



Astrodienst Ephemeris Tables for the year 1417

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 1417

geocentric

JANUARY 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|----------|--------|-------|--------|-------|-------|-------|--------|---------|--------|--------|------|-------|------|
| F 1 | 7 16 12 | 19°36'04 | 15°11'39 | 3°R 5 | 0°47 | 11°H 9 | 24°15 | 3°R49 | 26°53 | 13°R44 | 21°R14 | 2°R 4 | 0°26 | 2°2 | 24°16 | F 1 |
| S 2 | 7 20 9 | 20°37'09 | 0°28 | 2°36 | 2° 2 | 11°54 | 24°28 | 3°45 | 26°56 | 13°42 | 21°13 | 2°2 | 0°23 | 2° 9 | 24°22 | S 2 |
| S 3 | 7 24 6 | 21°38'13 | 15°37 | 1°55 | 3°17 | 12°40 | 24°41 | 3°40 | 26°59 | 13°41 | 21°12 | 1°56 | 0°20 | 2°16 | 24°28 | S 3 |
| M 4 | 7 28 2 | 22°39'16 | 0°256 | 1° 4 | 4°32 | 13°25 | 24°55 | 3°35 | 27° 2 | 13°39 | 21°11 | 1°49 | 0°16 | 2°23 | 24°34 | M 4 |
| T 5 | 7 31 59 | 23°40'18 | 16°14 | 0° 4 | 5°48 | 14°10 | 25° 8 | 3°30 | 27° 5 | 13°37 | 21°10 | 1°41 | 0°13 | 2°29 | 24°40 | T 5 |
| W 6 | 7 35 55 | 24°41'20 | 1°19 | 28°356 | 7° 3 | 14°55 | 25°21 | 3°26 | 27° 8 | 13°36 | 21° 9 | 1°33 | 0°10 | 2°36 | 24°46 | W 6 |
| T 7 | 7 39 52 | 25°42'21 | 16° 4 | 27°44 | 8°18 | 15°40 | 25°35 | 3°21 | 27°11 | 13°34 | 21° 8 | 1°26 | 0° 7 | 2°43 | 24°52 | T 7 |
| F 8 | 7 43 48 | 26°43'21 | 0°21 | 26°28 | 9°33 | 16°26 | 25°48 | 3°16 | 27°14 | 13°32 | 21° 7 | 1°20 | 0° 4 | 2°49 | 24°58 | F 8 |
| S 9 | 7 47 45 | 27°44'21 | 14°10 | 25°12 | 10°48 | 17°11 | 26° 2 | 3°11 | 27°18 | 13°31 | 21° 6 | 1°17 | 0° 0 | 2°56 | 25° 3 | S 9 |
| S 10 | 7 51 41 | 28°45'20 | 27°30 | 23°57 | 12° 4 | 17°56 | 26°16 | 3° 6 | 27°21 | 13°29 | 21° 5 | 1°D16 | 29°157 | 3° 3 | 25° 9 | S 10 |
| M 11 | 7 55 38 | 29°46'19 | 10°126 | 22°46 | 13°19 | 18°41 | 26°29 | 3° 1 | 27°24 | 13°27 | 21° 4 | 1°17 | 29°54 | 3° 9 | 25°15 | M 11 |
| T 12 | 7 59 35 | 0°47'16 | 23° 0 | 21°41 | 14°34 | 19°26 | 26°43 | 2°56 | 27°27 | 13°26 | 21° 3 | 1°18 | 29°51 | 3°16 | 25°20 | T 12 |
| W 13 | 8 3 31 | 1°48'14 | 5°18 | 20°41 | 15°49 | 20°11 | 26°57 | 2°51 | 27°30 | 13°24 | 21° 2 | 1°R18 | 29°48 | 3°23 | 25°26 | W 13 |
| T 14 | 8 7 28 | 2°49'10 | 17°24 | 19°50 | 17° 4 | 20°56 | 27°11 | 2°46 | 27°33 | 13°23 | 21° 1 | 1°16 | 29°45 | 3°30 | 25°31 | T 14 |
| F 15 | 8 11 24 | 3°50'06 | 29°22 | 19° 6 | 18°19 | 21°41 | 27°25 | 2°41 | 27°37 | 13°21 | 21° 1 | 1°12 | 29°41 | 3°36 | 25°37 | F 15 |
| S 16 | 8 15 21 | 4°51'00 | 11°316 | 18°31 | 19°34 | 22°26 | 27°38 | 2°37 | 27°40 | 13°19 | 21° 0 | 1° 6 | 29°38 | 3°43 | 25°42 | S 16 |
| S 17 | 8 19 17 | 5°51'54 | 23° 7 | 18° 5 | 20°49 | 23°10 | 27°52 | 2°32 | 27°43 | 13°18 | 20°59 | 0°56 | 29°35 | 3°50 | 25°48 | S 17 |
| M 18 | 8 23 14 | 6°52'46 | 4°58 | 17°47 | 22° 4 | 23°55 | 28° 6 | 2°27 | 27°46 | 13°16 | 20°58 | 0°44 | 29°32 | 3°56 | 25°53 | M 18 |
| T 19 | 8 27 11 | 7°53'38 | 16°50 | 17°38 | 23°19 | 24°40 | 28°20 | 2°22 | 27°50 | 13°15 | 20°57 | 0°31 | 29°29 | 4° 3 | 25°58 | T 19 |
| W 20 | 8 31 7 | 8°54'27 | 28°44 | 17°D36 | 24°34 | 25°25 | 28°34 | 2°17 | 27°53 | 13°13 | 20°57 | 0°17 | 29°26 | 4°10 | 26° 4 | W 20 |
| T 21 | 8 35 4 | 9°55'16 | 10°H43 | 17°42 | 25°49 | 26°10 | 28°49 | 2°12 | 27°56 | 13°12 | 20°56 | 0° 4 | 29°22 | 4°17 | 26° 9 | T 21 |
| F 22 | 8 39 0 | 10°56'03 | 22°47 | 17°54 | 27° 4 | 26°54 | 29° 3 | 2° 7 | 28° 0 | 13°10 | 20°55 | 29°153 | 29°19 | 4°23 | 26°14 | F 22 |
| S 23 | 8 42 57 | 11°56'49 | 4°Y59 | 18°13 | 28°19 | 27°39 | 29°17 | 2° 2 | 28° 3 | 13° 9 | 20°54 | 29°45 | 29°16 | 4°30 | 26°19 | S 23 |
| S 24 | 8 46 53 | 12°57'33 | 17°21 | 18°37 | 29°34 | 28°24 | 29°31 | 1°58 | 28° 6 | 13° 8 | 20°54 | 29°39 | 29°13 | 4°37 | 26°24 | S 24 |
| M 25 | 8 50 50 | 13°58'15 | 29°59 | 19° 7 | 0°H49 | 29° 8 | 29°45 | 1°53 | 28°10 | 13° 6 | 20°53 | 29°37 | 29°10 | 4°43 | 26°29 | M 25 |
| T 26 | 8 54 46 | 14°58'56 | 12°S4 | 19°42 | 2° 4 | 29°53 | 29°59 | 1°48 | 28°13 | 13° 5 | 20°52 | 29°D36 | 29° 6 | 4°50 | 26°34 | T 26 |
| W 27 | 8 58 43 | 15°59'35 | 26°11 | 20°22 | 3°19 | 0°Y37 | 0°H14 | 1°43 | 28°16 | 13° 3 | 20°52 | 29°R36 | 29° 3 | 4°57 | 26°39 | W 27 |
| T 28 | 9 2 39 | 17° 0'12 | 9°II54 | 21° 5 | 4°33 | 1°22 | 0°28 | 1°39 | 28°20 | 13° 2 | 20°51 | 29°36 | 29° 0 | 5° 4 | 26°44 | T 28 |
| F 29 | 9 6 36 | 18° 0'48 | 24° 3 | 21°53 | 5°48 | 2° 6 | 0°42 | 1°34 | 28°23 | 13° 1 | 20°51 | 29°34 | 28°57 | 5°10 | 26°49 | F 29 |
| S 30 | 9 10 33 | 19° 1'22 | 8°340 | 22°44 | 7° 3 | 2°51 | 0°57 | 1°29 | 28°27 | 12°59 | 20°50 | 29°30 | 28°54 | 5°17 | 26°53 | S 30 |
| S 31 | 9 14 29 | 20° 1'54 | 23°339 | 23°38 | 8°H18 | 3°Y35 | 1°H11 | 1°25 | 28°30 | 12°58 | 20°II49 | 29°122 | 28°151 | 5°24 | 26°58 | S 31 |

Delta T = 07m26s

Julian Calendar 1 Jan. 1417 == Greg. Calendar 10 Jan. 1417

FEBRUARY 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|--------|-------|--------|--------|-------|-------|-------|--------|---------|--------|--------|------|-------|------|
| M 1 | 9 18 26 | 21°22 | 8°J54 | 24°36 | 9°H32 | 4°Y20 | 1°H26 | 1°R20 | 28°33 | 12°R57 | 20°R49 | 29°R13 | 28°147 | 5°30 | 27°2 | M 1 |
| T 2 | 9 22 22 | 22° 2'52 | 24°13 | 25°36 | 10°47 | 5° 4 | 1°40 | 1°J16 | 28°37 | 12°56 | 20°II48 | 29°11 | 28°44 | 5°37 | 27° 7 | T 2 |
| W 3 | 9 26 19 | 23° 3'19 | 9°H26 | 26°39 | 12° 2 | 5°48 | 1°54 | 1°12 | 28°40 | 12°54 | 20°48 | 28°50 | 28°41 | 5°44 | 27°11 | W 3 |
| T 4 | 9 30 15 | 24° 3'45 | 24°21 | 27°44 | 13°16 | 6°32 | 2° 9 | 1° 7 | 28°44 | 12°53 | 20°48 | 28°39 | 28°38 | 5°51 | 27°16 | T 4 |
| F 5 | 9 34 12 | 25° 4'08 | 8°J51 | 28°51 | 14°31 | 7°17 | 2°23 | 1° 3 | 28°47 | 12°52 | 20°47 | 28°31 | 28°35 | 5°57 | 27°20 | F 5 |
| S 6 | 9 38 8 | 26° 4'31 | 22°51 | 0° 1 | 15°45 | 8° 1 | 2°38 | 0°59 | 28°51 | 12°51 | 20°47 | 28°26 | 28°32 | 6° 4 | 27°24 | S 6 |
| S 7 | 9 42 5 | 27° 4'52 | 6°II20 | 1°12 | 17° 0 | 8°45 | 2°52 | 0°55 | 28°54 | 12°50 | 20°46 | 28°23 | 28°28 | 6°11 | 27°29 | S 7 |
| M 8 | 9 46 2 | 28° 5'11 | 19°22 | 2°25 | 18°14 | 9°29 | 3° 7 | 0°50 | 28°58 | 12°49 | 20°46 | 28°22 | 28°25 | 6°17 | 27°33 | M 8 |
| T 9 | 9 49 58 | 29° 5'29 | 1°J58 | 3°40 | 19°29 | 10°13 | 3°21 | 0°46 | 29° 1 | 12°47 | 20°46 | 28°22 | 28°22 | 6°24 | 27°37 | T 9 |
| W 10 | 9 53 55 | 0°H546 | 14°16 | 4°57 | 20°43 | 10°57 | 3°36 | 0°42 | 29° 5 | 12°46 | 20°45 | 28°21 | 28°19 | 6°31 | 27°41 | W 10 |
| T 11 | 9 57 51 | 1° 6'01 | 26°20 | 6°15 | 21°58 | 11°41 | 3°50 | 0°39 | 29° 8 | 12°45 | 20°45 | 28°19 | 28°16 | 6°38 | 27°45 | T 11 |
| F 12 | 10 1 48 | 2° 6'15 | 8°J15 | 7°35 | 23°12 | 12°25 | 4° 5 | 0°35 | 29°11 | 12°44 | 20°45 | 28°15 | 28°12 | 6°44 | 27°48 | F 12 |
| S 13 | 10 5 44 | 3° 6'27 | 20° 5 | 8°57 | 24°26 | 13° 9 | 4°19 | 0°31 | 29°15 | 12°43 | 20°44 | 28° 8 | 28° 9 | 6°51 | 27°52 | S 13 |
| S 14 | 10 9 41 | 4° 6'37 | 1°J54 | 10°19 | 25°41 | 13°53 | 4°34 | 0°27 | 29°18 | 12°42 | 20°44 | 27°58 | 28° 6 | 6°58 | 27°56 | S 14 |
| M 15 | 10 13 37 | 5° 6'46 | 13°46 | 11°43 | 26°55 | 14°36 | 4°48 | 0°24 | 29°22 | 12°42 | 20°44 | 27°45 | 28° 3 | 7° 4 | 28° 0 | M 15 |
| T 16 | 10 17 34 | 6° 6'52 | 25°41 | 13° 9 | 28° 9 | 15°20 | 5° 3 | 0°20 | 29°25 | 12°41 | 20°44 | 27°31 | 28° 0 | 7°11 | 28° 3 | T 16 |
| W 17 | 10 21 31 | 7° 6'57 | 7°H42 | 14°35 | 29°23 | 16° 4 | 5°17 | 0°17 | 29°29 | 12°40 | 20°43 | 27°16 | 27°57 | 7°18 | 28° 7 | W 17 |
| T 18 | 10 25 27 | 8° 7'00 | 19°49 | 16° 3 | 0°Y38 | 16°47 | 5°32 | 0°13 | 29°32 | 12°39 | 20°43 | 27° 2 | 27°53 | 7°25 | 28°10 | T 18 |
| F 19 | 10 29 24 | 9° 7'01 | 2°Y 4 | 17°32 | 1°52 | 17°31 | 5°46 | 0°10 | 29°35 | 12°38 | 20°43 | 26°50 | 27°50 | 7°31 | 28°13 | F 19 |
| S 20 | 10 33 20 | 10° 7'00 | 14°28 | 19° 3 | 3° 6 | 18°15 | 6° 1 | 0° 7 | 29°39 | 12°37 | 20°43 | 26°41 | 27°47 | 7°38 | 28°17 | S 20 |
| S 21 | 10 37 17 | 11° 6'57 | 27° 1 | 20°34 | 4°20 | 18°58 | 6°15 | 0° 4 | 29°42 | 12°37 | 20°43 | 26°35 | 27°44 | 7°45 | 28°20 | S 21 |
| M 22 | 10 41 13 | 12° 6'52 | 9°J46 | 22° 7 | 5°34 | 19°42 | 6°29 | 0° 1 | 29°46 | 12°36 | 20°43 | 26°32 | 27°41 | 7°51 | 28°23 | M 22 |
| T 23 | 10 45 10 | 13° 6'44 | 22°45 | 23°41 | 6°48 | 20°25 | 6°44 | 29°58 | 29°49 | 12°35 | 20°43 | 26°D30 | 27°38 | 7°58 | 28°26 | T 23 |
| W 24 | 10 49 6 | 14° 6'34 | 6°II 2 | 25°16 | 8° 2 | 21° 9 | 6°58 | 29°55 | 29°52 | 12°35 | 20°D43 | 26°31 | 27°34 | 8° 5 | 28°29 | W 24 |
| T 25 | 10 53 3 | 15° 6'23 | 19°38 | 26°53 | 9°16 | 21°52 | 7°13 | 29°52 | 29°56 | 12°34 | 20°43 | 26°R31 | 27°31 | 8°12 | 28°32 | T 25 |
| F 26 | 10 57 0 | 16° 6'08 | 3°J36 | 28°30 | 10°30 | 22°35 | 7°27 | 29°50 | 29°59 | 12°33 | 20°43 | 26°29 | 27°28 | 8°18 | 28°34 | F 26 |
| S 27 | 11 0 56 | 17° 5'52 | 17°55 | 0°H 9 | 11°43 | 23°19 | 7°42 | 29°47 | 0°H 3 | 12°33 | 20°43 | 26°26 | 27°25 | 8°25 | 28°37 | S 27 |
| S 28 | 11 4 53 | 18°H533 | 2°J35 | 1°H49 | 12°Y57 | 24°Y 2 | 7°H56 | 29°45 | 0°H 6 | 12°32 | 20°II43 | 26°120 | 27°122 | 8°32 | 28°40 | S 28 |

Delta T = 07m26s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1417

geocentric

MARCH 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|------|
| M 1 | 11 8 49 | 19°51'2 | 17°30 | 3°30 | 14°11 | 24°45 | 8°10 | 29°42 | 0°9 | 12°32 | 20°43 | 26°12 | 27°18 | 8°38 | 28°42 | M 1 |
| T 2 | 11 12 46 | 20°4'48 | 2°32 | 5°13 | 15°24 | 25°28 | 8°25 | 29°34 | 0°13 | 12°31 | 20°43 | 26°12 | 27°15 | 8°45 | 28°45 | T 2 |
| W 3 | 11 16 42 | 21°4'23 | 17°32 | 6°57 | 16°38 | 26°11 | 8°39 | 29°38 | 0°16 | 12°31 | 20°43 | 25°52 | 27°12 | 8°52 | 28°47 | W 3 |
| T 4 | 11 20 39 | 22°3'55 | 2°20 | 8°42 | 17°52 | 26°54 | 8°53 | 29°36 | 0°19 | 12°31 | 20°44 | 25°43 | 27°9 | 8°59 | 28°49 | T 4 |
| F 5 | 11 24 35 | 23°3'25 | 16°48 | 10°28 | 19°5 | 27°37 | 9°8 | 29°34 | 0°22 | 12°30 | 20°44 | 25°36 | 27°6 | 9°5 | 28°51 | F 5 |
| S 6 | 11 28 32 | 24°2'54 | 0°51 | 12°15 | 20°19 | 28°20 | 9°22 | 29°32 | 0°26 | 12°30 | 20°44 | 25°31 | 27°3 | 9°12 | 28°54 | S 6 |
| S 7 | 11 32 29 | 25°2'20 | 14°25 | 14°4 | 21°32 | 29°3 | 9°36 | 29°30 | 0°29 | 12°30 | 20°44 | 25°28 | 26°59 | 9°19 | 28°56 | S 7 |
| M 8 | 11 36 25 | 26°1'45 | 27°32 | 15°54 | 22°45 | 29°46 | 9°50 | 29°29 | 0°32 | 12°29 | 20°44 | 25°27 | 26°56 | 9°25 | 28°57 | M 8 |
| T 9 | 11 40 22 | 27°1'08 | 10°15 | 17°46 | 23°59 | 0°29 | 10°5 | 29°27 | 0°35 | 12°29 | 20°45 | 25°28 | 26°53 | 9°32 | 28°59 | T 9 |
| W10 | 11 44 18 | 28°0'29 | 22°37 | 19°38 | 25°12 | 1°12 | 10°19 | 29°26 | 0°38 | 12°29 | 20°45 | 25°29 | 26°50 | 9°39 | 29°1 | W10 |
| T 11 | 11 48 15 | 28°59'48 | 4°44 | 21°33 | 26°25 | 1°54 | 10°33 | 29°24 | 0°41 | 12°29 | 20°45 | 25°29 | 26°47 | 9°46 | 29°3 | T 11 |
| F 12 | 11 52 11 | 29°59'06 | 16°41 | 23°28 | 27°38 | 2°37 | 10°47 | 29°23 | 0°45 | 12°29 | 20°46 | 25°27 | 26°43 | 9°52 | 29°4 | F 12 |
| S 13 | 11 56 8 | 0°58'22 | 28°32 | 25°25 | 28°52 | 3°20 | 11°1 | 29°22 | 0°48 | 12°29 | 20°46 | 25°23 | 26°40 | 9°59 | 29°6 | S 13 |
| S 14 | 12 0 4 | 1°57'36 | 10°32 | 27°22 | 0°5 | 4°2 | 11°15 | 29°21 | 0°51 | 12°29 | 20°46 | 25°17 | 26°37 | 10°6 | 29°7 | S 14 |
| M15 | 12 4 1 | 2°56'48 | 22°16 | 29°22 | 1°18 | 4°45 | 11°29 | 29°20 | 0°54 | 12°29 | 20°47 | 25°9 | 26°34 | 10°12 | 29°9 | M15 |
| T 16 | 12 7 57 | 3°55'58 | 4°16 | 1°22 | 2°31 | 5°27 | 11°43 | 29°19 | 0°57 | 12°29 | 20°47 | 25°0 | 26°31 | 10°19 | 29°10 | T 16 |
| W17 | 12 11 54 | 4°55'06 | 16°24 | 3°23 | 3°44 | 6°10 | 11°57 | 29°19 | 1°0 | 12°29 | 20°48 | 24°50 | 26°28 | 10°26 | 29°11 | W17 |
| T 18 | 12 15 51 | 5°54'12 | 28°42 | 5°26 | 4°56 | 6°52 | 12°11 | 29°18 | 1°3 | 12°29 | 20°48 | 24°41 | 26°24 | 10°33 | 29°12 | T 18 |
| F 19 | 12 19 47 | 6°53'16 | 11°11 | 7°29 | 6°9 | 7°35 | 12°25 | 29°18 | 1°6 | 12°29 | 20°49 | 24°33 | 26°21 | 10°39 | 29°13 | F 19 |
| S 20 | 12 23 44 | 7°52'18 | 23°51 | 9°33 | 7°22 | 8°17 | 12°39 | 29°17 | 1°9 | 12°29 | 20°49 | 24°27 | 26°18 | 10°46 | 29°14 | S 20 |
| S 21 | 12 27 40 | 8°51'18 | 6°43 | 11°38 | 8°35 | 8°59 | 12°52 | 29°17 | 1°12 | 12°29 | 20°50 | 24°23 | 26°15 | 10°53 | 29°15 | S 21 |
| M22 | 12 31 37 | 9°50'15 | 19°46 | 13°43 | 9°47 | 9°42 | 13°6 | 29°17 | 1°15 | 12°29 | 20°50 | 24°22 | 26°12 | 10°59 | 29°15 | M22 |
| T 23 | 12 35 33 | 10°49'11 | 3°11 | 15°48 | 11°0 | 10°24 | 13°20 | 29°17 | 1°17 | 12°30 | 20°51 | 24°22 | 26°9 | 11°6 | 29°16 | T 23 |
| W24 | 12 39 30 | 11°48'04 | 16°29 | 17°54 | 12°13 | 11°6 | 13°33 | 29°17 | 1°20 | 12°30 | 20°52 | 24°23 | 26°5 | 11°13 | 29°17 | W24 |
| T 25 | 12 43 26 | 12°46'55 | 0°11 | 19°59 | 13°25 | 11°48 | 13°47 | 29°17 | 1°23 | 12°30 | 20°52 | 24°24 | 26°2 | 11°20 | 29°17 | T 25 |
| F 26 | 12 47 23 | 13°45'44 | 14°7 | 22°3 | 14°37 | 12°30 | 14°1 | 29°17 | 1°26 | 12°31 | 20°53 | 24°25 | 25°59 | 11°26 | 29°17 | F 26 |
| S 27 | 12 51 20 | 14°44'30 | 28°17 | 24°7 | 15°50 | 13°12 | 14°14 | 29°18 | 1°29 | 12°31 | 20°53 | 24°24 | 25°56 | 11°33 | 29°18 | S 27 |
| S 28 | 12 55 16 | 15°43'14 | 12°39 | 26°9 | 17°2 | 13°54 | 14°27 | 29°18 | 1°31 | 12°31 | 20°54 | 24°22 | 25°53 | 11°40 | 29°18 | S 28 |
| M29 | 12 59 13 | 16°41'56 | 27°10 | 28°9 | 18°14 | 14°36 | 14°41 | 29°19 | 1°34 | 12°32 | 20°55 | 24°18 | 25°49 | 11°46 | 29°18 | M29 |
| T 30 | 13 3 9 | 17°40'35 | 11°46 | 0°8 | 19°26 | 15°18 | 14°54 | 29°20 | 1°37 | 12°32 | 20°56 | 24°12 | 25°46 | 11°53 | 29°18 | T 30 |
| W31 | 13 7 6 | 18°39'12 | 26°20 | 2°8 | 20°39 | 16°0 | 15°7 | 29°21 | 1°39 | 12°33 | 20°56 | 24°11 | 25°45 | 12°0 | 29°18 | W31 |

Delta T = 07m25s

Julian Calendar 1 March 1417 == Greg. Calendar 10 March 1417

APRIL 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|----------|-------|--------|-------|-------|-------|-------|------|-------|-------|--------|-------|-------|--------|------|
| T 1 | 13 11 2 | 19°37'47 | 10°45 | 3°58 | 21°51 | 16°42 | 15°21 | 29°21 | 1°42 | 12°33 | 20°57 | 24°R 2 | 25°40 | 12°7 | 29°R18 | T 1 |
| F 2 | 13 14 59 | 20°36'21 | 24°56 | 5°49 | 23°2 | 17°24 | 15°34 | 29°23 | 1°44 | 12°34 | 20°58 | 23°58 | 25°37 | 12°13 | 29°17 | F 2 |
| S 3 | 13 18 55 | 21°34'52 | 8°47 | 7°37 | 24°14 | 18°5 | 15°47 | 29°24 | 1°47 | 12°35 | 20°59 | 23°55 | 25°34 | 12°20 | 29°17 | S 3 |
| S 4 | 13 22 52 | 22°33'21 | 22°16 | 9°21 | 25°26 | 18°47 | 16°0 | 29°25 | 1°49 | 12°35 | 20°59 | 23°D55 | 25°30 | 12°27 | 29°17 | S 4 |
| M 5 | 13 26 49 | 23°31'49 | 5°22 | 11°2 | 26°38 | 19°29 | 16°13 | 29°26 | 1°52 | 12°36 | 21°0 | 23°55 | 25°27 | 12°34 | 29°16 | M 5 |
| T 6 | 13 30 45 | 24°30'15 | 18°7 | 12°38 | 27°50 | 20°10 | 16°26 | 29°28 | 1°54 | 12°37 | 21°1 | 23°56 | 25°24 | 12°40 | 29°15 | T 6 |
| W 7 | 13 34 42 | 25°28'39 | 0°32 | 14°11 | 29°1 | 20°52 | 16°39 | 29°29 | 1°57 | 12°37 | 21°2 | 23°58 | 25°21 | 12°47 | 29°15 | W 7 |
| T 8 | 13 38 38 | 26°27'02 | 12°43 | 15°39 | 0°13 | 21°34 | 16°51 | 29°31 | 1°59 | 12°38 | 21°3 | 24°0 | 25°18 | 12°54 | 29°14 | T 8 |
| F 9 | 13 42 35 | 27°25'23 | 24°42 | 17°3 | 1°24 | 22°15 | 17°4 | 29°33 | 2°1 | 12°39 | 21°4 | 24°R 0 | 25°14 | 13°0 | 29°13 | F 9 |
| S 10 | 13 46 31 | 28°23'43 | 6°36 | 18°23 | 2°36 | 22°56 | 17°17 | 29°35 | 2°4 | 12°40 | 21°5 | 24°0 | 25°11 | 13°7 | 29°12 | S 10 |
| S 11 | 13 50 28 | 29°22'00 | 18°29 | 19°38 | 3°47 | 23°38 | 17°29 | 29°37 | 2°6 | 12°41 | 21°6 | 23°59 | 25°8 | 13°14 | 29°11 | S 11 |
| M12 | 13 54 24 | 0°20'17 | 0°24 | 20°48 | 4°58 | 24°19 | 17°42 | 29°39 | 2°8 | 12°42 | 21°7 | 23°56 | 25°5 | 13°21 | 29°10 | M12 |
| T 13 | 13 58 21 | 1°18'31 | 12°28 | 21°54 | 6°9 | 25°1 | 17°54 | 29°41 | 2°10 | 12°42 | 21°8 | 23°53 | 25°2 | 13°27 | 29°9 | T 13 |
| W14 | 14 2 17 | 2°16'44 | 24°42 | 22°55 | 7°20 | 25°42 | 18°7 | 29°44 | 2°12 | 12°43 | 21°9 | 23°50 | 24°59 | 13°34 | 29°8 | W14 |
| T 15 | 14 6 14 | 3°14'56 | 7°9 | 23°51 | 8°31 | 26°23 | 18°19 | 29°46 | 2°14 | 12°44 | 21°10 | 23°46 | 24°55 | 13°41 | 29°6 | T 15 |
| F 16 | 14 10 11 | 4°13'06 | 19°51 | 24°42 | 9°42 | 27°4 | 18°31 | 29°49 | 2°16 | 12°45 | 21°11 | 23°44 | 24°52 | 13°47 | 29°5 | F 16 |
| S 17 | 14 14 7 | 5°11'14 | 2°48 | 25°27 | 10°53 | 27°45 | 18°43 | 29°51 | 2°18 | 12°47 | 21°12 | 23°42 | 24°49 | 13°54 | 29°3 | S 17 |
| S 18 | 14 18 4 | 6°9'21 | 16°1 | 26°8 | 12°4 | 28°27 | 18°55 | 29°54 | 2°20 | 12°48 | 21°13 | 23°41 | 24°46 | 14°1 | 29°2 | S 18 |
| M19 | 14 22 0 | 7°7'25 | 29°28 | 26°44 | 13°15 | 29°8 | 19°7 | 29°57 | 2°22 | 12°49 | 21°14 | 23°D41 | 24°43 | 14°8 | 29°0 | M19 |
| T 20 | 14 25 57 | 8°5'29 | 13°11 | 27°14 | 14°25 | 29°49 | 19°19 | 29°59 | 2°24 | 12°50 | 21°15 | 23°41 | 24°40 | 14°14 | 28°58 | T 20 |
| W21 | 14 29 53 | 9°3'30 | 26°58 | 27°40 | 15°36 | 0°13 | 19°31 | 0°3 | 2°26 | 12°51 | 21°16 | 23°42 | 24°36 | 14°21 | 28°56 | W21 |
| T 22 | 14 33 50 | 10°1'29 | 10°58 | 28°0 | 16°46 | 1°11 | 19°43 | 0°6 | 2°28 | 12°52 | 21°17 | 23°43 | 24°33 | 14°28 | 28°55 | T 22 |
| F 23 | 14 37 46 | 10°59'27 | 25°4 | 28°15 | 17°56 | 1°52 | 19°54 | 0°9 | 2°30 | 12°53 | 21°18 | 23°44 | 24°30 | 14°34 | 28°53 | F 23 |
| S 24 | 14 41 43 | 11°57'23 | 9°16 | 28°25 | 19°7 | 2°33 | 20°6 | 0°12 | 2°31 | 12°55 | 21°19 | 23°R45 | 24°27 | 14°41 | 28°50 | S 24 |
| S 25 | 14 45 40 | 12°55'17 | 23°30 | 28°R29 | 20°17 | 3°13 | 20°17 | 0°16 | 2°33 | 12°56 | 21°21 | 23°44 | 24°24 | 14°48 | 28°48 | S 25 |
| M26 | 14 49 36 | 13°53'08 | 7°45 | 28°29 | 21°27 | 3°54 | 20°29 | 0°19 | 2°35 | 12°57 | 21°22 | 23°44 | 24°20 | 14°55 | 28°46 | M26 |
| T 27 | 14 53 33 | 14°50'58 | 21°57 | 28°24 | 22°37 | 4°35 | 20°40 | 0°23 | 2°36 | 12°59 | 21°23 | 23°43 | 24°17 | 15°1 | 28°44 | T 27 |
| W28 | 14 57 29 | 15°48'47 | 6°2 | 28°14 | 23°47 | 5°16 | 20°51 | 0°26 | 2°38 | 13°0 | 21°24 | 23°42 | 24°14 | 15°8 | 28°42 | W28 |
| T 29 | 15 1 26 | 16°46'33 | 19°59 | 28°0 | 24°56 | 5°56 | 21°2 | 0°30 | 2°39 | 13°1 | 21°25 | 23°41 | 24°11 | 15°15 | 28°39 | T 29 |
| F 30 | 15 5 22 | 17°44'18 | 3°43 | 27°42 | 26°11 | 6°37 | 21°13 | 0°34 | 2°41 | 13°2 | 21°27 | 23°40 | 24°10 | 15°22 | 28°37 | F 30 |

Delta T = 07m25s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1417

geocentric

MAY 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|------------|--------|--------|---------|---------|--------|-------|-------|--------|---------|--------|--------|--------|--------|------|
| S 1 | 15 9 19 | 18°42'02 | 17°13 | 27°R20 | 27°II16 | 7°II18 | 21°H24 | 0°Ω38 | 2°H42 | 13°Ω 4 | 21°II28 | 23°D40 | 24°M 5 | 15°Ω28 | 28°R34 | S 1 |
| S 2 | 15 13 15 | 19°39'44 | 0°X26 | 26°B55 | 28°25 | 7°58 | 21°35 | 0°42 | 2°43 | 13° 6 | 21°29 | 23°M40 | 24° 1 | 15°35 | 28°X31 | S 2 |
| M 3 | 15 17 12 | 20°37'25 | 13°22 | 26°27 | 29°34 | 8°39 | 21°46 | 0°46 | 2°45 | 13° 7 | 21°30 | 23°40 | 23°58 | 15°42 | 28°29 | M 3 |
| T 4 | 15 21 9 | 21°35'05 | 26° 1 | 25°56 | 0°Ω43 | 9°19 | 21°56 | 0°50 | 2°46 | 13° 9 | 21°32 | 23°41 | 23°55 | 15°48 | 28°26 | T 4 |
| W 5 | 15 25 5 | 22°32'44 | 8°Z24 | 25°24 | 1°53 | 10° 0 | 22° 7 | 0°55 | 2°47 | 13°10 | 21°33 | 23°41 | 23°52 | 15°55 | 28°23 | W 5 |
| T 6 | 15 29 2 | 23°30'21 | 20°34 | 24°51 | 3° 2 | 10°40 | 22°17 | 0°59 | 2°48 | 13°12 | 21°34 | 23°R41 | 23°49 | 16° 2 | 28°20 | T 6 |
| F 7 | 15 32 58 | 24°27'58 | 2°Ω35 | 24°16 | 4°10 | 11°21 | 22°27 | 1° 3 | 2°49 | 13°13 | 21°36 | 23°41 | 23°46 | 16° 9 | 28°18 | F 7 |
| S 8 | 15 36 55 | 25°25'33 | 14°30 | 23°42 | 5°19 | 12° 1 | 22°37 | 1° 8 | 2°50 | 13°15 | 21°37 | 23°41 | 23°42 | 16°15 | 28°15 | S 8 |
| S 9 | 15 40 51 | 26°23'07 | 26°24 | 23° 9 | 6°28 | 12°41 | 22°47 | 1°12 | 2°51 | 13°17 | 21°38 | 23°D41 | 23°39 | 16°22 | 28°12 | S 9 |
| M10 | 15 44 48 | 27°20'41 | 8°H20 | 22°36 | 7°36 | 13°22 | 22°57 | 1°17 | 2°52 | 13°18 | 21°39 | 23°41 | 23°36 | 16°29 | 28° 8 | M10 |
| T 11 | 15 48 44 | 28°18'13 | 20°24 | 22° 5 | 8°45 | 14° 2 | 23° 7 | 1°22 | 2°53 | 13°20 | 21°41 | 23°41 | 23°33 | 16°35 | 28° 5 | T 11 |
| W12 | 15 52 41 | 29°15'45 | 2°Y41 | 21°36 | 9°53 | 14°42 | 23°17 | 1°27 | 2°54 | 13°22 | 21°42 | 23°42 | 23°30 | 16°42 | 28° 2 | W12 |
| T 13 | 15 56 38 | 0°II13'16 | 15°12 | 21°10 | 11° 1 | 15°22 | 23°26 | 1°32 | 2°55 | 13°23 | 21°43 | 23°42 | 23°26 | 16°49 | 27°59 | T 13 |
| F 14 | 16 0 34 | 1°10'46 | 28° 3 | 20°47 | 12° 9 | 16° 2 | 23°36 | 1°37 | 2°56 | 13°25 | 21°45 | 23°43 | 23°23 | 16°56 | 27°56 | F 14 |
| S 15 | 16 4 31 | 2° 8'15 | 11°B13 | 20°28 | 13°17 | 16°42 | 23°45 | 1°42 | 2°57 | 13°27 | 21°46 | 23°43 | 23°20 | 17° 2 | 27°52 | S 15 |
| S 16 | 16 8 27 | 3° 5'43 | 24°44 | 20°12 | 14°25 | 17°23 | 23°54 | 1°47 | 2°57 | 13°29 | 21°48 | 23°R44 | 23°17 | 17° 9 | 27°49 | S 16 |
| M17 | 16 12 24 | 4° 3'10 | 8°II34 | 20° 0 | 15°32 | 18° 3 | 24° 3 | 1°52 | 2°58 | 13°30 | 21°49 | 23°43 | 23°14 | 17°16 | 27°46 | M17 |
| T 18 | 16 16 20 | 5° 0'37 | 22°40 | 19°52 | 16°40 | 18°43 | 24°12 | 1°57 | 2°59 | 13°32 | 21°50 | 23°42 | 23°11 | 17°23 | 27°42 | T 18 |
| W19 | 16 20 17 | 5°58'02 | 6°Ω59 | 19°D48 | 17°47 | 19°23 | 24°21 | 2° 3 | 2°59 | 13°34 | 21°52 | 23°41 | 23° 7 | 17°29 | 27°39 | W19 |
| T 20 | 16 24 13 | 6°55'26 | 21°24 | 19°49 | 18°54 | 20° 3 | 24°30 | 2° 8 | 3° 0 | 13°36 | 21°53 | 23°40 | 23° 4 | 17°36 | 27°35 | T 20 |
| F 21 | 16 28 10 | 7°52'49 | 5°Ω51 | 19°55 | 20° 1 | 20°43 | 24°38 | 2°14 | 3° 0 | 13°38 | 21°55 | 23°38 | 23° 1 | 17°43 | 27°31 | F 21 |
| S 22 | 16 32 7 | 8°50'11 | 20°16 | 20° 4 | 21° 8 | 21°22 | 24°47 | 2°19 | 3° 1 | 13°40 | 21°56 | 23°37 | 22°58 | 17°49 | 27°28 | S 22 |
| S 23 | 16 36 3 | 9°47'32 | 4°M33 | 20°19 | 22°14 | 22° 2 | 24°55 | 2°25 | 3° 1 | 13°41 | 21°57 | 23°D36 | 22°55 | 17°56 | 27°24 | S 23 |
| M24 | 16 40 0 | 10°44'52 | 18°41 | 20°38 | 23°21 | 22°42 | 25° 3 | 2°30 | 3° 1 | 13°43 | 21°59 | 23°36 | 22°52 | 18° 3 | 27°21 | M24 |
| T 25 | 16 43 56 | 11°42'10 | 2°Ω38 | 21° 1 | 24°27 | 23°22 | 25°11 | 2°36 | 3° 1 | 13°45 | 22° 0 | 23°37 | 22°48 | 18°10 | 27°17 | T 25 |
| W26 | 16 47 53 | 12°39'28 | 16°22 | 21°29 | 25°33 | 24° 2 | 25°19 | 2°42 | 3° 2 | 13°47 | 22° 2 | 23°38 | 22°45 | 18°16 | 27°13 | W26 |
| T 27 | 16 51 49 | 13°36'45 | 29°54 | 22° 1 | 26°39 | 24°41 | 25°27 | 2°48 | 3° 2 | 13°49 | 22° 3 | 23°40 | 22°42 | 18°23 | 27° 9 | T 27 |
| F 28 | 16 55 46 | 14°34'01 | 13°M12 | 22°37 | 27°45 | 25°21 | 25°35 | 2°54 | 3° 2 | 13°51 | 22° 5 | 23°41 | 22°39 | 18°30 | 27° 6 | F 28 |
| S 29 | 16 59 42 | 15°31'16 | 26°17 | 23°17 | 28°51 | 26° 1 | 25°42 | 3° 0 | 3° 2 | 13°53 | 22° 6 | 23°R41 | 22°36 | 18°37 | 27° 2 | S 29 |
| S 30 | 17 3 39 | 16°28'30 | 9°X10 | 24° 2 | 29°56 | 26°40 | 25°49 | 3° 6 | 3°R 2 | 13°55 | 22° 7 | 23°40 | 22°32 | 18°43 | 26°58 | S 30 |
| M31 | 17 7 36 | 17°II25'44 | 21°X50 | 24°B50 | 1°Ω 1 | 27°II20 | 25°H57 | 3°Ω12 | 3°H 2 | 13°Ω57 | 22°II 9 | 23°M38 | 22°M29 | 18°Ω50 | 26°X54 | M31 |

Delta T = 07m25s

Julian Calendar 1 May 1417 == Greg. Calendar 10 May 1417

JUNE 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|------------|--------|--------|-------|---------|--------|-------|-------|--------|---------|--------|--------|--------|--------|------|
| T 1 | 17 11 32 | 18°II22'58 | 4°Z17 | 25°B43 | 2°Ω 6 | 28°II 0 | 26°H 4 | 3°Ω18 | 3°R 2 | 13°Ω59 | 22°II10 | 23°R35 | 22°M26 | 18°Ω57 | 26°R50 | T 1 |
| W 2 | 17 15 29 | 19°20'11 | 16°33 | 26°40 | 3°11 | 28°39 | 26°10 | 3°24 | 3°H 2 | 14° 1 | 22°12 | 23°M31 | 22°23 | 19° 3 | 26°X46 | W 2 |
| T 3 | 17 19 25 | 20°17'23 | 28°40 | 27°40 | 4°15 | 29°19 | 26°17 | 3°31 | 3° 2 | 14° 3 | 22°13 | 23°27 | 22°20 | 19°10 | 26°43 | T 3 |
| F 4 | 17 23 22 | 21°14'35 | 10°Ω39 | 28°44 | 5°20 | 29°58 | 26°24 | 3°37 | 3° 1 | 14° 6 | 22°15 | 23°23 | 22°17 | 19°17 | 26°39 | F 4 |
| S 5 | 17 27 18 | 22°11'48 | 22°33 | 29°52 | 6°24 | 0°Ω38 | 26°30 | 3°43 | 3° 1 | 14° 8 | 22°16 | 23°19 | 22°13 | 19°24 | 26°35 | S 5 |
| S 6 | 17 31 15 | 23° 8'59 | 4°H26 | 1°II 3 | 7°27 | 1°17 | 26°36 | 3°50 | 3° 1 | 14°10 | 22°18 | 23°16 | 22°10 | 19°30 | 26°31 | S 6 |
| M 7 | 17 35 12 | 24° 6'11 | 16°21 | 2°18 | 8°31 | 1°56 | 26°42 | 3°56 | 3° 0 | 14°12 | 22°19 | 23°14 | 22° 7 | 19°37 | 26°27 | M 7 |
| T 8 | 17 39 8 | 25° 3'23 | 28°24 | 3°37 | 9°34 | 2°36 | 26°48 | 4° 3 | 3° 0 | 14°14 | 22°20 | 23°D14 | 22° 4 | 19°44 | 26°23 | T 8 |
| W 9 | 17 43 5 | 26° 0'35 | 10°Y39 | 4°59 | 10°37 | 3°15 | 26°54 | 4° 9 | 3° 0 | 14°16 | 22°22 | 23°15 | 22° 1 | 19°50 | 26°19 | W 9 |
| T 10 | 17 47 1 | 26°57'46 | 23°10 | 6°24 | 11°40 | 3°55 | 27° 0 | 4°16 | 2°59 | 14°18 | 22°23 | 23°17 | 21°58 | 19°57 | 26°15 | T 10 |
| F 11 | 17 50 58 | 27°54'58 | 6°B 2 | 7°53 | 12°43 | 4°34 | 27° 5 | 4°23 | 2°58 | 14°20 | 22°25 | 23°18 | 21°54 | 20° 4 | 26°11 | F 11 |
| S 12 | 17 54 54 | 28°52'10 | 19°18 | 9°26 | 13°45 | 5°13 | 27°10 | 4°30 | 2°58 | 14°23 | 22°26 | 23°R19 | 21°51 | 20°11 | 26° 7 | S 12 |
| S 13 | 17 58 51 | 29°49'22 | 2°II59 | 11° 2 | 14°47 | 5°52 | 27°15 | 4°36 | 2°57 | 14°25 | 22°28 | 23°19 | 21°48 | 20°17 | 26° 4 | S 13 |
| M14 | 18 2 47 | 0°Ω46'34 | 17° 4 | 12°41 | 15°49 | 6°32 | 27°20 | 4°43 | 2°56 | 14°27 | 22°29 | 23°17 | 21°45 | 20°24 | 26° 0 | M14 |
| T 15 | 18 6 44 | 1°43'47 | 1°Ω32 | 14°23 | 16°50 | 7°11 | 27°25 | 4°50 | 2°56 | 14°29 | 22°30 | 23°13 | 21°42 | 20°31 | 25°56 | T 15 |
| W16 | 18 10 41 | 2°40'59 | 16°15 | 16° 9 | 17°51 | 7°50 | 27°30 | 4°57 | 2°55 | 14°31 | 22°32 | 23° 8 | 21°38 | 20°38 | 25°52 | W16 |
| T 17 | 18 14 37 | 3°38'11 | 1°Ω 7 | 17°57 | 18°52 | 8°29 | 27°34 | 5° 4 | 2°54 | 14°33 | 22°33 | 23° 2 | 21°35 | 20°44 | 25°48 | T 17 |
| F 18 | 18 18 34 | 4°35'22 | 15°59 | 19°48 | 19°53 | 9° 8 | 27°38 | 5°11 | 2°53 | 14°36 | 22°35 | 22°56 | 21°32 | 20°51 | 25°44 | F 18 |
| S 19 | 18 22 30 | 5°32'34 | 0°M43 | 21°43 | 20°53 | 9°47 | 27°42 | 5°18 | 2°52 | 14°38 | 22°36 | 22°51 | 21°29 | 20°58 | 25°40 | S 19 |
| S 20 | 18 26 27 | 6°29'45 | 15°13 | 23°39 | 21°53 | 10°26 | 27°46 | 5°25 | 2°51 | 14°40 | 22°38 | 22°48 | 21°26 | 21° 4 | 25°37 | S 20 |
| M21 | 18 30 23 | 7°26'56 | 29°25 | 25°39 | 22°52 | 11° 6 | 27°50 | 5°32 | 2°50 | 14°42 | 22°39 | 22°46 | 21°23 | 21°11 | 25°33 | M21 |
| T 22 | 18 34 20 | 8°24'07 | 13°Ω18 | 27°40 | 23°51 | 11°45 | 27°53 | 5°39 | 2°49 | 14°44 | 22°40 | 22°D46 | 21°19 | 21°18 | 25°29 | T 22 |
| W23 | 18 38 16 | 9°21'18 | 26°51 | 29°43 | 24°50 | 12°24 | 27°57 | 5°46 | 2°48 | 14°47 | 22°42 | 22°47 | 21°16 | 21°25 | 25°25 | W23 |
| T 24 | 18 42 13 | 10°18'29 | 10°M 5 | 1°Ω48 | 25°48 | 13° 3 | 28° 0 | 5°53 | 2°47 | 14°49 | 22°43 | 22°48 | 21°13 | 21°31 | 25°22 | T 24 |
| F 25 | 18 46 10 | 11°15'40 | 23° 4 | 3°55 | 26°46 | 13°42 | 28° 3 | 6° 1 | 2°46 | 14°51 | 22°45 | 22°R48 | 21°10 | 21°38 | 25°18 | F 25 |
| S 26 | 18 50 6 | 12°12'51 | 5°X50 | 6° 2 | 27°44 | 14°20 | 28° 6 | 6° 8 | 2°45 | 14°53 | 22°46 | 22°48 | 21° 7 | 21°45 | 25°14 | S 26 |
| S 27 | 18 54 3 | 13°10'02 | 18°23 | 8°10 | 28°41 | 14°59 | 28° 8 | 6°15 | 2°43 | 14°56 | 22°47 | 22°45 | 21° 3 | 21°52 | 25°11 | S 27 |
| M28 | 18 57 59 | 14° 7'14 | 0°Z47 | 10°19 | 29°37 | 15°38 | 28°11 | 6°23 | 2°42 | 14°58 | 22°49 | 22°40 | 21° 0 | 21°58 | 25° 7 | M28 |
| T 29 | 19 1 56 | 15° 4'26 | 13° 1 | 12°28 | 0°M33 | 16°17 | 28°13 | 6°30 | 2°41 | 15° 0 | 22°50 | 22°32 | 20°57 | 22° 5 | 25° 4 | T 29 |
| W30 | 19 5 52 | 16°Ω 1'38 | 25°Z 8 | 14°Ω36 | 1°M29 | 16°Ω56 | 28°H15 | 6°Ω37 | 2°H39 | 15°Ω 2 | 22°II51 | 22°M23 | 20°M54 | 22°Ω12 | 25°X 0 | W30 |

Delta T = 07m25s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1417
geocentric

JULY 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------|---------|--------|--------|-------|--------|--------|-------|-------|---------|--------|--------|--------|--------|------|
| T 1 | 19 9 49 | 16°58'50 | 7° 9 | 16°45 | 2° 24 | 17°35 | 28°17 | 6°45 | 2°R38 | 15° 5 | 22°II53 | 22°R13 | 20°M51 | 22° 18 | 24°R57 | T 1 |
| F 2 | 19 13 45 | 17°56'03 | 19° 4 | 18°52 | 3°18 | 18°14 | 28°18 | 6°52 | 2°H37 | 15° 7 | 22°54 | 22°M 3 | 20°48 | 22°25 | 24° 53 | F 2 |
| S 3 | 19 17 42 | 18°53'17 | 0°H57 | 20°59 | 4°13 | 18°52 | 28°20 | 7° 0 | 2°35 | 15° 9 | 22°55 | 21°54 | 20°44 | 22°32 | 24°50 | S 3 |
| S 4 | 19 21 39 | 19°50'32 | 12°49 | 23° 5 | 5° 6 | 19°31 | 28°21 | 7° 7 | 2°34 | 15°11 | 22°57 | 21°46 | 20°41 | 22°39 | 24°46 | S 4 |
| M 5 | 19 25 35 | 20°47'47 | 24°43 | 25°10 | 5°59 | 20°10 | 28°22 | 7°14 | 2°32 | 15°13 | 22°58 | 21°40 | 20°38 | 22°45 | 24°43 | M 5 |
| T 6 | 19 29 32 | 21°45'03 | 6°Y44 | 27°13 | 6°51 | 20°49 | 28°23 | 7°22 | 2°30 | 15°16 | 22°59 | 21°37 | 20°35 | 22°52 | 24°40 | T 6 |
| W 7 | 19 33 28 | 22°42'20 | 18°56 | 29°16 | 7°43 | 21°27 | 28°24 | 7°30 | 2°29 | 15°18 | 23° 1 | 21°D36 | 20°32 | 22°59 | 24°37 | W 7 |
| T 8 | 19 37 25 | 23°39'38 | 1°B24 | 1°L16 | 8°34 | 22° 6 | 28°24 | 7°37 | 2°27 | 15°20 | 23° 2 | 21°36 | 20°29 | 23° 5 | 24°33 | T 8 |
| F 9 | 19 41 21 | 24°36'56 | 14°13 | 3°15 | 9°24 | 22°45 | 28°24 | 7°45 | 2°25 | 15°22 | 23° 3 | 21°37 | 20°25 | 23°12 | 24°30 | F 9 |
| S 10 | 19 45 18 | 25°34'16 | 27°26 | 5°13 | 10°14 | 23°23 | 28°R24 | 7°52 | 2°24 | 15°24 | 23° 4 | 21°R37 | 20°22 | 23°19 | 24°27 | S 10 |
| S 11 | 19 49 14 | 26°31'37 | 11°II 8 | 7° 9 | 11° 3 | 24° 2 | 28°24 | 8° 0 | 2°22 | 15°27 | 23° 6 | 21°35 | 20°19 | 23°26 | 24°24 | S 11 |
| M12 | 19 53 11 | 27°28'59 | 25°18 | 9° 3 | 11°52 | 24°41 | 28°24 | 8° 7 | 2°20 | 15°29 | 23° 7 | 21°31 | 20°16 | 23°32 | 24°21 | M12 |
| T 13 | 19 57 8 | 28°26'22 | 9°B55 | 10°56 | 12°39 | 25°19 | 28°23 | 8°15 | 2°18 | 15°31 | 23° 8 | 21°25 | 20°13 | 23°39 | 24°19 | T 13 |
| W14 | 20 1 4 | 29°23'46 | 24°53 | 12°47 | 13°26 | 25°58 | 28°23 | 8°23 | 2°16 | 15°33 | 23° 9 | 21°17 | 20° 9 | 23°46 | 24°16 | W14 |
| T 15 | 20 5 1 | 0°L21'11 | 10°L 3 | 14°37 | 14°12 | 26°36 | 28°22 | 8°30 | 2°14 | 15°35 | 23°11 | 21° 7 | 20° 6 | 23°53 | 24°13 | T 15 |
| F 16 | 20 8 57 | 1°18'37 | 25°15 | 16°25 | 14°57 | 27°15 | 28°21 | 8°38 | 2°12 | 15°38 | 23°12 | 20°57 | 20° 3 | 23°59 | 24°10 | F 16 |
| S 17 | 20 12 54 | 2°16'03 | 10°M19 | 18°11 | 15°41 | 27°54 | 28°19 | 8°46 | 2°11 | 15°40 | 23°13 | 20°48 | 20° 0 | 24° 6 | 24° 8 | S 17 |
| S 18 | 20 16 50 | 3°13'30 | 25° 5 | 19°55 | 16°25 | 28°32 | 28°18 | 8°53 | 2° 9 | 15°42 | 23°14 | 20°42 | 19°57 | 24°13 | 24° 5 | S 18 |
| M19 | 20 20 47 | 4°10'58 | 9°B28 | 21°38 | 17° 7 | 29°11 | 28°16 | 9° 1 | 2° 7 | 15°44 | 23°15 | 20°37 | 19°54 | 24°19 | 24° 2 | M19 |
| T 20 | 20 24 43 | 5° 8'27 | 23°25 | 23°20 | 17°48 | 29°49 | 28°14 | 9° 9 | 2° 4 | 15°46 | 23°16 | 20°35 | 19°50 | 24°26 | 24° 0 | T 20 |
| W21 | 20 28 40 | 6° 5'56 | 6°M57 | 24°59 | 18°29 | 0°L28 | 28°12 | 9°16 | 2° 2 | 15°48 | 23°17 | 20°D35 | 19°47 | 24°33 | 23°58 | W21 |
| T 22 | 20 32 37 | 7° 3'27 | 20° 6 | 26°37 | 19° 8 | 1° 6 | 28°10 | 9°24 | 2° 0 | 15°50 | 23°19 | 20°R35 | 19°44 | 24°40 | 23°55 | T 22 |
| F 23 | 20 36 33 | 8° 0'58 | 2° 55 | 28°14 | 19°46 | 1°44 | 28° 7 | 9°32 | 1°58 | 15°53 | 23°20 | 20°34 | 19°41 | 24°46 | 23°53 | F 23 |
| S 24 | 20 40 30 | 8°58'30 | 15°28 | 29°49 | 20°23 | 2°23 | 28° 5 | 9°40 | 1°56 | 15°55 | 23°21 | 20°32 | 19°38 | 24°53 | 23°51 | S 24 |
| S 25 | 20 44 26 | 9°56'03 | 27°48 | 1°M22 | 20°59 | 3° 1 | 28° 2 | 9°47 | 1°54 | 15°57 | 23°22 | 20°28 | 19°35 | 25° 0 | 23°49 | S 25 |
| M26 | 20 48 23 | 10°53'37 | 10°B 0 | 2°54 | 21°33 | 3°40 | 27°59 | 9°55 | 1°52 | 15°59 | 23°23 | 20°20 | 19°31 | 25° 7 | 23°47 | M26 |
| T 27 | 20 52 19 | 11°51'12 | 22° 4 | 4°24 | 22° 7 | 4°18 | 27°55 | 10° 3 | 1°50 | 16° 1 | 23°24 | 20°10 | 19°28 | 25°13 | 23°45 | T 27 |
| W28 | 20 56 16 | 12°48'48 | 4° 3 | 5°53 | 22°38 | 4°56 | 27°52 | 10°10 | 1°47 | 16° 3 | 23°25 | 19°58 | 19°25 | 25°20 | 23°43 | W28 |
| T 29 | 21 0 12 | 13°46'25 | 15°58 | 7°20 | 23° 9 | 5°35 | 27°48 | 10°18 | 1°45 | 16° 5 | 23°26 | 19°44 | 19°22 | 25°27 | 23°41 | T 29 |
| F 30 | 21 4 9 | 14°44'04 | 27°51 | 8°45 | 23°38 | 6°13 | 27°45 | 10°26 | 1°43 | 16° 7 | 23°27 | 19°30 | 19°19 | 25°33 | 23°39 | F 30 |
| S 31 | 21 8 6 | 15°L41'44 | 9°H43 | 10°M 9 | 24°M 5 | 6°L51 | 27°H41 | 10°L33 | 1°H41 | 16° 9 | 23°II28 | 19°M17 | 19°M15 | 25° 40 | 23° 38 | S 31 |

Delta T = 07m25s

Julian Calendar 1 July 1417 == Greg. Calendar 10 July 1417

AUGUST 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|-----------|--------|--------|--------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|------|
| S 1 | 21 12 2 | 16°L39'25 | 21°H36 | 11°M31 | 24°M31 | 7°L30 | 27°R37 | 10°L41 | 1°R38 | 16°B11 | 23°II29 | 19°R 6 | 19°M12 | 25° 47 | 23°R36 | S 1 |
| M 2 | 21 15 59 | 17°37'08 | 3°Y32 | 12°51 | 24°55 | 8° 8 | 27°H32 | 10°49 | 1°H36 | 16°13 | 23°30 | 18°M58 | 19° 9 | 25°54 | 23° 35 | M 2 |
| T 3 | 21 19 55 | 18°34'53 | 15°34 | 14°10 | 25°18 | 8°46 | 27°28 | 10°56 | 1°34 | 16°15 | 23°31 | 18°52 | 19° 6 | 26° 0 | 23°33 | T 3 |
| W 4 | 21 23 52 | 19°32'39 | 27°47 | 15°27 | 25°39 | 9°25 | 27°23 | 11° 4 | 1°31 | 16°17 | 23°32 | 18°49 | 19° 3 | 26° 7 | 23°32 | W 4 |
| T 5 | 21 27 48 | 20°30'27 | 10°B13 | 16°41 | 25°58 | 10° 3 | 27°18 | 11°12 | 1°29 | 16°19 | 23°32 | 18°48 | 19° 0 | 26°14 | 23°31 | T 5 |
| F 6 | 21 31 45 | 21°28'17 | 22°58 | 17°54 | 26°15 | 10°41 | 27°13 | 11°19 | 1°27 | 16°21 | 23°33 | 18°48 | 18°56 | 26°20 | 23°29 | F 6 |
| S 7 | 21 35 41 | 22°26'08 | 6°II 6 | 19° 5 | 26°30 | 11°19 | 27° 8 | 11°27 | 1°24 | 16°22 | 23°34 | 18°48 | 18°53 | 26°27 | 23°28 | S 7 |
| S 8 | 21 39 38 | 23°24'02 | 19°41 | 20°14 | 26°43 | 11°58 | 27° 3 | 11°35 | 1°22 | 16°24 | 23°35 | 18°46 | 18°50 | 26°34 | 23°27 | S 8 |
| M 9 | 21 43 35 | 24°21'57 | 3°B45 | 21°21 | 26°55 | 12°36 | 26°57 | 11°42 | 1°20 | 16°26 | 23°36 | 18°42 | 18°47 | 26°41 | 23°26 | M 9 |
| T 10 | 21 47 31 | 25°19'54 | 18°18 | 22°25 | 27° 4 | 13°14 | 26°52 | 11°50 | 1°17 | 16°28 | 23°37 | 18°36 | 18°44 | 26°47 | 23°25 | T 10 |
| W11 | 21 51 28 | 26°17'53 | 3°L15 | 23°27 | 27°11 | 13°52 | 26°46 | 11°57 | 1°15 | 16°30 | 23°37 | 18°27 | 18°41 | 26°54 | 23°25 | W11 |
| T 12 | 21 55 24 | 27°15'53 | 18°28 | 24°27 | 27°16 | 14°30 | 26°40 | 12° 5 | 1°13 | 16°32 | 23°38 | 18°16 | 18°37 | 27° 1 | 23°24 | T 12 |
| F 13 | 21 59 21 | 28°13'56 | 3°M48 | 25°24 | 27°19 | 15° 9 | 26°34 | 12°12 | 1°10 | 16°33 | 23°39 | 18° 5 | 18°34 | 27° 8 | 23°23 | F 13 |
| S 14 | 22 3 17 | 29°11'59 | 19° 3 | 26°18 | 27°R19 | 15°47 | 26°28 | 12°20 | 1° 8 | 16°35 | 23°40 | 17°55 | 18°31 | 27°14 | 23°23 | S 14 |
| S 15 | 22 7 14 | 0°M10'05 | 4° 1 | 27° 9 | 27°17 | 16°25 | 26°21 | 12°27 | 1° 5 | 16°37 | 23°40 | 17°48 | 18°28 | 27°21 | 23°22 | S 15 |
| M16 | 22 11 10 | 1° 8'11 | 18°36 | 27°57 | 27°13 | 17° 3 | 26°15 | 12°35 | 1° 3 | 16°39 | 23°41 | 17°43 | 18°25 | 27°28 | 23°22 | M16 |
| T 17 | 22 15 7 | 2° 6'20 | 2°M42 | 28°41 | 27° 6 | 17°41 | 26° 8 | 12°42 | 1° 1 | 16°40 | 23°42 | 17°40 | 18°21 | 27°34 | 23°22 | T 17 |
| W18 | 22 19 4 | 3° 4'30 | 16°20 | 29°22 | 26°57 | 18°19 | 26° 1 | 12°50 | 0°58 | 16°42 | 23°42 | 17°D39 | 18°18 | 27°41 | 23°21 | W18 |
| T 19 | 22 23 0 | 4° 2'41 | 29°31 | 29°59 | 26°45 | 18°57 | 25°55 | 12°57 | 0°56 | 16°44 | 23°43 | 17°R39 | 18°15 | 27°48 | 23°21 | T 19 |
| F 20 | 22 26 57 | 5° 0'54 | 12° 19 | 0°B32 | 26°31 | 19°36 | 25°48 | 13° 4 | 0°53 | 16°45 | 23°43 | 17°39 | 18°12 | 27°55 | 23°D21 | F 20 |
| S 21 | 22 30 53 | 5°59'08 | 24°49 | 1° 0 | 26°15 | 20°14 | 25°41 | 13°12 | 0°51 | 16°47 | 23°44 | 17°38 | 18° 9 | 28° 1 | 23°21 | S 21 |
| S 22 | 22 34 50 | 6°57'24 | 7° 3 | 1°24 | 25°57 | 20°52 | 25°33 | 13°19 | 0°49 | 16°48 | 23°44 | 17°34 | 18° 6 | 28° 8 | 23°21 | S 22 |
| M23 | 22 38 46 | 7°55'41 | 19° 8 | 1°42 | 25°36 | 21°30 | 25°26 | 13°26 | 0°46 | 16°50 | 23°45 | 17°28 | 18° 2 | 28°15 | 23°22 | M23 |
| T 24 | 22 42 43 | 8°54'00 | 1° 6 | 1°56 | 25°13 | 22° 8 | 25°19 | 13°33 | 0°44 | 16°51 | 23°46 | 17°19 | 17°59 | 28°21 | 23°22 | T 24 |
| W25 | 22 46 39 | 9°52'21 | 13° 0 | 2° 3 | 24°48 | 22°46 | 25°11 | 13°41 | 0°42 | 16°53 | 23°46 | 17° 8 | 17°56 | 28°28 | 23°22 | W25 |
| T 26 | 22 50 36 | 10°50'43 | 24°52 | 2°R 5 | 24°21 | 23°24 | 25° 4 | 13°48 | 0°39 | 16°54 | 23°46 | 16°55 | 17°53 | 28°35 | 23°23 | T 26 |
| F 27 | 22 54 33 | 11°49'08 | 6°H45 | 2° 0 | 23°52 | 24° 2 | 24°56 | 13°55 | 0°37 | 16°56 | 23°47 | 16°43 | 17°50 | 28°42 | 23°23 | F 27 |
| S 28 | 22 58 29 | 12°47'34 | 18°40 | 1°49 | 23°21 | 24°40 | 24°49 | 14° 2 | 0°34 | 16°57 | 23°47 | 16°31 | 17°47 | 28°48 | 23°24 | S 28 |
| S 29 | 23 2 26 | 13°46'02 | 0°Y38 | 1°31 | 22°49 | 25°18 | 24°41 | 14° 9 | 0°32 | 16°59 | 23°48 | 16°21 | 17°43 | 28°55 | 23°25 | S 29 |
| M30 | 23 6 22 | 14°44'32 | 12°40 | 1° 6 | 22°15 | 25°56 | 24°33 | 14°16 | 0°30 | 17° 0 | 23°48 | 16°14 | 17°40 | 29° 2 | 23°26 | M30 |
| T 31 | 23 10 19 | 15°M43'04 | 24°Y49 | 0°B34 | 21°M41 | 26°L34 | 24°H25 | 14°L23 | 0°H28 | 17° 1 | 23°II48 | 16°M 9 | 17°M37 | 29° 9 | 23° 26 | T 31 |

Delta T = 07m25s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1417
geocentric

SEPTEMBER 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|----------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|-----------------------|-----------------------|---------------------|---------------------|------|
| W 1 | 23 14 15 | 16 ¹¹ 41'38 | 7 ⁸ 8 | 29 ¹ R56 | 21 ¹ R 5 | 27 ¹ Ω12 | 24 ¹ R17 | 14 ¹ Ω30 | 0 ¹ R25 | 17 ¹ ☾ 3 | 23 ¹ II49 | 16 ¹ R 7 | 17 ¹ III34 | 29 ¹ ≈15 | 23 ¹ ≈27 | W 1 |
| T 2 | 23 18 12 | 17 ¹ 40'14 | 19 ¹ 39 | 29 ¹ III11 | 20 ¹ III29 | 27 ¹ 50 | 24 ¹ ≈10 | 14 ¹ 37 | 0 ¹ ≈23 | 17 ¹ 4 | 23 ¹ 49 | 16 ¹ D 7 | 17 ¹ 31 | 29 ¹ 22 | 23 ¹ 29 | T 2 |
| F 3 | 23 22 8 | 18 ¹ 38'53 | 2 ¹ II26 | 28 ¹ 19 | 19 ¹ 52 | 28 ¹ 28 | 24 ¹ 2 | 14 ¹ 44 | 0 ¹ 21 | 17 ¹ 5 | 23 ¹ 49 | 16 ¹ III 7 | 17 ¹ 27 | 29 ¹ 29 | 23 ¹ 30 | F 3 |
| S 4 | 23 26 5 | 19 ¹ 37'34 | 15 ¹ 32 | 27 ¹ 23 | 19 ¹ 15 | 29 ¹ 6 | 23 ¹ 54 | 14 ¹ 51 | 0 ¹ 19 | 17 ¹ 7 | 23 ¹ 50 | 16 ¹ R 8 | 17 ¹ 24 | 29 ¹ 35 | 23 ¹ 31 | S 4 |
| S 5 | 23 30 1 | 20 ¹ 36'17 | 29 ¹ 1 | 26 ¹ 23 | 18 ¹ 38 | 29 ¹ 44 | 23 ¹ 46 | 14 ¹ 57 | 0 ¹ 16 | 17 ¹ 8 | 23 ¹ 50 | 16 ¹ 8 | 17 ¹ 21 | 29 ¹ 42 | 23 ¹ 32 | S 5 |
| M 6 | 23 33 58 | 21 ¹ 35'03 | 12 ¹ ☾55 | 25 ¹ 19 | 18 ¹ 2 | 0 ¹ III22 | 23 ¹ 38 | 15 ¹ 4 | 0 ¹ 14 | 17 ¹ 9 | 23 ¹ 50 | 16 ¹ 6 | 17 ¹ 18 | 29 ¹ 49 | 23 ¹ 34 | M 6 |
| T 7 | 23 37 55 | 22 ¹ 33'51 | 27 ¹ 15 | 24 ¹ 13 | 17 ¹ 25 | 1 ¹ 0 | 23 ¹ 30 | 15 ¹ 11 | 0 ¹ 12 | 17 ¹ 10 | 23 ¹ 50 | 16 ¹ 2 | 17 ¹ 15 | 29 ¹ 56 | 23 ¹ 35 | T 7 |
| W 8 | 23 41 51 | 23 ¹ 32'41 | 11 ¹ Ω58 | 23 ¹ 7 | 16 ¹ 50 | 1 ¹ 38 | 23 ¹ 22 | 15 ¹ 17 | 0 ¹ 10 | 17 ¹ 11 | 23 ¹ 51 | 15 ¹ 56 | 17 ¹ 12 | 0 ¹ ≈ 2 | 23 ¹ 37 | W 8 |
| T 9 | 23 45 48 | 24 ¹ 31'33 | 26 ¹ 59 | 22 ¹ 3 | 16 ¹ 16 | 2 ¹ 16 | 23 ¹ 13 | 15 ¹ 24 | 0 ¹ 8 | 17 ¹ 12 | 23 ¹ 51 | 15 ¹ 48 | 17 ¹ 8 | 0 ¹ 9 | 23 ¹ 38 | T 9 |
| F 10 | 23 49 44 | 25 ¹ 30'28 | 12 ¹ III 9 | 21 ¹ 1 | 15 ¹ 42 | 2 ¹ 54 | 23 ¹ 5 | 15 ¹ 30 | 0 ¹ 6 | 17 ¹ 13 | 23 ¹ 51 | 15 ¹ 40 | 17 ¹ 5 | 0 ¹ 16 | 23 ¹ 40 | F 10 |
| S 11 | 23 53 41 | 26 ¹ 29'24 | 27 ¹ 18 | 20 ¹ 4 | 15 ¹ 10 | 3 ¹ 32 | 22 ¹ 57 | 15 ¹ 37 | 0 ¹ 4 | 17 ¹ 15 | 23 ¹ 51 | 15 ¹ 33 | 17 ¹ 2 | 0 ¹ 22 | 23 ¹ 42 | S 11 |
| S 12 | 23 57 37 | 27 ¹ 28'23 | 12 ¹ ≈16 | 19 ¹ 14 | 14 ¹ 40 | 4 ¹ 10 | 22 ¹ 49 | 15 ¹ 43 | 0 ¹ 1 | 17 ¹ 16 | 23 ¹ 51 | 15 ¹ 28 | 16 ¹ 59 | 0 ¹ 29 | 23 ¹ 44 | S 12 |
| M13 | 0 1 34 | 28 ¹ 27'23 | 26 ¹ 54 | 18 ¹ 31 | 14 ¹ 11 | 4 ¹ 48 | 22 ¹ 41 | 15 ¹ 50 | 29 ¹ ≈59 | 17 ¹ 16 | 23 ¹ 51 | 15 ¹ 24 | 16 ¹ 56 | 0 ¹ 36 | 23 ¹ 46 | M13 |
| T 14 | 0 5 30 | 29 ¹ 26'26 | 11 ¹ III 7 | 17 ¹ 57 | 13 ¹ 45 | 5 ¹ 26 | 22 ¹ 34 | 15 ¹ 56 | 29 ¹ 57 | 17 ¹ 17 | 23 ¹ 51 | 15 ¹ D23 | 16 ¹ 52 | 0 ¹ 43 | 23 ¹ 48 | T 14 |
| W15 | 0 9 27 | 0 ¹ ≈25'30 | 24 ¹ 53 | 17 ¹ 32 | 13 ¹ 20 | 6 ¹ 4 | 22 ¹ 26 | 16 ¹ 2 | 29 ¹ 56 | 17 ¹ 18 | 23 ¹ R51 | 15 ¹ 23 | 16 ¹ 49 | 0 ¹ 49 | 23 ¹ 50 | W15 |
| T 16 | 0 13 24 | 1 ¹ 24'36 | 8 ¹ ≈10 | 17 ¹ 18 | 12 ¹ 57 | 6 ¹ 41 | 22 ¹ 18 | 16 ¹ 8 | 29 ¹ 54 | 17 ¹ 19 | 23 ¹ 51 | 15 ¹ 24 | 16 ¹ 46 | 0 ¹ 56 | 23 ¹ 52 | T 16 |
| F 17 | 0 17 20 | 2 ¹ 23'45 | 21 ¹ 3 | 17 ¹ D14 | 12 ¹ 37 | 7 ¹ 19 | 22 ¹ 10 | 16 ¹ 15 | 29 ¹ 52 | 17 ¹ 20 | 23 ¹ 51 | 15 ¹ 25 | 16 ¹ 43 | 1 ¹ 3 | 23 ¹ 55 | F 17 |
| S 18 | 0 21 17 | 3 ¹ 22'54 | 3 ¹ ≈35 | 17 ¹ 21 | 12 ¹ 19 | 7 ¹ 57 | 22 ¹ 2 | 16 ¹ 21 | 29 ¹ 50 | 17 ¹ 21 | 23 ¹ 51 | 15 ¹ R26 | 16 ¹ 40 | 1 ¹ 9 | 23 ¹ 57 | S 18 |
| S 19 | 0 25 13 | 4 ¹ 22'06 | 15 ¹ 50 | 17 ¹ 38 | 12 ¹ 3 | 8 ¹ 35 | 21 ¹ 55 | 16 ¹ 27 | 29 ¹ 48 | 17 ¹ 22 | 23 ¹ 51 | 15 ¹ 25 | 16 ¹ 37 | 1 ¹ 16 | 23 ¹ 59 | S 19 |
| M20 | 0 29 10 | 5 ¹ 21'20 | 27 ¹ 53 | 18 ¹ 5 | 11 ¹ 49 | 9 ¹ 13 | 21 ¹ 47 | 16 ¹ 33 | 29 ¹ 46 | 17 ¹ 22 | 23 ¹ 51 | 15 ¹ 23 | 16 ¹ 33 | 1 ¹ 23 | 24 ¹ 2 | M20 |
| T 21 | 0 33 6 | 6 ¹ 20'35 | 9 ¹ ≈49 | 18 ¹ 42 | 11 ¹ 38 | 9 ¹ 51 | 21 ¹ 39 | 16 ¹ 39 | 29 ¹ 44 | 17 ¹ 23 | 23 ¹ 51 | 15 ¹ 18 | 16 ¹ 30 | 1 ¹ 30 | 24 ¹ 5 | T 21 |
| W22 | 0 37 3 | 7 ¹ 19'52 | 21 ¹ 41 | 19 ¹ 27 | 11 ¹ 30 | 10 ¹ 29 | 21 ¹ 32 | 16 ¹ 44 | 29 ¹ 43 | 17 ¹ 24 | 23 ¹ 51 | 15 ¹ 13 | 16 ¹ 27 | 1 ¹ 36 | 24 ¹ 7 | W22 |
| T 23 | 0 40 59 | 8 ¹ 19'11 | 3 ¹ ≈33 | 20 ¹ 21 | 11 ¹ 23 | 11 ¹ 7 | 21 ¹ 25 | 16 ¹ 50 | 29 ¹ 41 | 17 ¹ 25 | 23 ¹ 50 | 15 ¹ 6 | 16 ¹ 24 | 1 ¹ 43 | 24 ¹ 10 | T 23 |
| F 24 | 0 44 56 | 9 ¹ 18'32 | 15 ¹ 28 | 21 ¹ 22 | 11 ¹ 20 | 11 ¹ 44 | 21 ¹ 17 | 16 ¹ 56 | 29 ¹ 39 | 17 ¹ 25 | 23 ¹ 50 | 14 ¹ 59 | 16 ¹ 21 | 1 ¹ 50 | 24 ¹ 13 | F 24 |
| S 25 | 0 48 52 | 10 ¹ 17'54 | 27 ¹ 28 | 22 ¹ 29 | 11 ¹ D18 | 12 ¹ 22 | 21 ¹ 10 | 17 ¹ 1 | 29 ¹ 38 | 17 ¹ 26 | 23 ¹ 50 | 14 ¹ 53 | 16 ¹ 18 | 1 ¹ 56 | 24 ¹ 16 | S 25 |
| S 26 | 0 52 49 | 11 ¹ 17'19 | 9 ¹ ≈34 | 23 ¹ 43 | 11 ¹ 19 | 13 ¹ 0 | 21 ¹ 3 | 17 ¹ 7 | 29 ¹ 36 | 17 ¹ 26 | 23 ¹ 50 | 14 ¹ 47 | 16 ¹ 14 | 2 ¹ 3 | 24 ¹ 19 | S 26 |
| M27 | 0 56 46 | 12 ¹ 16'46 | 21 ¹ 48 | 25 ¹ 1 | 11 ¹ 23 | 13 ¹ 38 | 20 ¹ 56 | 17 ¹ 13 | 29 ¹ 34 | 17 ¹ 27 | 23 ¹ 50 | 14 ¹ 44 | 16 ¹ 11 | 2 ¹ 10 | 24 ¹ 22 | M27 |
| T 28 | 1 0 42 | 13 ¹ 16'15 | 4 ¹ ≈11 | 26 ¹ 24 | 11 ¹ 29 | 14 ¹ 16 | 20 ¹ 49 | 17 ¹ 18 | 29 ¹ 33 | 17 ¹ 27 | 23 ¹ 49 | 14 ¹ 42 | 16 ¹ 8 | 2 ¹ 17 | 24 ¹ 25 | T 28 |
| W29 | 1 4 39 | 14 ¹ 15'46 | 16 ¹ 44 | 27 ¹ 51 | 11 ¹ 37 | 14 ¹ 54 | 20 ¹ 43 | 17 ¹ 23 | 29 ¹ 31 | 17 ¹ 28 | 23 ¹ 49 | 14 ¹ D41 | 16 ¹ 5 | 2 ¹ 23 | 24 ¹ 28 | W29 |
| T 30 | 1 8 35 | 15 ¹ ≈15'19 | 29 ¹ ≈29 | 29 ¹ III21 | 11 ¹ III47 | 15 ¹ III31 | 20 ¹ ≈36 | 17 ¹ Ω29 | 29 ¹ ≈30 | 17 ¹ ≈28 | 23 ¹ II49 | 14 ¹ III42 | 16 ¹ III 2 | 2 ¹ ≈30 | 24 ¹ ≈31 | T 30 |

Delta T = 07m25s

Julian Calendar 1 Sept. 1417 == Greg. Calendar 10 Sept. 1417

OCTOBER 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|-------|------|-------|------|
| F 1 | 1 12 32 | 16♌14'55 | 12♏27 | 0♌53 | 11♏59 | 16♏9 | 20♏R29 | 17♏34 | 29♏R28 | 17♏29 | 23♏R48 | 14♏43 | 15♏58 | 2♏37 | 24♏35 | F 1 |
| S 2 | 1 16 28 | 17°14'33 | 25°41 | 2°28 | 12°14 | 16°47 | 20♏23 | 17°39 | 29♏27 | 17°29 | 23♏48 | 14°45 | 15°55 | 2°44 | 24°38 | S 2 |
| S 3 | 1 20 25 | 18°14'13 | 9♏11 | 4°4 | 12°31 | 17°25 | 20°17 | 17°44 | 29°26 | 17°29 | 23°48 | 14°46 | 15°52 | 2°50 | 24°42 | S 3 |
| M 4 | 1 24 21 | 19°13'56 | 23°0 | 5°42 | 12°49 | 18°3 | 20°11 | 17°49 | 29°24 | 17°30 | 23°47 | 14°R46 | 15°49 | 2°57 | 24°45 | M 4 |
| T 5 | 1 28 18 | 20°13'41 | 7♏8 | 7°21 | 13°10 | 18°40 | 20°5 | 17°54 | 29°23 | 17°30 | 23°47 | 14°45 | 15°46 | 3°4 | 24°49 | T 5 |
| W 6 | 1 32 15 | 21°13'28 | 21°33 | 9°0 | 13°32 | 19°18 | 19°59 | 17°59 | 29°22 | 17°30 | 23°46 | 14°43 | 15°43 | 3°10 | 24°53 | W 6 |
| T 7 | 1 36 11 | 22°13'18 | 6♏11 | 10°41 | 13°57 | 19°56 | 19°53 | 18°3 | 29°21 | 17°30 | 23°46 | 14°41 | 15°39 | 3°17 | 24°56 | T 7 |
| F 8 | 1 40 8 | 23°13'09 | 20°57 | 12°21 | 14°23 | 20°34 | 19°48 | 18°8 | 29°20 | 17°30 | 23°45 | 14°38 | 15°36 | 3°24 | 25°0 | F 8 |
| S 9 | 1 44 4 | 24°13'03 | 5♌45 | 14°2 | 14°50 | 21°12 | 19°43 | 18°13 | 29°19 | 17°31 | 23°45 | 14°35 | 15°33 | 3°31 | 25°4 | S 9 |
| S 10 | 1 48 1 | 25°12'59 | 20°27 | 15°43 | 15°20 | 21°49 | 19°37 | 18°17 | 29°18 | 17°31 | 23°44 | 14°33 | 15°30 | 3°37 | 25°8 | S 10 |
| M11 | 1 51 57 | 26°12'57 | 4♏54 | 17°23 | 15°51 | 22°27 | 19°32 | 18°21 | 29°17 | 17°31 | 23°44 | 14°32 | 15°27 | 3°44 | 25°12 | M11 |
| T 12 | 1 55 54 | 27°12'56 | 19°3 | 19°4 | 16°23 | 23°5 | 19°28 | 18°26 | 29°16 | 17°R31 | 23°43 | 14°D31 | 15°23 | 3°51 | 25°16 | T 12 |
| W13 | 1 59 50 | 28°12'58 | 2♏49 | 20°45 | 16°57 | 23°43 | 19°23 | 18°30 | 29°15 | 17°31 | 23°43 | 14°32 | 15°20 | 3°57 | 25°20 | W13 |
| T 14 | 2 3 47 | 29°13'01 | 16°10 | 22°25 | 17°32 | 24°20 | 19°18 | 18°34 | 29°14 | 17°31 | 23°42 | 14°33 | 15°17 | 4°4 | 25°25 | T 14 |
| F 15 | 2 7 44 | 0♏13'07 | 29°7 | 24°5 | 18°9 | 24°58 | 19°14 | 18°38 | 29°13 | 17°31 | 23°41 | 14°35 | 15°14 | 4°11 | 25°29 | F 15 |
| S 16 | 2 11 40 | 1°13'13 | 11♌44 | 25°44 | 18°47 | 25°36 | 19°10 | 18°42 | 29°12 | 17°30 | 23°41 | 14°36 | 15°11 | 4°18 | 25°33 | S 16 |
| S 17 | 2 15 37 | 2°13'22 | 24°2 | 27°23 | 19°26 | 26°14 | 19°6 | 18°46 | 29°12 | 17°30 | 23°40 | 14°36 | 15°8 | 4°24 | 25°37 | S 17 |
| M18 | 2 19 33 | 3°13'32 | 6♏7 | 29°2 | 20°6 | 26°51 | 19°2 | 18°50 | 29°11 | 17°30 | 23°39 | 14°R36 | 15°4 | 4°31 | 25°42 | M18 |
| T 19 | 2 23 30 | 4°13'43 | 18°4 | 0♏41 | 20°47 | 27°29 | 18°59 | 18°53 | 29°10 | 17°30 | 23°39 | 14°36 | 15°1 | 4°38 | 25°46 | T 19 |
| W20 | 2 27 26 | 5°13'56 | 29°56 | 2°19 | 21°30 | 28°7 | 18°55 | 18°57 | 29°10 | 17°30 | 23°38 | 14°35 | 14°58 | 4°44 | 25°51 | W20 |
| T 21 | 2 31 23 | 6°14'10 | 11♏49 | 3°57 | 22°14 | 28°44 | 18°52 | 19°0 | 29°9 | 17°29 | 23°37 | 14°34 | 14°55 | 4°51 | 25°56 | T 21 |
| F 22 | 2 35 19 | 7°14'26 | 23°46 | 5°34 | 22°58 | 29°22 | 18°49 | 19°4 | 29°9 | 17°29 | 23°36 | 14°33 | 14°52 | 4°58 | 26°0 | F 22 |
| S 23 | 2 39 16 | 8°14'44 | 5♏50 | 7°11 | 23°44 | 29°59 | 18°47 | 19°7 | 29°8 | 17°29 | 23°36 | 14°32 | 14°49 | 5°5 | 26°5 | S 23 |
| S 24 | 2 43 13 | 9°15'03 | 18°5 | 8°48 | 24°31 | 0♌37 | 18°44 | 19°10 | 29°8 | 17°28 | 23°35 | 14°31 | 14°45 | 5°11 | 26°10 | S 24 |
| M25 | 2 47 9 | 10°15'24 | 0♌31 | 10°24 | 25°18 | 1°15 | 18°42 | 19°13 | 29°8 | 17°28 | 23°34 | 14°31 | 14°42 | 5°18 | 26°15 | M25 |
| T 26 | 2 51 6 | 11°15'47 | 13°11 | 12°0 | 26°7 | 1°53 | 18°40 | 19°16 | 29°7 | 17°27 | 23°33 | 14°D31 | 14°39 | 5°25 | 26°19 | T 26 |
| W27 | 2 55 2 | 12°16'11 | 26°5 | 13°35 | 26°56 | 2°30 | 18°38 | 19°19 | 29°7 | 17°27 | 23°32 | 14°31 | 14°36 | 5°31 | 26°24 | W27 |
| T 28 | 2 58 59 | 13°16'37 | 9♏13 | 15°11 | 27°46 | 3°8 | 18°36 | 19°22 | 29°7 | 17°26 | 23°31 | 14°31 | 14°33 | 5°38 | 26°29 | T 28 |
| F 29 | 3 2 55 | 14°17'05 | 22°34 | 16°46 | 28°37 | 3°46 | 18°34 | 19°25 | 29°7 | 17°26 | 23°31 | 14°R31 | 14°29 | 5°45 | 26°34 | F 29 |
| S 30 | 3 6 52 | 15°17'34 | 6♏7 | 18°20 | 29°29 | 4°23 | 18°33 | 19°27 | 29°7 | 17°25 | 23°30 | 14°31 | 14°26 | 5°52 | 26°39 | S 30 |
| S 31 | 3 10 48 | 16♏18'06 | 19♏52 | 19♏55 | 0♌22 | 5♌1 | 18♏32 | 19♏30 | 29°D 7 | 17♏25 | 23♏29 | 14♏31 | 14♏23 | 5♏58 | 26♏44 | S 31 |

ASTRODIENST EPHEMERIS for the year 1417

geocentric

NOVEMBER 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|
| M 1 | 3 14 45 | 17°18'39 | 3°47 | 21°18'29 | 1°15 | 5°39 | 18°31 | 19°32 | 29°7 | 17°24 | 23°28 | 14°31 | 14°20 | 6°5 | 26°50 | M 1 |
| T 2 | 3 18 42 | 18°19'14 | 17°52 | 23°3 | 2°9 | 6°16 | 18°30 | 19°35 | 29°7 | 17°23 | 23°27 | 14°31 | 14°17 | 6°12 | 26°55 | T 2 |
| W 3 | 3 22 38 | 19°19'51 | 2°47 | 24°37 | 3°4 | 6°54 | 18°30 | 19°37 | 29°7 | 17°23 | 23°26 | 14°31 | 14°14 | 6°18 | 27°0 | W 3 |
| T 4 | 3 26 35 | 20°20'29 | 16°21 | 26°11 | 3°59 | 7°31 | 18°29 | 19°39 | 29°7 | 17°22 | 23°25 | 14°31 | 14°10 | 6°25 | 27°5 | T 4 |
| F 5 | 3 30 31 | 21°21'10 | 0°41 | 27°44 | 4°55 | 8°9 | 18°29 | 19°41 | 29°8 | 17°21 | 23°24 | 14°32 | 14°7 | 6°32 | 27°11 | F 5 |
| S 6 | 3 34 28 | 22°21'52 | 14°59 | 29°17 | 5°51 | 8°47 | 18°29 | 19°43 | 29°8 | 17°20 | 23°23 | 14°32 | 14°4 | 6°39 | 27°16 | S 6 |
| S 7 | 3 38 24 | 23°22'35 | 29°13 | 0°50 | 6°48 | 9°24 | 18°30 | 19°44 | 29°8 | 17°20 | 23°22 | 14°33 | 14°1 | 6°45 | 27°21 | S 7 |
| M 8 | 3 42 21 | 24°23'20 | 13°17 | 2°23 | 7°46 | 10°2 | 18°30 | 19°46 | 29°9 | 17°19 | 23°21 | 14°33 | 13°58 | 6°52 | 27°27 | M 8 |
| T 9 | 3 46 17 | 25°24'07 | 27°8 | 3°56 | 8°44 | 10°39 | 18°31 | 19°48 | 29°9 | 17°18 | 23°20 | 14°33 | 13°55 | 6°59 | 27°32 | T 9 |
| W10 | 3 50 14 | 26°24'55 | 10°42 | 5°29 | 9°43 | 11°17 | 18°32 | 19°49 | 29°10 | 17°17 | 23°19 | 14°32 | 13°51 | 7°5 | 27°38 | W10 |
| T 11 | 3 54 11 | 27°25'44 | 23°58 | 7°2 | 10°42 | 11°54 | 18°33 | 19°50 | 29°10 | 17°16 | 23°18 | 14°31 | 13°48 | 7°12 | 27°43 | T 11 |
| F 12 | 3 58 7 | 28°26'34 | 6°54 | 8°34 | 11°42 | 12°32 | 18°34 | 19°51 | 29°11 | 17°15 | 23°17 | 14°29 | 13°45 | 7°19 | 27°49 | F 12 |
| S 13 | 4 2 4 | 29°27'26 | 19°31 | 10°6 | 12°42 | 13°10 | 18°36 | 19°52 | 29°11 | 17°14 | 23°16 | 14°27 | 13°42 | 7°26 | 27°54 | S 13 |
| S 14 | 4 6 0 | 0°28'18 | 1°52 | 11°39 | 13°42 | 13°47 | 18°38 | 19°53 | 29°12 | 17°13 | 23°15 | 14°24 | 13°39 | 7°32 | 28°0 | S 14 |
| M15 | 4 9 57 | 1°29'11 | 13°59 | 13°11 | 14°43 | 14°25 | 18°40 | 19°54 | 29°13 | 17°12 | 23°14 | 14°23 | 13°35 | 7°39 | 28°6 | M15 |
| T 16 | 4 13 53 | 2°30'05 | 25°56 | 14°42 | 15°44 | 15°2 | 18°42 | 19°55 | 29°14 | 17°11 | 23°12 | 14°22 | 13°32 | 7°46 | 28°11 | T 16 |
| W17 | 4 17 50 | 3°31'00 | 7°49 | 16°14 | 16°46 | 15°39 | 18°44 | 19°56 | 29°15 | 17°10 | 23°11 | 14°22 | 13°29 | 7°52 | 28°17 | W17 |
| T 18 | 4 21 46 | 4°31'56 | 19°41 | 17°46 | 17°48 | 16°17 | 18°47 | 19°56 | 29°15 | 17°9 | 23°10 | 14°23 | 13°26 | 7°59 | 28°23 | T 18 |
| F 19 | 4 25 43 | 5°32'52 | 1°38 | 19°17 | 18°51 | 16°54 | 18°49 | 19°57 | 29°16 | 17°7 | 23°9 | 14°24 | 13°23 | 8°6 | 28°29 | F 19 |
| S 20 | 4 29 40 | 6°33'49 | 13°44 | 20°48 | 19°54 | 17°32 | 18°52 | 19°57 | 29°17 | 17°6 | 23°8 | 14°26 | 13°20 | 8°12 | 28°34 | S 20 |
| S 21 | 4 33 36 | 7°34'47 | 26°3 | 22°19 | 20°57 | 18°9 | 18°56 | 19°57 | 29°18 | 17°5 | 23°7 | 14°27 | 13°16 | 8°19 | 28°40 | S 21 |
| M22 | 4 37 33 | 8°35'46 | 8°39 | 23°49 | 22°1 | 18°47 | 18°59 | 19°57 | 29°20 | 17°4 | 23°6 | 14°28 | 13°13 | 8°26 | 28°46 | M22 |
| T 23 | 4 41 29 | 9°36'45 | 21°33 | 25°19 | 23°5 | 19°24 | 19°3 | 19°57 | 29°21 | 17°3 | 23°4 | 14°28 | 13°10 | 8°33 | 28°52 | T 23 |
| W24 | 4 45 26 | 10°37'45 | 4°47 | 26°48 | 24°9 | 20°1 | 19°6 | 19°57 | 29°22 | 17°1 | 23°3 | 14°27 | 13°7 | 8°39 | 28°58 | W24 |
| T 25 | 4 49 22 | 11°38'46 | 18°20 | 28°16 | 25°13 | 20°39 | 19°10 | 19°57 | 29°23 | 17°0 | 23°2 | 14°24 | 13°4 | 8°46 | 29°4 | T 25 |
| F 26 | 4 53 19 | 12°39'48 | 2°9 | 29°44 | 26°18 | 21°16 | 19°14 | 19°56 | 29°25 | 16°59 | 23°1 | 14°20 | 13°1 | 8°53 | 29°10 | F 26 |
| S 27 | 4 57 15 | 13°40'51 | 16°12 | 1°31 | 27°23 | 21°53 | 19°19 | 19°56 | 29°26 | 16°57 | 23°0 | 14°16 | 12°57 | 8°59 | 29°15 | S 27 |
| S 28 | 5 1 12 | 14°41'55 | 0°23 | 2°36 | 28°29 | 22°31 | 19°23 | 19°55 | 29°27 | 16°56 | 22°59 | 14°11 | 12°54 | 9°6 | 29°21 | S 28 |
| M29 | 5 5 9 | 15°42'59 | 14°38 | 4°1 | 29°35 | 23°8 | 19°28 | 19°55 | 29°29 | 16°55 | 22°57 | 14°7 | 12°51 | 9°13 | 29°27 | M29 |
| T 30 | 5 9 5 | 16°44'05 | 28°53 | 5°23 | 0°41 | 23°45 | 19°33 | 19°54 | 29°30 | 16°53 | 22°56 | 14°4 | 12°48 | 9°20 | 29°33 | T 30 |

Delta T = 07m24s

Julian Calendar 1 Nov. 1417 == Greg. Calendar 10 Nov. 1417

DECEMBER 1417 JC

00:00 UT

| Day | Sid.t | ☉ | ☽ | ♀ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | ♂ | Day |
|------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|------|
| W 1 | 5 13 2 | 17°45'11 | 13°6 | 6°34 | 1°47 | 24°23 | 19°38 | 19°53 | 29°32 | 16°52 | 22°55 | 14°D 3 | 12°45 | 9°26 | 29°39 | W 1 |
| T 2 | 5 16 58 | 18°46'18 | 27°14 | 8°3 | 2°53 | 25°0 | 19°43 | 19°52 | 29°33 | 16°50 | 22°54 | 14°3 | 12°41 | 9°33 | 29°45 | T 2 |
| F 3 | 5 20 55 | 19°47'26 | 11°15 | 9°19 | 4°0 | 25°37 | 19°49 | 19°51 | 29°35 | 16°49 | 22°53 | 14°4 | 12°38 | 9°40 | 29°51 | F 3 |
| S 4 | 5 24 51 | 20°48'35 | 25°8 | 10°32 | 5°7 | 26°14 | 19°54 | 19°49 | 29°37 | 16°47 | 22°51 | 14°6 | 12°35 | 9°46 | 29°57 | S 4 |
| S 5 | 5 28 48 | 21°49'44 | 8°53 | 11°41 | 6°14 | 26°52 | 20°0 | 19°48 | 29°38 | 16°46 | 22°50 | 14°R 7 | 12°32 | 9°53 | 0°3 | S 5 |
| M 6 | 5 32 44 | 22°50'55 | 22°29 | 12°46 | 7°22 | 27°29 | 20°6 | 19°46 | 29°40 | 16°44 | 22°49 | 14°7 | 12°29 | 10°0 | 0°9 | M 6 |
| T 7 | 5 36 41 | 23°52'06 | 5°54 | 13°47 | 8°29 | 28°6 | 20°12 | 19°45 | 29°42 | 16°43 | 22°48 | 14°5 | 12°26 | 10°7 | 0°16 | T 7 |
| W 8 | 5 40 38 | 24°53'17 | 19°7 | 14°42 | 9°37 | 28°43 | 20°18 | 19°43 | 29°44 | 16°41 | 22°47 | 14°0 | 12°22 | 10°13 | 0°22 | W 8 |
| T 9 | 5 44 34 | 25°54'28 | 2°3 | 15°30 | 10°45 | 29°20 | 20°25 | 19°41 | 29°46 | 16°40 | 22°45 | 13°54 | 12°19 | 10°20 | 0°28 | T 9 |
| F 10 | 5 48 31 | 26°55'40 | 14°53 | 16°12 | 11°53 | 29°58 | 20°32 | 19°39 | 29°48 | 16°38 | 22°44 | 13°46 | 12°16 | 10°27 | 0°34 | F 10 |
| S 11 | 5 52 27 | 27°56'52 | 27°25 | 16°45 | 13°2 | 0°35 | 20°38 | 19°37 | 29°50 | 16°37 | 22°43 | 13°38 | 12°13 | 10°33 | 0°40 | S 11 |
| S 12 | 5 56 24 | 28°58'04 | 9°43 | 17°10 | 14°10 | 1°12 | 20°45 | 19°35 | 29°52 | 16°35 | 22°42 | 13°29 | 12°10 | 10°40 | 0°46 | S 12 |
| M13 | 6 0 20 | 29°59'16 | 21°49 | 17°24 | 15°19 | 1°49 | 20°52 | 19°33 | 29°54 | 16°33 | 22°41 | 13°22 | 12°7 | 10°47 | 0°52 | M13 |
| T 14 | 6 4 17 | 1°02'28 | 3°45 | 17°28 | 16°28 | 2°26 | 21°0 | 19°31 | 29°56 | 16°32 | 22°40 | 13°16 | 12°3 | 10°54 | 0°58 | T 14 |
| W15 | 6 8 13 | 2°1'40 | 15°37 | 17°21 | 17°37 | 3°3 | 21°7 | 19°28 | 29°58 | 16°30 | 22°38 | 13°12 | 12°0 | 11°0 | 1°4 | W15 |
| T 16 | 6 12 10 | 3°2'51 | 27°27 | 17°2 | 18°46 | 3°40 | 21°15 | 19°26 | 0°0 | 16°29 | 22°37 | 13°10 | 11°57 | 11°7 | 1°10 | T 16 |
| F 17 | 6 16 7 | 4°0'02 | 9°21 | 16°31 | 19°55 | 4°17 | 21°23 | 19°23 | 0°3 | 16°27 | 22°36 | 13°D10 | 11°54 | 11°14 | 1°16 | F 17 |
| S 18 | 6 20 3 | 5°5'13 | 21°25 | 15°48 | 21°5 | 4°54 | 21°31 | 19°21 | 0°5 | 16°25 | 22°35 | 13°11 | 11°51 | 11°20 | 1°22 | S 18 |
| S 19 | 6 24 0 | 6°6'23 | 3°43 | 14°55 | 22°14 | 5°31 | 21°39 | 19°18 | 0°7 | 16°24 | 22°34 | 13°12 | 11°47 | 11°27 | 1°28 | S 19 |
| M20 | 6 27 56 | 7°7'34 | 16°21 | 13°52 | 23°24 | 6°8 | 21°47 | 19°15 | 0°10 | 16°22 | 22°32 | 13°R13 | 11°44 | 11°34 | 1°34 | M20 |
| T 21 | 6 31 53 | 8°8'43 | 29°21 | 12°41 | 24°34 | 6°45 | 21°55 | 19°12 | 0°12 | 16°20 | 22°31 | 13°11 | 11°41 | 11°40 | 1°40 | T 21 |
| W22 | 6 35 49 | 9°9'53 | 12°47 | 11°25 | 25°44 | 7°21 | 22°4 | 19°9 | 0°14 | 16°19 | 22°30 | 13°8 | 11°38 | 11°47 | 1°46 | W22 |
| T 23 | 6 39 46 | 10°11'02 | 26°38 | 10°5 | 26°54 | 7°58 | 22°12 | 19°6 | 0°17 | 16°17 | 22°29 | 13°1 | 11°35 | 11°54 | 1°52 | T 23 |
| F 24 | 6 43 43 | 11°12'11 | 10°51 | 8°45 | 28°4 | 8°35 | 22°21 | 19°2 | 0°19 | 16°15 | 22°28 | 12°53 | 11°32 | 12°1 | 1°58 | F 24 |
| S 25 | 6 47 39 | 12°13'19 | 25°22 | 7°27 | 29°15 | 9°12 | 22°30 | 18°59 | 0°22 | 16°13 | 22°27 | 12°43 | 11°28 | 12°7 | 2°4 | S 25 |
| S 26 | 6 51 36 | 13°14'27 | 10°3 | 6°13 | 0°25 | 9°49 | 22°39 | 18°56 | 0°24 | 16°12 | 22°26 | 12°33 | 11°25 | 12°14 | 2°10 | S 26 |
| M27 | 6 55 32 | 14°15'35 | 24°47 | 5°5 | 1°36 | 10°25 | 22°48 | 18°52 | 0°27 | 16°10 | 22°25 | 12°24 | 11°22 | 12°21 | 2°16 | M27 |
| T 28 | 6 59 29 | 15°16'43 | 9°26 | 4°5 | 2°47 | 11°2 | 22°58 | 18°49 | 0°30 | 16°8 | 22°23 | 12°17 | 11°19 | 12°27 | 2°22 | T 28 |
| W29 | 7 3 25 | 16°17'50 | 23°53 | 3°14 | 3°57 | 11°39 | 23°7 | 18°45 | 0°32 | 16°7 | 22°22 | 12°13 | 11°16 | 12°34 | 2°28 | W29 |
| T 30 | 7 7 22 | 17°18'58 | 8°6 | 2°32 | 5°8 | 12°15 | 23°17 | 18°41 | 0°35 | 16°5 | 22°21 | 12°11 | 11°12 | 12°41 | 2°34 | T 30 |
| F 31 | 7 11 18 | 18°20'05 | 22°3 | 1°59 | 6°19 | 12°52 | 23°27 | 18°37 | 0°38 | 16°3 | 22°20 | 12°D10 | 11°9 | 12°47 | 2°40 | F 31 |

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