



Astrodienst Ephemeris Tables for the year 1589

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 1589
geocentric

JANUARY 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|--------|-------|------|
| S 1 | 6 42 1 | 10°39'56 | 1°14 | 13°R 4 | 24°M32 | 18°A 3 | 17°M53 | 23°R50 | 13°K48 | 2°R53 | 10°V11 | 2°R35 | 4°M12 | 10°S 0 | 4°R57 | S 1 |
| M 2 | 6 45 58 | 11°41'05 | 13° 5 | 11°S44 | 25°39 | 18°33 | 17°R54 | 23°B47 | 13°50 | 2°L52 | 10°12 | 2°M25 | 4° 9 | 10° 7 | 4°B56 | M 2 |
| T 3 | 6 49 54 | 12°42'14 | 24°56 | 10°24 | 26°45 | 19° 3 | 17°53 | 23°45 | 13°52 | 2°50 | 10°12 | 2°17 | 4° 6 | 10°14 | 4°55 | T 3 |
| W 4 | 6 53 51 | 13°43'22 | 6°L48 | 9° 5 | 27°52 | 19°32 | 17°53 | 23°42 | 13°54 | 2°49 | 10°12 | 2°11 | 4° 3 | 10°20 | 4°55 | W 4 |
| T 5 | 6 57 47 | 14°44'31 | 18°43 | 7°51 | 28°59 | 20° 1 | 17°53 | 23°40 | 13°56 | 2°47 | 10°12 | 2° 8 | 4° 0 | 10°27 | 4°54 | T 5 |
| F 6 | 7 1 44 | 15°45'39 | 0°M44 | 6°42 | 0°K 6 | 20°31 | 17°52 | 23°38 | 13°58 | 2°45 | 10°13 | 2°D 7 | 3°56 | 10°34 | 4°53 | F 6 |
| S 7 | 7 5 40 | 16°46'47 | 12°55 | 5°42 | 1°13 | 21° 0 | 17°51 | 23°36 | 14° 1 | 2°44 | 10°13 | 2° 7 | 3°53 | 10°40 | 4°53 | S 7 |
| S 8 | 7 9 37 | 17°47'54 | 25°18 | 4°50 | 2°21 | 21°28 | 17°50 | 23°34 | 14° 3 | 2°42 | 10°13 | 2° 9 | 3°50 | 10°47 | 4°53 | S 8 |
| M 9 | 7 13 34 | 18°49'02 | 7°L58 | 4° 8 | 3°29 | 21°57 | 17°49 | 23°33 | 14° 5 | 2°41 | 10°13 | 2°10 | 3°47 | 10°54 | 4°52 | M 9 |
| T 10 | 7 17 30 | 19°50'09 | 21° 0 | 3°35 | 4°36 | 22°25 | 17°48 | 23°31 | 14° 7 | 2°39 | 10°14 | 2°R11 | 3°44 | 11° 1 | 4°52 | T 10 |
| W11 | 7 21 27 | 20°51'16 | 4°M27 | 3°11 | 5°45 | 22°54 | 17°46 | 23°29 | 14°10 | 2°37 | 10°14 | 2°10 | 3°41 | 11° 7 | 4°52 | W11 |
| T 12 | 7 25 23 | 21°52'23 | 18°21 | 2°58 | 6°53 | 23°22 | 17°44 | 23°28 | 14°12 | 2°36 | 10°15 | 2° 7 | 3°37 | 11°14 | 4°52 | T 12 |
| F 13 | 7 29 20 | 22°53'29 | 2°K43 | 2°D53 | 8° 1 | 23°50 | 17°43 | 23°27 | 14°14 | 2°34 | 10°15 | 2° 3 | 3°34 | 11°21 | 4°52 | F 13 |
| S 14 | 7 33 16 | 23°54'36 | 17°29 | 2°56 | 9°10 | 24°17 | 17°40 | 23°25 | 14°17 | 2°32 | 10°16 | 1°57 | 3°31 | 11°27 | 4°D51 | S 14 |
| S 15 | 7 37 13 | 24°55'42 | 2°S35 | 3° 7 | 10°19 | 24°45 | 17°38 | 23°24 | 14°19 | 2°31 | 10°16 | 1°51 | 3°28 | 11°34 | 4°52 | S 15 |
| M16 | 7 41 9 | 25°56'47 | 17°49 | 3°25 | 11°28 | 25°12 | 17°36 | 23°23 | 14°22 | 2°29 | 10°17 | 1°46 | 3°25 | 11°41 | 4°52 | M16 |
| T 17 | 7 45 6 | 26°57'51 | 3°K 4 | 3°50 | 12°37 | 25°39 | 17°33 | 23°22 | 14°24 | 2°27 | 10°17 | 1°42 | 3°22 | 11°47 | 4°52 | T 17 |
| W18 | 7 49 3 | 27°58'55 | 18° 6 | 4°20 | 13°46 | 26° 6 | 17°30 | 23°22 | 14°27 | 2°26 | 10°18 | 1°39 | 3°18 | 11°54 | 4°52 | W18 |
| T 19 | 7 52 59 | 28°59'58 | 2°K50 | 4°56 | 14°55 | 26°32 | 17°27 | 23°21 | 14°30 | 2°24 | 10°18 | 1°D39 | 3°15 | 12° 1 | 4°52 | T 19 |
| F 20 | 7 56 56 | 0°K 59 | 17° 7 | 5°37 | 16° 4 | 26°59 | 17°24 | 23°21 | 14°32 | 2°22 | 10°19 | 1°39 | 3°12 | 12° 7 | 4°53 | F 20 |
| S 21 | 8 0 52 | 1° 2'00 | 0°V58 | 6°23 | 17°14 | 27°25 | 17°20 | 23°20 | 14°35 | 2°21 | 10°19 | 1°41 | 3° 9 | 12°14 | 4°53 | S 21 |
| S 22 | 8 4 49 | 2° 2'59 | 14°20 | 7°12 | 18°24 | 27°51 | 17°16 | 23°20 | 14°38 | 2°19 | 10°20 | 1°42 | 3° 6 | 12°21 | 4°54 | S 22 |
| M23 | 8 8 45 | 3° 3'57 | 27°18 | 8° 5 | 19°33 | 28°17 | 17°13 | 23°20 | 14°40 | 2°17 | 10°21 | 1°R43 | 3° 2 | 12°28 | 4°54 | M23 |
| T 24 | 8 12 42 | 4° 4'54 | 9°B54 | 9° 2 | 20°43 | 28°42 | 17° 9 | 23°D19 | 14°43 | 2°15 | 10°21 | 1°43 | 2°59 | 12°34 | 4°55 | T 24 |
| W25 | 8 16 38 | 5° 5'50 | 22°13 | 10° 1 | 21°53 | 29° 7 | 17° 5 | 23°20 | 14°46 | 2°14 | 10°22 | 1°42 | 2°56 | 12°41 | 4°56 | W25 |
| T 26 | 8 20 35 | 6° 6'44 | 4°I20 | 11° 3 | 23° 3 | 29°32 | 17° 0 | 23°20 | 14°49 | 2°12 | 10°23 | 1°40 | 2°53 | 12°48 | 4°56 | T 26 |
| F 27 | 8 24 32 | 7° 7'37 | 16°17 | 12° 8 | 24°14 | 29°57 | 16°56 | 23°20 | 14°52 | 2°10 | 10°23 | 1°36 | 2°50 | 12°54 | 4°57 | F 27 |
| S 28 | 8 28 28 | 8° 8'28 | 28° 9 | 13°15 | 25°24 | 0°M21 | 16°51 | 23°20 | 14°55 | 2° 9 | 10°24 | 1°32 | 2°47 | 13° 1 | 4°58 | S 28 |
| S 29 | 8 32 25 | 9° 9'19 | 9°S59 | 14°24 | 26°34 | 0°46 | 16°46 | 23°21 | 14°58 | 2° 7 | 10°25 | 1°28 | 2°43 | 13° 8 | 4°59 | S 29 |
| M30 | 8 36 21 | 10°10'08 | 21°50 | 15°35 | 27°45 | 1° 9 | 16°41 | 23°21 | 15° 1 | 2° 5 | 10°26 | 1°24 | 2°40 | 13°14 | 5° 0 | M30 |
| T 31 | 8 40 18 | 11°10'56 | 3°L43 | 16°S48 | 28°K55 | 1°M33 | 16°M36 | 23°B22 | 15°K 4 | 2°L 4 | 10°V27 | 1°M21 | 2°M37 | 13°S21 | 5°B 1 | T 31 |

Delta T = 104.91 sec

Greg. Calendar

FEBRUARY 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|--------|--------|-------|--------|--------|--------|--------|-------|--------|-------|-------|--------|-------|------|
| W 1 | 8 44 14 | 12°11'42 | 15°L41 | 18°S 3 | 0°S 6 | 1°M56 | 16°R31 | 23°B23 | 15°K 7 | 2°R 2 | 10°V27 | 1°R19 | 2°M34 | 13°S28 | 5°B 2 | W 1 |
| T 2 | 8 48 11 | 13°12'27 | 27°46 | 19°19 | 1°17 | 2°19 | 16°M26 | 23°24 | 15°10 | 2°L 0 | 10°28 | 1°D19 | 2°31 | 13°34 | 5° 3 | T 2 |
| F 3 | 8 52 7 | 14°13'11 | 9°M59 | 20°37 | 2°18 | 2°42 | 16°20 | 23°25 | 15°13 | 1°59 | 10°29 | 1°M19 | 2°27 | 13°41 | 5° 5 | F 3 |
| S 4 | 8 56 4 | 15°13'54 | 22°22 | 21°56 | 3°39 | 3° 5 | 16°14 | 23°26 | 15°16 | 1°57 | 10°30 | 1°20 | 2°24 | 13°48 | 5° 6 | S 4 |
| S 5 | 9 0 1 | 16°14'35 | 4°L57 | 23°16 | 4°50 | 3°27 | 16° 8 | 23°27 | 15°19 | 1°55 | 10°31 | 1°21 | 2°21 | 13°55 | 5° 7 | S 5 |
| M 6 | 9 3 57 | 17°15'15 | 17°46 | 24°38 | 6° 1 | 3°49 | 16° 2 | 23°29 | 15°22 | 1°54 | 10°32 | 1°22 | 2°18 | 14° 1 | 5° 9 | M 6 |
| T 7 | 9 7 54 | 18°15'54 | 0°M52 | 26° 0 | 7°12 | 4°10 | 15°56 | 23°30 | 15°25 | 1°52 | 10°33 | 1°23 | 2°15 | 14° 8 | 5°10 | T 7 |
| W 8 | 9 11 50 | 19°16'32 | 14°17 | 27°24 | 8°23 | 4°31 | 15°50 | 23°32 | 15°28 | 1°51 | 10°34 | 1°R24 | 2°12 | 14°15 | 5°12 | W 8 |
| T 9 | 9 15 47 | 20°17'09 | 28° 3 | 28°49 | 9°34 | 4°52 | 15°44 | 23°34 | 15°31 | 1°49 | 10°35 | 1°24 | 2° 8 | 14°21 | 5°13 | T 9 |
| F 10 | 9 19 43 | 21°17'45 | 12°K10 | 0°K16 | 10°46 | 5°12 | 15°37 | 23°35 | 15°34 | 1°47 | 10°36 | 1°23 | 2° 5 | 14°28 | 5°15 | F 10 |
| S 11 | 9 23 40 | 22°18'19 | 26°36 | 1°43 | 11°57 | 5°32 | 15°31 | 23°37 | 15°38 | 1°46 | 10°37 | 1°22 | 2° 2 | 14°35 | 5°17 | S 11 |
| S 12 | 9 27 36 | 23°18'53 | 11°S18 | 3°11 | 13° 9 | 5°52 | 15°24 | 23°39 | 15°41 | 1°44 | 10°38 | 1°21 | 1°59 | 14°41 | 5°19 | S 12 |
| M13 | 9 31 33 | 24°19'25 | 26°12 | 4°41 | 14°20 | 6°12 | 15°17 | 23°42 | 15°44 | 1°43 | 10°39 | 1°21 | 1°56 | 14°48 | 5°20 | M13 |
| T 14 | 9 35 30 | 25°19'55 | 11°K 8 | 6°11 | 15°32 | 6°30 | 15°10 | 23°44 | 15°47 | 1°41 | 10°40 | 1°20 | 1°53 | 14°55 | 5°22 | T 14 |
| W15 | 9 39 26 | 26°20'24 | 26° 0 | 7°42 | 16°44 | 6°49 | 15° 3 | 23°46 | 15°51 | 1°40 | 10°41 | 1°D20 | 1°49 | 15° 1 | 5°24 | W15 |
| T 16 | 9 43 23 | 27°20'51 | 10°K39 | 9°14 | 17°55 | 7° 7 | 14°56 | 23°49 | 15°54 | 1°38 | 10°42 | 1°20 | 1°46 | 15° 8 | 5°26 | T 16 |
| F 17 | 9 47 19 | 28°21'16 | 24°59 | 10°48 | 19° 7 | 7°25 | 14°49 | 23°51 | 15°57 | 1°37 | 10°43 | 1°20 | 1°43 | 15°15 | 5°28 | F 17 |
| S 18 | 9 51 16 | 29°21'40 | 8°V55 | 12°22 | 20°19 | 7°42 | 14°42 | 23°54 | 16° 1 | 1°35 | 10°44 | 1°20 | 1°40 | 15°21 | 5°31 | S 18 |
| S 19 | 9 55 12 | 0°K22'02 | 22°26 | 13°57 | 21°31 | 7°59 | 14°34 | 23°57 | 16° 4 | 1°34 | 10°45 | 1°20 | 1°37 | 15°28 | 5°33 | S 19 |
| M20 | 9 59 9 | 1°22'21 | 5°B31 | 15°33 | 22°43 | 8°15 | 14°27 | 24° 0 | 16° 7 | 1°32 | 10°46 | 1°R20 | 1°33 | 15°35 | 5°35 | M20 |
| T 21 | 10 3 5 | 2°22'39 | 18°14 | 17°11 | 23°55 | 8°31 | 14°19 | 24° 3 | 16°11 | 1°31 | 10°47 | 1°20 | 1°30 | 15°41 | 5°37 | T 21 |
| W22 | 10 7 2 | 3°22'55 | 0°I37 | 18°49 | 25° 7 | 8°47 | 14°12 | 24° 6 | 16°14 | 1°30 | 10°49 | 1°D20 | 1°27 | 15°48 | 5°40 | W22 |
| T 23 | 10 10 59 | 4°23'08 | 12°45 | 20°28 | 26°19 | 9° 2 | 14° 4 | 24° 9 | 16°17 | 1°28 | 10°50 | 1°20 | 1°24 | 15°55 | 5°42 | T 23 |
| F 24 | 10 14 55 | 5°23'20 | 24°42 | 22° 8 | 27°31 | 9°17 | 13°57 | 24°12 | 16°21 | 1°27 | 10°51 | 1°21 | 1°21 | 16° 2 | 5°44 | F 24 |
| S 25 | 10 18 52 | 6°23'30 | 6°S34 | 23°50 | 28°43 | 9°31 | 13°49 | 24°16 | 16°24 | 1°26 | 10°52 | 1°21 | 1°18 | 16° 8 | 5°47 | S 25 |
| S 26 | 10 22 48 | 7°23'37 | 18°23 | 25°32 | 29°55 | 9°44 | 13°41 | 24°19 | 16°28 | 1°24 | 10°53 | 1°22 | 1°14 | 16°15 | 5°49 | S 26 |
| M27 | 10 26 45 | 8°23'42 | 0°L15 | 27°16 | 1°K 7 | 9°57 | 13°33 | 24°23 | 16°31 | 1°23 | 10°55 | 1°22 | 1°11 | 16°22 | 5°52 | M27 |
| T 28 | 10 30 41 | 9°K23'46 | 12°L12 | 29°K 0 | 2°K19 | 10°M10 | 13°M26 | 24°B26 | 16°K34 | 1°L22 | 10°V56 | 1°M23 | 1°M 8 | 16°S28 | 5°B55 | T 28 |

Delta T = 104.77 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1589

geocentric

MARCH 1589 GC

00:00 UT

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

Delta T = 104.65 sec

Greg. Calendar

APRIL 1589 GC

00:00 UT

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

Delta T = 104.52 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1589

geocentric

MAY 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♂ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|-------|--------|-------|-------|------|--------|------|--------|--------|--------|--------|-------|------|
| M 1 | 14 35 8 | 10♌23'15 | 16♍51 | 3°R41 | 17°Y35 | 2°R 9 | 7°R56 | 0♐37 | 19°K49 | 1♌0 | 12°Y21 | 28°R34 | 27°Ω51 | 23°Ω22 | 9♌41 | M 1 |
| T 2 | 14 39 4 | 11°21'15 | 1♌6 | 3♌8 | 18°48 | 1♌47 | 7°M55 | 0°45 | 19°52 | 1°0 | 12°23 | 28°Ω23 | 27°48 | 23°29 | 9°46 | T 2 |
| W 3 | 14 43 1 | 12°19'14 | 15°31 | 2°38 | 20°1 | 1°26 | 7°55 | 0°52 | 19°54 | 1°1 | 12°24 | 28°13 | 27°45 | 23°36 | 9°50 | W 3 |
| T 4 | 14 46 57 | 13°17'11 | 29°59 | 2°11 | 21°14 | 1°4 | 7°55 | 1°0 | 19°56 | 1°2 | 12°25 | 28°5 | 27°41 | 23°42 | 9°54 | T 4 |
| F 5 | 14 50 54 | 14°15'07 | 14♌25 | 1°48 | 22°27 | 0°43 | 7°D55 | 1°7 | 19°59 | 1°3 | 12°26 | 28°0 | 27°38 | 23°49 | 9°58 | F 5 |
| S 6 | 14 54 50 | 15°13'01 | 28°44 | 1°29 | 23°40 | 0°23 | 7°55 | 1°15 | 20°1 | 1°3 | 12°28 | 27°58 | 27°35 | 23°56 | 10°2 | S 6 |
| S 7 | 14 58 47 | 16°10'54 | 12♌54 | 1°13 | 24°54 | 0°2 | 7°55 | 1°23 | 20°3 | 1°4 | 12°29 | 27°D57 | 27°32 | 24°2 | 10°6 | S 7 |
| M 8 | 15 2 43 | 17°8'46 | 26°54 | 1°2 | 26°7 | 29♌42 | 7°56 | 1°30 | 20°6 | 1°5 | 12°30 | 27°R57 | 27°29 | 24°9 | 10°10 | M 8 |
| T 9 | 15 6 40 | 18°6'37 | 10♌43 | 0°56 | 27°20 | 29°23 | 7°57 | 1°38 | 20°8 | 1°6 | 12°31 | 27°56 | 27°26 | 24°16 | 10°15 | T 9 |
| W10 | 15 10 37 | 19°4'26 | 24°22 | 0°D54 | 28°33 | 29°4 | 7°57 | 1°46 | 20°10 | 1°7 | 12°33 | 27°54 | 27°22 | 24°22 | 10°19 | W10 |
| T 11 | 15 14 33 | 20°2'14 | 7°Y51 | 0°57 | 29°46 | 28°46 | 7°58 | 1°53 | 20°12 | 1°8 | 12°34 | 27°50 | 27°19 | 24°29 | 10°23 | T 11 |
| F 12 | 15 18 30 | 21°0'01 | 21°9 | 1°4 | 0♌59 | 28°28 | 8°0 | 2°1 | 20°14 | 1°9 | 12°35 | 27°42 | 27°16 | 24°36 | 10°27 | F 12 |
| S 13 | 15 22 26 | 21°57'47 | 4♌16 | 1°16 | 2°13 | 28°10 | 8°1 | 2°9 | 20°16 | 1°10 | 12°36 | 27°32 | 27°13 | 24°42 | 10°31 | S 13 |
| S 14 | 15 26 23 | 22°55'31 | 17°11 | 1°33 | 3°26 | 27°54 | 8°3 | 2°16 | 20°18 | 1°11 | 12°37 | 27°20 | 27°10 | 24°49 | 10°35 | S 14 |
| M15 | 15 30 19 | 23°53'15 | 29°53 | 1°54 | 4°39 | 27°38 | 8°4 | 2°24 | 20°20 | 1°12 | 12°38 | 27°7 | 27°7 | 24°56 | 10°39 | M15 |
| T 16 | 15 34 16 | 24°50'57 | 12♐21 | 2°19 | 5°52 | 27°22 | 8°6 | 2°32 | 20°22 | 1°13 | 12°39 | 26°54 | 27°3 | 25°2 | 10°43 | T 16 |
| W17 | 15 38 12 | 25°48'37 | 24°37 | 2°48 | 7°5 | 27°8 | 8°8 | 2°40 | 20°24 | 1°14 | 12°41 | 26°42 | 27°0 | 25°9 | 10°47 | W17 |
| T 18 | 15 42 9 | 26°46'16 | 6♌41 | 3°21 | 8°18 | 26°54 | 8°11 | 2°48 | 20°26 | 1°15 | 12°42 | 26°32 | 26°57 | 25°16 | 10°52 | T 18 |
| F 19 | 15 46 6 | 27°43'54 | 18°37 | 3°59 | 9°32 | 26°41 | 8°13 | 2°55 | 20°28 | 1°16 | 12°43 | 26°26 | 26°54 | 25°22 | 10°56 | F 19 |
| S 20 | 15 50 2 | 28°41'30 | 0♌26 | 4°40 | 10°45 | 26°28 | 8°16 | 3°3 | 20°29 | 1°18 | 12°44 | 26°21 | 26°51 | 25°29 | 11°0 | S 20 |
| S 21 | 15 53 59 | 29°39'05 | 12°14 | 5°25 | 11°58 | 26°16 | 8°19 | 3°11 | 20°31 | 1°19 | 12°45 | 26°19 | 26°47 | 25°36 | 11°4 | S 21 |
| M22 | 15 57 55 | 0♐36'38 | 24°6 | 6°14 | 13°11 | 26°6 | 8°22 | 3°19 | 20°33 | 1°20 | 12°46 | 26°19 | 26°44 | 25°42 | 11°8 | M22 |
| T 23 | 16 1 52 | 1°34'10 | 6♐6 | 7°6 | 14°24 | 25°56 | 8°25 | 3°27 | 20°34 | 1°21 | 12°47 | 26°19 | 26°41 | 25°49 | 11°12 | T 23 |
| W24 | 16 5 48 | 2°31'40 | 18°21 | 8°2 | 15°38 | 25°46 | 8°28 | 3°34 | 20°36 | 1°23 | 12°48 | 26°18 | 26°38 | 25°56 | 11°16 | W24 |
| T 25 | 16 9 45 | 3°29'10 | 0♌55 | 9°1 | 16°51 | 25°38 | 8°32 | 3°42 | 20°37 | 1°24 | 12°49 | 26°16 | 26°35 | 26°2 | 11°20 | T 25 |
| F 26 | 16 13 41 | 4°26'37 | 13°53 | 10°3 | 18°4 | 25°30 | 8°35 | 3°50 | 20°39 | 1°25 | 12°50 | 26°11 | 26°32 | 26°9 | 11°23 | F 26 |
| S 27 | 16 17 38 | 5°24'04 | 27°18 | 11°9 | 19°17 | 25°23 | 8°39 | 3°58 | 20°40 | 1°27 | 12°51 | 26°4 | 26°28 | 26°16 | 11°27 | S 27 |
| S 28 | 16 21 35 | 6°21'29 | 11♌9 | 12°17 | 20°31 | 25°17 | 8°43 | 4°6 | 20°42 | 1°28 | 12°52 | 25°55 | 26°25 | 26°22 | 11°31 | S 28 |
| M29 | 16 25 31 | 7°18'54 | 25°25 | 13°29 | 21°44 | 25°12 | 8°47 | 4°13 | 20°43 | 1°30 | 12°53 | 25°44 | 26°22 | 26°29 | 11°35 | M29 |
| T 30 | 16 29 28 | 8°16'17 | 10♌1 | 14°44 | 22°57 | 25°8 | 8°52 | 4°21 | 20°44 | 1°31 | 12°54 | 25°33 | 26°19 | 26°36 | 11°39 | T 30 |
| W31 | 16 33 24 | 9♐13'40 | 24♌50 | 16♌1 | 24♌10 | 25♌4 | 8♐56 | 4♐29 | 20°46 | 1♌33 | 12°Y54 | 25°Ω23 | 26°Ω16 | 26°Ω42 | 11♌43 | W31 |

Delta T = 104.39 sec

Greg. Calendar

JUNE 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♂ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|-------|-------|--------|--------|------|--------|-------|--------|--------|--------|--------|-------|------|
| T 1 | 16 37 21 | 10♐11'01 | 9♌42 | 17♌22 | 25♌24 | 25°R 2 | 9♐1 | 4♐37 | 20°K47 | 1♌34 | 12°Y55 | 25°R15 | 26°Ω13 | 26°Ω49 | 11♌47 | T 1 |
| F 2 | 16 41 17 | 11°8'22 | 24°30 | 18°46 | 26°37 | 25°0 | 9°5 | 4°45 | 20°48 | 1°36 | 12°56 | 25°Ω10 | 26°9 | 26°56 | 11°50 | F 2 |
| S 3 | 16 45 14 | 12°5'43 | 9♌7 | 20°12 | 27°50 | 24°59 | 9°10 | 4°52 | 20°49 | 1°37 | 12°57 | 25°7 | 26°6 | 27°2 | 11°54 | S 3 |
| S 4 | 16 49 10 | 13°3'03 | 23°29 | 21°41 | 29°3 | 24°D58 | 9°15 | 5°0 | 20°50 | 1°39 | 12°58 | 25°D 6 | 26°3 | 27°9 | 11°58 | S 4 |
| M 5 | 16 53 7 | 14°0'22 | 7♌33 | 23°13 | 0♐17 | 24°59 | 9°21 | 5°8 | 20°51 | 1°40 | 12°59 | 25°R 6 | 26°0 | 27°16 | 12°2 | M 5 |
| T 6 | 16 57 4 | 14°57'41 | 21°20 | 24°48 | 1°30 | 25°0 | 9°26 | 5°16 | 20°52 | 1°42 | 12°59 | 25°6 | 25°57 | 27°22 | 12°5 | T 6 |
| W 7 | 17 1 0 | 15°54'59 | 4°Y49 | 26°26 | 2°43 | 25°2 | 9°31 | 5°24 | 20°53 | 1°44 | 13°0 | 25°5 | 25°53 | 27°29 | 12°9 | W 7 |
| T 8 | 17 4 57 | 16°52'17 | 18°4 | 28°6 | 3°57 | 25°5 | 9°37 | 5°31 | 20°54 | 1°45 | 13°1 | 25°1 | 25°50 | 27°36 | 12°12 | T 8 |
| F 9 | 17 8 53 | 17°49'35 | 1♌4 | 29°50 | 5°10 | 25°9 | 9°43 | 5°39 | 20°55 | 1°47 | 13°2 | 24°55 | 25°47 | 27°42 | 12°16 | F 9 |
| S 10 | 17 12 50 | 18°46'52 | 13°52 | 1♐36 | 6°24 | 25°13 | 9°49 | 5°47 | 20°56 | 1°49 | 13°2 | 24°47 | 25°44 | 27°49 | 12°20 | S 10 |
| S 11 | 17 16 46 | 19°44'09 | 26°28 | 3°24 | 7°37 | 25°18 | 9°55 | 5°54 | 20°56 | 1°50 | 13°3 | 24°36 | 25°41 | 27°56 | 12°23 | S 11 |
| M12 | 17 20 43 | 20°41'26 | 8♐53 | 5°15 | 8°50 | 25°24 | 10°1 | 6°2 | 20°57 | 1°52 | 13°4 | 24°25 | 25°38 | 28°2 | 12°27 | M12 |
| T 13 | 17 24 39 | 21°38'42 | 21°7 | 7°9 | 10°4 | 25°31 | 10°8 | 6°10 | 20°58 | 1°54 | 13°4 | 24°13 | 25°34 | 28°9 | 12°30 | T 13 |
| W14 | 17 28 36 | 22°35'57 | 3♌12 | 9°5 | 11°17 | 25°38 | 10°14 | 6°17 | 20°58 | 1°56 | 13°5 | 24°3 | 25°31 | 28°15 | 12°34 | W14 |
| T 15 | 17 32 33 | 23°33'12 | 15°10 | 11°4 | 12°31 | 25°46 | 10°21 | 6°25 | 20°59 | 1°58 | 13°6 | 23°55 | 25°28 | 28°22 | 12°37 | T 15 |
| F 16 | 17 36 29 | 24°30'27 | 27°0 | 13°4 | 13°44 | 25°55 | 10°28 | 6°33 | 20°59 | 1°59 | 13°6 | 23°49 | 25°25 | 28°29 | 12°40 | F 16 |
| S 17 | 17 40 26 | 25°27'41 | 8♌48 | 15°7 | 14°57 | 26°4 | 10°34 | 6°40 | 21°0 | 2°1 | 13°7 | 23°46 | 25°22 | 28°35 | 12°44 | S 17 |
| S 18 | 17 44 22 | 26°24'55 | 20°35 | 17°12 | 16°11 | 26°14 | 10°41 | 6°48 | 21°0 | 2°3 | 13°7 | 23°D44 | 25°19 | 28°42 | 12°47 | S 18 |
| M19 | 17 48 19 | 27°22'07 | 2♐26 | 19°18 | 17°24 | 26°25 | 10°49 | 6°55 | 21°1 | 2°5 | 13°8 | 23°45 | 25°15 | 28°49 | 12°50 | M19 |
| T 20 | 17 52 15 | 28°19'20 | 14°26 | 21°26 | 18°38 | 26°37 | 10°56 | 7°3 | 21°1 | 2°7 | 13°8 | 23°46 | 25°12 | 28°55 | 12°54 | T 20 |
| W21 | 17 56 12 | 29°16'32 | 26°39 | 23°35 | 19°51 | 26°49 | 11°3 | 7°10 | 21°1 | 2°9 | 13°9 | 23°R46 | 25°9 | 29°2 | 12°57 | W21 |
| T 22 | 18 0 8 | 0♐13'43 | 9♌12 | 25°45 | 21°5 | 27°2 | 11°11 | 7°18 | 21°2 | 2°11 | 13°9 | 23°46 | 25°6 | 29°9 | 13°0 | T 22 |
| F 23 | 18 4 5 | 1°10'54 | 22°7 | 27°55 | 22°18 | 27°15 | 11°19 | 7°25 | 21°2 | 2°13 | 13°10 | 23°44 | 25°3 | 29°15 | 13°3 | F 23 |
| S 24 | 18 8 2 | 2°8'04 | 5♐30 | 0♌6 | 23°32 | 27°29 | 11°26 | 7°32 | 21°2 | 2°15 | 13°10 | 23°40 | 24°59 | 29°22 | 13°6 | S 24 |
| S 25 | 18 11 58 | 3°5'14 | 19°22 | 2°17 | 24°45 | 27°44 | 11°34 | 7°40 | 21°2 | 2°17 | 13°11 | 23°34 | 24°56 | 29°29 | 13°9 | S 25 |
| M26 | 18 15 55 | 4°2'24 | 3♌42 | 4°28 | 25°59 | 27°59 | 11°42 | 7°47 | 21°R 2 | 2°19 | 13°11 | 23°27 | 24°53 | 29°35 | 13°12 | M26 |
| T 27 | 18 19 51 | 4°59'34 | 18°26 | 6°38 | 27°12 | 28°15 | 11°51 | 7°54 | 21°2 | 2°21 | 13°11 | 23°20 | 24°50 | 29°42 | 13°15 | T 27 |
| W28 | 18 23 48 | 5°56'43 | 3♌27 | 8°47 | 28°26 | 28°32 | 11°59 | 8°1 | 21°2 | 2°23 | 13°12 | 23°13 | 24°47 | 29°49 | 13°18 | W28 |
| T 29 | 18 27 44 | 6°53'53 | 18°36 | 10°56 | 29°40 | 28°48 | 12°7 | 8°9 | 21°2 | 2°25 | 13°12 | 23°8 | 24°44 | 29°55 | 13°21 | T 29 |
| F 30 | 18 31 41 | 7°51'03 | 3♌42 | 13°3 | 0♌53 | 29°0 | 12°M16 | 8♐16 | 21°K 2 | 2°Ω27 | 13°Y12 | 23°Ω 4 | 24°Ω40 | 0♌2 | 13♌24 | F 30 |

Delta T = 104.25 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1589

geocentric

JULY 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|-------|-------|-------|-------|-------|--------|------|--------|--------|-------|------|-------|------|
| S 1 | 18 35 37 | 8°48'12 | 18°38 | 15°9 | 2°7 | 29°24 | 12°24 | 8°23 | 21°R 1 | 2°29 | 13°13 | 23°D 3 | 24°37 | 0°9 | 13°27 | S 1 |
| S 2 | 18 39 34 | 9°45'23 | 3°16 | 17°14 | 3°20 | 29°43 | 12°33 | 8°30 | 21°1 | 2°31 | 13°13 | 23°3 | 24°34 | 0°15 | 13°29 | S 2 |
| M 3 | 18 43 31 | 10°42'33 | 17°32 | 19°17 | 4°34 | 0°21 | 12°42 | 8°37 | 21°1 | 2°33 | 13°13 | 23°4 | 24°31 | 0°22 | 13°32 | M 3 |
| T 4 | 18 47 27 | 11°39'44 | 1°26 | 21°18 | 5°48 | 0°21 | 12°51 | 8°44 | 21°0 | 2°35 | 13°13 | 23°5 | 24°28 | 0°29 | 13°35 | T 4 |
| W 5 | 18 51 24 | 12°36'55 | 14°56 | 23°18 | 7°1 | 0°41 | 13°0 | 8°51 | 21°0 | 2°37 | 13°14 | 23°R 6 | 24°24 | 0°35 | 13°37 | W 5 |
| T 6 | 18 55 20 | 13°34'07 | 28°6 | 25°16 | 8°15 | 1°2 | 13°9 | 8°58 | 20°59 | 2°39 | 13°14 | 23°5 | 24°21 | 0°42 | 13°40 | T 6 |
| F 7 | 18 59 17 | 14°31'19 | 10°57 | 27°12 | 9°29 | 1°23 | 13°18 | 9°5 | 20°59 | 2°42 | 13°14 | 23°2 | 24°18 | 0°49 | 13°42 | F 7 |
| S 8 | 19 3 13 | 15°28'32 | 23°32 | 29°7 | 10°43 | 1°44 | 13°27 | 9°12 | 20°58 | 2°44 | 13°14 | 22°58 | 24°15 | 0°55 | 13°45 | S 8 |
| S 9 | 19 7 10 | 16°25'46 | 5°55 | 0°59 | 11°56 | 2°6 | 13°37 | 9°19 | 20°58 | 2°46 | 13°14 | 22°52 | 24°12 | 1°2 | 13°47 | S 9 |
| M10 | 19 11 6 | 17°23'00 | 18°6 | 2°50 | 13°10 | 2°29 | 13°46 | 9°25 | 20°57 | 2°48 | 13°14 | 22°46 | 24°9 | 1°9 | 13°50 | M10 |
| T 11 | 19 15 3 | 18°20'15 | 0°9 | 4°39 | 14°24 | 2°52 | 13°56 | 9°32 | 20°56 | 2°50 | 13°14 | 22°40 | 24°5 | 1°15 | 13°52 | T 11 |
| W12 | 19 19 0 | 19°17'30 | 12°5 | 6°26 | 15°38 | 3°15 | 14°6 | 9°39 | 20°56 | 2°52 | 13°14 | 22°34 | 24°2 | 1°22 | 13°54 | W12 |
| T 13 | 19 22 56 | 20°14'46 | 23°56 | 8°11 | 16°51 | 3°39 | 14°15 | 9°45 | 20°55 | 2°55 | 13°14 | 22°30 | 23°59 | 1°29 | 13°56 | T 13 |
| F 14 | 19 26 53 | 21°12'02 | 5°44 | 9°55 | 18°5 | 4°3 | 14°25 | 9°52 | 20°54 | 2°57 | 13°R14 | 22°27 | 23°56 | 1°35 | 13°59 | F 14 |
| S 15 | 19 30 49 | 22°9'19 | 17°31 | 11°36 | 19°19 | 4°28 | 14°35 | 9°58 | 20°53 | 2°59 | 13°14 | 22°D26 | 23°53 | 1°42 | 14°1 | S 15 |
| S 16 | 19 34 46 | 23°6'36 | 29°20 | 13°16 | 20°33 | 4°53 | 14°45 | 10°5 | 20°52 | 3°1 | 13°14 | 22°26 | 23°50 | 1°49 | 14°3 | S 16 |
| M17 | 19 38 42 | 24°3'53 | 11°14 | 14°54 | 21°47 | 5°18 | 14°56 | 10°11 | 20°51 | 3°3 | 13°14 | 22°27 | 23°46 | 1°55 | 14°5 | M17 |
| T 18 | 19 42 39 | 25°1'11 | 23°16 | 16°30 | 23°1 | 5°44 | 15°6 | 10°18 | 20°50 | 3°6 | 13°14 | 22°29 | 23°43 | 2°2 | 14°7 | T 18 |
| W19 | 19 46 35 | 25°58'29 | 5°31 | 18°4 | 24°15 | 6°10 | 15°16 | 10°24 | 20°49 | 3°8 | 13°14 | 22°30 | 23°40 | 2°9 | 14°9 | W19 |
| T 20 | 19 50 32 | 26°55'48 | 18°3 | 19°36 | 25°29 | 6°37 | 15°27 | 10°30 | 20°48 | 3°10 | 13°14 | 22°31 | 23°37 | 2°15 | 14°11 | T 20 |
| F 21 | 19 54 29 | 27°53'07 | 0°56 | 21°6 | 26°43 | 7°4 | 15°37 | 10°36 | 20°47 | 3°12 | 13°14 | 22°R32 | 23°34 | 2°22 | 14°12 | F 21 |
| S 22 | 19 58 25 | 28°50'26 | 14°14 | 22°35 | 27°56 | 7°31 | 15°48 | 10°42 | 20°46 | 3°14 | 13°14 | 22°31 | 23°30 | 2°29 | 14°14 | S 22 |
| S 23 | 20 2 22 | 29°47'46 | 27°59 | 24°1 | 29°10 | 7°59 | 15°58 | 10°48 | 20°45 | 3°17 | 13°13 | 22°29 | 23°27 | 2°35 | 14°16 | S 23 |
| M24 | 20 6 18 | 0°45'07 | 12°12 | 25°26 | 0°24 | 8°27 | 16°9 | 10°54 | 20°43 | 3°19 | 13°13 | 22°27 | 23°24 | 2°42 | 14°17 | M24 |
| T 25 | 20 10 15 | 1°42'28 | 26°49 | 26°49 | 1°38 | 8°55 | 16°20 | 11°0 | 20°42 | 3°21 | 13°13 | 22°24 | 23°21 | 2°48 | 14°19 | T 25 |
| W26 | 20 14 11 | 2°39'50 | 11°47 | 28°10 | 2°52 | 9°24 | 16°31 | 11°6 | 20°41 | 3°23 | 13°13 | 22°22 | 23°18 | 2°55 | 14°21 | W26 |
| T 27 | 20 18 8 | 3°37'13 | 26°58 | 29°29 | 4°6 | 9°53 | 16°42 | 11°12 | 20°39 | 3°25 | 13°12 | 22°20 | 23°15 | 3°2 | 14°22 | T 27 |
| F 28 | 20 22 4 | 4°34'36 | 12°11 | 0°45 | 5°20 | 10°23 | 16°53 | 11°18 | 20°38 | 3°28 | 13°12 | 22°19 | 23°11 | 3°8 | 14°23 | F 28 |
| S 29 | 20 26 1 | 5°32'01 | 27°18 | 2°0 | 6°34 | 10°52 | 17°4 | 11°23 | 20°37 | 3°30 | 13°12 | 22°D18 | 23°8 | 3°15 | 14°25 | S 29 |
| S 30 | 20 29 58 | 6°29'27 | 12°9 | 3°12 | 7°48 | 11°22 | 17°15 | 11°29 | 20°35 | 3°32 | 13°11 | 22°19 | 23°5 | 3°22 | 14°26 | S 30 |
| M31 | 20 33 54 | 7°26'53 | 26°38 | 4°22 | 9°2 | 11°52 | 17°26 | 11°35 | 20°34 | 3°34 | 13°11 | 22°20 | 23°2 | 3°28 | 14°27 | M31 |

Delta T = 104.12 sec

Greg. Calendar

AUGUST 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|--------|-------|-------|-------|-------|--------|------|--------|--------|-------|------|--------|------|
| T 1 | 20 37 51 | 8°24'21 | 10°43 | 5°30 | 10°17 | 12°23 | 17°37 | 11°40 | 20°R32 | 3°37 | 13°R11 | 22°21 | 22°59 | 3°35 | 14°28 | T 1 |
| W 2 | 20 41 47 | 9°21'51 | 24°21 | 6°36 | 11°31 | 12°54 | 17°49 | 11°45 | 20°30 | 3°39 | 13°10 | 22°22 | 22°56 | 3°42 | 14°30 | W 2 |
| T 3 | 20 45 44 | 10°19'21 | 7°34 | 7°38 | 12°45 | 13°25 | 18°0 | 11°51 | 20°29 | 3°41 | 13°10 | 22°R22 | 22°52 | 3°48 | 14°31 | T 3 |
| F 4 | 20 49 40 | 11°16'53 | 20°24 | 8°39 | 13°59 | 13°56 | 18°12 | 11°56 | 20°27 | 3°43 | 13°9 | 22°22 | 22°49 | 3°55 | 14°32 | F 4 |
| S 5 | 20 53 37 | 12°14'27 | 2°55 | 9°36 | 15°13 | 14°28 | 18°23 | 12°1 | 20°25 | 3°45 | 13°9 | 22°22 | 22°46 | 4°2 | 14°33 | S 5 |
| S 6 | 20 57 33 | 13°12'02 | 15°10 | 10°31 | 16°27 | 15°0 | 18°35 | 12°6 | 20°24 | 3°48 | 13°9 | 22°21 | 22°43 | 4°8 | 14°34 | S 6 |
| M 7 | 21 1 30 | 14°9'39 | 27°14 | 11°22 | 17°41 | 15°32 | 18°46 | 12°11 | 20°22 | 3°50 | 13°8 | 22°20 | 22°40 | 4°15 | 14°34 | M 7 |
| T 8 | 21 5 27 | 15°7'17 | 9°9 | 12°11 | 18°56 | 16°5 | 18°58 | 12°16 | 20°20 | 3°52 | 13°8 | 22°18 | 22°36 | 4°22 | 14°35 | T 8 |
| W 9 | 21 9 23 | 16°4'56 | 20°59 | 12°56 | 20°10 | 16°38 | 19°10 | 12°21 | 20°18 | 3°54 | 13°7 | 22°18 | 22°33 | 4°28 | 14°36 | W 9 |
| T 10 | 21 13 20 | 17°2'37 | 2°47 | 13°37 | 21°24 | 17°11 | 19°22 | 12°26 | 20°16 | 3°56 | 13°6 | 22°17 | 22°30 | 4°35 | 14°36 | T 10 |
| F 11 | 21 17 16 | 18°0'19 | 14°35 | 14°15 | 22°38 | 17°44 | 19°34 | 12°31 | 20°14 | 3°59 | 13°6 | 22°17 | 22°27 | 4°42 | 14°37 | F 11 |
| S 12 | 21 21 13 | 18°58'02 | 26°25 | 14°49 | 23°52 | 18°18 | 19°46 | 12°35 | 20°13 | 4°1 | 13°5 | 22°D17 | 22°24 | 4°48 | 14°38 | S 12 |
| S 13 | 21 25 9 | 19°55'47 | 8°20 | 15°19 | 25°7 | 18°52 | 19°58 | 12°40 | 20°11 | 4°3 | 13°5 | 22°17 | 22°21 | 4°55 | 14°38 | S 13 |
| M14 | 21 29 6 | 20°53'33 | 20°22 | 15°44 | 26°21 | 19°26 | 20°10 | 12°44 | 20°9 | 4°5 | 13°4 | 22°17 | 22°17 | 5°2 | 14°38 | M14 |
| T 15 | 21 33 2 | 21°51'20 | 2°33 | 16°5 | 27°35 | 20°0 | 20°22 | 12°49 | 20°7 | 4°7 | 13°3 | 22°R17 | 22°14 | 5°8 | 14°39 | T 15 |
| W16 | 21 36 59 | 22°49'09 | 14°56 | 16°20 | 28°49 | 20°34 | 20°34 | 12°53 | 20°5 | 4°9 | 13°3 | 22°17 | 22°11 | 5°15 | 14°39 | W16 |
| T 17 | 21 40 56 | 23°46'59 | 27°33 | 16°31 | 0°4 | 21°9 | 20°46 | 12°57 | 20°2 | 4°12 | 13°2 | 22°17 | 22°8 | 5°21 | 14°39 | T 17 |
| F 18 | 21 44 52 | 24°44'50 | 10°28 | 16°R36 | 1°18 | 21°44 | 20°58 | 13°1 | 20°0 | 4°14 | 13°1 | 22°17 | 22°5 | 5°28 | 14°39 | F 18 |
| S 19 | 21 48 49 | 25°42'42 | 23°43 | 16°36 | 2°32 | 22°19 | 21°10 | 13°5 | 19°58 | 4°16 | 13°1 | 22°D17 | 22°2 | 5°35 | 14°39 | S 19 |
| S 20 | 21 52 45 | 26°40'35 | 7°21 | 16°30 | 3°47 | 22°55 | 21°23 | 13°9 | 19°56 | 4°18 | 13°0 | 22°17 | 21°58 | 5°41 | 14°R39 | S 20 |
| M21 | 21 56 42 | 27°38'30 | 21°21 | 16°18 | 5°1 | 23°31 | 21°35 | 13°13 | 19°54 | 4°20 | 12°59 | 22°17 | 21°55 | 5°48 | 14°39 | M21 |
| T 22 | 22 0 38 | 28°36'26 | 5°34 | 16°0 | 6°15 | 24°6 | 21°47 | 13°17 | 19°52 | 4°22 | 12°58 | 22°18 | 21°52 | 5°55 | 14°39 | T 22 |
| W23 | 22 4 35 | 29°34'24 | 20°27 | 15°36 | 7°30 | 24°42 | 22°0 | 13°20 | 19°50 | 4°24 | 12°58 | 22°18 | 21°49 | 6°1 | 14°39 | W23 |
| T 24 | 22 8 31 | 0°32'23 | 5°24 | 15°5 | 8°44 | 25°19 | 22°12 | 13°24 | 19°47 | 4°26 | 12°57 | 22°19 | 21°46 | 6°8 | 14°39 | T 24 |
| F 25 | 22 12 28 | 1°30'23 | 20°28 | 14°30 | 9°58 | 25°55 | 22°25 | 13°28 | 19°45 | 4°28 | 12°56 | 22°R19 | 21°42 | 6°15 | 14°39 | F 25 |
| S 26 | 22 16 25 | 2°28'25 | 5°31 | 13°48 | 11°13 | 26°32 | 22°37 | 13°31 | 19°43 | 4°30 | 12°55 | 22°19 | 21°39 | 6°21 | 14°38 | S 26 |
| S 27 | 22 20 21 | 3°26'29 | 20°24 | 13°2 | 12°27 | 27°9 | 22°50 | 13°34 | 19°41 | 4°32 | 12°54 | 22°18 | 21°36 | 6°28 | 14°38 | S 27 |
| M28 | 22 24 18 | 4°24'34 | 5°10 | 12°11 | 13°41 | 27°46 | 23°2 | 13°37 | 19°38 | 4°34 | 12°53 | 22°17 | 21°33 | 6°35 | 14°37 | M28 |
| T 29 | 22 28 14 | 5°22'41 | 19°12 | 11°16 | 14°56 | 28°23 | 23°15 | 13°41 | 19°36 | 4°36 | 12°53 | 22°15 | 21°30 | 6°41 | 14°37 | T 29 |
| W30 | 22 32 11 | 6°20'50 | 2°59 | 10°19 | 16°10 | 29°0 | 23°28 | 13°44 | 19°34 | 4°38 | 12°52 | 22°14 | 21°27 | 6°48 | 14°36 | W30 |
| T 31 | 22 36 7 | 7°19'01 | 16°18 | 9°21 | 17°24 | 29°38 | 23°40 | 13°46 | 19°31 | 4°40 | 12°51 | 22°12 | 21°23 | 6°55 | 14°36 | T 31 |

Delta T = 103.99 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1589

geocentric

SEPTEMBER 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|
| F 1 | 22 40 4 | 8 ^h 17'15" | 29 ^h 12' | 8°R22 | 18 ^h 39' | 0 ^h 16' | 23 ^h 53' | 13 ^h 49' | 19°R29 | 4 ^h 42' | 12°R50 | 22°R11 | 21 ^h 20' | 7 ^h 1 | 14°R35 | F 1 |
| S 2 | 22 44 0 | 9°15'30" | 11 ^h 44' | 7 ^h 23' | 19°53' | 0°54' | 24° 6' | 13°52' | 19 ^h 27' | 4°44' | 12°Y49 | 22°D11 | 21°17' | 7° 8' | 14°R34 | S 2 |
| S 3 | 22 47 57 | 10°13'47" | 23°58' | 6°28' | 21° 8' | 1°32' | 24°18' | 13°55' | 19°24' | 4°46' | 12°48' | 22 ^h 12' | 21°14' | 7°15' | 14°33' | S 3 |
| M 4 | 22 51 54 | 11°12'07" | 5 ^h 59' | 5°36' | 22°22' | 2°10' | 24°31' | 13°57' | 19°22' | 4°48' | 12°47' | 22°13' | 21°11' | 7°21' | 14°32' | M 4 |
| T 5 | 22 55 50 | 12°10'28" | 17°51' | 4°48' | 23°36' | 2°48' | 24°44' | 13°59' | 19°20' | 4°50' | 12°46' | 22°14' | 21° 7' | 7°28' | 14°31' | T 5 |
| W 6 | 22 59 47 | 13° 8'52" | 29°39' | 4° 7' | 24°51' | 3°27' | 24°57' | 14° 2' | 19°17' | 4°51' | 12°45' | 22°16' | 21° 4' | 7°34' | 14°30' | W 6 |
| T 7 | 23 3 43 | 14° 7'18" | 11 ^h 26' | 3°33' | 26° 5' | 4° 6' | 25°10' | 14° 4' | 19°15' | 4°53' | 12°44' | 22°17' | 21° 1' | 7°41' | 14°29' | T 7 |
| F 8 | 23 7 40 | 15° 5'45" | 23°17' | 3° 7' | 27°20' | 4°45' | 25°22' | 14° 6' | 19°12' | 4°55' | 12°43' | 22°R18 | 20°58' | 7°48' | 14°28' | F 8 |
| S 9 | 23 11 36 | 16° 4'15" | 5 ^h 13' | 2°49' | 28°34' | 5°24' | 25°35' | 14° 8' | 19°10' | 4°57' | 12°42' | 22°17' | 20°55' | 7°54' | 14°27' | S 9 |
| S 10 | 23 15 33 | 17° 2'47" | 17°18' | 2°D41 | 29°49' | 6° 3' | 25°48' | 14°10' | 19° 8' | 4°59' | 12°41' | 22°15' | 20°52' | 8° 1' | 14°26' | S 10 |
| M 11 | 23 19 29 | 18° 1'20" | 29°33' | 2°42' | 1 ^h 3' | 6°43' | 26° 1' | 14°12' | 19° 5' | 5° 0' | 12°40' | 22°12' | 20°48' | 8° 8' | 14°24' | M 11 |
| T 12 | 23 23 26 | 18°59'55" | 11 ^h 59' | 2°53' | 2°17' | 7°22' | 26°14' | 14°13' | 19° 3' | 5° 2' | 12°39' | 22° 8' | 20°45' | 8°14' | 14°23' | T 12 |
| W 13 | 23 27 22 | 19°58'33" | 24°38' | 3°13' | 3°32' | 8° 2' | 26°27' | 14°15' | 19° 0' | 5° 4' | 12°38' | 22° 3' | 20°42' | 8°21' | 14°22' | W 13 |
| T 14 | 23 31 19 | 20°57'12" | 7 ^h 29' | 3°42' | 4°46' | 8°42' | 26°40' | 14°16' | 18°58' | 5° 5' | 12°37' | 21°59' | 20°39' | 8°28' | 14°20' | T 14 |
| F 15 | 23 35 16 | 21°55'52" | 20°35' | 4°21' | 6° 1' | 9°22' | 26°53' | 14°18' | 18°55' | 5° 7' | 12°36' | 21°55' | 20°36' | 8°34' | 14°19' | F 15 |
| S 16 | 23 39 12 | 22°54'35" | 3 ^h 56' | 5° 8' | 7°15' | 10° 2' | 27° 6' | 14°19' | 18°53' | 5° 9' | 12°35' | 21°52' | 20°33' | 8°41' | 14°17' | S 16 |
| S 17 | 23 43 9 | 23°53'19" | 17°32' | 6° 3' | 8°30' | 10°43' | 27°19' | 14°20' | 18°51' | 5°10' | 12°34' | 21°D51 | 20°29' | 8°48' | 14°15' | S 17 |
| M 18 | 23 47 5 | 24°52'05" | 1 ^h 24' | 7° 5' | 9°44' | 11°23' | 27°32' | 14°21' | 18°48' | 5°12' | 12°33' | 21°51' | 20°26' | 8°54' | 14°14' | M 18 |
| T 19 | 23 51 2 | 25°50'53" | 15°31' | 8°14' | 10°59' | 12° 4' | 27°45' | 14°22' | 18°46' | 5°13' | 12°32' | 21°52' | 20°23' | 9° 1' | 14°12' | T 19 |
| W 20 | 23 54 58 | 26°49'43" | 29°54' | 9°30' | 12°13' | 12°44' | 27°58' | 14°23' | 18°43' | 5°15' | 12°30' | 21°53' | 20°20' | 9° 8' | 14°10' | W 20 |
| T 21 | 23 58 55 | 27°48'34" | 14 ^h 29' | 10°51' | 13°28' | 13°25' | 28°11' | 14°24' | 18°41' | 5°17' | 12°29' | 21°R54 | 20°17' | 9°14' | 14° 8' | T 21 |
| F 22 | 0 2 51 | 28°47'27" | 29°12' | 12°17' | 14°42' | 14° 6' | 28°24' | 14°24' | 18°39' | 5°18' | 12°28' | 21°54' | 20°13' | 9°21' | 14° 6' | F 22 |
| S 23 | 0 6 48 | 29°46'22" | 13 ^h 57' | 13°47' | 15°56' | 14°47' | 28°37' | 14°25' | 18°36' | 5°20' | 12°27' | 21°53' | 20°10' | 9°27' | 14° 4' | S 23 |
| S 24 | 0 10 45 | 0 ^h 45'18" | 28°37' | 15°20' | 17°11' | 15°29' | 28°50' | 14°25' | 18°34' | 5°21' | 12°26' | 21°49' | 20° 7' | 9°34' | 14° 2' | S 24 |
| M 25 | 0 14 41 | 1°44'17" | 13 ^h Y 5' | 16°57' | 18°25' | 16°10' | 29° 3' | 14°25' | 18°32' | 5°22' | 12°25' | 21°44' | 20° 4' | 9°41' | 14° 0' | M 25 |
| T 26 | 0 18 38 | 2°43'18" | 27°15' | 18°36' | 19°40' | 16°52' | 29°16' | 14°25' | 18°29' | 5°24' | 12°24' | 21°37' | 20° 1' | 9°47' | 13°58' | T 26 |
| W 27 | 0 22 34 | 3°42'21" | 11 ^h 3 | 20°17' | 20°54' | 17°33' | 29°29' | 14°R25 | 18°27' | 5°25' | 12°23' | 21°30' | 19°58' | 9°54' | 13°56' | W 27 |
| T 28 | 0 26 31 | 4°41'26" | 24°25' | 22° 0' | 22° 8' | 18°15' | 29°42' | 14°25' | 18°25' | 5°26' | 12°21' | 21°24' | 19°54' | 10° 1' | 13°54' | T 28 |
| F 29 | 0 30 27 | 5°40'34" | 7 ^h 23' | 23°44' | 23°23' | 18°57' | 29°54' | 14°25' | 18°23' | 5°28' | 12°20' | 21°19' | 19°51' | 10° 7' | 13°51' | F 29 |
| S 30 | 0 34 24 | 6 ^h 39'44" | 19 ^h 58' | 25 ^h 29' | 24 ^h 37' | 19 ^h 39' | 0 ^h 7' | 14 ^h 25' | 18 ^h 20' | 5 ^h 29' | 12 ^h Y19 | 21 ^h 15' | 19 ^h 48' | 10 ^h 14' | 13 ^h 49' | S 30 |

Delta T = 103.86 sec

Greg. Calendar

OCTOBER 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|-----------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------|---------------------|---------------------|---------------------|------|
| S 1 | 0 38 20 | 7 ^h 38'56" | 2 ^h 13' | 27 ^h 14' | 25 ^h 52' | 20 ^h 21' | 0 ^h 20' | 14°R24 | 18°R18 | 5 ^h 30' | 12°R18 | 21°R14 | 19 ^h 45' | 10 ^h 21' | 13°R47 | S 1 |
| M 2 | 0 42 17 | 8°38'11" | 14°14' | 29° 0' | 27° 6' | 21° 3' | 0°33' | 14 ^h 24' | 18 ^h 16' | 5°32' | 12°Y17 | 21°D14 | 19°42' | 10°27' | 13°R44 | M 2 |
| T 3 | 0 46 14 | 9°37'28" | 26° 6' | 0 ^h 46' | 28°21' | 21°45' | 0°46' | 14°23' | 18°14' | 5°33' | 12°16' | 21°D15 | 19°39' | 10°34' | 13°42' | T 3 |
| W 4 | 0 50 10 | 10°36'47" | 7 ^h 53' | 2°32' | 29°35' | 22°28' | 0°59' | 14°22' | 18°11' | 5°34' | 12°14' | 21°16' | 19°35' | 10°41' | 13°40' | W 4 |
| T 5 | 0 54 7 | 11°36'09" | 19°42' | 4°18' | 0 ^h 49' | 23°10' | 1°12' | 14°22' | 18° 9' | 5°35' | 12°13' | 21°R17 | 19°32' | 10°47' | 13°37' | T 5 |
| F 6 | 0 58 3 | 12°35'32" | 1 ^h 36' | 6° 4' | 2° 4' | 23°53' | 1°25' | 14°21' | 18° 7' | 5°36' | 12°12' | 21°16' | 19°29' | 10°54' | 13°34' | F 6 |
| S 7 | 1 2 0 | 13°34'58" | 13°40' | 7°49' | 3°18' | 24°35' | 1°38' | 14°20' | 18° 5' | 5°37' | 12°11' | 21°14' | 19°26' | 11° 1' | 13°32' | S 7 |
| S 8 | 1 5 56 | 14°34'27" | 25°56' | 9°34' | 4°33' | 25°18' | 1°51' | 14°18' | 18° 3' | 5°38' | 12°10' | 21° 9' | 19°23' | 11° 7' | 13°29' | S 8 |
| M 9 | 1 9 53 | 15°33'57" | 8 ^h 26' | 11°18' | 5°47' | 26° 1' | 2° 3' | 14°17' | 18° 1' | 5°39' | 12° 9' | 21° 1' | 19°19' | 11°14' | 13°27' | M 9 |
| T 10 | 1 13 49 | 16°33'29" | 21°11' | 13° 2' | 7° 2' | 26°44' | 2°16' | 14°16' | 17°59' | 5°40' | 12° 8' | 20°52' | 19°16' | 11°20' | 13°24' | T 10 |
| W 11 | 1 17 46 | 17°33'04" | 4 ^h 11' | 14°45' | 8°16' | 27°27' | 2°29' | 14°14' | 17°57' | 5°41' | 12° 6' | 20°42' | 19°13' | 11°27' | 13°21' | W 11 |
| T 12 | 1 21 42 | 18°32'40" | 17°25' | 16°28' | 9°30' | 28°11' | 2°42' | 14°12' | 17°55' | 5°42' | 12° 5' | 20°32' | 19°10' | 11°34' | 13°18' | T 12 |
| F 13 | 1 25 39 | 19°32'19" | 0 ^h 51' | 18°10' | 10°45' | 28°54' | 2°54' | 14°11' | 17°53' | 5°43' | 12° 4' | 20°23' | 19° 7' | 11°40' | 13°16' | F 13 |
| S 14 | 1 29 36 | 20°31'59" | 14°28' | 19°52' | 11°59' | 29°37' | 3° 7' | 14° 9' | 17°51' | 5°44' | 12° 3' | 20°15' | 19° 4' | 11°47' | 13°13' | S 14 |
| S 15 | 1 33 32 | 21°31'41" | 28°14' | 21°33' | 13°14' | 0 ^h 21' | 3°20' | 14° 7' | 17°49' | 5°45' | 12° 2' | 20°11' | 19° 0' | 11°54' | 13°10' | S 15 |
| M 16 | 1 37 29 | 22°31'25" | 12 ^h 38' | 23°13' | 14°28' | 1° 4' | 3°33' | 14° 5' | 17°47' | 5°46' | 12° 1' | 20° 8' | 18°57' | 12° 0' | 13° 7' | M 16 |
| T 17 | 1 41 25 | 23°31'10" | 26° 9' | 24°53' | 15°42' | 1°48' | 3°45' | 14° 3' | 17°45' | 5°46' | 12° 0' | 20°D 8' | 18°54' | 12° 7' | 13° 4' | T 17 |
| W 18 | 1 45 22 | 24°30'58" | 10 ^h 17' | 26°32' | 16°57' | 2°32' | 3°58' | 14° 1' | 17°44' | 5°47' | 11°58' | 20° 8' | 18°51' | 12°14' | 13° 1' | W 18 |
| T 19 | 1 49 18 | 25°30'46" | 24°31' | 28°10' | 18°11' | 3°16' | 4°10' | 13°58' | 17°42' | 5°48' | 11°57' | 20°R 8' | 18°48' | 12°20' | 12°58' | T 19 |
| F 20 | 1 53 15 | 26°30'37" | 8 ^h 48' | 29°48' | 19°25' | 4° 0' | 4°23' | 13°56' | 17°40' | 5°48' | 11°56' | 20° 7' | 18°44' | 12°27' | 12°55' | F 20 |
| S 21 | 1 57 11 | 27°30'29" | 23° 7' | 1 ^h 26' | 20°40' | 4°44' | 4°35' | 13°53' | 17°38' | 5°49' | 11°55' | 20° 3' | 18°41' | 12°34' | 12°52' | S 21 |
| S 22 | 2 1 8 | 28°30'23" | 7 ^h Y23 | 3° 2' | 21°54' | 5°28' | 4°48' | 13°51' | 17°37' | 5°50' | 11°54' | 19°57' | 18°38' | 12°40' | 12°49' | S 22 |
| M 23 | 2 5 5 | 29°30'18" | 21°31' | 4°39' | 23° 8' | 6°12' | 5° 0' | 13°48' | 17°35' | 5°50' | 11°53' | 19°47' | 18°35' | 12°47' | 12°46' | M 23 |
| T 24 | 2 9 1 | 0 ^h 30'16" | 5 ^h 25' | 6°15' | 24°23' | 6°56' | 5°12' | 13°45' | 17°34' | 5°51' | 11°52' | 19°36' | 18°32' | 12°53' | 12°43' | T 24 |
| W 25 | 2 12 58 | 1°30'16" | 19° 3' | 7°50' | 25°37' | 7°40' | 5°25' | 13°42' | 17°32' | 5°51' | 11°51' | 19°24' | 18°29' | 13° 0' | 12°40' | W 25 |
| T 26 | 2 16 54 | 2°30'17" | 2 ^h 22' | 9°25' | 26°51' | 8°25' | 5°37' | 13°39' | 17°31' | 5°52' | 11°50' | 19°13' | 18°25' | 13° 7' | 12°37' | T 26 |
| F 27 | 2 20 51 | 3°30'21" | 15°15' | 10°59' | 28° 6' | 9° 9' | 5°49' | 13°36' | 17°29' | 5°52' | 11°48' | 19° 3' | 18°22' | 13°13' | 12°34' | F 27 |
| S 28 | 2 24 47 | 4°30'27" | 27°49' | 12°33' | 29°20' | 9°54' | 6° 1' | 13°33' | 17°28' | 5°53' | 11°47' | 18°55' | 18°19' | 13°20' | 12°31' | S 28 |
| S 29 | 2 28 44 | 5°30'35" | 10 ^h 5 | 14° 7' | 0 ^h 34' | 10°38' | 6°14' | 13°30' | 17°26' | 5°53' | 11°46' | 18°50' | 18°16' | 13°27' | 12°27' | S 29 |
| M 30 | 2 32 40 | 6°30'45" | 22° 7' | 15°40' | 1°48' | 11°23' | 6°26' | 13°26' | 17°25' | 5°53' | 11°45' | 18°47' | 18°13' | 13°33' | 12°24' | M 30 |
| T 31 | 2 36 37 | 7 ^h 30'57" | 3 ^h 25' | 17 ^h 13' | 3 ^h 3' | 12 ^h 37' | 6 ^h 38' | 13 ^h 23' | 17 ^h 24' | 5 ^h 54' | 11 ^h Y44 | 18°D46 | 18 ^h 10' | 13 ^h 40' | 12 ^h 21' | T 31 |

Delta T = 103.73 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1589

geocentric

NOVEMBER 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|-----------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|-------|-------|--------|------|
| W 1 | 2 40 34 | 8♈31'11" | 15♏46 | 18♈45 | 4♈17 | 12♈52 | 6♈50 | 13°R19 | 17°R22 | 5♈54 | 11°R43 | 18°R46 | 18♏6 | 13♏47 | 12°R18 | W 1 |
| T 2 | 2 44 30 | 9°31'27" | 27°35 | 20°17 | 5°31 | 13°37 | 7°2 | 13♈16 | 17°R21 | 5°54 | 11°R42 | 18♏46 | 18°3 | 13°53 | 12♈15 | T 2 |
| F 3 | 2 48 27 | 10°31'45" | 9♈39 | 21°49 | 6°45 | 14°22 | 7°13 | 13°12 | 17°20 | 5°54 | 11°41 | 18°44 | 18°0 | 14°0 | 12°12 | F 3 |
| S 4 | 2 52 23 | 11°32'05" | 21°39 | 23°20 | 8°0 | 15°7 | 7°25 | 13°8 | 17°19 | 5°54 | 11°40 | 18°41 | 17°57 | 14°7 | 12°8 | S 4 |
| S 5 | 2 56 20 | 12°32'27" | 4♈3 | 24°51 | 9°14 | 15°52 | 7°37 | 13°4 | 17°18 | 5°55 | 11°39 | 18°34 | 17°54 | 14°13 | 12°5 | S 5 |
| M 6 | 3 0 16 | 13°32'51" | 16°45 | 26°22 | 10°28 | 16°37 | 7°49 | 13°0 | 17°17 | 5°55 | 11°38 | 18°25 | 17°50 | 14°20 | 12°2 | M 6 |
| T 7 | 3 4 13 | 14°33'16" | 29°47 | 27°52 | 11°42 | 17°22 | 8°0 | 12°56 | 17°16 | 5°55 | 11°37 | 18°13 | 17°47 | 14°27 | 11°59 | T 7 |
| W 8 | 3 8 9 | 15°33'44" | 13♈9 | 29°22 | 12°56 | 18°7 | 8°12 | 12°52 | 17°15 | 5°R55 | 11°36 | 18°0 | 17°44 | 14°33 | 11°56 | W 8 |
| T 9 | 3 12 6 | 16°34'13" | 26°48 | 0♈52 | 14°11 | 18°52 | 8°24 | 12°48 | 17°14 | 5°55 | 11°36 | 17°47 | 17°41 | 14°40 | 11°52 | T 9 |
| F 10 | 3 16 3 | 17°34'44" | 10♈41 | 2°21 | 15°25 | 19°38 | 8°35 | 12°44 | 17°13 | 5°55 | 11°35 | 17°35 | 17°38 | 14°46 | 11°49 | F 10 |
| S 11 | 3 19 59 | 18°35'16" | 24°43 | 3°50 | 16°39 | 20°23 | 8°46 | 12°40 | 17°12 | 5°55 | 11°34 | 17°25 | 17°35 | 14°53 | 11°46 | S 11 |
| S 12 | 3 23 56 | 19°35'49" | 8♈50 | 5°18 | 17°53 | 21°8 | 8°58 | 12°35 | 17°12 | 5°54 | 11°33 | 17°18 | 17°31 | 15°0 | 11°43 | S 12 |
| M13 | 3 27 52 | 20°36'24" | 22°59 | 6°46 | 19°7 | 21°54 | 9°9 | 12°31 | 17°11 | 5°54 | 11°32 | 17°14 | 17°28 | 15°6 | 11°40 | M13 |
| T 14 | 3 31 49 | 21°37'01" | 7♈8 | 8°13 | 20°21 | 22°39 | 9°20 | 12°27 | 17°10 | 5°54 | 11°31 | 17°13 | 17°25 | 15°13 | 11°37 | T 14 |
| W15 | 3 35 45 | 22°37'38" | 21°14 | 9°40 | 21°36 | 23°25 | 9°31 | 12°22 | 17°10 | 5°54 | 11°30 | 17°13 | 17°22 | 15°20 | 11°34 | W15 |
| T 16 | 3 39 42 | 23°38'16" | 5♈17 | 11°6 | 22°50 | 24°10 | 9°42 | 12°18 | 17°9 | 5°54 | 11°29 | 17°13 | 17°19 | 15°26 | 11°31 | T 16 |
| F 17 | 3 43 38 | 24°38'56" | 19°16 | 12°32 | 24°4 | 24°56 | 9°53 | 12°13 | 17°8 | 5°53 | 11°29 | 17°11 | 17°16 | 15°33 | 11°27 | F 17 |
| S 18 | 3 47 35 | 25°39'36" | 3♈11 | 13°56 | 25°18 | 25°42 | 10°4 | 12°8 | 17°8 | 5°53 | 11°28 | 17°7 | 17°12 | 15°40 | 11°24 | S 18 |
| S 19 | 3 51 32 | 26°40'18" | 17°0 | 15°20 | 26°32 | 26°27 | 10°15 | 12°4 | 17°8 | 5°53 | 11°27 | 16°59 | 17°9 | 15°46 | 11°21 | S 19 |
| M20 | 3 55 28 | 27°41'01" | 0♈41 | 16°43 | 27°46 | 27°13 | 10°25 | 11°59 | 17°7 | 5°52 | 11°26 | 16°49 | 17°6 | 15°53 | 11°18 | M20 |
| T 21 | 3 59 25 | 28°41'45" | 14°12 | 18°5 | 29°0 | 27°59 | 10°36 | 11°54 | 17°7 | 5°52 | 11°26 | 16°37 | 17°3 | 16°0 | 11°15 | T 21 |
| W22 | 4 3 21 | 29°42'30" | 27°29 | 19°25 | 0♈14 | 28°45 | 10°47 | 11°50 | 17°7 | 5°52 | 11°25 | 16°24 | 17°0 | 16°6 | 11°12 | W22 |
| T 23 | 4 7 18 | 0♈43'17" | 10♈30 | 20°44 | 1°28 | 29°30 | 10°57 | 11°45 | 17°7 | 5°51 | 11°24 | 16°11 | 16°56 | 16°13 | 11°9 | T 23 |
| F 24 | 4 11 14 | 1°44'05" | 23°15 | 22°1 | 2°42 | 0♈16 | 11°7 | 11°40 | 17°6 | 5°51 | 11°23 | 16°0 | 16°53 | 16°19 | 11°6 | F 24 |
| S 25 | 4 15 11 | 2°44'54" | 5♈42 | 23°17 | 3°56 | 1°2 | 11°18 | 11°35 | 17°6 | 5°50 | 11°23 | 15°51 | 16°50 | 16°26 | 11°3 | S 25 |
| S 26 | 4 19 7 | 3°45'45" | 17°55 | 24°30 | 5°10 | 1°48 | 11°28 | 11°30 | 17°6 | 5°49 | 11°22 | 15°45 | 16°47 | 16°33 | 11°1 | S 26 |
| M27 | 4 23 4 | 4°46'37" | 29°55 | 25°40 | 6°24 | 2°34 | 11°38 | 11°25 | 17°D 6 | 5°49 | 11°22 | 15°41 | 16°44 | 16°39 | 10°58 | M27 |
| T 28 | 4 27 1 | 5°47'30" | 11♈46 | 26°48 | 7°37 | 3°20 | 11°48 | 11°20 | 17°6 | 5°48 | 11°21 | 15°D40 | 16°41 | 16°46 | 10°55 | T 28 |
| W29 | 4 30 57 | 6°48'25" | 23°33 | 27°52 | 8°51 | 4°6 | 11°58 | 11°15 | 17°6 | 5°47 | 11°20 | 15°40 | 16°37 | 16°53 | 10°52 | W29 |
| T 30 | 4 34 54 | 7°49'20" | 5♈22 | 28°52 | 10♈5 | 4°55 | 12°58 | 11°11 | 17°R 7 | 5♈47 | 11°R20 | 15°R41 | 16°53 | 16°59 | 10°49 | T 30 |

Delta T = 103.59 sec

Greg. Calendar

DECEMBER 1589 GC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|-----------|-------|--------|-------|-------|-------|--------|--------|-------|--------|--------|-------|-------|--------|------|
| F 1 | 4 38 50 | 8♈50'17" | 17♈17 | 29♈48 | 11♈19 | 5♈38 | 12♈17 | 11°R 6 | 17°R 7 | 5°R46 | 11°R19 | 15°R40 | 16♈31 | 17♈6 | 10°R47 | F 1 |
| S 2 | 4 42 47 | 9°51'16" | 29°25 | 0♈38 | 12°33 | 6°24 | 12°27 | 11♈1 | 17°7 | 5♈45 | 11°R19 | 15♈38 | 16°28 | 17°13 | 10♈44 | S 2 |
| S 3 | 4 46 43 | 10°52'15" | 11♈50 | 1°23 | 13°46 | 7°10 | 12°36 | 10°56 | 17°7 | 5°44 | 11°18 | 15°34 | 16°25 | 17°19 | 10°41 | S 3 |
| M 4 | 4 50 40 | 11°53'16" | 24°36 | 2°1 | 15°0 | 7°56 | 12°46 | 10°51 | 17°8 | 5°44 | 11°18 | 15°27 | 16°21 | 17°26 | 10°39 | M 4 |
| T 5 | 4 54 36 | 12°54'18" | 7♈47 | 2°32 | 16°14 | 8°42 | 12°55 | 10°46 | 17°8 | 5°43 | 11°17 | 15°18 | 16°18 | 17°33 | 10°36 | T 5 |
| W 6 | 4 58 33 | 13°55'20" | 21°22 | 2°54 | 17°28 | 9°28 | 13°4 | 10°41 | 17°9 | 5°42 | 11°17 | 15°8 | 16°15 | 17°39 | 10°34 | W 6 |
| T 7 | 5 2 30 | 14°56'24" | 5♈19 | 3°7 | 18°41 | 10°14 | 13°13 | 10°36 | 17°9 | 5°41 | 11°16 | 14°57 | 16°12 | 17°46 | 10°31 | T 7 |
| F 8 | 5 6 26 | 15°57'29" | 19°36 | 3°R10 | 19°55 | 11°1 | 13°22 | 10°31 | 17°10 | 5°40 | 11°16 | 14°47 | 16°9 | 17°53 | 10°29 | F 8 |
| S 9 | 5 10 23 | 16°58'34" | 4♈5 | 3°3 | 21°8 | 11°47 | 13°31 | 10°26 | 17°10 | 5°39 | 11°16 | 14°39 | 16°6 | 17°59 | 10°26 | S 9 |
| S 10 | 5 14 19 | 17°59'40" | 18°40 | 2°44 | 22°22 | 12°33 | 13°40 | 10°21 | 17°11 | 5°38 | 11°15 | 14°34 | 16°2 | 18°6 | 10°24 | S 10 |
| M11 | 5 18 16 | 19°0'47" | 3♈14 | 2°13 | 23°36 | 13°19 | 13°48 | 10°16 | 17°12 | 5°37 | 11°15 | 14°31 | 15°59 | 18°12 | 10°22 | M11 |
| T 12 | 5 22 12 | 20°1'54" | 17°43 | 1°31 | 24°49 | 14°5 | 13°57 | 10°11 | 17°12 | 5°36 | 11°14 | 14°D31 | 15°56 | 18°19 | 10°19 | T 12 |
| W13 | 5 26 9 | 21°3'01" | 2♈2 | 0°38 | 26°2 | 14°52 | 14°5 | 10°7 | 17°13 | 5°35 | 11°14 | 14°32 | 15°53 | 18°26 | 10°17 | W13 |
| T 14 | 5 30 5 | 22°4'08" | 16°9 | 29♈35 | 27°16 | 15°38 | 14°13 | 10°2 | 17°14 | 5°34 | 11°14 | 14°R33 | 15°50 | 18°32 | 10°15 | T 14 |
| F 15 | 5 34 2 | 23°5'16" | 0♈4 | 28°23 | 28°29 | 16°24 | 14°21 | 9°57 | 17°15 | 5°33 | 11°14 | 14°32 | 15°47 | 18°39 | 10°13 | F 15 |
| S 16 | 5 37 59 | 24°6'23" | 13°46 | 27°6 | 29°43 | 17°10 | 14°29 | 9°52 | 17°16 | 5°32 | 11°13 | 14°31 | 15°43 | 18°46 | 10°11 | S 16 |
| S 17 | 5 41 55 | 25°7'31" | 27°16 | 25°44 | 0♈56 | 17°57 | 14°37 | 9°48 | 17°17 | 5°30 | 11°13 | 14°26 | 15°40 | 18°52 | 10°9 | S 17 |
| M18 | 5 45 52 | 26°8'39" | 10♈34 | 24°21 | 2°9 | 18°43 | 14°45 | 9°43 | 17°18 | 5°29 | 11°13 | 14°20 | 15°37 | 18°59 | 10°7 | M18 |
| T 19 | 5 49 48 | 27°9'47" | 23°40 | 23°1 | 3°22 | 19°29 | 14°52 | 9°38 | 17°19 | 5°28 | 11°13 | 14°12 | 15°34 | 19°6 | 10°5 | T 19 |
| W20 | 5 53 45 | 28°10'56" | 6♈33 | 21°44 | 4°35 | 20°15 | 15°0 | 9°34 | 17°20 | 5°27 | 11°13 | 14°3 | 15°31 | 19°12 | 10°3 | W20 |
| T 21 | 5 57 41 | 29°12'04" | 19°14 | 20°34 | 5°48 | 21°2 | 15°7 | 9°29 | 17°22 | 5°25 | 11°13 | 13°55 | 15°27 | 19°19 | 10°1 | T 21 |
| F 22 | 6 1 38 | 0♈13'13" | 1♈42 | 19°32 | 7°1 | 21°48 | 15°14 | 9°25 | 17°23 | 5°24 | 11°12 | 13°47 | 15°24 | 19°26 | 9°59 | F 22 |
| S 23 | 6 5 34 | 1°14'22" | 13°58 | 18°40 | 8°14 | 22°34 | 15°21 | 9°20 | 17°24 | 5°23 | 11°12 | 13°41 | 15°21 | 19°32 | 9°58 | S 23 |
| S 24 | 6 9 31 | 2°15'31" | 26°3 | 17°58 | 9°27 | 23°20 | 15°28 | 9°16 | 17°26 | 5°21 | 11°12 | 13°37 | 15°18 | 19°39 | 9°56 | S 24 |
| M25 | 6 13 28 | 3°16'41" | 7♈59 | 17°27 | 10°40 | 24°7 | 15°35 | 9°12 | 17°27 | 5°20 | 11°12 | 13°D36 | 15°15 | 19°45 | 9°55 | M25 |
| T 26 | 6 17 24 | 4°17'51" | 19°48 | 17°6 | 11°53 | 24°53 | 15°42 | 9°7 | 17°28 | 5°19 | 11°D12 | 13°36 | 15°12 | 19°52 | 9°53 | T 26 |
| W27 | 6 21 21 | 5°19'01" | 1♈35 | 16°55 | 13°6 | 25°39 | 15°48 | 9°3 | 17°30 | 5°17 | 11°12 | 13°37 | 15°8 | 19°59 | 9°52 | W27 |
| T 28 | 6 25 17 | 6°20'11" | 13°23 | 16°D53 | 14°18 | 26°25 | 15°54 | 8°59 | 17°32 | 5°16 | 11°12 | 13°39 | 15°5 | 20°5 | 9°50 | T 28 |
| F 29 | 6 29 14 | 7°21'21" | 25°17 | 17°1 | 15°31 | 27°11 | 16°0 | 8°55 | 17°33 | 5°14 | 11°12 | 13°40 | 15°2 | 20°12 | 9°49 | F 29 |
| S 30 | 6 33 10 | 8°22'32" | 7♈22 | 17°16 | 16°43 | 27°58 | 16°6 | 8°51 | 17°35 | 5°13 | 11°13 | 13°R41 | 14°59 | 20°19 | 9°47 | S 30 |
| S 31 | 6 37 7 | 9♈23'42" | 19♈44 | 17♈40 | 17°56 | 28°44 | 16°12 | 8°47 | 17°R36 | 5♈12 | 11°R13 | 13°R41 | 14°56 | 20°25 | 9°46 | S 31 |

Delta T = 103.46 sec

Greg. Calendar