



# Astrodienst Ephemeris Tables for the year 2040

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 2040  
geocentric

JANUARY 2040

00:00 UT

| Day  | Sid.t   | ☉        | ☾     | ♂     | ♀     | ♂      | ♂     | ♂      | ♂     | ♂     | ♂     | ♂      | ♂     | ♂    | ♂     | Day  |
|------|---------|----------|-------|-------|-------|--------|-------|--------|-------|-------|-------|--------|-------|------|-------|------|
| S 1  | 6 41 5  | 10♈9'26  | 26♏9  | 7♈44  | 3♈45  | 12°R29 | 1♈27  | 11♈39  | 2°R15 | 0°R50 | 24♏2  | 12°R50 | 11♈25 | 0♈49 | 9°R53 | S 1  |
| M 2  | 6 45 2  | 11°10'34 | 8♏8   | 9°20  | 4°58  | 12♏5   | 1°30  | 11°41  | 2♏13  | 0♈50  | 24°4  | 12♈45  | 11°22 | 0°56 | 9♏49  | M 2  |
| T 3  | 6 48 58 | 12°11'43 | 20°14 | 10°56 | 6°11  | 11°41  | 1°33  | 11°43  | 2°10  | 0°50  | 24°5  | 12°39  | 11°18 | 1°3  | 9°45  | T 3  |
| W 4  | 6 52 55 | 13°12'51 | 2♏29  | 12°32 | 7°24  | 11°18  | 1°35  | 11°45  | 2°8   | 0°49  | 24°7  | 12°34  | 11°15 | 1°9  | 9°41  | W 4  |
| T 5  | 6 56 51 | 14°13'59 | 14°57 | 14°9  | 8°38  | 10°54  | 1°38  | 11°47  | 2°6   | 0°49  | 24°8  | 12°30  | 11°12 | 1°16 | 9°37  | T 5  |
| F 6  | 7 0 48  | 15°15'08 | 27°38 | 15°46 | 9°51  | 10°31  | 1°40  | 11°49  | 2°3   | 0°49  | 24°9  | 12°27  | 11°9  | 1°23 | 9°33  | F 6  |
| S 7  | 7 4 45  | 16°16'17 | 10♈38 | 17°24 | 11°5  | 10°8   | 1°42  | 11°50  | 2°1   | 0°49  | 24°11 | 12°D25 | 11°6  | 1°29 | 9°29  | S 7  |
| S 8  | 7 8 41  | 17°17'26 | 23°57 | 19°1  | 12°18 | 9°45   | 1°43  | 11°52  | 1°58  | 0°49  | 24°12 | 12°25  | 11°3  | 1°36 | 9°25  | S 8  |
| M 9  | 7 12 38 | 18°18'35 | 7♏40  | 20°40 | 13°32 | 9°22   | 1°45  | 11°53  | 1°56  | 0°49  | 24°14 | 12°26  | 10°59 | 1°43 | 9°21  | M 9  |
| T 10 | 7 16 34 | 19°19'45 | 21°46 | 22°18 | 14°46 | 9°0    | 1°46  | 11°54  | 1°53  | 0°48  | 24°15 | 12°28  | 10°56 | 1°49 | 9°17  | T 10 |
| W 11 | 7 20 31 | 20°20'54 | 6♈16  | 23°58 | 15°59 | 8°38   | 1°47  | 11°56  | 1°51  | 0°D48 | 24°17 | 12°R29 | 10°53 | 1°56 | 9°13  | W 11 |
| T 12 | 7 24 27 | 21°22'04 | 21°7  | 25°37 | 17°13 | 8°17   | 1°48  | 11°57  | 1°48  | 0°48  | 24°18 | 12°29  | 10°50 | 2°3  | 9°9   | T 12 |
| F 13 | 7 28 24 | 22°23'14 | 6♈12  | 27°17 | 18°27 | 7°56   | 1°49  | 11°58  | 1°45  | 0°48  | 24°20 | 12°27  | 10°47 | 2°9  | 9°5   | F 13 |
| S 14 | 7 32 21 | 23°24'23 | 21°23 | 28°57 | 19°40 | 7°36   | 1°50  | 11°58  | 1°43  | 0°49  | 24°21 | 12°23  | 10°43 | 2°16 | 9°1   | S 14 |
| S 15 | 7 36 17 | 24°25'32 | 6♈31  | 0♈38  | 20°54 | 7°16   | 1°50  | 11°59  | 1°40  | 0°49  | 24°23 | 12°17  | 10°40 | 2°23 | 8°57  | S 15 |
| M 16 | 7 40 14 | 25°26'40 | 21°25 | 2°19  | 22°8  | 6°57   | 1°50  | 12°0   | 1°38  | 0°49  | 24°24 | 12°10  | 10°37 | 2°29 | 8°54  | M 16 |
| T 17 | 7 44 10 | 26°27'48 | 5♈57  | 4°0   | 23°22 | 6°38   | 1°R50 | 12°0   | 1°35  | 0°49  | 24°26 | 12°3   | 10°34 | 2°36 | 8°50  | T 17 |
| W 18 | 7 48 7  | 27°28'55 | 20°2  | 5°42  | 24°36 | 6°20   | 1°50  | 12°1   | 1°33  | 0°49  | 24°28 | 11°56  | 10°31 | 2°43 | 8°46  | W 18 |
| T 19 | 7 52 3  | 28°30'01 | 3°Y37 | 7°24  | 25°50 | 6°3    | 1°50  | 12°1   | 1°30  | 0°49  | 24°29 | 11°51  | 10°28 | 2°49 | 8°42  | T 19 |
| F 20 | 7 56 0  | 29°31'07 | 16°44 | 9°6   | 27°4  | 5°47   | 1°49  | 12°1   | 1°27  | 0°50  | 24°31 | 11°49  | 10°24 | 2°56 | 8°39  | F 20 |
| S 21 | 7 59 56 | 0♈32'11  | 29°25 | 10°48 | 28°17 | 5°31   | 1°49  | 12°R 1 | 1°25  | 0°50  | 24°32 | 11°D48 | 10°21 | 3°3  | 8°35  | S 21 |
| S 22 | 8 3 53  | 1°33'15  | 11♈45 | 12°30 | 29°31 | 5°16   | 1°48  | 12°1   | 1°22  | 0°50  | 24°34 | 11°48  | 10°18 | 3°9  | 8°31  | S 22 |
| M 23 | 8 7 50  | 2°34'18  | 23°49 | 14°12 | 0♈45  | 5°2    | 1°46  | 12°1   | 1°19  | 0°51  | 24°36 | 11°49  | 10°15 | 3°16 | 8°28  | M 23 |
| T 24 | 8 11 46 | 3°35'20  | 5♈43  | 15°53 | 1°59  | 4°49   | 1°45  | 12°1   | 1°17  | 0°51  | 24°37 | 11°R50 | 10°12 | 3°23 | 8°24  | T 24 |
| W 25 | 8 15 43 | 4°36'21  | 17°31 | 17°34 | 3°13  | 4°36   | 1°44  | 12°0   | 1°14  | 0°52  | 24°39 | 11°50  | 10°9  | 3°29 | 8°21  | W 25 |
| T 26 | 8 19 39 | 5°37'21  | 29°17 | 19°14 | 4°27  | 4°24   | 1°42  | 12°0   | 1°12  | 0°52  | 24°41 | 11°49  | 10°5  | 3°36 | 8°17  | T 26 |
| F 27 | 8 23 36 | 6°38'20  | 11♏6  | 20°54 | 5°42  | 4°13   | 1°40  | 11°59  | 1°9   | 0°53  | 24°42 | 11°44  | 10°2  | 3°43 | 8°14  | F 27 |
| S 28 | 8 27 32 | 7°39'18  | 23°0  | 22°32 | 6°56  | 4°3    | 1°38  | 11°59  | 1°6   | 0°53  | 24°44 | 11°37  | 9°59  | 3°49 | 8°10  | S 28 |
| S 29 | 8 31 29 | 8°40'15  | 5♏1   | 24°8  | 8°10  | 3°53   | 1°36  | 11°58  | 1°4   | 0°54  | 24°46 | 11°28  | 9°56  | 3°56 | 8°7   | S 29 |
| M 30 | 8 35 25 | 9°41'11  | 17°11 | 25°43 | 9°24  | 3°45   | 1°33  | 11°57  | 1°1   | 0°55  | 24°47 | 11°17  | 9°53  | 4°2  | 8°4   | M 30 |
| T 31 | 8 39 22 | 10♈42'06 | 29♏30 | 27♈15 | 10♈38 | 3♏37   | 1♈30  | 11♈56  | 0♏59  | 0♈55  | 24♈49 | 11♈6   | 9♈49  | 4♏9  | 8♏1   | T 31 |

Delta T = 71.80 sec

FEBRUARY 2040

00:00 UT

| Day  | Sid.t    | ☉        | ☾      | ♂     | ♀     | ♂     | ♂     | ♂      | ♂     | ♂    | ♂     | ♂      | ♂    | ♂    | ♂     | Day  |
|------|----------|----------|--------|-------|-------|-------|-------|--------|-------|------|-------|--------|------|------|-------|------|
| W 1  | 8 43 19  | 11♈43'01 | 12♏0   | 28♈44 | 11♈52 | 3°R30 | 1°R28 | 11°R55 | 0°R56 | 0♈56 | 24♈51 | 10°R54 | 9♈46 | 4♏16 | 7°R58 | W 1  |
| T 2  | 8 47 15  | 12°43'54 | 24°41  | 0♈10  | 13°6  | 3♏23  | 1♈25  | 11♈54  | 0♏54  | 0°57 | 24°52 | 10♈44  | 9°43 | 4°22 | 7♏55  | T 2  |
| F 3  | 8 51 12  | 13°44'47 | 7♈33   | 1°31  | 14°20 | 3°18  | 1°21  | 11°53  | 0°51  | 0°57 | 24°54 | 10°36  | 9°40 | 4°29 | 7°52  | F 3  |
| S 4  | 8 55 8   | 14°45'38 | 20°38  | 2°47  | 15°35 | 3°13  | 1°18  | 11°51  | 0°48  | 0°58 | 24°56 | 10°31  | 9°37 | 4°36 | 7°49  | S 4  |
| S 5  | 8 59 5   | 15°46'29 | 3♏58   | 3°58  | 16°49 | 3°9   | 1°15  | 11°50  | 0°46  | 0°59 | 24°58 | 10°28  | 9°34 | 4°42 | 7°46  | S 5  |
| M 6  | 9 3 1    | 16°47'19 | 17°34  | 5°3   | 18°3  | 3°6   | 1°11  | 11°48  | 0°43  | 1°0  | 24°59 | 10°D28 | 9°30 | 4°49 | 7°43  | M 6  |
| T 7  | 9 6 58   | 17°48'09 | 1♈27   | 6°0   | 19°17 | 3°4   | 1°7   | 11°46  | 0°41  | 1°1  | 25°1  | 10°28  | 9°27 | 4°56 | 7°40  | T 7  |
| W 8  | 9 10 54  | 18°48'57 | 15°38  | 6°50  | 20°32 | 3°3   | 1°3   | 11°44  | 0°39  | 1°2  | 25°3  | 10°R28 | 9°24 | 5°2  | 7°38  | W 8  |
| T 9  | 9 14 51  | 19°49'45 | 0♈7    | 7°31  | 21°46 | 3°D 2 | 0°59  | 11°43  | 0°36  | 1°3  | 25°4  | 10°27  | 9°21 | 5°9  | 7°35  | T 9  |
| F 10 | 9 18 48  | 20°50'31 | 14°51  | 8°3   | 23°0  | 3°2   | 0°54  | 11°41  | 0°34  | 1°4  | 25°6  | 10°23  | 9°18 | 5°16 | 7°32  | F 10 |
| S 11 | 9 22 44  | 21°51'17 | 29°42  | 8°24  | 24°14 | 3°3   | 0°50  | 11°38  | 0°31  | 1°5  | 25°8  | 10°16  | 9°15 | 5°22 | 7°30  | S 11 |
| S 12 | 9 26 41  | 22°52'01 | 14♈36  | 8°36  | 25°29 | 3°4   | 0°45  | 11°36  | 0°29  | 1°6  | 25°10 | 10°7   | 9°11 | 5°29 | 7°27  | S 12 |
| M 13 | 9 30 37  | 23°52'44 | 29°21  | 8°R36 | 26°43 | 3°6   | 0°40  | 11°34  | 0°27  | 1°7  | 25°11 | 9°56   | 9°8  | 5°36 | 7°25  | M 13 |
| T 14 | 9 34 34  | 24°53'26 | 13♈50  | 8°26  | 27°57 | 3°9   | 0°35  | 11°31  | 0°24  | 1°8  | 25°13 | 9°44   | 9°5  | 5°42 | 7°23  | T 14 |
| W 15 | 9 38 30  | 25°54'05 | 27°56  | 8°6   | 29°12 | 3°13  | 0°30  | 11°29  | 0°22  | 1°9  | 25°15 | 9°33   | 9°2  | 5°49 | 7°21  | W 15 |
| T 16 | 9 42 27  | 26°54'44 | 11°Y36 | 7°35  | 0♈26  | 3°17  | 0°24  | 11°26  | 0°20  | 1°10 | 25°17 | 9°24   | 8°59 | 5°56 | 7°19  | T 16 |
| F 17 | 9 46 23  | 27°55'20 | 24°48  | 6°56  | 1°40  | 3°22  | 0°19  | 11°24  | 0°17  | 1°12 | 25°18 | 9°17   | 8°55 | 6°2  | 7°17  | F 17 |
| S 18 | 9 50 20  | 28°55'55 | 7♈34   | 6°8   | 2°55  | 3°28  | 0°13  | 11°21  | 0°15  | 1°13 | 25°20 | 9°13   | 8°52 | 6°9  | 7°15  | S 18 |
| S 19 | 9 54 17  | 29°56'29 | 19°58  | 5°12  | 4°9   | 3°35  | 0°7   | 11°18  | 0°13  | 1°14 | 25°22 | 9°11   | 8°49 | 6°16 | 7°13  | S 19 |
| M 20 | 9 58 13  | 0♈57'00  | 2♈4    | 4°12  | 5°23  | 3°42  | 0°1   | 11°15  | 0°11  | 1°15 | 25°24 | 9°11   | 8°46 | 6°22 | 7°11  | M 20 |
| T 21 | 10 2 10  | 1°57'30  | 13°59  | 3°7   | 6°38  | 3°49  | 29♏55 | 11°12  | 0°9   | 1°17 | 25°25 | 9°11   | 8°43 | 6°29 | 7°9   | T 21 |
| W 22 | 10 6 6   | 2°57'58  | 25°47  | 2°1   | 7°52  | 3°58  | 29°49 | 11°9   | 0°7   | 1°18 | 25°27 | 9°10   | 8°40 | 6°36 | 7°8   | W 22 |
| T 23 | 10 10 3  | 3°58'24  | 7♏34   | 0°54  | 9°6   | 4°7   | 29°43 | 11°6   | 0°5   | 1°19 | 25°29 | 9°7    | 8°36 | 6°42 | 7°6   | T 23 |
| F 24 | 10 13 59 | 4°58'48  | 19°25  | 29♈48 | 10°21 | 4°16  | 29°36 | 11°3   | 0°3   | 1°21 | 25°31 | 9°2    | 8°33 | 6°49 | 7°5   | F 24 |
| S 25 | 10 17 56 | 5°59'10  | 1♏24   | 28°45 | 11°35 | 4°26  | 29°30 | 10°59  | 0°1   | 1°22 | 25°32 | 8°54   | 8°30 | 6°56 | 7°3   | S 25 |
| S 26 | 10 21 52 | 6°59'31  | 13°34  | 27°46 | 12°49 | 4°37  | 29°23 | 10°56  | 29♏59 | 1°24 | 25°34 | 8°43   | 8°27 | 7°2  | 7°2   | S 26 |
| M 27 | 10 25 49 | 7°59'49  | 25°56  | 26°53 | 14°4  | 4°48  | 29°17 | 10°52  | 29°57 | 1°25 | 25°36 | 8°30   | 8°24 | 7°9  | 7°1   | M 27 |
| T 28 | 10 29 46 | 9°0'06   | 8♏31   | 26°5  | 15°18 | 5°0   | 29°10 | 10°49  | 29°55 | 1°27 | 25°37 | 8°16   | 8°20 | 7°16 | 7°0   | T 28 |
| W 29 | 10 33 42 | 10♈0'21  | 21♏20  | 25♈24 | 16♈32 | 5♏12  | 29♏3  | 10♈45  | 29♏53 | 1♏28 | 25♈39 | 8♈2    | 8♈17 | 7♏22 | 6♏59  | W 29 |

Delta T = 71.82 sec

ASTRODIENST EPHEMERIS for the year 2040  
geocentric

MARCH 2040

00:00 UT

| Day  | Sid.t    | ☉         | ☽     | ♀      | ♂     | ♂     | ♂      | ♂      | ♂      | ♂    | ♂     | ♂     | ♂    | ♂     | ♂     | Day  |
|------|----------|-----------|-------|--------|-------|-------|--------|--------|--------|------|-------|-------|------|-------|-------|------|
| T 1  | 10 37 39 | 11♈ 0°35  | 4♌21  | 24°R49 | 17♋47 | 5♊25  | 28°R56 | 10°R42 | 29°R51 | 1♈30 | 25♋41 | 7°R50 | 8♌14 | 7♊29  | 6°R58 | T 1  |
| F 2  | 10 41 35 | 12° 0°46  | 17°33 | 24♋22  | 19° 1 | 5°38  | 28♌49  | 10♌38  | 29♊50  | 1°31 | 25°43 | 7♌40  | 8°11 | 7°36  | 6♊57  | F 2  |
| S 3  | 10 45 32 | 13° 0°56  | 0♍56  | 24° 2  | 20°15 | 5°52  | 28°41  | 10°34  | 29°48  | 1°33 | 25°44 | 7°33  | 8° 8 | 7°42  | 6°56  | S 3  |
| S 4  | 10 49 28 | 14° 1°05  | 14°29 | 23°49  | 21°30 | 6° 7  | 28°34  | 10°30  | 29°46  | 1°35 | 25°46 | 7°29  | 8° 5 | 7°49  | 6°55  | S 4  |
| M 5  | 10 53 25 | 15° 1°12  | 28°11 | 23°D42 | 22°44 | 6°21  | 28°27  | 10°26  | 29°45  | 1°36 | 25°48 | 7°28  | 8° 1 | 7°56  | 6°55  | M 5  |
| T 6  | 10 57 21 | 16° 1°18  | 12♊4  | 23°42  | 23°59 | 6°37  | 28°19  | 10°22  | 29°43  | 1°38 | 25°49 | 7°27  | 7°58 | 8° 2  | 6°54  | T 6  |
| W 7  | 11 1 18  | 17° 1°22  | 26° 7 | 23°49  | 25°13 | 6°52  | 28°12  | 10°18  | 29°41  | 1°40 | 25°51 | 7°27  | 7°55 | 8° 9  | 6°54  | W 7  |
| T 8  | 11 5 14  | 18° 1°24  | 10♊19 | 24° 1  | 26°27 | 7° 9  | 28° 4  | 10°14  | 29°40  | 1°42 | 25°53 | 7°26  | 7°52 | 8°16  | 6°54  | T 8  |
| F 9  | 11 9 11  | 19° 1°25  | 24°40 | 24°19  | 27°42 | 7°25  | 27°57  | 10°10  | 29°38  | 1°43 | 25°54 | 7°22  | 7°49 | 8°22  | 6°53  | F 9  |
| S 10 | 11 13 8  | 20° 1°25  | 9♋6   | 24°42  | 28°56 | 7°42  | 27°49  | 10° 6  | 29°37  | 1°45 | 25°56 | 7°15  | 7°46 | 8°29  | 6°53  | S 10 |
| S 11 | 11 17 4  | 21° 1°22  | 23°33 | 25°11  | 0♈10  | 8° 0  | 27°41  | 10° 1  | 29°36  | 1°47 | 25°57 | 7° 6  | 7°42 | 8°36  | 6°D53 | S 11 |
| M12  | 11 21 1  | 22° 1°18  | 7♈54  | 25°43  | 1°25  | 8°18  | 27°34  | 9°57   | 29°34  | 1°49 | 25°59 | 6°55  | 7°39 | 8°42  | 6°53  | M12  |
| T 13 | 11 24 57 | 23° 1°12  | 22° 4 | 26°20  | 2°39  | 8°36  | 27°26  | 9°53   | 29°33  | 1°51 | 26° 1 | 6°43  | 7°36 | 8°49  | 6°53  | T 13 |
| W14  | 11 28 54 | 24° 1°04  | 5♈56  | 27° 2  | 3°53  | 8°55  | 27°18  | 9°48   | 29°32  | 1°52 | 26° 2 | 6°32  | 7°33 | 8°56  | 6°53  | W14  |
| T 15 | 11 32 50 | 25° 0°54  | 19°27 | 27°47  | 5° 8  | 9°14  | 27°10  | 9°44   | 29°31  | 1°54 | 26° 4 | 6°22  | 7°30 | 9° 2  | 6°54  | T 15 |
| F 16 | 11 36 47 | 26° 0°41  | 2♊36  | 28°35  | 6°22  | 9°33  | 27° 3  | 9°39   | 29°30  | 1°56 | 26° 5 | 6°15  | 7°26 | 9° 9  | 6°54  | F 16 |
| S 17 | 11 40 43 | 27° 0°27  | 15°21 | 29°27  | 7°36  | 9°53  | 26°55  | 9°35   | 29°29  | 1°58 | 26° 7 | 6°10  | 7°23 | 9°16  | 6°55  | S 17 |
| S 18 | 11 44 40 | 28° 0°11  | 27°46 | 0♈22   | 8°51  | 10°13 | 26°47  | 9°30   | 29°28  | 2° 0 | 26° 8 | 6° 8  | 7°20 | 9°22  | 6°55  | S 18 |
| M19  | 11 48 37 | 28°59'52  | 9♌55  | 1°19   | 10° 5 | 10°34 | 26°39  | 9°26   | 29°27  | 2° 2 | 26°10 | 6°D 8 | 7°17 | 9°29  | 6°56  | M19  |
| T 20 | 11 52 33 | 29°59'31  | 21°52 | 2°20   | 11°19 | 10°55 | 26°31  | 9°21   | 29°26  | 2° 4 | 26°11 | 6° 9  | 7°14 | 9°36  | 6°57  | T 20 |
| W21  | 11 56 30 | 0♈59'08   | 3♊42  | 3°23   | 12°34 | 11°16 | 26°24  | 9°17   | 29°25  | 2° 6 | 26°13 | 6°R 9 | 7°11 | 9°42  | 6°57  | W21  |
| T 22 | 12 0 26  | 1°58'42   | 15°31 | 4°28   | 13°48 | 11°37 | 26°16  | 9°12   | 29°24  | 2° 8 | 26°14 | 6° 8  | 7° 7 | 9°49  | 6°58  | T 22 |
| F 23 | 12 4 23  | 2°58'15   | 27°24 | 5°36   | 15° 2 | 11°59 | 26° 8  | 9° 7   | 29°23  | 2°10 | 26°16 | 6° 5  | 7° 4 | 9°56  | 6°59  | F 23 |
| S 24 | 12 8 19  | 3°57'45   | 9♌26  | 6°46   | 16°16 | 12°21 | 26° 0  | 9° 3   | 29°22  | 2°12 | 26°17 | 5°59  | 7° 1 | 10° 2 | 7° 0  | S 24 |
| S 25 | 12 12 16 | 4°57'12   | 21°42 | 7°59   | 17°31 | 12°44 | 25°53  | 8°58   | 29°22  | 2°14 | 26°19 | 5°51  | 6°58 | 10° 9 | 7° 2  | S 25 |
| M26  | 12 16 12 | 5°56'38   | 4♌13  | 9°13   | 18°45 | 13° 6 | 25°45  | 8°53   | 29°21  | 2°16 | 26°20 | 5°42  | 6°55 | 10°16 | 7° 3  | M26  |
| T 27 | 12 20 9  | 6°56'01   | 17° 1 | 10°29  | 19°59 | 13°30 | 25°38  | 8°49   | 29°21  | 2°18 | 26°22 | 5°31  | 6°52 | 10°22 | 7° 4  | T 27 |
| W28  | 12 24 6  | 7°55'22   | 0♌7   | 11°47  | 21°13 | 13°53 | 25°30  | 8°44   | 29°20  | 2°20 | 26°23 | 5°21  | 6°48 | 10°29 | 7° 6  | W28  |
| T 29 | 12 28 2  | 8°54'41   | 13°29 | 13° 7  | 22°28 | 14°16 | 25°23  | 8°39   | 29°20  | 2°22 | 26°24 | 5°12  | 6°45 | 10°36 | 7° 7  | T 29 |
| F 30 | 12 31 59 | 9°53'58   | 27° 6 | 14°28  | 23°42 | 14°40 | 25°15  | 8°35   | 29°19  | 2°24 | 26°26 | 5° 4  | 6°42 | 10°42 | 7° 9  | F 30 |
| S 31 | 12 35 55 | 10°Y53'13 | 10♌53 | 15♈52  | 24♈56 | 15♊4  | 25♌8   | 8♌30   | 29♊19  | 2♊27 | 26♋27 | 5♌0   | 6♌39 | 10♊49 | 7♊10  | S 31 |

Delta T = 71.84 sec

APRIL 2040

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♂     | ♂     | ♂      | ♂     | ♂      | ♂    | ♂     | ♂     | ♂    | ♂     | ♂    | Day  |
|------|----------|----------|-------|-------|-------|-------|--------|-------|--------|------|-------|-------|------|-------|------|------|
| S 1  | 12 39 52 | 11♈52'26 | 24♌50 | 17♈17 | 26♈10 | 15♊29 | 25°R 1 | 8°R25 | 29°R19 | 2♊29 | 26♋28 | 4°R57 | 6♌36 | 10♊56 | 7♊12 | S 1  |
| M 2  | 12 43 48 | 12°51'38 | 8♊52  | 18°43 | 27°25 | 15°53 | 24♌54  | 8♌21  | 29♊18  | 2°31 | 26°30 | 4°D57 | 6°32 | 11° 2 | 7°14 | M 2  |
| T 3  | 12 47 45 | 13°50'47 | 22°58 | 20°11 | 28°39 | 16°18 | 24°47  | 8°16  | 29°18  | 2°33 | 26°31 | 4♌58  | 6°29 | 11° 9 | 7°16 | T 3  |
| W 4  | 12 51 41 | 14°49'55 | 7♊6   | 21°41 | 29°53 | 16°43 | 24°40  | 8°11  | 29°18  | 2°35 | 26°32 | 4°59  | 6°26 | 11°16 | 7°18 | W 4  |
| T 5  | 12 55 38 | 15°49'02 | 21°15 | 23°12 | 1°Y 7 | 17° 8 | 24°33  | 8° 7  | 29°18  | 2°37 | 26°33 | 4°R59 | 6°23 | 11°22 | 7°20 | T 5  |
| F 6  | 12 59 35 | 16°48'06 | 5♋23  | 24°45 | 2°21  | 17°34 | 24°26  | 8° 2  | 29°D18 | 2°40 | 26°35 | 4°57  | 6°20 | 11°29 | 7°22 | F 6  |
| S 7  | 13 3 31  | 17°47'09 | 19°29 | 26°20 | 3°36  | 18° 0 | 24°19  | 7°58  | 29°18  | 2°42 | 26°36 | 4°53  | 6°17 | 11°36 | 7°25 | S 7  |
| S 8  | 13 7 28  | 18°46'10 | 3♈29  | 27°56 | 4°50  | 18°26 | 24°13  | 7°53  | 29°18  | 2°44 | 26°37 | 4°48  | 6°13 | 11°42 | 7°27 | S 8  |
| M 9  | 13 11 24 | 19°45'09 | 17°23 | 29°33 | 6° 4  | 18°52 | 24° 6  | 7°48  | 29°18  | 2°46 | 26°38 | 4°41  | 6°10 | 11°49 | 7°29 | M 9  |
| T 10 | 13 15 21 | 20°44'06 | 1°Y 5 | 1°Y12 | 7°18  | 19°18 | 24° 0  | 7°44  | 29°18  | 2°48 | 26°39 | 4°34  | 6° 7 | 11°56 | 7°32 | T 10 |
| W11  | 13 19 17 | 21°43'01 | 14°33 | 2°53  | 8°32  | 19°45 | 23°54  | 7°39  | 29°19  | 2°51 | 26°41 | 4°26  | 6° 4 | 12° 2 | 7°34 | W11  |
| T 12 | 13 23 14 | 22°41'54 | 27°45 | 4°35  | 9°46  | 20°12 | 23°48  | 7°35  | 29°19  | 2°53 | 26°42 | 4°20  | 6° 1 | 12° 9 | 7°37 | T 12 |
| F 13 | 13 27 10 | 23°40'46 | 10♊40 | 6°18  | 11° 1 | 20°39 | 23°42  | 7°31  | 29°19  | 2°55 | 26°43 | 4°16  | 5°57 | 12°16 | 7°40 | F 13 |
| S 14 | 13 31 7  | 24°39'35 | 23°16 | 8° 3  | 12°15 | 21° 6 | 23°36  | 7°26  | 29°20  | 2°57 | 26°44 | 4°14  | 5°54 | 12°22 | 7°43 | S 14 |
| S 15 | 13 35 4  | 25°38'22 | 5♌37  | 9°50  | 13°29 | 21°33 | 23°30  | 7°22  | 29°20  | 3° 0 | 26°45 | 4°D13 | 5°51 | 12°29 | 7°46 | S 15 |
| M16  | 13 39 0  | 26°37'07 | 17°44 | 11°38 | 14°43 | 22° 1 | 23°25  | 7°18  | 29°21  | 3° 2 | 26°46 | 4°14  | 5°48 | 12°36 | 7°49 | M16  |
| T 17 | 13 42 57 | 27°35'50 | 29°41 | 13°28 | 15°57 | 22°29 | 23°19  | 7°13  | 29°21  | 3° 4 | 26°47 | 4°15  | 5°45 | 12°42 | 7°52 | T 17 |
| W18  | 13 46 53 | 28°34'31 | 11♊32 | 15°19 | 17°11 | 22°57 | 23°14  | 7° 9  | 29°22  | 3° 6 | 26°48 | 4°17  | 5°42 | 12°49 | 7°55 | W18  |
| T 19 | 13 50 50 | 29°33'09 | 23°22 | 17°12 | 18°25 | 23°25 | 23° 9  | 7° 5  | 29°23  | 3° 9 | 26°49 | 4°18  | 5°38 | 12°56 | 7°58 | T 19 |
| F 20 | 13 54 46 | 0♊31'45  | 5♌16  | 19° 6 | 19°39 | 23°53 | 23° 4  | 7° 1  | 29°23  | 3°11 | 26°50 | 4°R18 | 5°35 | 13° 2 | 8° 1 | F 20 |
| S 21 | 13 58 43 | 1°30'20  | 17°19 | 21° 2 | 20°53 | 24°22 | 22°59  | 6°57  | 29°24  | 3°13 | 26°51 | 4°17  | 5°32 | 13° 9 | 8° 5 | S 21 |
| S 22 | 14 2 39  | 2°28'51  | 29°36 | 23° 0 | 22° 7 | 24°50 | 22°54  | 6°53  | 29°25  | 3°15 | 26°52 | 4°14  | 5°29 | 13°16 | 8° 8 | S 22 |
| M23  | 14 6 36  | 3°27'21  | 12♌10 | 24°59 | 23°21 | 25°19 | 22°50  | 6°49  | 29°26  | 3°18 | 26°52 | 4°10  | 5°26 | 13°22 | 8°12 | M23  |
| T 24 | 14 10 33 | 4°25'49  | 25° 4 | 27° 0 | 24°35 | 25°48 | 22°45  | 6°45  | 29°27  | 3°20 | 26°53 | 4° 6  | 5°23 | 13°29 | 8°15 | T 24 |
| W25  | 14 14 29 | 5°24'14  | 8♌20  | 29° 2 | 25°49 | 26°17 | 22°41  | 6°41  | 29°28  | 3°22 | 26°54 | 4° 1  | 5°19 | 13°36 | 8°19 | W25  |
| T 26 | 14 18 26 | 6°22'38  | 21°58 | 1♊5   | 27° 3 | 26°46 | 22°37  | 6°37  | 29°29  | 3°24 | 26°55 | 3°57  | 5°16 | 13°42 | 8°22 | T 26 |
| F 27 | 14 22 22 | 7°20'59  | 5♌55  | 3°10  | 28°17 | 27°16 | 22°33  | 6°34  | 29°30  | 3°27 | 26°56 | 3°54  | 5°13 | 13°49 | 8°26 | F 27 |
| S 28 | 14 26 19 | 8°19'19  | 20° 7 | 5°16  | 29°31 | 27°45 | 22°30  | 6°30  | 29°31  | 3°29 | 26°56 | 3°52  | 5°10 | 13°56 | 8°30 | S 28 |
| S 29 | 14 30 15 | 9°17'37  | 4♊30  | 7°23  | 0♈45  | 28°15 | 22°26  | 6°27  | 29°32  | 3°31 | 26°57 | 3°D51 | 5° 7 | 14° 2 | 8°34 | S 29 |
| M30  | 14 34 12 | 10♊15'54 | 18♊59 | 9♊31  | 1♊59  | 28♊45 | 22♌23  | 6♌23  | 29♊34  | 3♊34 | 26♋58 | 3♌52  | 5♌3  | 14♊9  | 8♊38 | M30  |

Delta T = 71.87 sec

ASTRODIENST EPHEMERIS for the year 2040  
geocentric

MAY 2040

00:00 UT

| Day  | Sid.t    | ☉        | ☽      | ♀     | ♂     | ♂      | ♂      | ♂     | ♂     | ♂    | ♂      | ♂     | ♂    | ♂     | ♂     | Day  |
|------|----------|----------|--------|-------|-------|--------|--------|-------|-------|------|--------|-------|------|-------|-------|------|
| T 1  | 14 38 8  | 11♈14'08 | 3♈28   | 11♈40 | 3♈13  | 29♈15  | 22°R20 | 6°R20 | 29♈35 | 3♈36 | 26♈59  | 3♈53  | 5♈0  | 14♈16 | 8♈42  | T 1  |
| W 2  | 14 42 5  | 12°12'22 | 17°54  | 13°49 | 4°27  | 29°45  | 22♈17  | 6♈16  | 29°36 | 3°38 | 26°59  | 3°55  | 4°57 | 14°22 | 8°46  | W 2  |
| T 3  | 14 46 2  | 13°10'34 | 2♈12   | 15°59 | 5°41  | 0♈15   | 22°14  | 6°13  | 29°38 | 3°40 | 27°0   | 3°56  | 4°54 | 14°29 | 8°50  | T 3  |
| F 4  | 14 49 58 | 14°8'44  | 16°20  | 18°9  | 6°55  | 0°45   | 22°11  | 6°10  | 29°39 | 3°42 | 27°1   | 3°R56 | 4°51 | 14°36 | 8°54  | F 4  |
| S 5  | 14 53 55 | 15°6'53  | 0♈16   | 20°18 | 8°9   | 1°16   | 22°9   | 6°7   | 29°41 | 3°45 | 27°1   | 3°55  | 4°48 | 14°43 | 8°59  | S 5  |
| S 6  | 14 57 51 | 16°5'01  | 14°0   | 22°27 | 9°23  | 1°46   | 22°6   | 6°4   | 29°42 | 3°47 | 27°2   | 3°54  | 4°44 | 14°49 | 9°3   | S 6  |
| M 7  | 15 1 48  | 17°3'07  | 27°31  | 24°35 | 10°37 | 2°17   | 22°4   | 6°1   | 29°44 | 3°49 | 27°2   | 3°52  | 4°41 | 14°56 | 9°7   | M 7  |
| T 8  | 15 5 44  | 18°1'12  | 10°V48 | 26°42 | 11°50 | 2°48   | 22°2   | 5°58  | 29°45 | 3°51 | 27°3   | 3°50  | 4°38 | 15°3  | 9°12  | T 8  |
| W 9  | 15 9 41  | 18°59'15 | 23°51  | 28°48 | 13°4  | 3°19   | 22°0   | 5°55  | 29°47 | 3°54 | 27°3   | 3°47  | 4°35 | 15°9  | 9°16  | W 9  |
| T 10 | 15 13 37 | 19°57'17 | 6♈40   | 0♈52  | 14°18 | 3°50   | 21°59  | 5°52  | 29°49 | 3°56 | 27°4   | 3°46  | 4°32 | 15°16 | 9°21  | T 10 |
| F 11 | 15 17 34 | 20°55'17 | 19°16  | 2°54  | 15°32 | 4°21   | 21°57  | 5°50  | 29°51 | 3°58 | 27°4   | 3°45  | 4°29 | 15°23 | 9°25  | F 11 |
| S 12 | 15 21 30 | 21°53'16 | 1♈38   | 4°54  | 16°46 | 4°52   | 21°56  | 5°47  | 29°52 | 4°0  | 27°4   | 3°D44 | 4°25 | 15°29 | 9°30  | S 12 |
| S 13 | 15 25 27 | 22°51'13 | 13°50  | 6°52  | 18°0  | 5°24   | 21°55  | 5°45  | 29°54 | 4°2  | 27°5   | 3°44  | 4°22 | 15°36 | 9°35  | S 13 |
| M14  | 15 29 24 | 23°49'09 | 25°51  | 8°47  | 19°14 | 5°55   | 21°54  | 5°42  | 29°56 | 4°4  | 27°5   | 3°45  | 4°19 | 15°43 | 9°40  | M14  |
| T 15 | 15 33 20 | 24°47'02 | 7♈45   | 10°39 | 20°28 | 6°27   | 21°54  | 5°40  | 29°58 | 4°7  | 27°6   | 3°46  | 4°16 | 15°49 | 9°44  | T 15 |
| W16  | 15 37 17 | 25°44'55 | 19°36  | 12°29 | 21°41 | 6°59   | 21°53  | 5°38  | 0♈0   | 4°9  | 27°6   | 3°47  | 4°13 | 15°56 | 9°49  | W16  |
| T 17 | 15 41 13 | 26°42'45 | 1♈26   | 14°15 | 22°55 | 7°30   | 21°53  | 5°36  | 0°2   | 4°11 | 27°6   | 3°48  | 4°9  | 16°3  | 9°54  | T 17 |
| F 18 | 15 45 10 | 27°40'34 | 13°20  | 15°58 | 24°9  | 8°2    | 21°D53 | 5°34  | 0°4   | 4°13 | 27°6   | 3°48  | 4°6  | 16°9  | 9°59  | F 18 |
| S 19 | 15 49 6  | 28°38'21 | 25°22  | 17°39 | 25°23 | 8°34   | 21°53  | 5°32  | 0°6   | 4°15 | 27°7   | 3°R48 | 4°3  | 16°16 | 10°4  | S 19 |
| S 20 | 15 53 3  | 29°36'07 | 7♈37   | 19°16 | 26°37 | 9°6    | 21°53  | 5°30  | 0°9   | 4°17 | 27°7   | 3°48  | 4°0  | 16°23 | 10°9  | S 20 |
| M21  | 15 57 0  | 0♈33'51  | 20°10  | 20°49 | 27°51 | 9°39   | 21°53  | 5°28  | 0°11  | 4°19 | 27°7   | 3°48  | 3°57 | 16°29 | 10°14 | M21  |
| T 22 | 16 0 56  | 1°31'33  | 3♈3    | 22°20 | 29°4  | 10°11  | 21°54  | 5°27  | 0°13  | 4°21 | 27°7   | 3°48  | 3°54 | 16°36 | 10°20 | T 22 |
| W23  | 16 4 53  | 2°29'13  | 16°21  | 23°47 | 0♈18  | 10°43  | 21°55  | 5°25  | 0°15  | 4°23 | 27°7   | 3°48  | 3°50 | 16°43 | 10°25 | W23  |
| T 24 | 16 8 49  | 3°26'53  | 0♈3    | 25°10 | 1°32  | 11°16  | 21°56  | 5°24  | 0°18  | 4°25 | 27°7   | 3°D48 | 3°47 | 16°49 | 10°30 | T 24 |
| F 25 | 16 12 46 | 4°24'30  | 14°10  | 26°30 | 2°46  | 11°48  | 21°57  | 5°22  | 0°20  | 4°27 | 27°7   | 3°48  | 3°44 | 16°56 | 10°35 | F 25 |
| S 26 | 16 16 42 | 5°22'07  | 28°38  | 27°47 | 3°59  | 12°21  | 21°58  | 5°21  | 0°23  | 4°30 | 27°7   | 3°R48 | 3°41 | 17°3  | 10°41 | S 26 |
| S 27 | 16 20 39 | 6°19'42  | 13♈22  | 29°0  | 5°13  | 12°54  | 22°0   | 5°20  | 0°25  | 4°31 | 27°8   | 3°48  | 3°38 | 17°9  | 10°46 | S 27 |
| M28  | 16 24 35 | 7°17'16  | 28°15  | 0♈9   | 6°27  | 13°27  | 22°1   | 5°19  | 0°28  | 4°33 | 27°R 8 | 3°47  | 3°35 | 17°16 | 10°51 | M28  |
| T 29 | 16 28 32 | 8°14'49  | 13♈10  | 1°15  | 7°41  | 14°0   | 22°3   | 5°18  | 0°30  | 4°35 | 27°7   | 3°47  | 3°31 | 17°23 | 10°57 | T 29 |
| W30  | 16 32 29 | 9°12'22  | 27°59  | 2°17  | 8°54  | 14°33  | 22°5   | 5°17  | 0°33  | 4°37 | 27°7   | 3°47  | 3°28 | 17°30 | 11°2  | W30  |
| T 31 | 16 36 25 | 10♈9'53  | 12♈34  | 3♈15  | 10♈8  | 15°Ω 6 | 22♈7   | 5♈17  | 0°Ω35 | 4♈39 | 27°R 7 | 3♈46  | 3♈25 | 17°36 | 11°8  | T 31 |

Delta T = 71.89 sec

JUNE 2040

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♂     | ♂      | ♂     | ♂     | ♂     | ♂    | ♂      | ♂     | ♂    | ♂      | ♂      | Day  |
|------|----------|----------|-------|-------|-------|--------|-------|-------|-------|------|--------|-------|------|--------|--------|------|
| F 1  | 16 40 22 | 11♈7'23  | 26♈53 | 4♈10  | 11♈22 | 15°Ω39 | 22♈10 | 5°R16 | 0°Ω38 | 4♈41 | 27°R 7 | 3°R45 | 3♈22 | 17°Ω43 | 11°Ω13 | F 1  |
| S 2  | 16 44 18 | 12°4'53  | 10♈51 | 5°0   | 12°36 | 16°12  | 22°12 | 5♈15  | 0°41  | 4°43 | 27°R 7 | 3°D45 | 3°19 | 17°50  | 11°19  | S 2  |
| S 3  | 16 48 15 | 13°2'22  | 24°29 | 5°46  | 13°49 | 16°46  | 22°15 | 5°15  | 0°43  | 4°45 | 27°7   | 3♈45  | 3°15 | 17°56  | 11°25  | S 3  |
| M 4  | 16 52 11 | 13°59'50 | 7°V47 | 6°29  | 15°3  | 17°19  | 22°18 | 5°15  | 0°46  | 4°47 | 27°7   | 3°46  | 3°12 | 18°3   | 11°30  | M 4  |
| T 5  | 16 56 8  | 14°57'17 | 20°47 | 7°7   | 16°17 | 17°53  | 22°21 | 5°14  | 0°49  | 4°49 | 27°7   | 3°47  | 3°9  | 18°10  | 11°36  | T 5  |
| W 6  | 17 0 4   | 15°54'44 | 3♈31  | 7°40  | 17°31 | 18°26  | 22°24 | 5°14  | 0°52  | 4°51 | 27°6   | 3°48  | 3°6  | 18°16  | 11°42  | W 6  |
| T 7  | 17 4 1   | 16°52'10 | 16°1  | 8°10  | 18°44 | 19°0   | 22°28 | 5°D14 | 0°55  | 4°52 | 27°6   | 3°49  | 3°3  | 18°23  | 11°48  | T 7  |
| F 8  | 17 7 58  | 17°49'35 | 28°19 | 8°35  | 19°58 | 19°34  | 22°31 | 5°14  | 0°58  | 4°54 | 27°6   | 3°R49 | 3°0  | 18°30  | 11°53  | F 8  |
| S 9  | 17 11 54 | 18°47'00 | 10♈27 | 8°56  | 21°12 | 20°7   | 22°35 | 5°15  | 1°0   | 4°56 | 27°6   | 3°49  | 2°56 | 18°36  | 11°59  | S 9  |
| S 10 | 17 15 51 | 19°44'24 | 22°28 | 9°12  | 22°26 | 20°41  | 22°39 | 5°15  | 1°3   | 4°58 | 27°5   | 3°49  | 2°53 | 18°43  | 12°5   | S 10 |
| M11  | 17 19 47 | 20°41'47 | 4♈23  | 9°23  | 23°39 | 21°15  | 22°43 | 5°15  | 1°6   | 4°59 | 27°5   | 3°47  | 2°50 | 18°50  | 12°11  | M11  |
| T 12 | 17 23 44 | 21°39'09 | 16°14 | 9°30  | 24°53 | 21°49  | 22°47 | 5°16  | 1°9   | 5°1  | 27°4   | 3°45  | 2°47 | 18°56  | 12°17  | T 12 |
| W13  | 17 27 40 | 22°36'31 | 28°4  | 9°R32 | 26°7  | 22°23  | 22°51 | 5°16  | 1°12  | 5°3  | 27°4   | 3°42  | 2°44 | 19°3   | 12°23  | W13  |
| T 14 | 17 31 37 | 23°33'51 | 9♈55  | 9°30  | 27°21 | 22°58  | 22°56 | 5°17  | 1°16  | 5°4  | 27°4   | 3°39  | 2°41 | 19°10  | 12°29  | T 14 |
| F 15 | 17 35 33 | 24°31'11 | 21°49 | 9°23  | 28°34 | 23°32  | 23°1  | 5°18  | 1°19  | 5°6  | 27°3   | 3°36  | 2°37 | 19°16  | 12°35  | F 15 |
| S 16 | 17 39 30 | 25°28'30 | 3♈52  | 9°13  | 29°48 | 24°6   | 23°5  | 5°19  | 1°22  | 5°8  | 27°3   | 3°33  | 2°34 | 19°23  | 12°41  | S 16 |
| S 17 | 17 43 27 | 26°25'48 | 16°6  | 8°58  | 1♈2   | 24°41  | 23°10 | 5°20  | 1°25  | 5°9  | 27°2   | 3°32  | 2°31 | 19°30  | 12°47  | S 17 |
| M18  | 17 47 23 | 27°23'05 | 28°35 | 8°39  | 2°15  | 25°15  | 23°16 | 5°21  | 1°28  | 5°11 | 27°2   | 3°D32 | 2°28 | 19°37  | 12°53  | M18  |
| T 19 | 17 51 20 | 28°20'21 | 11♈24 | 8°16  | 3°29  | 25°50  | 23°21 | 5°22  | 1°31  | 5°12 | 27°1   | 3°32  | 2°25 | 19°43  | 12°59  | T 19 |
| W20  | 17 55 16 | 29°17'36 | 24°36 | 7°50  | 4°43  | 26°24  | 23°26 | 5°23  | 1°35  | 5°14 | 27°1   | 3°33  | 2°21 | 19°50  | 13°5   | W20  |
| T 21 | 17 59 13 | 0♈14'51  | 8♈14  | 7°22  | 5°57  | 26°59  | 23°32 | 5°25  | 1°38  | 5°15 | 27°0   | 3°35  | 2°18 | 19°57  | 13°11  | T 21 |
| F 22 | 18 3 9   | 1°12'05  | 22°19 | 6°51  | 7°10  | 27°34  | 23°38 | 5°26  | 1°41  | 5°17 | 26°59  | 3°36  | 2°15 | 20°3   | 13°17  | F 22 |
| S 23 | 18 7 6   | 2°9'19   | 6♈50  | 6°18  | 8°24  | 28°8   | 23°43 | 5°28  | 1°44  | 5°18 | 26°59  | 3°R36 | 2°12 | 20°10  | 13°23  | S 23 |
| S 24 | 18 11 2  | 3°6'32   | 21°43 | 5°44  | 9°38  | 28°43  | 23°49 | 5°29  | 1°48  | 5°20 | 26°58  | 3°35  | 2°9  | 20°17  | 13°29  | S 24 |
| M25  | 18 14 59 | 4°3'45   | 6♈50  | 5°9   | 10°51 | 29°18  | 23°56 | 5°31  | 1°51  | 5°21 | 26°58  | 3°33  | 2°6  | 20°23  | 13°35  | M25  |
| T 26 | 18 18 56 | 5°0'57   | 22°3  | 4°34  | 12°5  | 29°53  | 24°2  | 5°33  | 1°54  | 5°22 | 26°57  | 3°30  | 2°2  | 20°30  | 13°41  | T 26 |
| W27  | 18 22 52 | 5°58'09  | 7♈11  | 3°59  | 13°19 | 0♈28   | 24°8  | 5°35  | 1°58  | 5°24 | 26°56  | 3°25  | 1°59 | 20°37  | 13°48  | W27  |
| T 28 | 18 26 49 | 6°55'21  | 22°6  | 3°25  | 14°32 | 1°3    | 24°15 | 5°37  | 2°1   | 5°25 | 26°55  | 3°21  | 1°56 | 20°43  | 13°54  | T 28 |
| F 29 | 18 30 45 | 7°52'33  | 6♈39  | 2°53  | 15°46 | 1°38   | 24°22 | 5°39  | 2°5   | 5°26 | 26°55  | 3°17  | 1°53 | 20°50  | 14°0   | F 29 |
| S 30 | 18 34 42 | 8°49'45  | 20♈46 | 2°23  | 17°50 | 2♈14   | 24°28 | 5♈42  | 2°Ω 8 | 5♈27 | 26°54  | 3♈14  | 1♈50 | 20°57  | 14°6   | S 30 |

Delta T = 71.91 sec

ASTRODIENST EPHEMERIS for the year 2040  
geocentric

JULY 2040

00:00 UT

| Day  | Sid.t    | ☉                      | ☾                   | ♂                   | ♀                   | ♂                   | ♂                   | ♂                  | ♂                  | ♂                  | ♂                    | ♂                   | ♂                  | ♂                   | ♂                   | Day  |
|------|----------|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|----------------------|---------------------|--------------------|---------------------|---------------------|------|
| S 1  | 18 38 38 | 9 <sup>56</sup> 46'57  | 4 <sup>47</sup> 27  | 1 <sup>56</sup> R56 | 18 <sup>56</sup> 14 | 2 <sup>47</sup> 49  | 24 <sup>47</sup> 35 | 5 <sup>44</sup> 44 | 2 <sup>47</sup> 12 | 5 <sup>48</sup> 29 | 26 <sup>53</sup> R53 | 3 <sup>47</sup> D13 | 1 <sup>47</sup> 47 | 21 <sup>56</sup> 4  | 14 <sup>56</sup> 12 | S 1  |
| M 2  | 18 42 35 | 10 <sup>54</sup> 44'09 | 17 <sup>43</sup> 43 | 1 <sup>56</sup> 32  | 19 <sup>57</sup> 27 | 3 <sup>52</sup> 24  | 24 <sup>43</sup> 43 | 5 <sup>46</sup> 46 | 2 <sup>51</sup> 15 | 5 <sup>30</sup> 30 | 26 <sup>55</sup> 52  | 3 <sup>47</sup> 13  | 1 <sup>43</sup> 43 | 21 <sup>51</sup> 10 | 14 <sup>51</sup> 19 | M 2  |
| T 3  | 18 46 32 | 11 <sup>54</sup> 41'22 | 0 <sup>53</sup> 35  | 1 <sup>51</sup> 11  | 20 <sup>54</sup> 41 | 4 <sup>50</sup> 0   | 24 <sup>50</sup> 50 | 5 <sup>49</sup> 49 | 2 <sup>51</sup> 19 | 5 <sup>31</sup> 26 | 26 <sup>51</sup> 34  | 3 <sup>47</sup> 14  | 1 <sup>40</sup> 40 | 21 <sup>51</sup> 17 | 14 <sup>52</sup> 25 | T 3  |
| W 4  | 18 50 28 | 12 <sup>53</sup> 38'34 | 13 <sup>58</sup> 8  | 0 <sup>54</sup> 54  | 21 <sup>55</sup> 54 | 5 <sup>51</sup> 25  | 24 <sup>57</sup> 57 | 5 <sup>51</sup> 51 | 2 <sup>52</sup> 22 | 5 <sup>32</sup> 32 | 26 <sup>51</sup> 34  | 3 <sup>47</sup> 15  | 1 <sup>37</sup> 37 | 21 <sup>52</sup> 24 | 14 <sup>53</sup> 31 | W 4  |
| T 5  | 18 54 25 | 13 <sup>53</sup> 35'47 | 25 <sup>56</sup> 26 | 0 <sup>42</sup> 42  | 23 <sup>58</sup> 8  | 5 <sup>51</sup> 25  | 25 <sup>55</sup> 5  | 5 <sup>54</sup> 54 | 2 <sup>52</sup> 26 | 5 <sup>33</sup> 33 | 26 <sup>50</sup> 34  | 3 <sup>47</sup> 17  | 1 <sup>34</sup> 34 | 21 <sup>53</sup> 30 | 14 <sup>53</sup> 37 | T 5  |
| F 6  | 18 58 21 | 14 <sup>53</sup> 33'01 | 7 <sup>47</sup> 32  | 0 <sup>35</sup> 35  | 24 <sup>52</sup> 22 | 5 <sup>46</sup> 25  | 25 <sup>12</sup> 12 | 5 <sup>57</sup> 57 | 2 <sup>52</sup> 29 | 5 <sup>34</sup> 34 | 26 <sup>49</sup> 34  | 3 <sup>47</sup> R17 | 1 <sup>31</sup> 31 | 21 <sup>53</sup> 37 | 14 <sup>54</sup> 43 | F 6  |
| S 7  | 19 2 18  | 15 <sup>53</sup> 30'14 | 19 <sup>53</sup> 30 | 0 <sup>53</sup> D32 | 25 <sup>53</sup> 36 | 6 <sup>52</sup> 22  | 25 <sup>20</sup> 20 | 6 <sup>50</sup> 0  | 2 <sup>53</sup> 33 | 5 <sup>35</sup> 35 | 26 <sup>48</sup> 34  | 3 <sup>47</sup> 15  | 1 <sup>27</sup> 27 | 21 <sup>54</sup> 44 | 14 <sup>55</sup> 50 | S 7  |
| S 8  | 19 6 14  | 16 <sup>52</sup> 27'28 | 1 <sup>56</sup> 23  | 0 <sup>34</sup> 34  | 26 <sup>49</sup> 49 | 6 <sup>58</sup> 25  | 25 <sup>28</sup> 28 | 6 <sup>53</sup> 3  | 2 <sup>53</sup> 36 | 5 <sup>36</sup> 36 | 26 <sup>47</sup> 34  | 3 <sup>47</sup> 12  | 1 <sup>24</sup> 24 | 21 <sup>55</sup> 0  | 14 <sup>56</sup> 56 | S 8  |
| M 9  | 19 10 11 | 17 <sup>52</sup> 24'41 | 13 <sup>13</sup> 13 | 0 <sup>41</sup> 41  | 28 <sup>53</sup> 3  | 7 <sup>53</sup> 24  | 25 <sup>36</sup> 36 | 6 <sup>56</sup> 6  | 2 <sup>54</sup> 40 | 5 <sup>37</sup> 37 | 26 <sup>46</sup> 34  | 3 <sup>47</sup> 7   | 1 <sup>21</sup> 21 | 21 <sup>55</sup> 7  | 15 <sup>52</sup> 2  | M 9  |
| T 10 | 19 14 7  | 18 <sup>52</sup> 21'55 | 25 <sup>53</sup> 3  | 0 <sup>53</sup> 53  | 29 <sup>57</sup> 17 | 8 <sup>59</sup> 9   | 25 <sup>44</sup> 44 | 6 <sup>59</sup> 9  | 2 <sup>54</sup> 43 | 5 <sup>38</sup> 38 | 26 <sup>45</sup> 34  | 2 <sup>59</sup> 59  | 1 <sup>18</sup> 18 | 22 <sup>54</sup> 4  | 15 <sup>58</sup> 8  | T 10 |
| W11  | 19 18 4  | 19 <sup>51</sup> 19'09 | 6 <sup>47</sup> 54  | 1 <sup>10</sup> 10  | 0 <sup>47</sup> 31  | 8 <sup>45</sup> 25  | 25 <sup>52</sup> 52 | 6 <sup>12</sup> 12 | 2 <sup>54</sup> 47 | 5 <sup>39</sup> 39 | 26 <sup>44</sup> 34  | 2 <sup>51</sup> 51  | 1 <sup>15</sup> 15 | 22 <sup>51</sup> 10 | 15 <sup>51</sup> 15 | W11  |
| T 12 | 19 22 1  | 20 <sup>51</sup> 16'23 | 18 <sup>48</sup> 48 | 1 <sup>33</sup> 33  | 1 <sup>44</sup> 44  | 9 <sup>21</sup> 26  | 26 <sup>0</sup> 0   | 6 <sup>16</sup> 16 | 2 <sup>55</sup> 51 | 5 <sup>40</sup> 40 | 26 <sup>43</sup> 34  | 2 <sup>42</sup> 42  | 1 <sup>12</sup> 12 | 22 <sup>51</sup> 17 | 15 <sup>52</sup> 21 | T 12 |
| F 13 | 19 25 57 | 21 <sup>51</sup> 13'37 | 0 <sup>47</sup> 47  | 2 <sup>1</sup> 1    | 2 <sup>58</sup> 58  | 9 <sup>57</sup> 26  | 26 <sup>9</sup> 9   | 6 <sup>19</sup> 19 | 2 <sup>54</sup> 54 | 5 <sup>41</sup> 41 | 26 <sup>42</sup> 34  | 2 <sup>34</sup> 34  | 1 <sup>8</sup> 8   | 22 <sup>52</sup> 24 | 15 <sup>52</sup> 27 | F 13 |
| S 14 | 19 29 54 | 22 <sup>51</sup> 10'52 | 12 <sup>53</sup> 53 | 2 <sup>34</sup> 34  | 4 <sup>12</sup> 12  | 10 <sup>53</sup> 33 | 26 <sup>17</sup> 17 | 6 <sup>23</sup> 23 | 2 <sup>58</sup> 58 | 5 <sup>42</sup> 42 | 26 <sup>41</sup> 34  | 2 <sup>26</sup> 26  | 1 <sup>5</sup> 5   | 22 <sup>53</sup> 31 | 15 <sup>53</sup> 33 | S 14 |
| S 15 | 19 33 50 | 23 <sup>51</sup> 8'06  | 25 <sup>59</sup> 9  | 3 <sup>13</sup> 13  | 5 <sup>25</sup> 25  | 11 <sup>10</sup> 10 | 26 <sup>26</sup> 26 | 6 <sup>26</sup> 26 | 3 <sup>59</sup> 2  | 5 <sup>43</sup> 43 | 26 <sup>40</sup> 34  | 2 <sup>21</sup> 21  | 1 <sup>2</sup> 2   | 22 <sup>53</sup> 37 | 15 <sup>54</sup> 40 | S 15 |
| M16  | 19 37 47 | 24 <sup>51</sup> 5'20  | 7 <sup>48</sup> 38  | 3 <sup>56</sup> 56  | 6 <sup>39</sup> 39  | 11 <sup>46</sup> 46 | 26 <sup>35</sup> 35 | 6 <sup>30</sup> 30 | 3 <sup>59</sup> 5  | 5 <sup>43</sup> 43 | 26 <sup>39</sup> 34  | 2 <sup>17</sup> 17  | 0 <sup>59</sup> 59 | 22 <sup>54</sup> 44 | 15 <sup>54</sup> 46 | M16  |
| T 17 | 19 41 43 | 25 <sup>51</sup> 2'35  | 20 <sup>24</sup> 24 | 4 <sup>45</sup> 45  | 7 <sup>53</sup> 53  | 12 <sup>22</sup> 22 | 26 <sup>44</sup> 44 | 6 <sup>34</sup> 34 | 3 <sup>59</sup> 9  | 5 <sup>44</sup> 44 | 26 <sup>38</sup> 34  | 2 <sup>47</sup> 47  | 0 <sup>56</sup> 56 | 22 <sup>55</sup> 51 | 15 <sup>55</sup> 52 | T 17 |
| W18  | 19 45 40 | 25 <sup>51</sup> 59'49 | 3 <sup>47</sup> 30  | 5 <sup>39</sup> 39  | 9 <sup>6</sup> 6    | 12 <sup>58</sup> 58 | 26 <sup>53</sup> 53 | 6 <sup>38</sup> 38 | 3 <sup>13</sup> 13 | 5 <sup>45</sup> 45 | 26 <sup>37</sup> 34  | 2 <sup>16</sup> 16  | 0 <sup>53</sup> 53 | 22 <sup>55</sup> 57 | 15 <sup>55</sup> 58 | W18  |
| T 19 | 19 49 36 | 26 <sup>51</sup> 57'04 | 17 <sup>50</sup> 0  | 6 <sup>38</sup> 38  | 10 <sup>20</sup> 20 | 13 <sup>35</sup> 35 | 27 <sup>2</sup> 2   | 6 <sup>42</sup> 42 | 3 <sup>16</sup> 16 | 5 <sup>45</sup> 45 | 26 <sup>36</sup> 34  | 2 <sup>17</sup> 17  | 0 <sup>49</sup> 49 | 23 <sup>54</sup> 4  | 16 <sup>54</sup> 4  | T 19 |
| F 20 | 19 53 33 | 27 <sup>51</sup> 54'19 | 0 <sup>47</sup> 56  | 7 <sup>42</sup> 42  | 11 <sup>34</sup> 34 | 14 <sup>11</sup> 11 | 27 <sup>11</sup> 11 | 6 <sup>46</sup> 46 | 3 <sup>20</sup> 20 | 5 <sup>46</sup> 46 | 26 <sup>35</sup> 34  | 2 <sup>47</sup> R17 | 0 <sup>46</sup> 46 | 23 <sup>51</sup> 11 | 16 <sup>51</sup> 10 | F 20 |
| S 21 | 19 57 30 | 28 <sup>51</sup> 51'34 | 15 <sup>19</sup> 19 | 8 <sup>51</sup> 51  | 12 <sup>47</sup> 47 | 14 <sup>48</sup> 48 | 27 <sup>20</sup> 20 | 6 <sup>50</sup> 50 | 3 <sup>24</sup> 24 | 5 <sup>47</sup> 47 | 26 <sup>33</sup> 34  | 2 <sup>17</sup> 17  | 0 <sup>43</sup> 43 | 23 <sup>51</sup> 17 | 16 <sup>51</sup> 17 | S 21 |
| S 22 | 20 1 26  | 29 <sup>48</sup> 50'50 | 0 <sup>56</sup> 6   | 10 <sup>4</sup> 4   | 14 <sup>1</sup> 1   | 15 <sup>24</sup> 24 | 27 <sup>29</sup> 29 | 6 <sup>54</sup> 54 | 3 <sup>27</sup> 27 | 5 <sup>47</sup> 47 | 26 <sup>32</sup> 34  | 2 <sup>14</sup> 14  | 0 <sup>40</sup> 40 | 23 <sup>52</sup> 24 | 16 <sup>52</sup> 23 | S 22 |
| M23  | 20 5 23  | 0 <sup>47</sup> 46'06  | 15 <sup>12</sup> 12 | 11 <sup>22</sup> 22 | 15 <sup>15</sup> 15 | 16 <sup>1</sup> 1   | 27 <sup>39</sup> 39 | 6 <sup>58</sup> 58 | 3 <sup>31</sup> 31 | 5 <sup>48</sup> 48 | 26 <sup>31</sup> 34  | 2 <sup>9</sup> 9    | 0 <sup>37</sup> 37 | 23 <sup>53</sup> 31 | 16 <sup>52</sup> 29 | M23  |
| T 24 | 20 9 19  | 1 <sup>43</sup> 22     | 0 <sup>58</sup> 28  | 12 <sup>45</sup> 45 | 16 <sup>28</sup> 28 | 16 <sup>38</sup> 38 | 27 <sup>48</sup> 48 | 7 <sup>2</sup> 2   | 3 <sup>35</sup> 35 | 5 <sup>48</sup> 48 | 26 <sup>30</sup> 34  | 2 <sup>2</sup> 2    | 0 <sup>33</sup> 33 | 23 <sup>53</sup> 37 | 16 <sup>53</sup> 25 | T 24 |
| W25  | 20 13 16 | 2 <sup>40</sup> 39     | 15 <sup>44</sup> 44 | 14 <sup>12</sup> 12 | 17 <sup>42</sup> 42 | 17 <sup>14</sup> 14 | 27 <sup>58</sup> 58 | 7 <sup>7</sup> 7   | 3 <sup>38</sup> 38 | 5 <sup>49</sup> 49 | 26 <sup>29</sup> 34  | 1 <sup>54</sup> 54  | 0 <sup>30</sup> 30 | 23 <sup>54</sup> 44 | 16 <sup>54</sup> 41 | W25  |
| T 26 | 20 17 12 | 3 <sup>37</sup> 57     | 0 <sup>48</sup> 49  | 15 <sup>44</sup> 44 | 18 <sup>56</sup> 56 | 17 <sup>51</sup> 51 | 28 <sup>8</sup> 8   | 7 <sup>11</sup> 11 | 3 <sup>42</sup> 42 | 5 <sup>49</sup> 49 | 26 <sup>28</sup> 34  | 1 <sup>45</sup> 45  | 0 <sup>27</sup> 27 | 23 <sup>55</sup> 51 | 16 <sup>54</sup> 47 | T 26 |
| F 27 | 20 21 9  | 4 <sup>35</sup> 15     | 15 <sup>33</sup> 33 | 17 <sup>20</sup> 20 | 20 <sup>9</sup> 9   | 18 <sup>28</sup> 28 | 28 <sup>18</sup> 18 | 7 <sup>16</sup> 16 | 3 <sup>46</sup> 46 | 5 <sup>50</sup> 50 | 26 <sup>26</sup> 34  | 1 <sup>36</sup> 36  | 0 <sup>24</sup> 24 | 23 <sup>58</sup> 58 | 16 <sup>55</sup> 3  | F 27 |
| S 28 | 20 25 5  | 5 <sup>32</sup> 35     | 29 <sup>51</sup> 51 | 19 <sup>0</sup> 0   | 21 <sup>23</sup> 23 | 19 <sup>5</sup> 5   | 28 <sup>28</sup> 28 | 7 <sup>21</sup> 21 | 3 <sup>49</sup> 49 | 5 <sup>50</sup> 50 | 26 <sup>25</sup> 34  | 1 <sup>30</sup> 30  | 0 <sup>21</sup> 21 | 24 <sup>54</sup> 4  | 16 <sup>55</sup> 9  | S 28 |
| S 29 | 20 29 2  | 6 <sup>29</sup> 55     | 13 <sup>47</sup> 39 | 20 <sup>43</sup> 43 | 22 <sup>37</sup> 37 | 19 <sup>42</sup> 42 | 28 <sup>38</sup> 38 | 7 <sup>25</sup> 25 | 3 <sup>53</sup> 53 | 5 <sup>50</sup> 50 | 26 <sup>24</sup> 34  | 1 <sup>26</sup> 26  | 0 <sup>18</sup> 18 | 24 <sup>51</sup> 11 | 17 <sup>55</sup> 5  | S 29 |
| M30  | 20 32 59 | 7 <sup>27</sup> 16     | 26 <sup>57</sup> 57 | 22 <sup>30</sup> 30 | 23 <sup>50</sup> 50 | 20 <sup>19</sup> 19 | 28 <sup>48</sup> 48 | 7 <sup>30</sup> 30 | 3 <sup>57</sup> 57 | 5 <sup>51</sup> 51 | 26 <sup>23</sup> 34  | 1 <sup>23</sup> 23  | 0 <sup>14</sup> 14 | 24 <sup>51</sup> 18 | 17 <sup>51</sup> 11 | M30  |
| T 31 | 20 36 55 | 8 <sup>42</sup> 43'9   | 9 <sup>48</sup> 50  | 24 <sup>52</sup> 52 | 25 <sup>4</sup> 4   | 20 <sup>47</sup> 47 | 28 <sup>47</sup> 47 | 7 <sup>43</sup> 43 | 4 <sup>4</sup> 4   | 5 <sup>48</sup> 48 | 26 <sup>22</sup> 34  | 1 <sup>47</sup> D23 | 0 <sup>47</sup> 47 | 24 <sup>52</sup> 24 | 17 <sup>52</sup> 17 | T 31 |

Delta T = 71.93 sec

AUGUST 2040

00:00 UT

| Day  | Sid.t    | ☉        | ☾     | ♂     | ♀     | ♂     | ♂     | ♂     | ♂    | ♂     | ♂      | ♂     | ♂     | ♂     | ♂     | Day  |
|------|----------|----------|-------|-------|-------|-------|-------|-------|------|-------|--------|-------|-------|-------|-------|------|
| W 1  | 20 40 52 | 9♂22°02  | 22♂20 | 26♂14 | 26♂18 | 21♂33 | 29♂ 8 | 7♂40  | 4♂ 4 | 5♂51  | 26°R20 | 1♂23  | 0♂ 8  | 24♂31 | 17♂23 | W 1  |
| T 2  | 20 44 48 | 10°19'27 | 4♂33  | 28° 9 | 27°31 | 22°10 | 29°19 | 7°45  | 4° 8 | 5°52  | 26♂19  | 1°R23 | 0° 5  | 24°38 | 17°29 | T 2  |
| F 3  | 20 48 45 | 11°16'53 | 16°34 | 0♂ 7  | 28°45 | 22°47 | 29°29 | 7°50  | 4°11 | 5°52  | 26°18  | 1°22  | 0° 2  | 24°44 | 17°35 | F 3  |
| S 4  | 20 52 41 | 12°14'20 | 28°27 | 2° 7  | 29°58 | 23°24 | 29°40 | 7°55  | 4°15 | 5°52  | 26°17  | 1°19  | 29♂59 | 24°51 | 17°41 | S 4  |
| S 5  | 20 56 38 | 13°11'48 | 10♂17 | 4° 9  | 1♂12  | 24° 2 | 29°50 | 8° 0  | 4°19 | 5°52  | 26°15  | 1°13  | 29°55 | 24°58 | 17°47 | S 5  |
| M 6  | 21 0 34  | 14° 9'17 | 22° 6 | 6°11  | 2°26  | 24°39 | 0♂ 1  | 8° 5  | 4°22 | 5°52  | 26°14  | 1° 5  | 29°52 | 25° 5 | 17°53 | M 6  |
| T 7  | 21 4 31  | 15° 6'47 | 3♂57  | 8°15  | 3°39  | 25°16 | 0°12  | 8°11  | 4°26 | 5°52  | 26°13  | 0°54  | 29°49 | 25°11 | 17°59 | T 7  |
| W 8  | 21 8 28  | 16° 4'19 | 15°52 | 10°19 | 4°53  | 25°54 | 0°22  | 8°16  | 4°30 | 5°R52 | 26°11  | 0°41  | 29°46 | 25°18 | 18° 5 | W 8  |
| T 9  | 21 12 24 | 17° 1'51 | 27°53 | 12°23 | 6° 7  | 26°32 | 0°33  | 8°22  | 4°33 | 5°52  | 26°10  | 0°28  | 29°43 | 25°25 | 18°10 | T 9  |
| F 10 | 21 16 21 | 17°59'24 | 10♂ 0 | 14°27 | 7°20  | 27° 9 | 0°44  | 8°27  | 4°37 | 5°52  | 26° 9  | 0°15  | 29°39 | 25°31 | 18°16 | F 10 |
| S 11 | 21 20 17 | 18°56'59 | 22°15 | 16°31 | 8°34  | 27°47 | 0°55  | 8°33  | 4°41 | 5°52  | 26° 8  | 0° 4  | 29°36 | 25°38 | 18°22 | S 11 |
| S 12 | 21 24 14 | 19°54'34 | 4♂39  | 18°34 | 9°47  | 28°25 | 1° 7  | 8°38  | 4°44 | 5°52  | 26° 6  | 29♂55 | 29°33 | 25°45 | 18°28 | S 12 |
| M13  | 21 28 10 | 20°52'10 | 17°15 | 20°36 | 11° 1 | 29° 2 | 1°18  | 8°44  | 4°48 | 5°52  | 26° 5  | 29°48 | 29°30 | 25°51 | 18°33 | M13  |
| T 14 | 21 32 7  | 21°49'47 | 0♂ 4  | 22°38 | 12°14 | 29°40 | 1°29  | 8°50  | 4°51 | 5°52  | 26° 4  | 29°45 | 29°27 | 25°58 | 18°39 | T 14 |
| W15  | 21 36 3  | 22°47'26 | 13°10 | 24°39 | 13°28 | 0♂18  | 1°40  | 8°56  | 4°55 | 5°51  | 26° 2  | 29°43 | 29°24 | 26° 5 | 18°44 | W15  |
| T 16 | 21 40 0  | 23°45'05 | 26°35 | 26°38 | 14°41 | 0°56  | 1°52  | 9° 1  | 4°58 | 5°51  | 26° 1  | 29°43 | 29°20 | 26°12 | 18°50 | T 16 |
| F 17 | 21 43 57 | 24°42'45 | 10♂22 | 28°37 | 15°55 | 1°34  | 2° 3  | 9° 7  | 5° 2 | 5°51  | 26° 0  | 29°43 | 29°17 | 26°18 | 18°55 | F 17 |
| S 18 | 21 47 53 | 25°40'26 | 24°32 | 0♂34  | 17° 8 | 2°12  | 2°15  | 9°13  | 5° 6 | 5°51  | 25°58  | 29°41 | 29°14 | 26°25 | 19° 1 | S 18 |
| S 19 | 21 51 50 | 26°38'09 | 9♂ 5  | 2°30  | 18°22 | 2°50  | 2°26  | 9°19  | 5° 9 | 5°50  | 25°57  | 29°38 | 29°11 | 26°32 | 19° 6 | S 19 |
| M20  | 21 55 46 | 27°35'52 | 23°56 | 4°24  | 19°35 | 3°28  | 2°38  | 9°25  | 5°13 | 5°50  | 25°56  | 29°32 | 29° 8 | 26°38 | 19°12 | M20  |
| T 21 | 21 59 43 | 28°33'37 | 9♂ 1  | 6°17  | 20°49 | 4° 6  | 2°50  | 9°31  | 5°16 | 5°50  | 25°54  | 29°23 | 29° 4 | 26°45 | 19°17 | T 21 |
| W22  | 22 3 39  | 29°31'23 | 24° 8 | 8° 9  | 22° 2 | 4°45  | 3° 1  | 9°38  | 5°19 | 5°49  | 25°53  | 29°12 | 29° 1 | 26°52 | 19°22 | W22  |
| T 23 | 22 7 36  | 0♂29'10  | 9♂ 9  | 10° 0 | 23°16 | 5°23  | 3°13  | 9°44  | 5°23 | 5°49  | 25°52  | 29° 1 | 28°58 | 26°58 | 19°28 | T 23 |
| F 24 | 22 11 32 | 1°26'58  | 23°53 | 11°49 | 24°29 | 6° 1  | 3°25  | 9°50  | 5°26 | 5°48  | 25°51  | 28°51 | 28°55 | 27° 5 | 19°33 | F 24 |
| S 25 | 22 15 29 | 2°24'49  | 8♂13  | 13°36 | 25°43 | 6°40  | 3°37  | 9°56  | 5°30 | 5°48  | 25°49  | 28°42 | 28°52 | 27°12 | 19°38 | S 25 |
| S 26 | 22 19 26 | 3°22'40  | 22° 6 | 15°23 | 26°56 | 7°18  | 3°49  | 10° 3 | 5°33 | 5°47  | 25°48  | 28°36 | 28°49 | 27°19 | 19°43 | S 26 |
| M27  | 22 23 22 | 4°20'34  | 5♂29  | 17° 8 | 28° 9 | 7°57  | 4° 1  | 10° 9 | 5°36 | 5°47  | 25°47  | 28°32 | 28°45 | 27°25 | 19°48 | M27  |
| T 28 | 22 27 19 | 5°18'29  | 18°24 | 18°52 | 29°23 | 8°35  | 4°13  | 10°16 | 5°40 | 5°46  | 25°45  | 28°31 | 28°42 | 27°32 | 19°53 | T 28 |
| W29  | 22 31 15 | 6°16'27  | 0♂57  | 20°34 | 0♂36  | 9°14  | 4°25  | 10°22 | 5°43 | 5°45  | 25°44  | 28°31 | 28°39 | 27°39 | 19°58 | W29  |
| T 30 | 22 35 12 | 7°14'26  | 13°11 | 22°15 | 1°50  | 9°53  | 4°37  | 10°29 | 5°46 | 5°45  | 25°43  | 28°31 | 28°36 | 27°45 | 20° 3 | T 30 |
| F 31 | 22 39 8  | 8♂12'27  | 25♂11 | 23♂55 | 3♂ 3  | 10♂31 | 4♂49  | 10♂35 | 5♂50 | 5♂44  | 25♂41  | 28♂30 | 28♂33 | 27♂52 | 20♂ 8 | F 31 |

## ASTRODIENST EPHEMERIS for the year 2040

geocentric

SEPTEMBER 2040

00:00 UT

| Day  | Sid.t    | ☉                    | ☽                  | ♀                  | ♂                 | ♂                  | ♂                  | ♂                  | ♂                 | ♂                  | ♂                   | ♂                   | ♂                  | ♂                  | ♂                  | Day  |
|------|----------|----------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|------|
| S 1  | 22 43 5  | 9 <sup>h</sup> 10'30 | 7 <sup>h</sup> 4 4 | 25 <sup>h</sup> 33 | 4 <sup>h</sup> 16 | 11 <sup>h</sup> 10 | 5 <sup>h</sup> 2   | 10 <sup>h</sup> 42 | 5 <sup>h</sup> 53 | 5 <sup>h</sup> R43 | 25 <sup>h</sup> R40 | 28 <sup>h</sup> R27 | 28 <sup>h</sup> 30 | 27 <sup>h</sup> 59 | 20 <sup>h</sup> 13 | S 1  |
| S 2  | 22 47 1  | 10° 8'35             | 18°54              | 27°11              | 5°30              | 11°49              | 5°14               | 10°49              | 5°56              | 5 <sup>h</sup> 42  | 25 <sup>h</sup> 39  | 28 <sup>h</sup> 21  | 28°26              | 28° 5              | 20°18              | S 2  |
| M 3  | 22 50 58 | 11° 6'41             | 0 <sup>h</sup> 44  | 28°47              | 6°43              | 12°28              | 5°26               | 10°55              | 5°59              | 5°42               | 25°38               | 28°13               | 28°23              | 28°12              | 20°22              | M 3  |
| T 4  | 22 54 55 | 12° 4'50             | 12°39              | 0 <sup>h</sup> 22  | 7°56              | 13° 7              | 5°39               | 11° 2              | 6° 2              | 5°41               | 25°36               | 28° 2               | 28°20              | 28°19              | 20°27              | T 4  |
| W 5  | 22 58 51 | 13° 3'00             | 24°40              | 1°55               | 9°10              | 13°46              | 5°51               | 11° 9              | 6° 6              | 5°40               | 25°35               | 27°50               | 28°17              | 28°26              | 20°32              | W 5  |
| T 6  | 23 2 48  | 14° 1'12             | 6 <sup>h</sup> 50  | 3°28               | 10°23             | 14°25              | 6° 3               | 11°16              | 6° 9              | 5°39               | 25°34               | 27°37               | 28°14              | 28°32              | 20°36              | T 6  |
| F 7  | 23 6 44  | 14°59'26             | 19°10              | 4°59               | 11°36             | 15° 4              | 6°16               | 11°22              | 6°12              | 5°38               | 25°33               | 27°24               | 28°10              | 28°39              | 20°41              | F 7  |
| S 8  | 23 10 41 | 15°57'41             | 1 <sup>h</sup> 39  | 6°29               | 12°49             | 15°43              | 6°28               | 11°29              | 6°15              | 5°37               | 25°31               | 27°13               | 28° 7              | 28°46              | 20°45              | S 8  |
| S 9  | 23 14 37 | 16°55'58             | 14°18              | 7°58               | 14° 3             | 16°23              | 6°41               | 11°36              | 6°18              | 5°36               | 25°30               | 27° 4               | 28° 4              | 28°52              | 20°50              | S 9  |
| M10  | 23 18 34 | 17°54'17             | 27° 9              | 9°25               | 15°16             | 17° 2              | 6°54               | 11°43              | 6°21              | 5°35               | 25°29               | 26°58               | 28° 1              | 28°59              | 20°54              | M10  |
| T 11 | 23 22 30 | 18°52'38             | 10 <sup>h</sup> 11 | 10°51              | 16°29             | 17°41              | 7° 6               | 11°50              | 6°24              | 5°34               | 25°28               | 26°54               | 27°58              | 29° 6              | 20°58              | T 11 |
| W12  | 23 26 27 | 19°51'00             | 23°26              | 12°16              | 17°42             | 18°21              | 7°19               | 11°57              | 6°27              | 5°33               | 25°27               | 26°D53              | 27°55              | 29°12              | 21° 3              | W12  |
| T 13 | 23 30 23 | 20°49'24             | 6 <sup>h</sup> 55  | 13°40              | 18°55             | 19° 0              | 7°31               | 12° 4              | 6°30              | 5°32               | 25°25               | 26°53               | 27°51              | 29°19              | 21° 7              | T 13 |
| F 14 | 23 34 20 | 21°47'49             | 20°39              | 15° 2              | 20° 8             | 19°40              | 7°44               | 12°11              | 6°32              | 5°31               | 25°24               | 26°R53              | 27°48              | 29°26              | 21°11              | F 14 |
| S 15 | 23 38 17 | 22°46'16             | 4 <sup>h</sup> 30  | 16°23              | 21°22             | 20°19              | 7°57               | 12°18              | 6°35              | 5°30               | 25°23               | 26°53               | 27°45              | 29°33              | 21°15              | S 15 |
| S 16 | 23 42 13 | 23°44'44             | 18°58              | 17°43              | 22°35             | 20°59              | 8°10               | 12°25              | 6°38              | 5°29               | 25°22               | 26°50               | 27°42              | 29°39              | 21°19              | S 16 |
| M17  | 23 46 10 | 24°43'14             | 3 <sup>h</sup> 30  | 19° 1              | 23°48             | 21°39              | 8°22               | 12°32              | 6°41              | 5°28               | 25°21               | 26°46               | 27°39              | 29°46              | 21°23              | M17  |
| T 18 | 23 50 6  | 25°41'46             | 18°12              | 20°18              | 25° 1             | 22°19              | 8°35               | 12°40              | 6°44              | 5°26               | 25°20               | 26°39               | 27°36              | 29°53              | 21°26              | T 18 |
| W19  | 23 54 3  | 26°40'19             | 2 <sup>h</sup> 57  | 21°33              | 26°14             | 22°58              | 8°48               | 12°47              | 6°46              | 5°25               | 25°19               | 26°30               | 27°32              | 29°59              | 21°30              | W19  |
| T 20 | 23 57 59 | 27°38'54             | 17°39              | 22°47              | 27°27             | 23°38              | 9° 1               | 12°54              | 6°49              | 5°24               | 25°18               | 26°21               | 27°29              | 0 <sup>h</sup> 6   | 21°34              | T 20 |
| F 21 | 0 1 56   | 28°37'31             | 2 <sup>h</sup> 9   | 23°59              | 28°40             | 24°18              | 9°14               | 13° 1              | 6°52              | 5°23               | 25°17               | 26°12               | 27°26              | 0°13               | 21°37              | F 21 |
| S 22 | 0 5 52   | 29°36'10             | 16°19              | 25° 9              | 29°53             | 24°58              | 9°27               | 13° 8              | 6°54              | 5°21               | 25°16               | 26° 5               | 27°23              | 0°20               | 21°41              | S 22 |
| S 23 | 0 9 49   | 0 <sup>h</sup> 34'51 | 0 <sup>h</sup> 8   | 26°17              | 1 <sup>h</sup> 6  | 25°38              | 9°39               | 13°15              | 6°57              | 5°20               | 25°15               | 26° 0               | 27°20              | 0°26               | 21°45              | S 23 |
| M24  | 0 13 46  | 1°33'34              | 13°29              | 27°23              | 2°19              | 26°18              | 9°52               | 13°23              | 6°59              | 5°19               | 25°13               | 25°57               | 27°16              | 0°33               | 21°48              | M24  |
| T 25 | 0 17 42  | 2°32'19              | 26°26              | 28°27              | 3°32              | 26°58              | 10° 5              | 13°30              | 7° 2              | 5°17               | 25°12               | 25°D56              | 27°13              | 0°40               | 21°51              | T 25 |
| W26  | 0 21 39  | 3°31'07              | 9 <sup>h</sup> 1   | 29°29              | 4°45              | 27°39              | 10°18              | 13°37              | 7° 4              | 5°16               | 25°12               | 25°57               | 27°10              | 0°46               | 21°54              | W26  |
| T 27 | 0 25 35  | 4°29'57              | 21°17              | 0 <sup>h</sup> 28  | 5°57              | 28°19              | 10°31              | 13°45              | 7° 6              | 5°15               | 25°11               | 25°58               | 27° 7              | 0°53               | 21°58              | T 27 |
| F 28 | 0 29 32  | 5°28'49              | 3 <sup>h</sup> 20  | 1°25               | 7°10              | 28°59              | 10°44              | 13°52              | 7° 9              | 5°13               | 25°10               | 25°R58              | 27° 4              | 1° 0               | 22° 1              | F 28 |
| S 29 | 0 33 28  | 6°27'43              | 15°15              | 2°19               | 8°23              | 29°40              | 10°57              | 13°59              | 7°11              | 5°12               | 25° 9               | 25°58               | 27° 1              | 1° 6               | 22° 4              | S 29 |
| S 30 | 0 37 25  | 7 <sup>h</sup> 26'40 | 27 <sup>h</sup> 6  | 3 <sup>h</sup> 9   | 9 <sup>h</sup> 36 | 0 <sup>h</sup> 20  | 11 <sup>h</sup> 10 | 14 <sup>h</sup> 7  | 7 <sup>h</sup> 13 | 5 <sup>h</sup> 10  | 25 <sup>h</sup> 8   | 25 <sup>h</sup> 56  | 26 <sup>h</sup> 57 | 1 <sup>h</sup> 13  | 22 <sup>h</sup> 7  | S 30 |

Delta T = 71.98 sec

OCTOBER 2040

00:00 UT

| Day  | Sid.t   | ☉                    | ☽                    | ♀                  | ♂                  | ♂                  | ♂                  | ♂                  | ♂                 | ♂                  | ♂                  | ♂                  | ♂                  | ♂                 | ♂                  | Day  |
|------|---------|----------------------|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|------|
| M 1  | 0 41 21 | 8 <sup>h</sup> 25'39 | 8 <sup>h</sup> 25'58 | 3 <sup>h</sup> 57  | 10 <sup>h</sup> 49 | 1 <sup>h</sup> 0   | 11 <sup>h</sup> 23 | 14 <sup>h</sup> 14 | 7 <sup>h</sup> 16 | 5 <sup>h</sup> R 9 | 25°R 7             | 25°R52             | 26 <sup>h</sup> 54 | 1 <sup>h</sup> 20 | 22 <sup>h</sup> 10 | M 1  |
| T 2  | 0 45 18 | 9°24'40              | 20°56                | 4°40               | 12° 1              | 1°41               | 11°36              | 14°21              | 7°18              | 5 <sup>h</sup> 8   | 25 <sup>h</sup> 6  | 25 <sup>h</sup> 45 | 26°51              | 1°27              | 22°12              | T 2  |
| W 3  | 0 49 15 | 10°23'43             | 3 <sup>h</sup> 3 3   | 5°20               | 13°14              | 2°22               | 11°49              | 14°29              | 7°20              | 5° 6               | 25° 5              | 25°38              | 26°48              | 1°33              | 22°15              | W 3  |
| T 4  | 0 53 11 | 11°22'49             | 15°22                | 5°55               | 14°27              | 3° 2               | 12° 2              | 14°36              | 7°22              | 5° 5               | 25° 4              | 25°30              | 26°45              | 1°40              | 22°18              | T 4  |
| F 5  | 0 57 8  | 12°21'56             | 27°54                | 6°25               | 15°40              | 3°43               | 12°15              | 14°43              | 7°24              | 5° 3               | 25° 3              | 25°22              | 26°41              | 1°47              | 22°20              | F 5  |
| S 6  | 1 1 4   | 13°21'06             | 10 <sup>h</sup> 39   | 6°50               | 16°52              | 4°24               | 12°28              | 14°51              | 7°26              | 5° 2               | 25° 3              | 25°14              | 26°38              | 1°53              | 22°23              | S 6  |
| S 7  | 1 5 1   | 14°20'17             | 23°38                | 7°10               | 18° 5              | 5° 5               | 12°41              | 14°58              | 7°28              | 5° 0               | 25° 2              | 25° 9              | 26°35              | 2° 0              | 22°25              | S 7  |
| M 8  | 1 8 57  | 15°19'31             | 6 <sup>h</sup> 50    | 7°24               | 19°18              | 5°46               | 12°54              | 15° 5              | 7°30              | 4°58               | 25° 1              | 25° 5              | 26°32              | 2° 7              | 22°28              | M 8  |
| T 9  | 1 12 54 | 16°18'47             | 20°14                | 7°31               | 20°30              | 6°26               | 13° 7              | 15°13              | 7°32              | 4°57               | 25° 0              | 25°D 4             | 26°29              | 2°14              | 22°30              | T 9  |
| W10  | 1 16 50 | 17°18'05             | 3 <sup>h</sup> 49    | 7°R31              | 21°43              | 7° 7               | 13°20              | 15°20              | 7°34              | 4°55               | 25° 0              | 25° 4              | 26°26              | 2°20              | 22°32              | W10  |
| T 11 | 1 20 47 | 18°17'24             | 17°34                | 7°23               | 22°55              | 7°49               | 13°33              | 15°27              | 7°35              | 4°54               | 24°59              | 25° 5              | 26°22              | 2°27              | 22°34              | T 11 |
| F 12 | 1 24 44 | 19°16'46             | 1 <sup>h</sup> 28    | 7° 8               | 24° 8              | 8°30               | 13°46              | 15°35              | 7°37              | 4°52               | 24°58              | 25° 7              | 26°19              | 2°34              | 22°36              | F 12 |
| S 13 | 1 28 40 | 20°16'09             | 15°31                | 6°44               | 25°20              | 9°11               | 13°59              | 15°42              | 7°39              | 4°50               | 24°58              | 25°R 8             | 26°16              | 2°40              | 22°38              | S 13 |
| S 14 | 1 32 37 | 21°15'33             | 29°41                | 6°13               | 26°33              | 9°52               | 14°12              | 15°49              | 7°40              | 4°49               | 24°57              | 25° 8              | 26°13              | 2°47              | 22°40              | S 14 |
| M15  | 1 36 33 | 22°15'00             | 13 <sup>h</sup> 57   | 5°32               | 27°45              | 10°33              | 14°25              | 15°57              | 7°42              | 4°47               | 24°56              | 25° 6              | 26°10              | 2°54              | 22°41              | M15  |
| T 16 | 1 40 30 | 23°14'28             | 28°16                | 4°44               | 28°58              | 11°15              | 14°38              | 16° 4              | 7°43              | 4°46               | 24°56              | 25° 3              | 26° 7              | 3° 1              | 22°43              | T 16 |
| W17  | 1 44 26 | 24°13'58             | 12 <sup>h</sup> 34   | 3°48               | 0 <sup>h</sup> 10  | 11°56              | 14°51              | 16°11              | 7°45              | 4°44               | 24°55              | 24°59              | 26° 3              | 3° 7              | 22°45              | W17  |
| T 18 | 1 48 23 | 25°13'30             | 26°47                | 2°45               | 1°22               | 12°38              | 15° 4              | 16°19              | 7°46              | 4°42               | 24°55              | 24°54              | 26° 0              | 3°14              | 22°46              | T 18 |
| F 19 | 1 52 19 | 26°13'03             | 10 <sup>h</sup> 51   | 1°37               | 2°35               | 13°19              | 15°17              | 16°26              | 7°48              | 4°41               | 24°54              | 24°50              | 25°57              | 3°21              | 22°47              | F 19 |
| S 20 | 1 56 16 | 27°12'39             | 24°40                | 0°24               | 3°47               | 14° 1              | 15°29              | 16°33              | 7°49              | 4°39               | 24°54              | 24°46              | 25°54              | 3°27              | 22°49              | S 20 |
| S 21 | 2 0 13  | 28°12'16             | 8 <sup>h</sup> 11    | 29 <sup>h</sup> 10 | 4°59               | 14°42              | 15°42              | 16°41              | 7°50              | 4°37               | 24°53              | 24°44              | 25°51              | 3°34              | 22°50              | S 21 |
| M22  | 2 4 9   | 29°11'56             | 21°23                | 27°55              | 6°11               | 15°24              | 15°55              | 16°48              | 7°51              | 4°36               | 24°53              | 24°D43             | 25°47              | 3°41              | 22°51              | M22  |
| T 23 | 2 8 6   | 0 <sup>h</sup> 11'37 | 4 <sup>h</sup> 15    | 26°43              | 7°23               | 16° 6              | 16° 8              | 16°55              | 7°53              | 4°34               | 24°53              | 24°43              | 25°44              | 3°48              | 22°52              | T 23 |
| W24  | 2 12 2  | 1°11'21              | 16°49                | 25°35              | 8°36               | 16°48              | 16°21              | 17° 2              | 7°54              | 4°32               | 24°52              | 24°44              | 25°41              | 3°54              | 22°53              | W24  |
| T 25 | 2 15 59 | 2°11'07              | 29° 6                | 24°33              | 9°48               | 17°29              | 16°33              | 17°10              | 7°55              | 4°31               | 24°52              | 24°46              | 25°38              | 4° 1              | 22°54              | T 25 |
| F 26 | 2 19 55 | 3°10'56              | 11 <sup>h</sup> 20   | 23°40              | 11° 0              | 18°11              | 16°46              | 17°17              | 7°56              | 4°29               | 24°51              | 24°48              | 25°35              | 4° 8              | 22°54              | F 26 |
| S 27 | 2 23 52 | 4°10'46              | 23° 6                | 22°56              | 12°12              | 18°53              | 16°59              | 17°24              | 7°57              | 4°27               | 24°51              | 24°49              | 25°32              | 4°14              | 22°55              | S 27 |
| S 28 | 2 27 48 | 5°10'39              | 4 <sup>h</sup> 28    | 22°24              | 13°24              | 19°35              | 17°12              | 17°31              | 7°58              | 4°25               | 24°51              | 24°R49             | 25°28              | 4°21              | 22°56              | S 28 |
| M29  | 2 31 45 | 6°10'33              | 16°52                | 22° 2              | 14°35              | 20°17              | 17°24              | 17°38              | 7°58              | 4°24               | 24°51              | 24°49              | 25°25              | 4°28              | 22°56              | M29  |
| T 30 | 2 35 42 | 7°10'30              | 28°51                | 21°D52             | 15°47              | 21° 0              | 17°37              | 17°45              | 7°59              | 4°22               | 24°50              | 24°47              | 25°22              | 4°35              | 22°56              | T 30 |
| W31  | 2 39 38 | 8 <sup>h</sup> 10'29 | 11 <sup>h</sup> 0    | 21 <sup>h</sup> 53 | 16°59              | 21 <sup>h</sup> 42 | 17 <sup>h</sup> 50 | 17 <sup>h</sup> 52 | 8 <sup>h</sup> 0  | 4 <sup>h</sup> 20  | 24 <sup>h</sup> 50 | 24 <sup>h</sup> 46 | 25 <sup>h</sup> 19 | 4 <sup>h</sup> 41 | 22 <sup>h</sup> 57 | W31  |

Delta T = 72.00 sec

ASTRODIENST EPHEMERIS for the year 2040  
geocentric

NOVEMBER 2040

00:00 UT

| Day  | Sid.t   | ☉        | ☽     | ♀     | ♂     | ♂     | ♂     | ♂     | ♂    | ♂     | ♂      | ♂      | ♂     | ♂    | ♂      | Day  |
|------|---------|----------|-------|-------|-------|-------|-------|-------|------|-------|--------|--------|-------|------|--------|------|
| T 1  | 2 43 35 | 9♉10'31  | 23♏23 | 22♋6  | 18♌11 | 22♍24 | 18♏2  | 17♏59 | 8♏1  | 4°R19 | 24°R50 | 24°R43 | 25♌16 | 4♏48 | 22♏57  | T 1  |
| F 2  | 2 47 31 | 10°10'34 | 6♋2   | 22°28 | 19°23 | 23°6  | 18°15 | 18°6  | 8°1  | 4♏17  | 24°R50 | 24°R41 | 25°13 | 4°55 | 22°R57 | F 2  |
| S 3  | 2 51 28 | 11°10'39 | 19°0  | 23°1  | 20°34 | 23°49 | 18°27 | 18°13 | 8°2  | 4°15  | 24°50  | 24°39  | 25°9  | 5°1  | 22°57  | S 3  |
| S 4  | 2 55 24 | 12°10'46 | 2♍17  | 23°42 | 21°46 | 24°31 | 18°40 | 18°20 | 8°2  | 4°14  | 24°50  | 24°38  | 25°6  | 5°8  | 22°57  | S 4  |
| M 5  | 2 59 21 | 13°10'55 | 15°52 | 24°30 | 22°58 | 25°14 | 18°52 | 18°27 | 8°3  | 4°12  | 24°50  | 24°37  | 25°3  | 5°15 | 22°57  | M 5  |
| T 6  | 3 3 17  | 14°11'07 | 29°42 | 25°26 | 24°9  | 25°56 | 19°5  | 18°34 | 8°3  | 4°10  | 24°49  | 24°D37 | 25°0  | 5°22 | 22°56  | T 6  |
| W 7  | 3 7 14  | 15°11'19 | 13♌44 | 26°28 | 25°21 | 26°39 | 19°17 | 18°41 | 8°4  | 4°9   | 24°D49 | 24°37  | 24°57 | 5°28 | 22°56  | W 7  |
| T 8  | 3 11 11 | 16°11'34 | 27°56 | 27°36 | 26°32 | 27°22 | 19°29 | 18°48 | 8°4  | 4°7   | 24°49  | 24°38  | 24°53 | 5°35 | 22°55  | T 8  |
| F 9  | 3 15 7  | 17°11'50 | 12♏12 | 28°47 | 27°44 | 28°4  | 19°41 | 18°55 | 8°4  | 4°5   | 24°49  | 24°39  | 24°50 | 5°42 | 22°55  | F 9  |
| S 10 | 3 19 4  | 18°12'07 | 26°29 | 0♍3   | 28°55 | 28°47 | 19°54 | 19°1  | 8°4  | 4°4   | 24°50  | 24°39  | 24°47 | 5°48 | 22°54  | S 10 |
| S 11 | 3 23 0  | 19°12'26 | 10♋45 | 1°23  | 0♏6   | 29°30 | 20°6  | 19°8  | 8°4  | 4°2   | 24°50  | 24°40  | 24°44 | 5°55 | 22°53  | S 11 |
| M12  | 3 26 57 | 20°12'47 | 24°56 | 2°45  | 1°17  | 0♌13  | 20°18 | 19°15 | 8°4  | 4°1   | 24°50  | 24°R40 | 24°41 | 6°2  | 22°53  | M12  |
| T 13 | 3 30 53 | 21°13'08 | 9♏0   | 4°9   | 2°29  | 0°56  | 20°30 | 19°22 | 8°R4 | 3°59  | 24°50  | 24°39  | 24°38 | 6°9  | 22°52  | T 13 |
| W14  | 3 34 50 | 22°13'31 | 22°56 | 5°36  | 3°40  | 1°39  | 20°42 | 19°28 | 8°4  | 3°57  | 24°50  | 24°39  | 24°34 | 6°15 | 22°51  | W14  |
| T 15 | 3 38 46 | 23°13'55 | 6♏42  | 7°4   | 4°51  | 2°22  | 20°54 | 19°35 | 8°4  | 3°56  | 24°50  | 24°39  | 24°31 | 6°22 | 22°50  | T 15 |
| F 16 | 3 42 43 | 24°14'21 | 20°16 | 8°34  | 6°2   | 3°5   | 21°6  | 19°41 | 8°4  | 3°54  | 24°50  | 24°D39 | 24°28 | 6°29 | 22°48  | F 16 |
| S 17 | 3 46 40 | 25°14'48 | 3♏38  | 10°4  | 7°12  | 3°48  | 21°18 | 19°48 | 8°4  | 3°53  | 24°51  | 24°39  | 24°25 | 6°35 | 22°47  | S 17 |
| S 18 | 3 50 36 | 26°15'16 | 16°46 | 11°36 | 8°23  | 4°31  | 21°30 | 19°54 | 8°4  | 3°51  | 24°51  | 24°39  | 24°22 | 6°42 | 22°46  | S 18 |
| M19  | 3 54 33 | 27°15'47 | 29°40 | 13°8  | 9°34  | 5°14  | 21°41 | 20°0  | 8°3  | 3°50  | 24°51  | 24°R39 | 24°19 | 6°49 | 22°44  | M19  |
| T 20 | 3 58 29 | 28°16'18 | 12♏20 | 14°41 | 10°44 | 5°58  | 21°53 | 20°7  | 8°3  | 3°48  | 24°52  | 24°39  | 24°15 | 6°56 | 22°43  | T 20 |
| W21  | 4 2 26  | 29°16'52 | 24°46 | 16°15 | 11°55 | 6°41  | 22°5  | 20°13 | 8°3  | 3°47  | 24°52  | 24°38  | 24°12 | 7°2  | 22°41  | W21  |
| T 22 | 4 6 22  | 0♌17'26  | 6♏59  | 17°48 | 13°5  | 7°25  | 22°16 | 20°19 | 8°2  | 3°45  | 24°52  | 24°38  | 24°9  | 7°9  | 22°39  | T 22 |
| F 23 | 4 10 19 | 1°18'03  | 19°2  | 19°22 | 14°16 | 8°8   | 22°28 | 20°25 | 8°2  | 3°44  | 24°53  | 24°37  | 24°6  | 7°16 | 22°37  | F 23 |
| S 24 | 4 14 15 | 2°18'41  | 0♏58  | 20°56 | 15°26 | 8°52  | 22°39 | 20°32 | 8°1  | 3°42  | 24°53  | 24°36  | 24°3  | 7°22 | 22°36  | S 24 |
| S 25 | 4 18 12 | 3°19'21  | 12°50 | 22°30 | 16°36 | 9°35  | 22°50 | 20°38 | 8°0  | 3°41  | 24°54  | 24°35  | 23°59 | 7°29 | 22°34  | S 25 |
| M26  | 4 22 9  | 4°20'02  | 24°43 | 24°5  | 17°46 | 10°19 | 23°2  | 20°44 | 8°0  | 3°39  | 24°54  | 24°34  | 23°56 | 7°36 | 22°32  | M26  |
| T 27 | 4 26 5  | 5°20'45  | 6♏40  | 25°39 | 18°56 | 11°3  | 23°13 | 20°50 | 7°59 | 3°38  | 24°55  | 24°D34 | 23°53 | 7°43 | 22°29  | T 27 |
| W28  | 4 30 2  | 6°21'29  | 18°47 | 27°14 | 20°6  | 11°46 | 23°24 | 20°56 | 7°58 | 3°37  | 24°55  | 24°34  | 23°50 | 7°49 | 22°27  | W28  |
| T 29 | 4 33 58 | 7°22'15  | 1♏8   | 28°48 | 21°16 | 12°30 | 23°35 | 21°1  | 7°57 | 3°35  | 24°56  | 24°35  | 23°47 | 7°56 | 22°25  | T 29 |
| F 30 | 4 37 55 | 8♌23'03  | 13♏47 | 0♌22  | 22♏25 | 13♌14 | 23♏46 | 21♏7  | 7♏56 | 3♏34  | 24°R56 | 24°R36 | 23♏44 | 8♏3  | 22°22  | F 30 |

Delta T = 72.02 sec

DECEMBER 2040

00:00 UT

| Day  | Sid.t   | ☉        | ☽     | ♀     | ♂     | ♂     | ♂     | ♂     | ♂     | ♂     | ♂      | ♂      | ♂     | ♂     | ♂      | Day  |
|------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|--------|------|
| S 1  | 4 41 51 | 9♌23'51  | 26♏49 | 1♌57  | 23♏35 | 13♌58 | 23♏57 | 21♏13 | 7°R55 | 3°R33 | 24°R57 | 24°R38 | 23♏40 | 8♏9   | 22°R20 | S 1  |
| S 2  | 4 45 48 | 10°24'42 | 10♍14 | 3°31  | 24°44 | 14°42 | 24°8  | 21°19 | 7♏54  | 3♏31  | 24°58  | 24°39  | 23°37 | 8°16  | 22°R17 | S 2  |
| M 3  | 4 49 44 | 11°25'33 | 24°3  | 5°5   | 25°54 | 15°26 | 24°18 | 21°24 | 7°53  | 3°30  | 24°58  | 24°R39 | 23°34 | 8°23  | 22°15  | M 3  |
| T 4  | 4 53 41 | 12°26'26 | 8♌14  | 6°39  | 27°3  | 16°10 | 24°29 | 21°30 | 7°52  | 3°29  | 24°59  | 24°39  | 23°31 | 8°30  | 22°12  | T 4  |
| W 5  | 4 57 38 | 13°27'21 | 22°43 | 8°13  | 28°12 | 16°54 | 24°40 | 21°35 | 7°51  | 3°28  | 25°0   | 24°37  | 23°28 | 8°36  | 22°9   | W 5  |
| T 6  | 5 1 34  | 14°28'16 | 7♏24  | 9°48  | 29°21 | 17°38 | 24°50 | 21°41 | 7°50  | 3°27  | 25°0   | 24°35  | 23°25 | 8°43  | 22°7   | T 6  |
| F 7  | 5 5 31  | 15°29'12 | 22°9  | 11°22 | 0♏29  | 18°23 | 25°1  | 21°46 | 7°49  | 3°25  | 25°1   | 24°32  | 23°21 | 8°50  | 22°4   | F 7  |
| S 8  | 5 9 27  | 16°30'09 | 6♋52  | 12°56 | 1°38  | 19°7  | 25°11 | 21°51 | 7°47  | 3°24  | 25°2   | 24°29  | 23°18 | 8°57  | 22°1   | S 8  |
| S 9  | 5 13 24 | 17°31'06 | 21°26 | 14°30 | 2°47  | 19°51 | 25°21 | 21°56 | 7°46  | 3°23  | 25°3   | 24°27  | 23°15 | 9°3   | 21°58  | S 9  |
| M10  | 5 17 20 | 18°32'04 | 5♏46  | 16°4  | 3°55  | 20°36 | 25°31 | 22°2  | 7°45  | 3°22  | 25°4   | 24°25  | 23°12 | 9°10  | 21°55  | M10  |
| T 11 | 5 21 17 | 19°33'03 | 19°49 | 17°38 | 5°3   | 21°20 | 25°41 | 22°7  | 7°43  | 3°21  | 25°4   | 24°D24 | 23°9  | 9°17  | 21°51  | T 11 |
| W12  | 5 25 14 | 20°34'02 | 3♏35  | 19°13 | 6°11  | 22°5  | 25°51 | 22°12 | 7°42  | 3°20  | 25°5   | 24°25  | 23°5  | 9°23  | 21°48  | W12  |
| T 13 | 5 29 10 | 21°35'02 | 17°3  | 20°47 | 7°19  | 22°49 | 26°1  | 22°16 | 7°40  | 3°19  | 25°6   | 24°26  | 23°2  | 9°30  | 21°45  | T 13 |
| F 14 | 5 33 7  | 22°36'02 | 0♌15  | 22°21 | 8°26  | 23°34 | 26°11 | 22°21 | 7°38  | 3°18  | 25°7   | 24°28  | 22°59 | 9°37  | 21°42  | F 14 |
| S 15 | 5 37 3  | 23°37'03 | 13°13 | 23°56 | 9°34  | 24°18 | 26°20 | 22°26 | 7°37  | 3°17  | 25°8   | 24°29  | 22°56 | 9°44  | 21°38  | S 15 |
| S 16 | 5 41 0  | 24°38'04 | 25°58 | 25°30 | 10°41 | 25°3  | 26°30 | 22°31 | 7°35  | 3°16  | 25°9   | 24°R30 | 22°53 | 9°50  | 21°35  | S 16 |
| M17  | 5 44 56 | 25°39'06 | 8♏32  | 27°5  | 11°48 | 25°48 | 26°39 | 22°35 | 7°33  | 3°15  | 25°10  | 24°29  | 22°50 | 9°57  | 21°31  | M17  |
| T 18 | 5 48 53 | 26°40'09 | 20°55 | 28°40 | 12°55 | 26°33 | 26°49 | 22°40 | 7°32  | 3°14  | 25°11  | 24°26  | 22°46 | 10°4  | 21°28  | T 18 |
| W19  | 5 52 49 | 27°41'12 | 3♏9   | 0♏15  | 14°1  | 27°17 | 26°58 | 22°44 | 7°30  | 3°14  | 25°12  | 24°22  | 22°43 | 10°10 | 21°24  | W19  |
| T 20 | 5 56 46 | 28°42'16 | 15°15 | 1°50  | 15°8  | 28°2  | 27°7  | 22°49 | 7°28  | 3°13  | 25°13  | 24°16  | 22°40 | 10°17 | 21°20  | T 20 |
| F 21 | 6 0 43  | 29°43'20 | 27°15 | 3°25  | 16°14 | 28°47 | 27°16 | 22°53 | 7°26  | 3°12  | 25°14  | 24°9   | 22°37 | 10°24 | 21°17  | F 21 |
| S 22 | 6 4 39  | 0♏44'25  | 9♏9   | 5°1   | 17°20 | 29°32 | 27°25 | 22°57 | 7°24  | 3°11  | 25°15  | 24°2   | 22°34 | 10°31 | 21°13  | S 22 |
| S 23 | 6 8 36  | 1°45'31  | 21°1  | 6°36  | 18°25 | 0♏17  | 27°33 | 23°1  | 7°22  | 3°11  | 25°17  | 23°56  | 22°31 | 10°37 | 21°9   | S 23 |
| M24  | 6 12 32 | 2°46'37  | 2♏52  | 8°12  | 19°31 | 1°2   | 27°42 | 23°5  | 7°20  | 3°10  | 25°18  | 23°50  | 22°27 | 10°44 | 21°5   | M24  |
| T 25 | 6 16 29 | 3°47'44  | 14°48 | 9°48  | 20°36 | 1°47  | 27°51 | 23°9  | 7°18  | 3°9   | 25°19  | 23°46  | 22°24 | 10°51 | 21°1   | T 25 |
| W26  | 6 20 25 | 4°48'51  | 26°51 | 11°25 | 21°41 | 2°33  | 27°59 | 23°13 | 7°16  | 3°9   | 25°20  | 23°44  | 22°21 | 10°57 | 20°57  | W26  |
| T 27 | 6 24 22 | 5°49'59  | 9♏7   | 13°1  | 22°45 | 3°18  | 28°7  | 23°17 | 7°14  | 3°8   | 25°21  | 23°D44 | 22°18 | 11°4  | 20°53  | T 27 |
| F 28 | 6 28 18 | 6°51'08  | 21°41 | 14°38 | 23°50 | 4°3   | 28°15 | 23°20 | 7°12  | 3°7   | 25°23  | 23°45  | 22°15 | 11°11 | 20°49  | F 28 |
| S 29 | 6 32 15 | 7°52'17  | 4♏37  | 16°15 | 24°54 | 4°48  | 28°23 | 23°24 | 7°10  | 3°7   | 25°24  | 23°46  | 22°11 | 11°18 | 20°45  | S 29 |
| S 30 | 6 36 12 | 8°53'26  | 17°58 | 17°52 | 25°57 | 5°34  | 28°31 | 23°28 | 7°8   | 3°6   | 25°25  | 23°R47 | 22°8  | 11°24 | 20°41  | S 30 |
| M31  | 6 40 8  | 9♏54'36  | 1♌48  | 19♏29 | 27°R1 | 6♏19  | 28♏39 | 23♏31 | 7♏6   | 3♏6   | 25°R26 | 23♏47  | 22♏5  | 11♏31 | 20°R37 | M31  |

Delta T = 72.04 sec