 14°9 | 17°38 | 2°15 | 28°3 | 9°52 | 10°34 | 27°34 | 26°42 | F 15 |
| S 16 | 3 40 17 | 23°33'48 | 5♊56 | 28°39 | 10°38 | 2°54 | 3°57 | 14°15 | 17°40 | 2°13 | 28°4 | 9°53 | 10°31 | 27°41 | 26°41 | S 16 |
| S 17 | 3 44 14 | 24°34'10 | 19°54 | 27°21 | 11°38 | 3°23 | 4°3 | 14°21 | 17°42 | 2°11 | 28°6 | 9°R54 | 10°27 | 27°48 | 26°40 | S 17 |
| M18 | 3 48 10 | 25°34'34 | 3♈32 | 26°1 | 12°38 | 3°53 | 4°9 | 14°28 | 17°44 | 2°10 | 28°7 | 9°53 | 10°24 | 27°54 | 26°39 | M18 |
| T 19 | 3 52 7 | 26°34'58 | 16°51 | 24°41 | 13°37 | 4°22 | 4°15 | 14°34 | 17°46 | 2°8 | 28°9 | 9°53 | 10°21 | 28°1 | 26°38 | T 19 |
| W20 | 3 56 4 | 27°35'24 | 29°52 | 23°23 | 14°36 | 4°50 | 4°21 | 14°40 | 17°48 | 2°6 | 28°10 | 9°51 | 10°18 | 28°8 | 26°37 | W20 |
| T 21 | 4 0 0 | 28°35'52 | 12°Y37 | 22°11 | 15°34 | 5°19 | 4°27 | 14°46 | 17°49 | 2°5 | 28°11 | 9°50 | 10°15 | 28°14 | 26°36 | T 21 |
| F 22 | 4 3 57 | 29°36'21 | 25°8 | 21°6 | 16°32 | 5°47 | 4°32 | 14°52 | 17°51 | 2°3 | 28°13 | 9°48 | 10°12 | 28°21 | 26°35 | F 22 |
| S 23 | 4 7 53 | 0♉36'51 | 7♈28 | 20°10 | 17°29 | 6°15 | 4°38 | 14°58 | 17°53 | 2°1 | 28°14 | 9°47 | 10°8 | 28°28 | 26°34 | S 23 |
| S 24 | 4 11 50 | 1°37'22 | 19°37 | 19°25 | 18°26 | 6°43 | 4°43 | 15°4 | 17°55 | 2°0 | 28°15 | 9°46 | 10°5 | 28°34 | 26°33 | S 24 |
| M25 | 4 15 46 | 2°37'55 | 1♉38 | 18°52 | 19°22 | 7°11 | 4°48 | 15°10 | 17°56 | 1°58 | 28°16 | 9°45 | 10°2 | 28°41 | 26°33 | M25 |
| T 26 | 4 19 43 | 3°38'30 | 13°33 | 18°30 | 20°18 | 7°39 | 4°53 | 15°15 | 17°58 | 1°56 | 28°17 | 9°D45 | 9°59 | 28°48 | 26°32 | T 26 |
| W27 | 4 23 39 | 4°39'06 | 25°22 | 18°D20 | 21°13 | 8°6 | 4°58 | 15°21 | 17°59 | 1°54 | 28°18 | 9°46 | 9°56 | 28°54 | 26°31 | W27 |
| T 28 | 4 27 36 | 5°39'44 | 7♈10 | 18°21 | 22°7 | 8°33 | 5°2 | 15°27 | 18°1 | 1°53 | 28°20 | 9°46 | 9°53 | 29°1 | 26°31 | T 28 |
| F 29 | 4 31 33 | 6°40'23 | 18°58 | 18°32 | 23°1 | 9°0 | 5°7 | 15°32 | 18°2 | 1°51 | 28°21 | 9°46 | 9°49 | 29°8 | 26°30 | F 29 |
| S 30 | 4 35 29 | 7♈41'03 | 0♉50 | 18♉53 | 23♈54 | 9♉26 | 5♉11 | 15♊38 | 18♉3 | 1♉49 | 28♉22 | 9♈47 | 9♈46 | 29♉14 | 26♈30 | S 30 |

Delta T = 180.38 sec

DECEMBER 2216

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|------|-------|--------|------|
| S 1 | 4 39 26 | 8♈41'45 | 12♉49 | 19♉23 | 24♈47 | 9♉52 | 5♉15 | 15♊43 | 18♉5 | 1°R48 | 28♉23 | 9♈47 | 9♈43 | 29♉21 | 26°R29 | S 1 |
| M 2 | 4 43 22 | 9°42'29 | 25°0 | 20°1 | 25°39 | 10°18 | 5°19 | 15°49 | 18°6 | 1♉46 | 28°24 | 9°R47 | 9°40 | 29°27 | 26°R29 | M 2 |
| T 3 | 4 47 19 | 10°43'14 | 7♉26 | 20°46 | 26°30 | 10°44 | 5°22 | 15°54 | 18°7 | 1°44 | 28°25 | 9°D47 | 9°37 | 29°34 | 26°29 | T 3 |
| W 4 | 4 51 15 | 11°44'01 | 20°12 | 21°37 | 27°21 | 11°10 | 5°26 | 15°59 | 18°8 | 1°43 | 28°26 | 9°47 | 9°33 | 29°41 | 26°29 | W 4 |
| T 5 | 4 55 12 | 12°44'49 | 3♊21 | 22°34 | 28°10 | 11°35 | 5°29 | 16°4 | 18°9 | 1°41 | 28°27 | 9°47 | 9°30 | 29°47 | 26°28 | T 5 |
| F 6 | 4 59 8 | 13°45'38 | 16°56 | 23°35 | 28°59 | 12°0 | 5°32 | 16°9 | 18°10 | 1°39 | 28°27 | 9°47 | 9°27 | 29°54 | 26°28 | F 6 |
| S 7 | 5 3 5 | 14°46'29 | 0♉59 | 24°41 | 29°47 | 12°24 | 5°35 | 16°14 | 18°11 | 1°38 | 28°28 | 9°48 | 9°24 | 0♉1 | 26°28 | S 7 |
| S 8 | 5 7 2 | 15°47'21 | 15°28 | 25°50 | 0♊34 | 12°49 | 5°38 | 16°19 | 18°12 | 1°36 | 28°29 | 9°48 | 9°21 | 0°7 | 26°D28 | S 8 |
| M 9 | 5 10 58 | 16°48'15 | 0♈20 | 27°3 | 1°21 | 13°13 | 5°40 | 16°24 | 18°13 | 1°34 | 28°30 | 9°49 | 9°18 | 0°14 | 26°28 | M 9 |
| T 10 | 5 14 55 | 17°49'10 | 15°26 | 28°18 | 2°6 | 13°36 | 5°43 | 16°29 | 18°14 | 1°33 | 28°31 | 9°R49 | 9°14 | 0°21 | 26°28 | T 10 |
| W11 | 5 18 51 | 18°50'06 | 0♉39 | 29°35 | 2°50 | 14°0 | 5°45 | 16°34 | 18°15 | 1°31 | 28°31 | 9°48 | 9°11 | 0°27 | 26°28 | W11 |
| T 12 | 5 22 48 | 19°51'03 | 15°48 | 0♈54 | 3°34 | 14°23 | 5°47 | 16°38 | 18°16 | 1°30 | 28°32 | 9°48 | 9°8 | 0°34 | 26°29 | T 12 |
| F 13 | 5 26 44 | 20°52'01 | 0♊45 | 2°15 | 4°16 | 14°46 | 5°49 | 16°43 | 18°16 | 1°28 | 28°33 | 9°46 | 9°5 | 0°41 | 26°29 | F 13 |
| S 14 | 5 30 41 | 21°52'59 | 15°22 | 3°38 | 4°57 | 15°8 | 5°51 | 16°47 | 18°17 | 1°26 | 28°33 | 9°45 | 9°2 | 0°47 | 26°29 | S 14 |
| S 15 | 5 34 38 | 22°53'58 | 29°34 | 5°2 | 5°37 | 15°30 | 5°52 | 16°52 | 18°17 | 1°25 | 28°34 | 9°43 | 8°59 | 0°54 | 26°30 | S 15 |
| M16 | 5 38 34 | 23°54'57 | 13♈20 | 6°27 | 6°15 | 15°52 | 5°53 | 16°56 | 18°18 | 1°23 | 28°34 | 9°43 | 8°55 | 1°1 | 26°30 | M16 |
| T 17 | 5 42 31 | 24°55'57 | 26°39 | 7°53 | 6°53 | 16°13 | 5°54 | 17°0 | 18°18 | 1°22 | 28°35 | 9°D42 | 8°52 | 1°7 | 26°31 | T 17 |
| W18 | 5 46 27 | 25°56'57 | 9°Y35 | 9°19 | 7°29 | 16°34 | 5°55 | 17°4 | 18°19 | 1°20 | 28°35 | 9°43 | 8°49 | 1°14 | 26°31 | W18 |
| T 19 | 5 50 24 | 26°57'58 | 22°11 | 10°47 | 8°4 | 16°54 | 5°56 | 17°8 | 18°19 | 1°19 | 28°36 | 9°44 | 8°46 | 1°21 | 26°32 | T 19 |
| F 20 | 5 54 20 | 27°58'59 | 4♈31 | 12°15 | 8°37 | 17°15 | 5°56 | 17°12 | 18°19 | 1°17 | 28°36 | 9°45 | 8°43 | 1°27 | 26°32 | F 20 |
| S 21 | 5 58 17 | 29°0'01 | 16°38 | 13°43 | 9°9 | 17°34 | 5°57 | 17°16 | 18°19 | 1°16 | 28°36 | 9°47 | 8°39 | 1°34 | 26°33 | S 21 |
| S 22 | 6 2 13 | 0♉1°03 | 28°36 | 15°12 | 9°39 | 17°54 | 5°R57 | 17°20 | 18°19 | 1°14 | 28°37 | 9°48 | 8°36 | 1°41 | 26°34 | S 22 |
| M23 | 6 6 10 | 1°2'06 | 10♉28 | 16°42 | 10°7 | 18°13 | 5°57 | 17°24 | 18°19 | 1°13 | 28°37 | 9°R49 | 8°33 | 1°47 | 26°35 | M23 |
| T 24 | 6 10 7 | 2°3'10 | 22°17 | 18°12 | 10°34 | 18°31 | 5°56 | 17°27 | 18°R19 | 1°12 | 28°37 | 9°48 | 8°30 | 1°54 | 26°36 | T 24 |
| W25 | 6 14 3 | 3°4'13 | 4♈5 | 19°42 | 10°59 | 18°50 | 5°56 | 17°31 | 18°19 | 1°10 | 28°38 | 9°46 | 8°27 | 2°1 | 26°37 | W25 |
| T 26 | 6 18 0 | 4°5'18 | 15°55 | 21°13 | 11°22 | 19°7 | 5°55 | 17°34 | 18°19 | 1°9 | 28°38 | 9°43 | 8°24 | 2°7 | 26°38 | T 26 |
| F 27 | 6 21 56 | 5°6'22 | 27°47 | 22°44 | 11°44 | 19°25 | 5°54 | 17°37 | 18°19 | 1°7 | 28°38 | 9°39 | 8°20 | 2°14 | 26°39 | F 27 |
| S 28 | 6 25 53 | 6°7'28 | 9♉45 | 24°15 | 12°3 | 19°42 | 5°53 | 17°41 | 18°19 | 1°6 | 28°38 | 9°34 | 8°17 | 2°21 | 26°40 | S 28 |
| S 29 | 6 29 49 | 7°8'34 | 21°50 | 25°47 | 12°21 | 19°58 | 5°52 | 17°44 | 18°19 | 1°5 | 28°38 | 9°29 | 8°14 | 2°27 | 26°41 | S 29 |
| M30 | 6 33 46 | 8°9'40 | 4♉5 | 27°18 | 12°36 | 20°14 | 5°50 | 17°47 | 18°18 | 1°4 | 28°38 | 9°25 | 8°11 | 2°34 | 26°42 | M30 |
| T 31 | 6 37 42 | 9♉10'47 | 16♉32 | 28♈51 | 12♊49 | 20♉29 | 5♉49 | 17♊50 | 18♉18 | 1♉2 | 28°R38 | 9♈21 | 8♈8 | 2♉40 | 26♈44 | T 31 |

Delta T = 180.47 sec