

SWISS EPHEMERIS for the year 2116

JANUARY 2116

00:00 UT

| Day  | Sid.t   | ☉        | ☽     | ♀      | ♂     | ♂      | ♂     | ♂       | ♂      | ♂       | ♂      | ♂      | ♂     | ♂    | ♂     |
|------|---------|----------|-------|--------|-------|--------|-------|---------|--------|---------|--------|--------|-------|------|-------|
| W 1  | 6 39 30 | 9°34'58  | 18°39 | 25°R18 | 19°55 | 8°2' 2 | 6°12  | 18°9' 9 | 25°R51 | 22°15 8 | 17°R48 | 13°R 2 | 11°32 | 3°12 | 16°27 |
| T 2  | 6 43 26 | 10°43'06 | 3°12  | 24°47  | 21° 7 | 8°43   | 6°25  | 18°10   | 25°R48 | 22° 8   | 17°R48 | 12°R52 | 11°28 | 3°18 | 16°29 |
| F 3  | 6 47 23 | 11°44'14 | 19° 2 | 24°27  | 22°19 | 9°25   | 6°39  | 18°12   | 25°46  | 22° 9   | 17°47  | 12°43  | 11°25 | 3°25 | 16°31 |
| S 4  | 6 51 19 | 12°45'22 | 3°17  | 24°17  | 23°31 | 10° 7  | 6°53  | 18°13   | 25°44  | 22°10   | 17°46  | 12°36  | 11°22 | 3°32 | 16°33 |
| S 5  | 6 55 16 | 13°46'30 | 18°17 | 24°D17 | 24°42 | 10°49  | 7° 6  | 18°15   | 25°41  | 22°10   | 17°46  | 12°31  | 11°19 | 3°38 | 16°35 |
| M 6  | 6 59 12 | 14°47'39 | 2°16  | 24°25  | 25°54 | 11°31  | 7°20  | 18°16   | 25°39  | 22°11   | 17°45  | 12°28  | 11°16 | 3°45 | 16°37 |
| T 7  | 7 3 9   | 15°48'48 | 15°49 | 24°42  | 27° 5 | 12°13  | 7°34  | 18°18   | 25°36  | 22°12   | 17°45  | 12°D27 | 11°12 | 3°52 | 16°40 |
| W 8  | 7 7 5   | 16°49'58 | 28°57 | 25° 6  | 28°17 | 12°55  | 7°47  | 18°20   | 25°34  | 22°12   | 17°44  | 12°28  | 11° 9 | 3°59 | 16°42 |
| T 9  | 7 11 2  | 17°51'07 | 11°45 | 25°36  | 29°28 | 13°37  | 8° 1  | 18°22   | 25°32  | 22°13   | 17°44  | 12°R28 | 11° 6 | 4° 5 | 16°44 |
| F 10 | 7 14 59 | 18°52'17 | 24°16 | 26°13  | 0°39  | 14°19  | 8°15  | 18°24   | 25°29  | 22°13   | 17°43  | 12°27  | 11° 3 | 4°12 | 16°46 |
| S 11 | 7 18 55 | 19°53'27 | 6°35  | 26°55  | 1°50  | 15° 1  | 8°29  | 18°26   | 25°27  | 22°14   | 17°43  | 12°25  | 11° 0 | 4°19 | 16°49 |
| S 12 | 7 22 52 | 20°54'37 | 18°43 | 27°42  | 3° 1  | 15°44  | 8°43  | 18°28   | 25°25  | 22°14   | 17°42  | 12°19  | 10°57 | 4°25 | 16°51 |
| M13  | 7 26 48 | 21°55'47 | 0°36  | 28°33  | 4°12  | 16°26  | 8°57  | 18°31   | 25°23  | 22°14   | 17°42  | 12°10  | 10°53 | 4°32 | 16°54 |
| T 14 | 7 30 45 | 22°56'56 | 12°43 | 29°29  | 5°22  | 17° 8  | 9°10  | 18°33   | 25°20  | 22°15   | 17°42  | 11°59  | 10°50 | 4°39 | 16°56 |
| W15  | 7 34 41 | 23°58'06 | 24°37 | 0°32   | 6°33  | 17°50  | 9°24  | 18°36   | 25°18  | 22°15   | 17°41  | 11°46  | 10°47 | 4°46 | 16°59 |
| T 16 | 7 38 38 | 24°59'15 | 6°30  | 1°29   | 7°43  | 18°33  | 9°38  | 18°39   | 25°16  | 22°15   | 17°41  | 11°31  | 10°44 | 4°52 | 17° 1 |
| F 17 | 7 42 34 | 26° 0'23 | 18°22 | 2°34   | 8°54  | 19°15  | 9°52  | 18°41   | 25°14  | 22°16   | 17°40  | 11°17  | 10°41 | 4°59 | 17° 4 |
| S 18 | 7 46 31 | 27° 1'31 | 0°14  | 3°41   | 10° 4 | 19°57  | 10° 7 | 18°44   | 25°12  | 22°16   | 17°40  | 11° 4  | 10°38 | 5° 6 | 17° 7 |
| S 19 | 7 50 28 | 28° 2'39 | 12°10 | 4°50   | 11°14 | 20°40  | 10°21 | 18°47   | 25°10  | 22°16   | 17°40  | 10°53  | 10°34 | 5°13 | 17° 9 |
| M20  | 7 54 24 | 29° 3'46 | 24°11 | 6° 2   | 12°24 | 21°22  | 10°35 | 18°51   | 25° 8  | 22°16   | 17°40  | 10°46  | 10°31 | 5°19 | 17°12 |
| T 21 | 7 58 21 | 0°45'52  | 6°21  | 7°15   | 13°34 | 22° 5  | 10°49 | 18°54   | 25° 6  | 22°16   | 17°39  | 10°41  | 10°28 | 5°26 | 17°15 |
| W22  | 8 2 17  | 1° 5'57  | 18°45 | 8°30   | 14°43 | 22°47  | 11° 3 | 18°57   | 25° 4  | 22°16   | 17°39  | 10°39  | 10°25 | 5°33 | 17°18 |
| T 23 | 8 6 14  | 2° 7'01  | 1°26  | 9°46   | 15°53 | 23°30  | 11°17 | 19° 0   | 25° 2  | 22°17   | 17°39  | 10°D38 | 10°22 | 5°39 | 17°21 |
| F 24 | 8 10 10 | 3° 8'05  | 14°29 | 11° 4  | 17° 2 | 24°12  | 11°31 | 19° 4   | 25° 0  | 22°R17  | 17°39  | 10°R38 | 10°18 | 5°46 | 17°24 |
| S 25 | 8 14 7  | 4° 9'07  | 27°59 | 12°23  | 18°12 | 24°55  | 11°45 | 19° 7   | 24°58  | 22°17   | 17°39  | 10°37  | 10°15 | 5°53 | 17°27 |
| S 26 | 8 18 3  | 5°10'09  | 11°58 | 13°44  | 19°21 | 25°37  | 12° 0 | 19°11   | 24°57  | 22°16   | 17°38  | 10°35  | 10°12 | 6° 0 | 17°30 |
| M27  | 8 22 0  | 6°11'09  | 26°27 | 15° 5  | 20°29 | 26°20  | 12°14 | 19°15   | 24°55  | 22°16   | 17°38  | 10°29  | 10° 9 | 6° 6 | 17°33 |
| T 28 | 8 25 57 | 7°12'09  | 11°22 | 16°28  | 21°38 | 27° 3  | 12°28 | 19°19   | 24°53  | 22°16   | 17°38  | 10°21  | 10° 6 | 6°13 | 17°36 |
| W29  | 8 29 53 | 8°13'08  | 26°36 | 17°52  | 22°47 | 27°45  | 12°42 | 19°23   | 24°51  | 22°16   | 17°38  | 10°11  | 10° 3 | 6°20 | 17°39 |
| T 30 | 8 33 50 | 9°14'06  | 11°59 | 19°16  | 23°55 | 28°28  | 12°57 | 19°27   | 24°50  | 22°16   | 17°38  | 9°59   | 9°59  | 6°27 | 17°42 |
| F 31 | 8 37 46 | 10°15'02 | 27°19 | 20°42  | 25°3  | 29°11  | 13°11 | 19°31   | 24°48  | 22°16   | 17°38  | 9°47   | 9°56  | 6°33 | 17°45 |

Delta T = 251.30 sec.

FEBRUARY 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀      | ♂     | ♂      | ♂     | ♂     | ♂      | ♂      | ♂      | ♂     | ♂     | ♂    | ♂     |
|------|----------|----------|-------|--------|-------|--------|-------|-------|--------|--------|--------|-------|-------|------|-------|
| S 1  | 8 41 43  | 11°15'58 | 12°17 | 22°3 8 | 26°11 | 29°15  | 13°25 | 19°35 | 24°R47 | 22°R15 | 17°D38 | 9°R37 | 9°R53 | 6°40 | 17°48 |
| S 2  | 8 45 39  | 12°16'54 | 27° 6 | 23°35  | 27°19 | 0°37   | 13°39 | 19°40 | 24°R45 | 22°15  | 17°R38 | 9°R30 | 9°50  | 6°47 | 17°51 |
| M 3  | 8 49 36  | 13°17'48 | 11°18 | 25° 3  | 28°26 | 1°19   | 13°54 | 19°44 | 24°44  | 22°15  | 17°38  | 9°25  | 9°47  | 6°53 | 17°55 |
| T 4  | 8 53 33  | 14°18'42 | 25° 1 | 26°32  | 29°33 | 2° 2   | 14° 8 | 19°48 | 24°42  | 22°14  | 17°38  | 9°23  | 9°44  | 7° 0 | 17°58 |
| W 5  | 8 57 29  | 15°19'35 | 8°16  | 28° 2  | 0°40  | 2°45   | 14°22 | 19°53 | 24°41  | 22°14  | 17°38  | 9°23  | 9°40  | 7° 7 | 18° 1 |
| T 6  | 9 1 26   | 16°20'27 | 21° 5 | 29°32  | 1°47  | 3°28   | 14°36 | 19°58 | 24°40  | 22°14  | 17°38  | 9°23  | 9°37  | 7°14 | 18° 4 |
| F 7  | 9 5 22   | 17°21'18 | 3°34  | 1°4    | 2°54  | 4°11   | 14°51 | 20° 2 | 24°38  | 22°13  | 17°38  | 9°22  | 9°34  | 7°20 | 18° 8 |
| S 8  | 9 9 19   | 18°22'09 | 15°47 | 2°36   | 4° 0  | 4°54   | 15° 5 | 20° 7 | 24°37  | 22°13  | 17°39  | 9°19  | 9°31  | 7°27 | 18°11 |
| S 9  | 9 13 15  | 19°22'58 | 27°50 | 4° 8   | 5° 6  | 5°37   | 15°19 | 20°12 | 24°36  | 22°12  | 17°39  | 9°14  | 9°28  | 7°34 | 18°15 |
| M10  | 9 17 12  | 20°23'47 | 9°46  | 5°42   | 6°12  | 6°21   | 15°33 | 20°17 | 24°35  | 22°12  | 17°39  | 9° 5  | 9°24  | 7°40 | 18°18 |
| T 11 | 9 21 8   | 21°24'35 | 21°38 | 7°16   | 7°18  | 7° 4   | 15°48 | 20°22 | 24°34  | 22°11  | 17°39  | 8°54  | 9°21  | 7°47 | 18°21 |
| W12  | 9 25 5   | 22°25'21 | 3°29  | 8°52   | 8°23  | 7°47   | 16° 2 | 20°27 | 24°33  | 22°10  | 17°39  | 8°40  | 9°18  | 7°54 | 18°25 |
| T 13 | 9 29 2   | 23°26'06 | 15°21 | 10°28  | 9°28  | 8°30   | 16°16 | 20°32 | 24°32  | 22°10  | 17°40  | 8°26  | 9°15  | 8° 1 | 18°28 |
| F 14 | 9 32 58  | 24°26'50 | 27°16 | 12° 4  | 10°33 | 9°13   | 16°30 | 20°38 | 24°31  | 22° 9  | 17°40  | 8°12  | 9°12  | 8° 7 | 18°32 |
| S 15 | 9 36 55  | 25°27'33 | 9°14  | 13°42  | 11°38 | 9°57   | 16°45 | 20°43 | 24°30  | 22° 8  | 17°40  | 7°59  | 9° 9  | 8°14 | 18°35 |
| S 16 | 9 40 51  | 26°28'14 | 21°16 | 15°20  | 12°42 | 10°40  | 16°59 | 20°48 | 24°29  | 22° 8  | 17°40  | 7°48  | 9° 5  | 8°21 | 18°39 |
| M17  | 9 44 48  | 27°28'53 | 3°25  | 16°59  | 13°46 | 11°23  | 17°13 | 20°54 | 24°28  | 22° 7  | 17°41  | 7°40  | 9° 2  | 8°28 | 18°43 |
| T 18 | 9 48 44  | 28°29'31 | 15°43 | 18°40  | 14°50 | 12° 6  | 17°27 | 21° 0 | 24°27  | 22° 6  | 17°41  | 7°35  | 8°59  | 8°34 | 18°46 |
| W19  | 9 52 41  | 29°30'07 | 28°11 | 20°21  | 15°53 | 12°50  | 17°41 | 21° 5 | 24°27  | 22° 5  | 17°42  | 7°33  | 8°56  | 8°41 | 18°50 |
| T 20 | 9 56 37  | 0°30'42  | 10°54 | 22° 2  | 16°56 | 13°33  | 17°55 | 21°11 | 24°26  | 22° 4  | 17°42  | 7°D32 | 8°53  | 8°48 | 18°53 |
| F 21 | 10 0 34  | 1°31'14  | 23°56 | 23°45  | 17°58 | 14°17  | 18°10 | 21°17 | 24°25  | 22° 4  | 17°42  | 7°33  | 8°50  | 8°54 | 18°57 |
| S 22 | 10 4 30  | 2°31'46  | 7°11  | 25°29  | 19° 1 | 15° 0  | 18°24 | 21°22 | 24°25  | 22° 3  | 17°43  | 7°R33 | 8°46  | 9° 1 | 19° 1 |
| S 23 | 10 8 27  | 3°32'15  | 21° 6 | 27°13  | 20° 2 | 15°44  | 18°38 | 21°28 | 24°24  | 22° 2  | 17°43  | 7°32  | 8°43  | 9° 8 | 19° 4 |
| M24  | 10 12 24 | 4°32'42  | 5°19  | 28°59  | 21° 4 | 16°27  | 18°52 | 21°34 | 24°24  | 22° 1  | 17°44  | 7°28  | 8°40  | 9°15 | 19° 8 |
| T 25 | 10 16 20 | 5°33'08  | 19°57 | 0°45   | 22° 5 | 17°11  | 19° 6 | 21°40 | 24°24  | 22° 0  | 17°44  | 7°22  | 8°37  | 9°21 | 19°12 |
| W26  | 10 20 17 | 6°33'31  | 4°55  | 2°33   | 23° 5 | 17°54  | 19°20 | 21°46 | 24°23  | 21°59  | 17°45  | 7°14  | 8°34  | 9°28 | 19°15 |
| T 27 | 10 24 13 | 7°33'53  | 20° 5 | 4°21   | 24° 6 | 18°38  | 19°34 | 21°53 | 24°23  | 21°58  | 17°45  | 7° 5  | 8°30  | 9°35 | 19°19 |
| F 28 | 10 28 10 | 8°34'13  | 5°17  | 6°10   | 25° 5 | 19°21  | 19°48 | 21°59 | 24°23  | 21°57  | 17°46  | 6°55  | 8°27  | 9°42 | 19°23 |
| S 29 | 10 32 6  | 9°34'31  | 20°17 | 8°1    | 26°5  | 20°3 5 | 20°1  | 22°5  | 24°23  | 21°55  | 17°46  | 6°47  | 8°24  | 9°48 | 19°26 |

Delta T = 251.48 sec.

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SWISS EPHEMERIS for the year 2116

MARCH 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♂     | ♂     | ♂     | ♂     | ♂      | ♂     | ♂     | ♂     | ♂    | ♂     | ♂     |
|------|----------|----------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|------|-------|-------|
| S 1  | 10 36 3  | 10♋34'47 | 5♌ 6  | 9♍52  | 27♎ 3 | 20♏49 | 20♐15 | 22♑11 | 24♒22  | 21♓54 | 17♈47 | 6♉R41 | 8♊21 | 9♋55  | 19♌30 |
| M 2  | 10 39 59 | 11°35'02 | 19°26 | 11°44 | 28° 2 | 21°32 | 20°29 | 22°18 | 24♓22  | 21♈53 | 17°48 | 6♉R38 | 8°18 | 10° 2 | 19°34 |
| T 3  | 10 43 56 | 12°35'15 | 3♌18  | 13°37 | 28°59 | 22°16 | 20°43 | 22°24 | 24♓D22 | 21°52 | 17°48 | 6♉D36 | 8°15 | 10° 8 | 19°38 |
| W 4  | 10 47 53 | 13°35'27 | 16°41 | 15°31 | 29°57 | 23° 0 | 20°57 | 22°31 | 24°22  | 21°51 | 17°49 | 6°37  | 8°11 | 10°15 | 19°41 |
| T 5  | 10 51 49 | 14°35'37 | 29°38 | 17°25 | 0♉53  | 23°44 | 21°10 | 22°37 | 24°23  | 21°50 | 17°50 | 6°38  | 8° 8 | 10°22 | 19°45 |
| F 6  | 10 55 46 | 15°35'46 | 12♌12 | 19°20 | 1°50  | 24°27 | 21°24 | 22°44 | 24°23  | 21°48 | 17°50 | 6°R38 | 8° 5 | 10°29 | 19°49 |
| S 7  | 10 59 42 | 16°35'54 | 24°28 | 21°16 | 2°45  | 25°11 | 21°38 | 22°50 | 24°23  | 21°47 | 17°51 | 6°38  | 8° 2 | 10°35 | 19°53 |
| S 8  | 11 3 39  | 17°35'59 | 6♌31  | 23°12 | 3°40  | 25°55 | 21°51 | 22°57 | 24°23  | 21°46 | 17°52 | 6°36  | 7°59 | 10°42 | 19°56 |
| M 9  | 11 7 35  | 18°36'04 | 18°27 | 25° 9 | 4°35  | 26°39 | 22° 5 | 23° 4 | 24°24  | 21°45 | 17°53 | 6°32  | 7°55 | 10°49 | 20° 0 |
| T 10 | 11 11 32 | 19°36'06 | 0♌18  | 27° 6 | 5°28  | 27°23 | 22°18 | 23°10 | 24°24  | 21°43 | 17°53 | 6°26  | 7°52 | 10°55 | 20° 4 |
| W11  | 11 15 28 | 20°36'07 | 12° 9 | 29° 2 | 6°21  | 28° 7 | 22°32 | 23°17 | 24°24  | 21°42 | 17°54 | 6°18  | 7°49 | 11° 2 | 20° 8 |
| T 12 | 11 19 25 | 21°36'06 | 24° 2 | 0♎59  | 7°14  | 28°51 | 22°45 | 23°24 | 24°25  | 21°41 | 17°55 | 6° 9  | 7°46 | 11° 9 | 20°11 |
| F 13 | 11 23 22 | 22°36'03 | 6♋ 1  | 2°54  | 8° 6  | 29°35 | 22°59 | 23°31 | 24°25  | 21°39 | 17°56 | 6° 0  | 7°43 | 11°16 | 20°15 |
| S 14 | 11 27 18 | 23°35'58 | 18° 7 | 4°49  | 8°57  | 0♌19  | 23°12 | 23°38 | 24°26  | 21°38 | 17°57 | 5°52  | 7°40 | 11°22 | 20°19 |
| S 15 | 11 31 15 | 24°35'51 | 0♎20  | 6°43  | 9°47  | 1° 3  | 23°25 | 23°45 | 24°27  | 21°36 | 17°58 | 5°46  | 7°36 | 11°29 | 20°23 |
| M16  | 11 35 11 | 25°35'43 | 12°43 | 8°35  | 10°36 | 1°47  | 23°38 | 23°52 | 24°27  | 21°35 | 17°58 | 5°41  | 7°33 | 11°36 | 20°26 |
| T 17 | 11 39 8  | 26°35'32 | 25°15 | 10°24 | 11°25 | 2°31  | 23°51 | 23°59 | 24°28  | 21°34 | 17°59 | 5°39  | 7°30 | 11°43 | 20°30 |
| W18  | 11 43 4  | 27°35'19 | 7♌59  | 12°11 | 12°12 | 3°15  | 24° 5 | 24° 6 | 24°29  | 21°32 | 18° 0 | 5°D38 | 7°27 | 11°49 | 20°34 |
| T 19 | 11 47 1  | 28°35'05 | 20°55 | 13°56 | 12°59 | 3°59  | 24°18 | 24°13 | 24°30  | 21°31 | 18° 1 | 5°39  | 7°24 | 11°56 | 20°38 |
| F 20 | 11 50 57 | 29°34'48 | 4♓ 6  | 15°36 | 13°45 | 4°43  | 24°31 | 24°20 | 24°31  | 21°29 | 18° 2 | 5°41  | 7°21 | 12° 3 | 20°41 |
| S 21 | 11 54 54 | 0♎34'28  | 17°33 | 17°13 | 14°30 | 5°27  | 24°44 | 24°28 | 24°31  | 21°28 | 18° 3 | 5°42  | 7°17 | 12° 9 | 20°45 |
| S 22 | 11 58 51 | 1°34'07  | 1♌18  | 18°46 | 15°14 | 6°12  | 24°56 | 24°35 | 24°32  | 21°26 | 18° 4 | 5°R43 | 7°14 | 12°16 | 20°49 |
| M23  | 12 2 47  | 2°33'43  | 15°21 | 20°13 | 15°57 | 6°56  | 25° 9 | 24°42 | 24°34  | 21°25 | 18° 5 | 5°42  | 7°11 | 12°23 | 20°53 |
| T 24 | 12 6 44  | 3°33'17  | 29°42 | 21°35 | 16°39 | 7°40  | 25°22 | 24°49 | 24°35  | 21°23 | 18° 6 | 5°40  | 7° 8 | 12°30 | 20°56 |
| W25  | 12 10 40 | 4°32'48  | 14♌17 | 22°52 | 17°19 | 8°24  | 25°35 | 24°57 | 24°36  | 21°21 | 18° 7 | 5°36  | 7° 5 | 12°36 | 21° 0 |
| T 26 | 12 14 37 | 5°32'18  | 29° 2 | 24° 2 | 17°59 | 9° 8  | 25°47 | 25° 4 | 24°37  | 21°20 | 18° 8 | 5°32  | 7° 1 | 12°43 | 21° 4 |
| F 27 | 12 18 33 | 6°31'44  | 13♎50 | 25° 6 | 18°37 | 9°53  | 26° 0 | 25°11 | 24°38  | 21°18 | 18° 9 | 5°28  | 6°58 | 12°50 | 21° 7 |
| S 28 | 12 22 30 | 7°31'09  | 28°33 | 26° 4 | 19°14 | 10°37 | 26°12 | 25°19 | 24°40  | 21°17 | 18°10 | 5°24  | 6°55 | 12°56 | 21°11 |
| S 29 | 12 26 26 | 8°30'32  | 13♌ 5 | 26°54 | 19°50 | 11°21 | 26°25 | 25°26 | 24°41  | 21°15 | 18°11 | 5°21  | 6°52 | 13° 3 | 21°14 |
| M30  | 12 30 23 | 9°29'52  | 27°17 | 27°37 | 20°24 | 12° 5 | 26°37 | 25°33 | 24°42  | 21°14 | 18°12 | 5°20  | 6°49 | 13°10 | 21°18 |
| T 31 | 12 34 20 | 10♎29'11 | 11♌ 7 | 28♎13 | 20♏57 | 12♐50 | 26♑49 | 25♒41 | 24♓44  | 21♈12 | 18♉13 | 5°D20 | 6♊46 | 13♋17 | 21♌22 |

Delta T = 251.65 sec.

APRIL 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀      | ♂      | ♂     | ♂     | ♂     | ♂     | ♂      | ♂     | ♂     | ♂    | ♂     | ♂     |
|------|----------|----------|-------|--------|--------|-------|-------|-------|-------|--------|-------|-------|------|-------|-------|
| W 1  | 12 38 16 | 11♎28'28 | 24♌33 | 28♎42  | 21♏29  | 13♐34 | 27♑ 1 | 25♒48 | 24♓45 | 21°R10 | 18♈15 | 5♉21  | 6♊42 | 13♋23 | 21♌25 |
| T 2  | 12 42 13 | 12°27'43 | 7♌34  | 29° 3  | 21°59  | 14°18 | 27°13 | 25°56 | 24°47 | 21° 9  | 18°16 | 5°22  | 6°39 | 13°30 | 21°29 |
| F 3  | 12 46 9  | 13°26'56 | 20°14 | 29°17  | 22°27  | 15° 3 | 27°25 | 26° 3 | 24°48 | 21° 7  | 18°17 | 5°24  | 6°36 | 13°37 | 21°32 |
| S 4  | 12 50 6  | 14°26'08 | 2♌35  | 29°R23 | 22°54  | 15°47 | 27°37 | 26°11 | 24°50 | 21° 5  | 18°18 | 5°25  | 6°33 | 13°44 | 21°36 |
| S 5  | 12 54 2  | 15°25'17 | 14°42 | 29°23  | 23°19  | 16°32 | 27°49 | 26°18 | 24°52 | 21° 4  | 18°19 | 5°R26 | 6°30 | 13°50 | 21°39 |
| M 6  | 12 57 59 | 16°24'25 | 26°40 | 29°16  | 23°42  | 17°16 | 28° 1 | 26°26 | 24°54 | 21° 2  | 18°20 | 5°25  | 6°27 | 13°57 | 21°43 |
| T 7  | 13 1 55  | 17°23'31 | 8♌32  | 29° 2  | 24° 3  | 18° 0 | 28°13 | 26°33 | 24°55 | 21° 1  | 18°21 | 5°24  | 6°23 | 14° 4 | 21°46 |
| W 8  | 13 5 52  | 18°22'36 | 20°25 | 28°41  | 24°23  | 18°45 | 28°24 | 26°41 | 24°57 | 20°59  | 18°23 | 5°22  | 6°20 | 14°10 | 21°50 |
| T 9  | 13 9 49  | 19°21'38 | 2♋21  | 28°16  | 24°41  | 19°29 | 28°36 | 26°49 | 24°59 | 20°57  | 18°24 | 5°20  | 6°17 | 14°17 | 21°53 |
| F 10 | 13 13 45 | 20°20'39 | 14°24 | 27°45  | 24°56  | 20°14 | 28°47 | 26°56 | 25° 1 | 20°56  | 18°25 | 5°17  | 6°14 | 14°24 | 21°57 |
| S 11 | 13 17 42 | 21°19'37 | 26°37 | 27°10  | 25°10  | 20°58 | 28°59 | 27° 4 | 25° 3 | 20°54  | 18°26 | 5°15  | 6°11 | 14°31 | 22° 0 |
| S 12 | 13 21 38 | 22°18'34 | 9♎ 1  | 26°31  | 25°22  | 21°43 | 29°10 | 27°11 | 25° 5 | 20°52  | 18°27 | 5°13  | 6° 7 | 14°37 | 22° 4 |
| M13  | 13 25 35 | 23°17'29 | 21°39 | 25°49  | 25°31  | 22°27 | 29°21 | 27°19 | 25° 7 | 20°51  | 18°29 | 5°12  | 6° 4 | 14°44 | 22° 7 |
| T 14 | 13 29 31 | 24°16'22 | 4♌31  | 25° 6  | 25°38  | 23°12 | 29°32 | 27°27 | 25° 9 | 20°49  | 18°30 | 5°D12 | 6° 1 | 14°51 | 22°10 |
| W15  | 13 33 28 | 25°15'12 | 17°37 | 24°21  | 25°43  | 23°56 | 29°43 | 27°34 | 25°11 | 20°47  | 18°31 | 5°12  | 5°58 | 14°57 | 22°13 |
| T 16 | 13 37 24 | 26°14'01 | 0♓56  | 23°36  | 25°46  | 24°41 | 29°54 | 27°42 | 25°13 | 20°46  | 18°32 | 5°13  | 5°55 | 15° 4 | 22°17 |
| F 17 | 13 41 21 | 27°12'48 | 14°27 | 22°52  | 25°R46 | 25°25 | 0♋ 5  | 27°50 | 25°16 | 20°44  | 18°34 | 5°14  | 5°52 | 15°11 | 22°20 |
| S 18 | 13 45 18 | 28°11'33 | 28°11 | 22° 9  | 25°44  | 26°10 | 0°15  | 27°57 | 25°18 | 20°42  | 18°35 | 5°14  | 5°48 | 15°18 | 22°23 |
| S 19 | 13 49 14 | 29°10'15 | 12♌ 6 | 21°28  | 25°39  | 26°54 | 0°26  | 28° 5 | 25°20 | 20°41  | 18°36 | 5°15  | 5°45 | 15°24 | 22°26 |
| M20  | 13 53 11 | 0♉ 8'55  | 26°11 | 20°50  | 25°32  | 27°38 | 0°36  | 28°12 | 25°23 | 20°39  | 18°38 | 5°R15 | 5°42 | 15°31 | 22°29 |
| T 21 | 13 57 7  | 1° 7'33  | 10♌23 | 20°15  | 25°22  | 28°23 | 0°47  | 28°20 | 25°25 | 20°38  | 18°39 | 5°15  | 5°39 | 15°38 | 22°33 |
| W22  | 14 1 4   | 2° 6'08  | 24°42 | 19°44  | 25°10  | 29° 7 | 0°57  | 28°28 | 25°27 | 20°36  | 18°40 | 5°15  | 5°36 | 15°45 | 22°36 |
| T 23 | 14 5 0   | 3° 4'42  | 9♎ 2  | 19°17  | 24°55  | 29°52 | 1° 7  | 28°35 | 25°30 | 20°34  | 18°42 | 5°15  | 5°33 | 15°51 | 22°39 |
| F 24 | 14 8 57  | 4° 3'12  | 23°22 | 18°55  | 24°38  | 0♋36  | 1°17  | 28°43 | 25°32 | 20°33  | 18°43 | 5°14  | 5°29 | 15°58 | 22°42 |
| S 25 | 14 12 53 | 5° 1'41  | 7♌37  | 18°37  | 24°19  | 1°21  | 1°27  | 28°50 | 25°35 | 20°31  | 18°44 | 5°D14 | 5°26 | 16° 5 | 22°45 |
| S 26 | 14 16 50 | 6° 0'08  | 21°42 | 18°24  | 23°57  | 2° 5  | 1°37  | 28°58 | 25°37 | 20°30  | 18°45 | 5°14  | 5°23 | 16°11 | 22°48 |
| M27  | 14 20 47 | 6°58'33  | 5♌34  | 18°17  | 23°33  | 2°50  | 1°47  | 29° 6 | 25°40 | 20°28  | 18°47 | 5°R14 | 5°20 | 16°18 | 22°51 |
| T 28 | 14 24 43 | 7°56'56  | 19°10 | 18°D14 | 23° 7  | 3°34  | 1°56  | 29°13 | 25°43 | 20°26  | 18°48 | 5°14  | 5°17 | 16°25 | 22°54 |
| W29  | 14 28 40 | 8°55'18  | 2♌26  | 18°16  | 22°39  | 4°19  | 2° 6  | 29°21 | 25°45 | 20°25  | 18°49 | 5°14  | 5°13 | 16°32 | 22°56 |
| T 30 | 14 32 36 | 9♉53'37  | 15♌24 | 18♎23  | 22♏ 9  | 5♋ 3  | 2♋15  | 29♎28 | 25♓48 | 20♈23  | 18♉51 | 5♊14  | 5♋10 | 16♌38 | 22♍59 |

Delta T = 251.83 sec.

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SWISS EPHEMERIS for the year 2116

MAY 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♂      | ♂     | ♂    | ♂     | ♂     | ♂      | ♂     | ♂     | ♂    | ♂     | ♂     |
|------|----------|----------|-------|-------|--------|-------|------|-------|-------|--------|-------|-------|------|-------|-------|
| F 1  | 14 36 33 | 10♈51'56 | 28♌ 3 | 18♍35 | 21♎R37 | 5♏48  | 2♐24 | 29♑36 | 25♒51 | 20♓R22 | 18♈52 | 5♉R13 | 5♊ 7 | 16♋45 | 23♌ 2 |
| S 2  | 14 40 29 | 11°50'12 | 10♈36 | 18°52 | 21♎ 4  | 6°32  | 2°33 | 29°43 | 25°53 | 20♓20  | 18°54 | 5♊12  | 5° 4 | 16°52 | 23° 5 |
| S 3  | 14 44 26 | 12°48'27 | 22°35 | 19°13 | 20°30  | 7°17  | 2°42 | 29°51 | 25°56 | 20°19  | 18°55 | 5°12  | 5° 1 | 16°58 | 23° 7 |
| M 4  | 14 48 22 | 13°46'40 | 4♈35  | 19°39 | 19°54  | 8° 1  | 2°51 | 29°58 | 25°59 | 20°17  | 18°56 | 5°11  | 4°58 | 17° 5 | 23°10 |
| T 5  | 14 52 19 | 14°44'52 | 16°29 | 20° 9 | 19°18  | 8°45  | 3° 0 | 0♈ 6  | 26° 2 | 20°16  | 18°58 | 5°D11 | 4°54 | 17°12 | 23°13 |
| W 6  | 14 56 16 | 15°43'03 | 28°22 | 20°43 | 18°41  | 9°30  | 3° 8 | 0°13  | 26° 5 | 20°14  | 18°59 | 5°11  | 4°51 | 17°19 | 23°15 |
| T 7  | 15 0 12  | 16°41'12 | 10♈19 | 21°20 | 18° 3  | 10°14 | 3°17 | 0°21  | 26° 8 | 20°13  | 19° 0 | 5°12  | 4°48 | 17°25 | 23°18 |
| F 8  | 15 4 9   | 17°39'19 | 22°24 | 22° 2 | 17°25  | 10°59 | 3°25 | 0°28  | 26°11 | 20°12  | 19° 2 | 5°13  | 4°45 | 17°32 | 23°20 |
| S 9  | 15 8 5   | 18°37'25 | 4♍42  | 22°47 | 16°48  | 11°43 | 3°33 | 0°36  | 26°14 | 20°10  | 19° 3 | 5°14  | 4°42 | 17°39 | 23°23 |
| S 10 | 15 12 2  | 19°35'30 | 17°15 | 23°36 | 16°10  | 12°27 | 3°41 | 0°43  | 26°17 | 20° 9  | 19° 4 | 5°15  | 4°38 | 17°46 | 23°25 |
| M11  | 15 15 58 | 20°33'33 | 0♈ 6  | 24°28 | 15°33  | 13°12 | 3°49 | 0°50  | 26°20 | 20° 7  | 19° 6 | 5°R16 | 4°35 | 17°52 | 23°28 |
| T 12 | 15 19 55 | 21°31'34 | 13°15 | 25°24 | 14°57  | 13°56 | 3°57 | 0°58  | 26°23 | 20° 6  | 19° 7 | 5°16  | 4°32 | 17°59 | 23°30 |
| W13  | 15 23 51 | 22°29'34 | 26°44 | 26°22 | 14°22  | 14°40 | 4° 5 | 1° 5  | 26°26 | 20° 5  | 19° 8 | 5°15  | 4°29 | 18° 6 | 23°32 |
| T 14 | 15 27 48 | 23°27'33 | 10♈29 | 27°24 | 13°49  | 15°25 | 4°12 | 1°12  | 26°29 | 20° 3  | 19°10 | 5°13  | 4°26 | 18°12 | 23°35 |
| F 15 | 15 31 45 | 24°25'30 | 24°28 | 28°28 | 13°16  | 16° 9 | 4°19 | 1°20  | 26°32 | 20° 2  | 19°11 | 5°11  | 4°23 | 18°19 | 23°37 |
| S 16 | 15 35 41 | 25°23'25 | 8♈38  | 29°36 | 12°45  | 16°53 | 4°27 | 1°27  | 26°35 | 20° 1  | 19°12 | 5° 8  | 4°19 | 18°26 | 23°39 |
| S 17 | 15 39 38 | 26°21'19 | 22°53 | 0♈46  | 12°16  | 17°37 | 4°34 | 1°34  | 26°39 | 19°59  | 19°14 | 5° 5  | 4°16 | 18°33 | 23°41 |
| M18  | 15 43 34 | 27°19'11 | 7♈11  | 1°58  | 11°49  | 18°21 | 4°41 | 1°41  | 26°42 | 19°58  | 19°15 | 5° 4  | 4°13 | 18°39 | 23°43 |
| T 19 | 15 47 31 | 28°17'01 | 21°28 | 3°13  | 11°24  | 19° 6 | 4°47 | 1°48  | 26°45 | 19°57  | 19°17 | 5° 2  | 4°10 | 18°46 | 23°45 |
| W20  | 15 51 27 | 29°14'49 | 5♍40  | 4°31  | 11° 1  | 19°50 | 4°54 | 1°55  | 26°48 | 19°56  | 19°18 | 5°D 2 | 4° 7 | 18°53 | 23°47 |
| T 21 | 15 55 24 | 0♈12'36  | 19°45 | 5°52  | 10°40  | 20°34 | 5° 0 | 2° 2  | 26°52 | 19°55  | 19°19 | 5° 3  | 4° 4 | 18°59 | 23°49 |
| F 22 | 15 59 20 | 1°10'20  | 3♈43  | 7°14  | 10°22  | 21°18 | 5° 7 | 2° 9  | 26°55 | 19°53  | 19°21 | 5° 5  | 4° 0 | 19° 6 | 23°51 |
| S 23 | 16 3 17  | 2° 8'04  | 17°31 | 8°40  | 10° 5  | 22° 2 | 5°13 | 2°16  | 26°58 | 19°52  | 19°22 | 5° 6  | 3°57 | 19°13 | 23°53 |
| S 24 | 16 7 14  | 3° 5'45  | 1♍ 9  | 10° 7 | 9°52   | 22°46 | 5°19 | 2°23  | 27° 1 | 19°51  | 19°23 | 5°R 7 | 3°54 | 19°20 | 23°55 |
| M25  | 16 11 10 | 4° 3'25  | 14°35 | 11°37 | 9°40   | 23°30 | 5°24 | 2°30  | 27° 5 | 19°50  | 19°25 | 5° 7  | 3°51 | 19°26 | 23°57 |
| T 26 | 16 15 7  | 5° 1'04  | 27°49 | 13° 9 | 9°31   | 24°14 | 5°30 | 2°37  | 27° 8 | 19°49  | 19°26 | 5° 5  | 3°48 | 19°33 | 23°58 |
| W27  | 16 19 3  | 5°58'42  | 10♈19 | 14°44 | 9°25   | 24°58 | 5°36 | 2°44  | 27°12 | 19°48  | 19°27 | 5° 2  | 3°44 | 19°40 | 24° 0 |
| T 28 | 16 23 0  | 6°56'18  | 23°34 | 16°21 | 9°21   | 25°41 | 5°41 | 2°51  | 27°15 | 19°47  | 19°28 | 4°57  | 3°41 | 19°46 | 24° 2 |
| F 29 | 16 26 56 | 7°53'54  | 6♈ 6  | 18° 1 | 9°D19  | 26°25 | 5°46 | 2°57  | 27°18 | 19°46  | 19°30 | 4°52  | 3°38 | 19°53 | 24° 3 |
| S 30 | 16 30 53 | 8°51'28  | 18°25 | 19°42 | 9°19   | 27° 9 | 5°51 | 3° 4  | 27°22 | 19°45  | 19°31 | 4°46  | 3°35 | 20° 0 | 24° 5 |
| S 31 | 16 34 49 | 9♈49'01  | 0♈32  | 21♈26 | 9♈22   | 27♈53 | 5♈56 | 3♈11  | 27♈25 | 19♈44  | 19♈32 | 4♈41  | 3♈32 | 20♈ 7 | 24♈ 6 |

Delta T = 252.01 sec.

JUNE 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♂     | ♂     | ♂     | ♂    | ♂     | ♂      | ♂     | ♂     | ♂    | ♂     | ♂      |
|------|----------|----------|-------|-------|-------|-------|-------|------|-------|--------|-------|-------|------|-------|--------|
| M 1  | 16 38 46 | 10♈46'34 | 12♈31 | 23♈13 | 9♈28  | 28♈36 | 6♈ 0  | 3♈17 | 27♈29 | 19♈R43 | 19♈34 | 4♈R36 | 3♈29 | 20♈13 | 24♈ 8  |
| T 2  | 16 42 43 | 11°44'05 | 24°25 | 25° 1 | 9°35  | 29°20 | 6° 5  | 3°24 | 27°32 | 19♈42  | 19°35 | 4♈33  | 3°25 | 20°20 | 24° 9  |
| W 3  | 16 46 39 | 12°41'36 | 6♈17  | 26°52 | 9°45  | 0♍ 4  | 6° 9  | 3°31 | 27°36 | 19°42  | 19°36 | 4°31  | 3°22 | 20°27 | 24°10  |
| T 4  | 16 50 36 | 13°39'06 | 18°14 | 28°45 | 9°56  | 0°47  | 6°13  | 3°37 | 27°39 | 19°41  | 19°37 | 4°D31 | 3°19 | 20°34 | 24°12  |
| F 5  | 16 54 32 | 14°36'35 | 0♍18  | 0♈41  | 10°10 | 1°31  | 6°17  | 3°43 | 27°43 | 19°40  | 19°39 | 4°32  | 3°16 | 20°40 | 24°13  |
| S 6  | 16 58 29 | 15°34'03 | 12°36 | 2°38  | 10°26 | 2°14  | 6°21  | 3°50 | 27°46 | 19°39  | 19°40 | 4°34  | 3°13 | 20°47 | 24°14  |
| S 7  | 17 2 25  | 16°31'30 | 25°12 | 4°38  | 10°44 | 2°58  | 6°25  | 3°56 | 27°50 | 19°38  | 19°41 | 4°35  | 3°10 | 20°54 | 24°15  |
| M 8  | 17 6 22  | 17°28'57 | 8♈10  | 6°40  | 11° 3 | 3°41  | 6°28  | 4° 2 | 27°53 | 19°38  | 19°42 | 4°R35 | 3° 6 | 21° 0 | 24°16  |
| T 9  | 17 10 18 | 18°26'24 | 21°31 | 8°43  | 11°24 | 4°24  | 6°31  | 4° 9 | 27°57 | 19°37  | 19°44 | 4°34  | 3° 3 | 21° 7 | 24°17  |
| W10  | 17 14 15 | 19°23'49 | 5♈16  | 10°49 | 11°48 | 5° 8  | 6°34  | 4°15 | 28° 0 | 19°36  | 19°45 | 4°31  | 3° 0 | 21°14 | 24°18  |
| T 11 | 17 18 12 | 20°21'14 | 19°23 | 12°56 | 12°12 | 5°51  | 6°37  | 4°21 | 28° 4 | 19°36  | 19°46 | 4°26  | 2°57 | 21°21 | 24°19  |
| F 12 | 17 22 8  | 21°18'38 | 3♈49  | 15° 4 | 12°39 | 6°34  | 6°40  | 4°27 | 28° 7 | 19°35  | 19°47 | 4°19  | 2°54 | 21°27 | 24°20  |
| S 13 | 17 26 5  | 22°16'02 | 18°26 | 17°14 | 13° 6 | 7°17  | 6°42  | 4°33 | 28°11 | 19°35  | 19°48 | 4°12  | 2°50 | 21°34 | 24°21  |
| S 14 | 17 30 1  | 23°13'24 | 3♈ 8  | 19°24 | 13°36 | 8° 0  | 6°45  | 4°39 | 28°14 | 19°34  | 19°50 | 4° 5  | 2°47 | 21°41 | 24°21  |
| M15  | 17 33 58 | 24°10'45 | 17°47 | 21°36 | 14° 7 | 8°43  | 6°47  | 4°45 | 28°18 | 19°34  | 19°51 | 3°59  | 2°44 | 21°47 | 24°22  |
| T 16 | 17 37 54 | 25° 8'06 | 2♍17  | 23°48 | 14°39 | 9°26  | 6°49  | 4°50 | 28°22 | 19°33  | 19°52 | 3°55  | 2°41 | 21°54 | 24°23  |
| W17  | 17 41 51 | 26° 5'25 | 16°34 | 26° 0 | 15°12 | 10° 8 | 6°50  | 4°56 | 28°25 | 19°33  | 19°53 | 3°53  | 2°38 | 22° 1 | 24°23  |
| T 18 | 17 45 48 | 27° 2'44 | 0♈36  | 28°11 | 15°47 | 10°51 | 6°52  | 5° 2 | 28°29 | 19°32  | 19°54 | 3°D52 | 2°35 | 22° 8 | 24°24  |
| F 19 | 17 49 44 | 28° 0'01 | 14°22 | 0♈23  | 16°23 | 11°34 | 6°53  | 5° 8 | 28°32 | 19°32  | 19°55 | 3°53  | 2°31 | 22°14 | 24°24  |
| S 20 | 17 53 41 | 28°57'18 | 27°53 | 2°34  | 17° 0 | 12°16 | 6°55  | 5°13 | 28°36 | 19°31  | 19°56 | 3°R54 | 2°28 | 22°21 | 24°25  |
| S 21 | 17 57 37 | 29°54'34 | 11♍ 9 | 4°44  | 17°39 | 12°59 | 6°55  | 5°19 | 28°40 | 19°31  | 19°57 | 3°54  | 2°25 | 22°28 | 24°25  |
| M22  | 18 1 34  | 0♈51'49  | 24°13 | 6°53  | 18°18 | 13°41 | 6°56  | 5°24 | 28°43 | 19°31  | 19°59 | 3°52  | 2°22 | 22°34 | 24°25  |
| T 23 | 18 5 30  | 1°49'04  | 7♈ 5  | 9° 1  | 18°59 | 14°23 | 6°57  | 5°29 | 28°47 | 19°31  | 20° 0 | 3°48  | 2°19 | 22°41 | 24°26  |
| W24  | 18 9 27  | 2°46'18  | 19°46 | 11° 7 | 19°40 | 15° 5 | 6°57  | 5°35 | 28°50 | 19°30  | 20° 1 | 3°41  | 2°16 | 22°48 | 24°26  |
| T 25 | 18 13 23 | 3°43'32  | 2♈16  | 13°11 | 20°23 | 15°47 | 6°57  | 5°40 | 28°54 | 19°30  | 20° 2 | 3°32  | 2°12 | 22°55 | 24°26  |
| F 26 | 18 17 20 | 4°40'45  | 14°36 | 15°14 | 21° 6 | 16°30 | 6°R57 | 5°45 | 28°57 | 19°30  | 20° 3 | 3°21  | 2° 9 | 23° 1 | 24°26  |
| S 27 | 18 21 17 | 5°37'58  | 26°47 | 17°15 | 21°50 | 17°11 | 6°57  | 5°50 | 29° 1 | 19°30  | 20° 4 | 3°10  | 2° 6 | 23° 8 | 24°R26 |
| S 28 | 18 25 13 | 6°35'11  | 8♈49  | 19°14 | 22°36 | 17°53 | 6°57  | 5°55 | 29° 5 | 19°30  | 20° 5 | 2°59  | 2° 3 | 23°15 | 24°26  |
| M29  | 18 29 10 | 7°32'23  | 20°45 | 21°11 | 23°22 | 18°35 | 6°56  | 6° 0 | 29° 8 | 19°30  | 20° 6 | 2°50  | 2° 0 | 23°21 | 24°26  |
| T 30 | 18 33 6  | 8♈29'36  | 2♈37  | 23♈ 7 | 24♈ 9 | 19♈17 | 6♈56  | 6♈ 5 | 29♈12 | 19♈30  | 20♈ 7 | 2♈42  | 1♈56 | 23♈28 | 24♈26  |

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SWISS EPHEMERIS for the year 2116

JULY 2116

00:00 UT

| Day  | Sid.t    | ☉                      | ☽                   | ♀                   | ♂                   | ♃                   | ♄                  | ♅                  | ♆                   | ♇                   | ♁                   | ♂                   | ♁                  | ♃                   | ♄                   |
|------|----------|------------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| W 1  | 18 37 3  | 9 <sup>h</sup> 26'48"  | 14 <sup>h</sup> 28' | 25 <sup>h</sup> 00' | 24 <sup>h</sup> 56' | 19 <sup>h</sup> 58' | 6 <sup>h</sup> R55 | 6 <sup>h</sup> 10' | 29 <sup>h</sup> 15' | 19 <sup>h</sup> D30 | 20 <sup>h</sup> 8'  | 2 <sup>h</sup> R37  | 1 <sup>h</sup> 53' | 23 <sup>h</sup> 35' | 24 <sup>h</sup> R26 |
| T 2  | 18 40 59 | 10 <sup>h</sup> 24'01" | 26 <sup>h</sup> 22' | 26 <sup>h</sup> 51' | 25 <sup>h</sup> 45' | 20 <sup>h</sup> 40' | 6 <sup>h</sup> 54' | 6 <sup>h</sup> 14' | 29 <sup>h</sup> 19' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 9'  | 2 <sup>h</sup> R34  | 1 <sup>h</sup> 50' | 23 <sup>h</sup> 42' | 24 <sup>h</sup> R25 |
| F 3  | 18 44 56 | 11 <sup>h</sup> 21'13" | 8 <sup>h</sup> 25'  | 28 <sup>h</sup> 39' | 26 <sup>h</sup> 34' | 21 <sup>h</sup> 21' | 6 <sup>h</sup> 52' | 6 <sup>h</sup> 19' | 29 <sup>h</sup> 22' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 9'  | 2 <sup>h</sup> D33  | 1 <sup>h</sup> 47' | 23 <sup>h</sup> 48' | 24 <sup>h</sup> 25' |
| S 4  | 18 48 52 | 12 <sup>h</sup> 18'26" | 20 <sup>h</sup> 41' | 0 <sup>h</sup> 26'  | 27 <sup>h</sup> 24' | 22 <sup>h</sup> 3'  | 6 <sup>h</sup> 51' | 6 <sup>h</sup> 24' | 29 <sup>h</sup> 26' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 10' | 2 <sup>h</sup> 33'  | 1 <sup>h</sup> 44' | 23 <sup>h</sup> 55' | 24 <sup>h</sup> 25' |
| S 5  | 18 52 49 | 13 <sup>h</sup> 15'39" | 3 <sup>h</sup> 15'  | 2 <sup>h</sup> 11'  | 28 <sup>h</sup> 14' | 22 <sup>h</sup> 44' | 6 <sup>h</sup> 49' | 6 <sup>h</sup> 28' | 29 <sup>h</sup> 29' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 11' | 2 <sup>h</sup> R33  | 1 <sup>h</sup> 41' | 24 <sup>h</sup> 2'  | 24 <sup>h</sup> 24' |
| M 6  | 18 56 46 | 14 <sup>h</sup> 12'52" | 16 <sup>h</sup> 12' | 3 <sup>h</sup> 53'  | 29 <sup>h</sup> 6'  | 23 <sup>h</sup> 25' | 6 <sup>h</sup> 47' | 6 <sup>h</sup> 32' | 29 <sup>h</sup> 33' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 12' | 2 <sup>h</sup> 32'  | 1 <sup>h</sup> 37' | 24 <sup>h</sup> 8'  | 24 <sup>h</sup> 24' |
| T 7  | 19 0 42  | 15 <sup>h</sup> 10'05" | 29 <sup>h</sup> 36' | 5 <sup>h</sup> 34'  | 29 <sup>h</sup> 57' | 24 <sup>h</sup> 6'  | 6 <sup>h</sup> 45' | 6 <sup>h</sup> 37' | 29 <sup>h</sup> 36' | 19 <sup>h</sup> 30' | 20 <sup>h</sup> 13' | 2 <sup>h</sup> 30'  | 1 <sup>h</sup> 34' | 24 <sup>h</sup> 15' | 24 <sup>h</sup> 23' |
| W 8  | 19 4 39  | 16 <sup>h</sup> 7'19"  | 13 <sup>h</sup> 28' | 7 <sup>h</sup> 12'  | 0 <sup>h</sup> 50'  | 24 <sup>h</sup> 47' | 6 <sup>h</sup> 43' | 6 <sup>h</sup> 41' | 29 <sup>h</sup> 40' | 19 <sup>h</sup> 31' | 20 <sup>h</sup> 14' | 2 <sup>h</sup> 25'  | 1 <sup>h</sup> 31' | 24 <sup>h</sup> 22' | 24 <sup>h</sup> 23' |
| T 9  | 19 8 35  | 17 <sup>h</sup> 4'33"  | 27 <sup>h</sup> 48' | 8 <sup>h</sup> 48'  | 1 <sup>h</sup> 43'  | 25 <sup>h</sup> 27' | 6 <sup>h</sup> 40' | 6 <sup>h</sup> 45' | 29 <sup>h</sup> 43' | 19 <sup>h</sup> 31' | 20 <sup>h</sup> 15' | 2 <sup>h</sup> 17'  | 1 <sup>h</sup> 28' | 24 <sup>h</sup> 29' | 24 <sup>h</sup> 22' |
| F 10 | 19 12 32 | 18 <sup>h</sup> 1'47"  | 12 <sup>h</sup> 30' | 10 <sup>h</sup> 22' | 2 <sup>h</sup> 36'  | 26 <sup>h</sup> 8'  | 6 <sup>h</sup> 38' | 6 <sup>h</sup> 49' | 29 <sup>h</sup> 47' | 19 <sup>h</sup> 31' | 20 <sup>h</sup> 15' | 2 <sup>h</sup> 8'   | 1 <sup>h</sup> 25' | 24 <sup>h</sup> 35' | 24 <sup>h</sup> 22' |
| S 11 | 19 16 28 | 18 <sup>h</sup> 59'02" | 27 <sup>h</sup> 29' | 11 <sup>h</sup> 54' | 3 <sup>h</sup> 31'  | 26 <sup>h</sup> 48' | 6 <sup>h</sup> 35' | 6 <sup>h</sup> 53' | 29 <sup>h</sup> 50' | 19 <sup>h</sup> 31' | 20 <sup>h</sup> 16' | 1 <sup>h</sup> 57'  | 1 <sup>h</sup> 22' | 24 <sup>h</sup> 42' | 24 <sup>h</sup> 21' |
| S 12 | 19 20 25 | 19 <sup>h</sup> 56'16" | 12 <sup>h</sup> 23' | 13 <sup>h</sup> 24' | 4 <sup>h</sup> 25'  | 27 <sup>h</sup> 29' | 6 <sup>h</sup> 32' | 6 <sup>h</sup> 57' | 29 <sup>h</sup> 53' | 19 <sup>h</sup> 32' | 20 <sup>h</sup> 17' | 1 <sup>h</sup> 47'  | 1 <sup>h</sup> 18' | 24 <sup>h</sup> 49' | 24 <sup>h</sup> 20' |
| M13  | 19 24 21 | 20 <sup>h</sup> 53'31" | 27 <sup>h</sup> 34' | 14 <sup>h</sup> 52' | 5 <sup>h</sup> 20'  | 28 <sup>h</sup> 9'  | 6 <sup>h</sup> 28' | 7 <sup>h</sup> 1'  | 29 <sup>h</sup> 57' | 19 <sup>h</sup> 32' | 20 <sup>h</sup> 18' | 1 <sup>h</sup> 38'  | 1 <sup>h</sup> 15' | 24 <sup>h</sup> 55' | 24 <sup>h</sup> 19' |
| T 14 | 19 28 18 | 21 <sup>h</sup> 50'45" | 12 <sup>h</sup> 23' | 16 <sup>h</sup> 17' | 6 <sup>h</sup> 16'  | 28 <sup>h</sup> 49' | 6 <sup>h</sup> 25' | 7 <sup>h</sup> 5'  | 0 <sup>h</sup> 0'   | 19 <sup>h</sup> 33' | 20 <sup>h</sup> 19' | 1 <sup>h</sup> 31'  | 1 <sup>h</sup> 12' | 25 <sup>h</sup> 2'  | 24 <sup>h</sup> 18' |
| W15  | 19 32 15 | 22 <sup>h</sup> 47'59" | 26 <sup>h</sup> 53' | 17 <sup>h</sup> 40' | 7 <sup>h</sup> 12'  | 29 <sup>h</sup> 29' | 6 <sup>h</sup> 21' | 7 <sup>h</sup> 8'  | 0 <sup>h</sup> 4'   | 19 <sup>h</sup> 33' | 20 <sup>h</sup> 19' | 1 <sup>h</sup> 27'  | 1 <sup>h</sup> 9'  | 25 <sup>h</sup> 9'  | 24 <sup>h</sup> 17' |
| T 16 | 19 36 11 | 23 <sup>h</sup> 45'13" | 11 <sup>h</sup> 1'  | 19 <sup>h</sup> 1'  | 8 <sup>h</sup> 8'   | 0 <sup>h</sup> 8'   | 6 <sup>h</sup> 18' | 7 <sup>h</sup> 12' | 0 <sup>h</sup> 7'   | 19 <sup>h</sup> 33' | 20 <sup>h</sup> 20' | 1 <sup>h</sup> 25'  | 1 <sup>h</sup> 6'  | 25 <sup>h</sup> 16' | 24 <sup>h</sup> 16' |
| F 17 | 19 40 8  | 24 <sup>h</sup> 42'27" | 24 <sup>h</sup> 46' | 20 <sup>h</sup> 20' | 9 <sup>h</sup> 5'   | 0 <sup>h</sup> 48'  | 6 <sup>h</sup> 14' | 7 <sup>h</sup> 15' | 0 <sup>h</sup> 10'  | 19 <sup>h</sup> 34' | 20 <sup>h</sup> 21' | 1 <sup>h</sup> 25'  | 1 <sup>h</sup> 2'  | 25 <sup>h</sup> 22' | 24 <sup>h</sup> 15' |
| S 18 | 19 44 4  | 25 <sup>h</sup> 39'42" | 8 <sup>h</sup> 10'  | 21 <sup>h</sup> 36' | 10 <sup>h</sup> 3'  | 1 <sup>h</sup> 28'  | 6 <sup>h</sup> 10' | 7 <sup>h</sup> 19' | 0 <sup>h</sup> 14'  | 19 <sup>h</sup> 35' | 20 <sup>h</sup> 21' | 1 <sup>h</sup> 25'  | 0 <sup>h</sup> 59' | 25 <sup>h</sup> 29' | 24 <sup>h</sup> 14' |
| S 19 | 19 48 1  | 26 <sup>h</sup> 36'56" | 21 <sup>h</sup> 15' | 22 <sup>h</sup> 49' | 11 <sup>h</sup> 0'  | 2 <sup>h</sup> 7'   | 6 <sup>h</sup> 5'  | 7 <sup>h</sup> 22' | 0 <sup>h</sup> 17'  | 19 <sup>h</sup> 35' | 20 <sup>h</sup> 22' | 1 <sup>h</sup> 24'  | 0 <sup>h</sup> 56' | 25 <sup>h</sup> 36' | 24 <sup>h</sup> 13' |
| M20  | 19 51 57 | 27 <sup>h</sup> 34'11" | 4 <sup>h</sup> 5'   | 24 <sup>h</sup> 1'  | 11 <sup>h</sup> 59' | 2 <sup>h</sup> 46'  | 6 <sup>h</sup> 1'  | 7 <sup>h</sup> 25' | 0 <sup>h</sup> 20'  | 19 <sup>h</sup> 36' | 20 <sup>h</sup> 23' | 1 <sup>h</sup> 21'  | 0 <sup>h</sup> 53' | 25 <sup>h</sup> 42' | 24 <sup>h</sup> 12' |
| T 21 | 19 55 54 | 28 <sup>h</sup> 31'26" | 16 <sup>h</sup> 41' | 25 <sup>h</sup> 10' | 12 <sup>h</sup> 57' | 3 <sup>h</sup> 25'  | 5 <sup>h</sup> 56' | 7 <sup>h</sup> 28' | 0 <sup>h</sup> 24'  | 19 <sup>h</sup> 36' | 20 <sup>h</sup> 23' | 1 <sup>h</sup> 15'  | 0 <sup>h</sup> 50' | 25 <sup>h</sup> 49' | 24 <sup>h</sup> 11' |
| W22  | 19 59 50 | 29 <sup>h</sup> 28'41" | 29 <sup>h</sup> 6'  | 26 <sup>h</sup> 16' | 13 <sup>h</sup> 56' | 4 <sup>h</sup> 4'   | 5 <sup>h</sup> 52' | 7 <sup>h</sup> 31' | 0 <sup>h</sup> 27'  | 19 <sup>h</sup> 37' | 20 <sup>h</sup> 24' | 1 <sup>h</sup> 7'   | 0 <sup>h</sup> 47' | 25 <sup>h</sup> 56' | 24 <sup>h</sup> 9'  |
| T 23 | 20 3 47  | 0 <sup>h</sup> 25'56"  | 11 <sup>h</sup> 32' | 27 <sup>h</sup> 19' | 14 <sup>h</sup> 55' | 4 <sup>h</sup> 43'  | 5 <sup>h</sup> 47' | 7 <sup>h</sup> 34' | 0 <sup>h</sup> 30'  | 19 <sup>h</sup> 38' | 20 <sup>h</sup> 24' | 0 <sup>h</sup> 56'  | 0 <sup>h</sup> 43' | 26 <sup>h</sup> 3'  | 24 <sup>h</sup> 8'  |
| F 24 | 20 7 44  | 1 <sup>h</sup> 23'12"  | 23 <sup>h</sup> 31' | 28 <sup>h</sup> 20' | 15 <sup>h</sup> 55' | 5 <sup>h</sup> 21'  | 5 <sup>h</sup> 41' | 7 <sup>h</sup> 37' | 0 <sup>h</sup> 33'  | 19 <sup>h</sup> 38' | 20 <sup>h</sup> 25' | 0 <sup>h</sup> 43'  | 0 <sup>h</sup> 40' | 26 <sup>h</sup> 9'  | 24 <sup>h</sup> 7'  |
| S 25 | 20 11 40 | 2 <sup>h</sup> 20'29"  | 5 <sup>h</sup> 33'  | 29 <sup>h</sup> 17' | 16 <sup>h</sup> 55' | 6 <sup>h</sup> 0'   | 5 <sup>h</sup> 36' | 7 <sup>h</sup> 40' | 0 <sup>h</sup> 36'  | 19 <sup>h</sup> 39' | 20 <sup>h</sup> 26' | 0 <sup>h</sup> 29'  | 0 <sup>h</sup> 37' | 26 <sup>h</sup> 16' | 24 <sup>h</sup> 5'  |
| S 26 | 20 15 37 | 3 <sup>h</sup> 17'45"  | 17 <sup>h</sup> 29' | 0 <sup>h</sup> 12'  | 17 <sup>h</sup> 55' | 6 <sup>h</sup> 38'  | 5 <sup>h</sup> 31' | 7 <sup>h</sup> 42' | 0 <sup>h</sup> 40'  | 19 <sup>h</sup> 40' | 20 <sup>h</sup> 26' | 0 <sup>h</sup> 16'  | 0 <sup>h</sup> 34' | 26 <sup>h</sup> 23' | 24 <sup>h</sup> 4'  |
| M27  | 20 19 33 | 4 <sup>h</sup> 15'03"  | 29 <sup>h</sup> 22' | 1 <sup>h</sup> 3'   | 18 <sup>h</sup> 56' | 7 <sup>h</sup> 16'  | 5 <sup>h</sup> 25' | 7 <sup>h</sup> 45' | 0 <sup>h</sup> 43'  | 19 <sup>h</sup> 41' | 20 <sup>h</sup> 27' | 0 <sup>h</sup> 4'   | 0 <sup>h</sup> 31' | 26 <sup>h</sup> 29' | 24 <sup>h</sup> 2'  |
| T 28 | 20 23 30 | 5 <sup>h</sup> 12'21"  | 11 <sup>h</sup> 22' | 1 <sup>h</sup> 52'  | 19 <sup>h</sup> 57' | 7 <sup>h</sup> 54'  | 5 <sup>h</sup> 20' | 7 <sup>h</sup> 47' | 0 <sup>h</sup> 46'  | 19 <sup>h</sup> 42' | 20 <sup>h</sup> 27' | 29 <sup>h</sup> 54' | 0 <sup>h</sup> 28' | 26 <sup>h</sup> 36' | 24 <sup>h</sup> 1'  |
| W29  | 20 27 26 | 6 <sup>h</sup> 9'40"   | 23 <sup>h</sup> 3'  | 2 <sup>h</sup> 36'  | 20 <sup>h</sup> 58' | 8 <sup>h</sup> 32'  | 5 <sup>h</sup> 14' | 7 <sup>h</sup> 49' | 0 <sup>h</sup> 49'  | 19 <sup>h</sup> 43' | 20 <sup>h</sup> 28' | 29 <sup>h</sup> 47' | 0 <sup>h</sup> 24' | 26 <sup>h</sup> 43' | 23 <sup>h</sup> 59' |
| T 30 | 20 31 23 | 7 <sup>h</sup> 7'00"   | 4 <sup>h</sup> 57'  | 3 <sup>h</sup> 18'  | 22 <sup>h</sup> 0'  | 9 <sup>h</sup> 9'   | 5 <sup>h</sup> 8'  | 7 <sup>h</sup> 52' | 0 <sup>h</sup> 52'  | 19 <sup>h</sup> 43' | 20 <sup>h</sup> 28' | 29 <sup>h</sup> 43' | 0 <sup>h</sup> 21' | 26 <sup>h</sup> 49' | 23 <sup>h</sup> 58' |
| F 31 | 20 35 19 | 8 <sup>h</sup> 2'42"   | 16 <sup>h</sup> 59' | 3 <sup>h</sup> 55'  | 23 <sup>h</sup> 2'  | 9 <sup>h</sup> 47'  | 5 <sup>h</sup> 2'  | 7 <sup>h</sup> 54' | 0 <sup>h</sup> 55'  | 19 <sup>h</sup> 44' | 20 <sup>h</sup> 28' | 29 <sup>h</sup> 41' | 0 <sup>h</sup> 18' | 26 <sup>h</sup> 56' | 23 <sup>h</sup> 56' |

Delta T = 252.37 sec.

AUGUST 2116

00:00 UT

| Day  | Sid.t    | ☉                      | ☽                   | ♀                  | ♂                   | ♃                   | ♄                  | ♅                  | ♆                  | ♇                   | ♁                   | ♂                   | ♁                   | ♃                   | ♄                   |
|------|----------|------------------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| S 1  | 20 39 16 | 9 <sup>h</sup> 1'43"   | 29 <sup>h</sup> 13' | 4 <sup>h</sup> 28' | 24 <sup>h</sup> 2'  | 10 <sup>h</sup> 24' | 4 <sup>h</sup> R56 | 7 <sup>h</sup> 56' | 0 <sup>h</sup> 58' | 19 <sup>h</sup> 45' | 20 <sup>h</sup> 29' | 29 <sup>h</sup> D40 | 0 <sup>h</sup> 15'  | 27 <sup>h</sup> 3'  | 23 <sup>h</sup> R54 |
| S 2  | 20 43 13 | 9 <sup>h</sup> 59'06"  | 11 <sup>h</sup> 45' | 4 <sup>h</sup> 58' | 25 <sup>h</sup> 6'  | 11 <sup>h</sup> 1'  | 4 <sup>h</sup> 49' | 7 <sup>h</sup> 58' | 1 <sup>h</sup> 1'  | 19 <sup>h</sup> 46' | 20 <sup>h</sup> 29' | 29 <sup>h</sup> R40 | 0 <sup>h</sup> 12'  | 27 <sup>h</sup> 10' | 23 <sup>h</sup> R52 |
| M 3  | 20 47 9  | 10 <sup>h</sup> 56'31" | 24 <sup>h</sup> 39' | 5 <sup>h</sup> 23' | 26 <sup>h</sup> 9'  | 11 <sup>h</sup> 38' | 4 <sup>h</sup> 43' | 8 <sup>h</sup> 0'  | 1 <sup>h</sup> 4'  | 19 <sup>h</sup> 47' | 20 <sup>h</sup> 30' | 29 <sup>h</sup> 40' | 0 <sup>h</sup> 8'   | 27 <sup>h</sup> 16' | 23 <sup>h</sup> 50' |
| T 4  | 20 51 6  | 11 <sup>h</sup> 53'56" | 7 <sup>h</sup> 59'  | 5 <sup>h</sup> 44' | 27 <sup>h</sup> 12' | 12 <sup>h</sup> 14' | 4 <sup>h</sup> 36' | 8 <sup>h</sup> 1'  | 1 <sup>h</sup> 7'  | 19 <sup>h</sup> 48' | 20 <sup>h</sup> 30' | 29 <sup>h</sup> 37' | 0 <sup>h</sup> 5'   | 27 <sup>h</sup> 23' | 23 <sup>h</sup> 49' |
| W 5  | 20 55 2  | 12 <sup>h</sup> 51'23" | 21 <sup>h</sup> 48' | 5 <sup>h</sup> 59' | 28 <sup>h</sup> 16' | 12 <sup>h</sup> 51' | 4 <sup>h</sup> 29' | 8 <sup>h</sup> 3'  | 1 <sup>h</sup> 10' | 19 <sup>h</sup> 50' | 20 <sup>h</sup> 30' | 29 <sup>h</sup> 33' | 0 <sup>h</sup> 2'   | 27 <sup>h</sup> 30' | 23 <sup>h</sup> 47' |
| T 6  | 20 58 59 | 13 <sup>h</sup> 48'51" | 6 <sup>h</sup> 57'  | 6 <sup>h</sup> 11' | 29 <sup>h</sup> 19' | 13 <sup>h</sup> 27' | 4 <sup>h</sup> 23' | 8 <sup>h</sup> 5'  | 1 <sup>h</sup> 13' | 19 <sup>h</sup> 51' | 20 <sup>h</sup> 30' | 29 <sup>h</sup> 26' | 29 <sup>h</sup> 59' | 27 <sup>h</sup> 36' | 23 <sup>h</sup> 45' |
| F 7  | 21 2 55  | 14 <sup>h</sup> 46'19" | 20 <sup>h</sup> 53' | 6 <sup>h</sup> 17' | 0 <sup>h</sup> 23'  | 14 <sup>h</sup> 3'  | 4 <sup>h</sup> 16' | 8 <sup>h</sup> 6'  | 1 <sup>h</sup> 15' | 19 <sup>h</sup> 52' | 20 <sup>h</sup> 31' | 29 <sup>h</sup> 17' | 29 <sup>h</sup> 56' | 27 <sup>h</sup> 43' | 23 <sup>h</sup> 43' |
| S 8  | 21 6 52  | 15 <sup>h</sup> 43'50" | 5 <sup>h</sup> 58'  | 6 <sup>h</sup> R18 | 1 <sup>h</sup> 27'  | 14 <sup>h</sup> 38' | 4 <sup>h</sup> 9'  | 8 <sup>h</sup> 7'  | 1 <sup>h</sup> 18' | 19 <sup>h</sup> 53' | 20 <sup>h</sup> 31' | 29 <sup>h</sup> 7'  | 29 <sup>h</sup> 53' | 27 <sup>h</sup> 50' | 23 <sup>h</sup> 41' |
| S 9  | 21 10 49 | 16 <sup>h</sup> 41'21" | 21 <sup>h</sup> 15' | 6 <sup>h</sup> 13' | 2 <sup>h</sup> 31'  | 15 <sup>h</sup> 14' | 4 <sup>h</sup> 2'  | 8 <sup>h</sup> 9'  | 1 <sup>h</sup> 21' | 19 <sup>h</sup> 54' | 20 <sup>h</sup> 31' | 28 <sup>h</sup> 57' | 29 <sup>h</sup> 49' | 27 <sup>h</sup> 57' | 23 <sup>h</sup> 39' |
| M10  | 21 14 45 | 17 <sup>h</sup> 38'53" | 6 <sup>h</sup> 30'  | 6 <sup>h</sup> 4'  | 3 <sup>h</sup> 35'  | 15 <sup>h</sup> 49' | 3 <sup>h</sup> 54' | 8 <sup>h</sup> 10' | 1 <sup>h</sup> 24' | 19 <sup>h</sup> 55' | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 48' | 29 <sup>h</sup> 46' | 28 <sup>h</sup> 3'  | 23 <sup>h</sup> 37' |
| T 11 | 21 18 42 | 18 <sup>h</sup> 36'25" | 21 <sup>h</sup> 34' | 5 <sup>h</sup> 49' | 4 <sup>h</sup> 40'  | 16 <sup>h</sup> 24' | 3 <sup>h</sup> 47' | 8 <sup>h</sup> 11' | 1 <sup>h</sup> 26' | 19 <sup>h</sup> 57' | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 41' | 29 <sup>h</sup> 43' | 28 <sup>h</sup> 10' | 23 <sup>h</sup> 34' |
| W12  | 21 22 38 | 19 <sup>h</sup> 33'59" | 6 <sup>h</sup> 18'  | 5 <sup>h</sup> 29' | 5 <sup>h</sup> 45'  | 16 <sup>h</sup> 59' | 3 <sup>h</sup> 40' | 8 <sup>h</sup> 12' | 1 <sup>h</sup> 29' | 19 <sup>h</sup> 58' | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 37' | 29 <sup>h</sup> 40' | 28 <sup>h</sup> 17' | 23 <sup>h</sup> 32' |
| T 13 | 21 26 35 | 20 <sup>h</sup> 31'34" | 20 <sup>h</sup> 37' | 5 <sup>h</sup> 3'  | 6 <sup>h</sup> 50'  | 17 <sup>h</sup> 33' | 3 <sup>h</sup> 32' | 8 <sup>h</sup> 12' | 1 <sup>h</sup> 32' | 19 <sup>h</sup> 59' | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 35' | 29 <sup>h</sup> 37' | 28 <sup>h</sup> 23' | 23 <sup>h</sup> 30' |
| F 14 | 21 30 31 | 21 <sup>h</sup> 29'09" | 4 <sup>h</sup> 30'  | 4 <sup>h</sup> 32' | 7 <sup>h</sup> 55'  | 18 <sup>h</sup> 7'  | 3 <sup>h</sup> 25' | 8 <sup>h</sup> 13' | 1 <sup>h</sup> 34' | 20 <sup>h</sup> 1'  | 20 <sup>h</sup> 32' | 28 <sup>h</sup> D35 | 29 <sup>h</sup> 34' | 28 <sup>h</sup> 30' | 23 <sup>h</sup> 28' |
| S 15 | 21 34 28 | 22 <sup>h</sup> 26'46" | 17 <sup>h</sup> 56' | 3 <sup>h</sup> 57' | 9 <sup>h</sup> 1'   | 18 <sup>h</sup> 41' | 3 <sup>h</sup> 17' | 8 <sup>h</sup> 14' | 1 <sup>h</sup> 37' | 20 <sup>h</sup> 2'  | 20 <sup>h</sup> 32' | 28 <sup>h</sup> R36 | 29 <sup>h</sup> 30' | 28 <sup>h</sup> 37' | 23 <sup>h</sup> 25' |
| S 16 | 21 38 24 | 23 <sup>h</sup> 24'23" | 1 <sup>h</sup> 0'   | 3 <sup>h</sup> 17' | 10 <sup>h</sup> 7'  | 19 <sup>h</sup> 15' | 3 <sup>h</sup> 9'  | 8 <sup>h</sup> 14' | 1 <sup>h</sup> 39' | 20 <sup>h</sup> 3'  | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 35' | 29 <sup>h</sup> 27' | 28 <sup>h</sup> 43' | 23 <sup>h</sup> 23' |
| M17  | 21 42 21 | 24 <sup>h</sup> 22'01" | 13 <sup>h</sup> 44' | 2 <sup>h</sup> 34' | 11 <sup>h</sup> 12' | 19 <sup>h</sup> 48' | 3 <sup>h</sup> 2'  | 8 <sup>h</sup> 14' | 1 <sup>h</sup> 42' | 20 <sup>h</sup> 5'  | 20 <sup>h</sup> 32' | 28 <sup>h</sup> 34' | 29 <sup>h</sup> 24' | 28 <sup>h</sup> 50' | 23 <sup>h</sup> 21' |
| T 18 | 21 46 18 |                        |                     |                    |                     |                     |                    |                    |                    |                     |                     |                     |                     |                     |                     |

SWISS EPHEMERIS for the year 2116

SEPTEMBER 2116

00:00 UT

| Day  | Sid.t    | ☉        | ☽     | ♀     | ♁     | ♂     | ♃     | ♄     | ♅    | ♆     | ♇      | ♈      | ♉     | ♊    | ♋      | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ |
|------|----------|----------|-------|-------|-------|-------|-------|-------|------|-------|--------|--------|-------|------|--------|---|---|---|---|---|---|---|---|
| T 1  | 22 41 29 | 8♎49'09  | 17♏2  | 23♌35 | 28♉1  | 27♎34 | 1°R 4 | 8°R 8 | 2♉15 | 20♏29 | 20°R31 | 27°R17 | 28♎36 | 0♎31 | 22°R43 |   |   |   |   |   |   |   |   |
| W 2  | 22 45 26 | 9°47'11  | 0♉44  | 23°44 | 29°10 | 28°2  | 0♎57  | 8♎6   | 2°17 | 20°31 | 20♎31  | 27♎15  | 28°33 | 0°37 | 22♎40  |   |   |   |   |   |   |   |   |
| T 3  | 22 49 22 | 10°45'15 | 14°53 | 24°2  | 0♏19  | 28°30 | 0°49  | 8°5   | 2°18 | 20°32 | 20°31  | 27°11  | 28°30 | 0°44 | 22°37  |   |   |   |   |   |   |   |   |
| F 4  | 22 53 19 | 11°43'21 | 29°29 | 24°29 | 1°27  | 28°58 | 0°41  | 8°3   | 2°20 | 20°34 | 20°30  | 27°6   | 28°27 | 0°51 | 22°34  |   |   |   |   |   |   |   |   |
| S 5  | 22 57 15 | 12°41'28 | 14♏26 | 25°3  | 2°36  | 29°25 | 0°34  | 8°2   | 2°22 | 20°36 | 20°30  | 26°59  | 28°24 | 0°58 | 22°32  |   |   |   |   |   |   |   |   |
| S 6  | 23 1 12  | 13°39'37 | 29°37 | 25°46 | 3°45  | 29°52 | 0°26  | 8°0   | 2°23 | 20°38 | 20°30  | 26°53  | 28°20 | 1°4  | 22°29  |   |   |   |   |   |   |   |   |
| M 7  | 23 5 9   | 14°37'48 | 14♎52 | 26°37 | 4°55  | 0♏18  | 0°19  | 7°58  | 2°25 | 20°40 | 20°29  | 26°47  | 28°17 | 1°11 | 22°26  |   |   |   |   |   |   |   |   |
| T 8  | 23 9 5   | 15°36'01 | 29°59 | 27°35 | 6°4   | 0°44  | 0°11  | 7°56  | 2°27 | 20°42 | 20°29  | 26°43  | 28°14 | 1°18 | 22°23  |   |   |   |   |   |   |   |   |
| W 9  | 23 13 2  | 16°34'15 | 14♏51 | 28°40 | 7°14  | 1°9   | 0°4   | 7°54  | 2°28 | 20°44 | 20°29  | 26°40  | 28°11 | 1°24 | 22°21  |   |   |   |   |   |   |   |   |
| T 10 | 23 16 58 | 17°32'31 | 29°19 | 29°51 | 8°23  | 1°34  | 29♎57 | 7°52  | 2°30 | 20°46 | 20°28  | 26°D40 | 28°8  | 1°31 | 22°18  |   |   |   |   |   |   |   |   |
| F 11 | 23 20 55 | 18°30'49 | 13♏21 | 1♎9   | 9°33  | 1°59  | 29°50 | 7°50  | 2°31 | 20°47 | 20°28  | 26°41  | 28°5  | 1°38 | 22°15  |   |   |   |   |   |   |   |   |
| S 12 | 23 24 51 | 19°29'08 | 26°56 | 2°32  | 10°43 | 2°23  | 29°43 | 7°48  | 2°32 | 20°49 | 20°27  | 26°42  | 28°1  | 1°44 | 22°12  |   |   |   |   |   |   |   |   |
| S 13 | 23 28 48 | 20°27'28 | 10♎4  | 4°1   | 11°53 | 2°46  | 29°36 | 7°45  | 2°34 | 20°51 | 20°27  | 26°44  | 27°58 | 1°51 | 22°9   |   |   |   |   |   |   |   |   |
| M 14 | 23 32 44 | 21°25'51 | 22°50 | 5°34  | 13°3  | 3°9   | 29°29 | 7°43  | 2°35 | 20°53 | 20°26  | 26°R44 | 27°55 | 1°58 | 22°7   |   |   |   |   |   |   |   |   |
| T 15 | 23 36 41 | 22°24'14 | 5♎17  | 7°11  | 14°13 | 3°32  | 29°22 | 7°40  | 2°36 | 20°55 | 20°26  | 26°43  | 27°52 | 2°5  | 22°4   |   |   |   |   |   |   |   |   |
| W 16 | 23 40 38 | 23°22'40 | 17°30 | 8°51  | 15°23 | 3°54  | 29°16 | 7°38  | 2°38 | 20°57 | 20°25  | 26°41  | 27°49 | 2°11 | 22°1   |   |   |   |   |   |   |   |   |
| T 17 | 23 44 34 | 24°21'07 | 29°32 | 10°34 | 16°34 | 4°15  | 29°9  | 7°35  | 2°39 | 20°59 | 20°25  | 26°37  | 27°46 | 2°18 | 21°58  |   |   |   |   |   |   |   |   |
| F 18 | 23 48 31 | 25°19'35 | 11♎27 | 12°19 | 17°44 | 4°36  | 29°3  | 7°32  | 2°40 | 21°2  | 20°24  | 26°32  | 27°42 | 2°25 | 21°55  |   |   |   |   |   |   |   |   |
| S 19 | 23 52 27 | 26°18'05 | 23°19 | 14°6  | 18°55 | 4°56  | 28°57 | 7°29  | 2°41 | 21°4  | 20°24  | 26°27  | 27°39 | 2°31 | 21°53  |   |   |   |   |   |   |   |   |
| S 20 | 23 56 24 | 27°16'37 | 5♎11  | 15°55 | 20°6  | 5°16  | 28°51 | 7°26  | 2°42 | 21°6  | 20°23  | 26°21  | 27°36 | 2°38 | 21°50  |   |   |   |   |   |   |   |   |
| M 21 | 0 0 20   | 28°15'11 | 17°3  | 17°45 | 21°16 | 5°36  | 28°45 | 7°23  | 2°43 | 21°8  | 20°22  | 26°17  | 27°33 | 2°45 | 21°47  |   |   |   |   |   |   |   |   |
| T 22 | 0 4 17   | 29°13'46 | 29°0  | 19°36 | 22°27 | 5°54  | 28°39 | 7°20  | 2°44 | 21°10 | 20°22  | 26°13  | 27°30 | 2°51 | 21°44  |   |   |   |   |   |   |   |   |
| W 23 | 0 8 13   | 0♏12'24  | 11♎1  | 21°27 | 23°39 | 6°12  | 28°34 | 7°17  | 2°44 | 21°12 | 20°21  | 26°11  | 27°26 | 2°58 | 21°41  |   |   |   |   |   |   |   |   |
| T 24 | 0 12 10  | 1°11'03  | 23°10 | 23°18 | 24°50 | 6°30  | 28°28 | 7°13  | 2°45 | 21°14 | 20°20  | 26°D10 | 27°23 | 3°5  | 21°39  |   |   |   |   |   |   |   |   |
| F 25 | 0 16 7   | 2°9'45   | 5♎27  | 25°9  | 26°1  | 6°47  | 28°23 | 7°10  | 2°46 | 21°16 | 20°20  | 26°10  | 27°20 | 3°12 | 21°36  |   |   |   |   |   |   |   |   |
| S 26 | 0 20 3   | 3°8'28   | 17°56 | 27°0  | 27°12 | 7°3   | 28°18 | 7°7   | 2°47 | 21°18 | 20°19  | 26°11  | 27°17 | 3°18 | 21°33  |   |   |   |   |   |   |   |   |
| S 27 | 0 24 0   | 4°7'14   | 0♏38  | 28°51 | 28°24 | 7°19  | 28°13 | 7°3   | 2°47 | 21°20 | 20°18  | 26°13  | 27°14 | 3°25 | 21°31  |   |   |   |   |   |   |   |   |
| M 28 | 0 27 56  | 5°6'02   | 13°36 | 0♏41  | 29°35 | 7°34  | 28°8  | 6°59  | 2°48 | 21°23 | 20°18  | 26°14  | 27°11 | 3°32 | 21°28  |   |   |   |   |   |   |   |   |
| T 29 | 0 31 53  | 6°4'53   | 26°53 | 2°31  | 0♎47  | 7°48  | 28°3  | 6°56  | 2°48 | 21°25 | 20°17  | 26°15  | 27°7  | 3°38 | 21°25  |   |   |   |   |   |   |   |   |
| W 30 | 0 35 49  | 7°3'46   | 10♎30 | 4♏20  | 1♎59  | 8♏2   | 27♎58 | 6♎52  | 2♉49 | 21♏27 | 20♎16  | 26°R15 | 27♎4  | 3♎45 | 21♎22  |   |   |   |   |   |   |   |   |

Delta T = 252.73 sec.

OCTOBER 2116

00:00 UT

| Day  | Sid.t   | ☉        | ☽     | ♀     | ♁     | ♂     | ♃      | ♄     | ♅     | ♆     | ♇      | ♈      | ♉      | ♊    | ♋      | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ |
|------|---------|----------|-------|-------|-------|-------|--------|-------|-------|-------|--------|--------|--------|------|--------|---|---|---|---|---|---|---|---|
| T 1  | 0 39 46 | 8♏2'41   | 24♉29 | 6♏8   | 3♎11  | 8♏15  | 27°R54 | 6°R48 | 2♉49  | 21♏29 | 20°R15 | 26°R15 | 27♎1   | 3♎52 | 21°R20 |   |   |   |   |   |   |   |   |
| F 2  | 0 43 42 | 9°1'38   | 8♏49  | 7°56  | 4°23  | 8°27  | 27♎50  | 6♎44  | 2°50  | 21°31 | 20♎14  | 26°R13 | 26°58  | 3°58 | 21♎17  |   |   |   |   |   |   |   |   |
| S 3  | 0 47 39 | 10°0'38  | 23°27 | 9°43  | 5°35  | 8°38  | 27°46  | 6°40  | 2°50  | 21°34 | 20°14  | 26°11  | 26°55  | 4°5  | 21°15  |   |   |   |   |   |   |   |   |
| S 4  | 0 51 36 | 10°59'39 | 8♎19  | 11°29 | 6°47  | 8°49  | 27°42  | 6°36  | 2°50  | 21°36 | 20°13  | 26°9   | 26°51  | 4°12 | 21°12  |   |   |   |   |   |   |   |   |
| M 5  | 0 55 32 | 11°58'43 | 23°16 | 13°14 | 7°59  | 8°59  | 27°38  | 6°32  | 2°50  | 21°38 | 20°12  | 26°8   | 26°48  | 4°18 | 21°9   |   |   |   |   |   |   |   |   |
| T 6  | 0 59 29 | 12°57'49 | 8♏12  | 14°59 | 9°12  | 9°8   | 27°35  | 6°28  | 2°51  | 21°40 | 20°11  | 26°7   | 26°45  | 4°25 | 21°7   |   |   |   |   |   |   |   |   |
| W 7  | 1 3 25  | 13°56'57 | 22°57 | 16°43 | 10°24 | 9°17  | 27°32  | 6°24  | 2°51  | 21°42 | 20°10  | 26°D 6 | 26°42  | 4°32 | 21°4   |   |   |   |   |   |   |   |   |
| T 8  | 1 7 22  | 14°56'07 | 7♏25  | 18°25 | 11°36 | 9°24  | 27°29  | 6°19  | 2°R51 | 21°45 | 20°9   | 26°6   | 26°39  | 4°39 | 21°2   |   |   |   |   |   |   |   |   |
| F 9  | 1 11 18 | 15°55'19 | 21°30 | 20°7  | 12°49 | 9°31  | 27°26  | 6°15  | 2°51  | 21°47 | 20°8   | 26°7   | 26°36  | 4°45 | 20°59  |   |   |   |   |   |   |   |   |
| S 10 | 1 15 15 | 16°54'33 | 5♎10  | 21°49 | 14°2  | 9°37  | 27°23  | 6°11  | 2°51  | 21°49 | 20°8   | 26°8   | 26°32  | 4°52 | 20°57  |   |   |   |   |   |   |   |   |
| S 11 | 1 19 11 | 17°53'49 | 18°25 | 23°29 | 15°14 | 9°42  | 27°20  | 6°6   | 2°50  | 21°51 | 20°7   | 26°9   | 26°29  | 4°59 | 20°54  |   |   |   |   |   |   |   |   |
| M 12 | 1 23 8  | 18°53'07 | 1♎16  | 25°9  | 16°27 | 9°46  | 27°18  | 6°2   | 2°50  | 21°54 | 20°6   | 26°9   | 26°26  | 5°5  | 20°52  |   |   |   |   |   |   |   |   |
| T 13 | 1 27 5  | 19°52'26 | 13°46 | 26°48 | 17°40 | 9°50  | 27°16  | 5°57  | 2°50  | 21°56 | 20°5   | 26°10  | 26°23  | 5°12 | 20°50  |   |   |   |   |   |   |   |   |
| W 14 | 1 31 1  | 20°51'47 | 26°0  | 28°26 | 18°53 | 9°53  | 27°14  | 5°53  | 2°50  | 21°58 | 20°4   | 26°R10 | 26°20  | 5°19 | 20°47  |   |   |   |   |   |   |   |   |
| T 15 | 1 34 58 | 21°51'10 | 8♎2   | 0♏3   | 20°6  | 9°54  | 27°12  | 5°48  | 2°50  | 22°0  | 20°3   | 26°9   | 26°17  | 5°25 | 20°45  |   |   |   |   |   |   |   |   |
| F 16 | 1 38 54 | 22°50'35 | 19°56 | 1°40  | 21°19 | 9°55  | 27°11  | 5°44  | 2°49  | 22°2  | 20°2   | 26°9   | 26°13  | 5°32 | 20°43  |   |   |   |   |   |   |   |   |
| S 17 | 1 42 51 | 23°50'01 | 1♎47  | 3°16  | 22°32 | 9°R55 | 27°10  | 5°39  | 2°49  | 22°5  | 20°1   | 26°9   | 26°10  | 5°39 | 20°41  |   |   |   |   |   |   |   |   |
| S 18 | 1 46 47 | 24°49'29 | 13°39 | 4°51  | 23°45 | 9°54  | 27°8   | 5°34  | 2°48  | 22°7  | 20°0   | 26°8   | 26°7   | 5°45 | 20°38  |   |   |   |   |   |   |   |   |
| M 19 | 1 50 44 | 25°48'59 | 25°35 | 6°26  | 24°58 | 9°53  | 27°8   | 5°30  | 2°48  | 22°9  | 19°59  | 26°D 8 | 26°4   | 5°52 | 20°36  |   |   |   |   |   |   |   |   |
| T 20 | 1 54 40 | 26°48'31 | 7♎37  | 8°0   | 26°12 | 9°50  | 27°7   | 5°25  | 2°47  | 22°11 | 19°58  | 26°8   | 26°1   | 5°59 | 20°34  |   |   |   |   |   |   |   |   |
| W 21 | 1 58 37 | 27°48'04 | 19°49 | 9°34  | 27°25 | 9°47  | 27°6   | 5°20  | 2°46  | 22°14 | 19°57  | 26°R 8 | 25°57  | 6°6  | 20°32  |   |   |   |   |   |   |   |   |
| T 22 | 2 2 33  | 28°47'40 | 2♎12  | 11°6  | 28°39 | 9°42  | 27°6   | 5°15  | 2°46  | 22°16 | 19°56  | 26°8   | 25°54  | 6°12 | 20°30  |   |   |   |   |   |   |   |   |
| F 23 | 2 6 30  | 29°47'18 | 14°47 | 12°39 | 29°52 | 9°37  | 27°D 6 | 5°11  | 2°45  | 22°18 | 19°55  | 26°8   | 25°51  | 6°19 | 20°28  |   |   |   |   |   |   |   |   |
| S 24 | 2 10 27 | 0♏46'58  | 27°35 | 14°10 | 1♏6   | 9°31  | 27°6   | 5°6   | 2°44  | 22°20 | 19°54  | 26°8   | 25°48  | 6°26 | 20°26  |   |   |   |   |   |   |   |   |
| S 25 | 2 14 23 | 1°46'40  | 10♏36 | 15°41 | 2°19  | 9°24  | 27°6   | 5°1   | 2°43  | 22°23 | 19°53  | 26°7   | 25°45  | 6°32 | 20°24  |   |   |   |   |   |   |   |   |
| M 26 | 2 18 20 | 2°46'24  | 23°51 | 17°12 | 3°33  | 9°16  | 27°7   | 4°56  | 2°43  | 22°25 | 19°52  | 26°6   | 25°42  | 6°39 | 20°22  |   |   |   |   |   |   |   |   |
| T 27 | 2 22 16 | 3°46'10  | 7♎19  | 18°42 | 4°47  | 9°7   | 27°7   | 4°51  | 2°42  | 22°27 | 19°51  | 26°6   | 25°38  | 6°46 | 20°20  |   |   |   |   |   |   |   |   |
| W 28 | 2 26 13 | 4°45'59  | 21°1  | 20°11 | 6°1   | 8°57  | 27°8   | 4°47  | 2°41  | 22°29 | 19°50  | 26°5   | 25°35  | 6°52 | 20°19  |   |   |   |   |   |   |   |   |
| T 29 | 2 30 9  | 5°45'50  | 4♏57  | 21°40 | 7°15  | 8°47  | 27°9   | 4°42  | 2°40  | 22°31 | 19°48  | 26°D 5 | 25°32  | 6°59 | 20°17  |   |   |   |   |   |   |   |   |
| F 30 | 2 34 6  | 6°45'43  | 19°5  | 23°8  | 8°29  | 8°35  | 27°11  | 4°37  | 2°39  | 22°34 | 19°47  | 26°5   | 25°29  | 7°6  | 20°15  |   |   |   |   |   |   |   |   |
| S 31 | 2 38 3  | 7♏45'38  | 3♎24  | 24♏35 | 9♏43  | 8♏23  | 27♎12  | 4♎32  | 2♉37  | 22♏36 | 19♎46  | 26°R 6 | 25°R26 | 7♎12 | 20♎13  |   |   |   |   |   |   |   |   |

Delta T = 252.91 sec.

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SWISS EPHEMERIS for the year 2116

NOVEMBER 2116

00:00 UT

| Day  | Sid.t   | ☉        | ☽     | ♀      | ♁     | ♂     | ♃     | ♄     | ♅     | ♆     | ♇      | ♈      | ♉      | ♊     | ♋      | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ |
|------|---------|----------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|--------|---|---|---|---|---|---|---|---|
| S 1  | 2 41 59 | 8♏45°35  | 17♏51 | 26♏2   | 10♏57 | 8°R10 | 27♏14 | 4°R27 | 2°R36 | 22♏38 | 19°R45 | 26°Y 7 | 25°Y23 | 7♏19  | 20°R12 |   |   |   |   |   |   |   |   |
| M 2  | 2 45 56 | 9°45'35  | 2♏21  | 27°29  | 12°11 | 7♏56  | 27°16 | 4♏23  | 2♏35  | 22°40 | 19♏44  | 26° 8  | 25°19  | 7°26  | 20°R10 |   |   |   |   |   |   |   |   |
| T 3  | 2 49 52 | 10°45'37 | 16°52 | 28°54  | 13°25 | 7°41  | 27°18 | 4°18  | 2°34  | 22°42 | 19°43  | 26° 8  | 25°16  | 7°33  | 20° 9  |   |   |   |   |   |   |   |   |
| W 4  | 2 53 49 | 11°45'40 | 1♏16  | 0♏19   | 14°39 | 7°26  | 27°20 | 4°13  | 2°32  | 22°44 | 19°42  | 26°R 8 | 25°13  | 7°39  | 20° 7  |   |   |   |   |   |   |   |   |
| T 5  | 2 57 45 | 12°45'46 | 15°29 | 1°43   | 15°53 | 7°10  | 27°23 | 4° 8  | 2°31  | 22°46 | 19°41  | 26° 8  | 25°10  | 7°46  | 20° 6  |   |   |   |   |   |   |   |   |
| F 6  | 3 1 42  | 13°45'53 | 29°26 | 3° 7   | 17° 8 | 6°53  | 27°25 | 4° 4  | 2°30  | 22°49 | 19°40  | 26° 6  | 25° 7  | 7°53  | 20° 4  |   |   |   |   |   |   |   |   |
| S 7  | 3 5 38  | 14°46'03 | 13♏3  | 4°29   | 18°22 | 6°35  | 27°28 | 3°59  | 2°28  | 22°51 | 19°38  | 26° 4  | 25° 3  | 7°59  | 20° 3  |   |   |   |   |   |   |   |   |
| S 8  | 3 9 35  | 15°46'13 | 26°18 | 5°51   | 19°36 | 6°17  | 27°31 | 3°54  | 2°27  | 22°53 | 19°37  | 26° 1  | 25° 0  | 8° 6  | 20° 2  |   |   |   |   |   |   |   |   |
| M 9  | 3 13 32 | 16°46'26 | 9♏11  | 7°12   | 20°51 | 5°58  | 27°35 | 3°50  | 2°25  | 22°55 | 19°36  | 25°58  | 24°57  | 8°13  | 20° 1  |   |   |   |   |   |   |   |   |
| T 10 | 3 17 28 | 17°46'40 | 21°45 | 8°31   | 22° 5 | 5°39  | 27°38 | 3°45  | 2°24  | 22°57 | 19°35  | 25°55  | 24°54  | 8°19  | 19°59  |   |   |   |   |   |   |   |   |
| W11  | 3 21 25 | 18°46'56 | 4♏1   | 9°49   | 23°20 | 5°19  | 27°42 | 3°40  | 2°22  | 22°59 | 19°34  | 25°53  | 24°51  | 8°26  | 19°58  |   |   |   |   |   |   |   |   |
| T 12 | 3 25 21 | 19°47'13 | 16° 4 | 11° 6  | 24°34 | 4°59  | 27°46 | 3°36  | 2°20  | 23° 1 | 19°33  | 25°D52 | 24°48  | 8°33  | 19°57  |   |   |   |   |   |   |   |   |
| F 13 | 3 29 18 | 20°47'31 | 27°58 | 12°22  | 25°49 | 4°38  | 27°50 | 3°31  | 2°19  | 23° 3 | 19°32  | 25°52  | 24°44  | 8°39  | 19°56  |   |   |   |   |   |   |   |   |
| S 14 | 3 33 14 | 21°47'51 | 9♏49  | 13°35  | 27° 3 | 4°17  | 27°54 | 3°27  | 2°17  | 23° 5 | 19°31  | 25°53  | 24°41  | 8°46  | 19°55  |   |   |   |   |   |   |   |   |
| S 15 | 3 37 11 | 22°48'12 | 21°41 | 14°47  | 28°18 | 3°56  | 27°58 | 3°23  | 2°15  | 23° 7 | 19°30  | 25°55  | 24°38  | 8°53  | 19°54  |   |   |   |   |   |   |   |   |
| M16  | 3 41 7  | 23°48'35 | 3°Y38 | 15°57  | 29°32 | 3°34  | 28° 3 | 3°18  | 2°13  | 23° 9 | 19°28  | 25°57  | 24°35  | 8°59  | 19°54  |   |   |   |   |   |   |   |   |
| T 17 | 3 45 4  | 24°48'59 | 15°46 | 17° 4  | 0♏47  | 3°12  | 28° 8 | 3°14  | 2°11  | 23°11 | 19°27  | 25°58  | 24°32  | 9° 6  | 19°53  |   |   |   |   |   |   |   |   |
| W18  | 3 49 1  | 25°49'24 | 28° 7 | 18° 9  | 2° 2  | 2°50  | 28°13 | 3°10  | 2° 9  | 23°13 | 19°26  | 25°R59 | 24°29  | 9°13  | 19°52  |   |   |   |   |   |   |   |   |
| T 19 | 3 52 57 | 26°49'51 | 10♏44 | 19°11  | 3°17  | 2°28  | 28°18 | 3° 5  | 2° 8  | 23°15 | 19°25  | 25°58  | 24°25  | 9°19  | 19°51  |   |   |   |   |   |   |   |   |
| F 20 | 3 56 54 | 27°50'20 | 23°37 | 20° 9  | 4°31  | 2° 6  | 28°23 | 3° 1  | 2° 6  | 23°17 | 19°24  | 25°55  | 24°22  | 9°26  | 19°51  |   |   |   |   |   |   |   |   |
| S 21 | 4 0 50  | 28°50'50 | 6♏49  | 21° 3  | 5°46  | 1°44  | 28°29 | 2°57  | 2° 4  | 23°19 | 19°23  | 25°51  | 24°19  | 9°33  | 19°50  |   |   |   |   |   |   |   |   |
| S 22 | 4 4 47  | 29°51'21 | 20°16 | 21°53  | 7° 1  | 1°21  | 28°34 | 2°53  | 2° 2  | 23°21 | 19°22  | 25°46  | 24°16  | 9°40  | 19°50  |   |   |   |   |   |   |   |   |
| M23  | 4 8 43  | 0♏51'55  | 3♏57  | 22°38  | 8°16  | 0°59  | 28°40 | 2°49  | 1°59  | 23°23 | 19°21  | 25°40  | 24°13  | 9°46  | 19°49  |   |   |   |   |   |   |   |   |
| T 24 | 4 12 40 | 1°52'30  | 17°49 | 23°17  | 9°31  | 0°37  | 28°46 | 2°45  | 1°57  | 23°25 | 19°20  | 25°34  | 24° 9  | 9°53  | 19°49  |   |   |   |   |   |   |   |   |
| W25  | 4 16 36 | 2°53'06  | 1♏48  | 23°50  | 10°46 | 0°15  | 28°52 | 2°42  | 1°55  | 23°26 | 19°18  | 25°29  | 24° 6  | 10° 0 | 19°48  |   |   |   |   |   |   |   |   |
| T 26 | 4 20 33 | 3°53'45  | 15°53 | 24°16  | 12° 1 | 29♏54 | 28°59 | 2°38  | 1°53  | 23°28 | 19°17  | 25°26  | 24° 3  | 10° 6 | 19°48  |   |   |   |   |   |   |   |   |
| F 27 | 4 24 30 | 4°54'24  | 0♏1   | 24°35  | 13°16 | 29°32 | 29° 5 | 2°34  | 1°51  | 23°30 | 19°16  | 25°D25 | 24° 0  | 10°13 | 19°48  |   |   |   |   |   |   |   |   |
| S 28 | 4 28 26 | 5°55'06  | 14°10 | 24°44  | 14°31 | 29°11 | 29°12 | 2°31  | 1°49  | 23°32 | 19°15  | 25°25  | 23°57  | 10°20 | 19°48  |   |   |   |   |   |   |   |   |
| S 29 | 4 32 23 | 6°55'49  | 28°18 | 24°R45 | 15°46 | 28°50 | 29°19 | 2°27  | 1°46  | 23°34 | 19°14  | 25°26  | 23°54  | 10°26 | 19°48  |   |   |   |   |   |   |   |   |
| M30  | 4 36 19 | 7♏56'34  | 12♏23 | 24♏35  | 17♏1  | 28♏30 | 29♏26 | 2♏24  | 1♏44  | 23♏35 | 19♏13  | 25°Y28 | 23°Y50 | 10♏33 | 19♏48  |   |   |   |   |   |   |   |   |

Delta T = 253.09 sec.

DECEMBER 2116

00:00 UT

| Day  | Sid.t   | ☉        | ☽      | ♀      | ♁     | ♂      | ♃     | ♄     | ♅     | ♆     | ♇      | ♈      | ♉      | ♊     | ♋      | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ |
|------|---------|----------|--------|--------|-------|--------|-------|-------|-------|-------|--------|--------|--------|-------|--------|---|---|---|---|---|---|---|---|
| T 1  | 4 40 16 | 8♏57'20  | 26♏25  | 24°R14 | 18♏16 | 28°R10 | 29♏33 | 2°R20 | 1°R42 | 23♏37 | 19°R12 | 25°R28 | 23°Y47 | 10♏40 | 19°D48 |   |   |   |   |   |   |   |   |
| W 2  | 4 44 12 | 9°58'08  | 10♏21  | 23♏43  | 19°31 | 27♏51  | 29°40 | 2♏17  | 1♏40  | 23°39 | 19♏11  | 25°Y27 | 23°44  | 10°46 | 19°R48 |   |   |   |   |   |   |   |   |
| T 3  | 4 48 9  | 10°58'57 | 24° 9  | 23° 0  | 20°46 | 27°32  | 29°48 | 2°14  | 1°37  | 23°40 | 19°10  | 25°24  | 23°41  | 10°53 | 19°48  |   |   |   |   |   |   |   |   |
| F 4  | 4 52 5  | 11°59'47 | 7♏46   | 22° 7  | 22° 1 | 27°13  | 29°55 | 2°11  | 1°35  | 23°42 | 19° 9  | 25°18  | 23°38  | 11° 0 | 19°48  |   |   |   |   |   |   |   |   |
| S 5  | 4 56 2  | 13° 0'39 | 21° 8  | 21° 5  | 23°16 | 26°56  | 0♏3   | 2° 7  | 1°32  | 23°44 | 19° 8  | 25°11  | 23°35  | 11° 6 | 19°48  |   |   |   |   |   |   |   |   |
| S 6  | 4 59 59 | 14° 1'32 | 4♏14   | 19°53  | 24°31 | 26°39  | 0°11  | 2° 5  | 1°30  | 23°45 | 19° 7  | 25° 2  | 23°31  | 11°13 | 19°48  |   |   |   |   |   |   |   |   |
| M 7  | 5 3 55  | 15° 2'25 | 17° 2  | 18°36  | 25°47 | 26°22  | 0°19  | 2° 2  | 1°28  | 23°47 | 19° 6  | 24°52  | 23°28  | 11°20 | 19°49  |   |   |   |   |   |   |   |   |
| T 8  | 5 7 52  | 16° 3'20 | 29°34  | 17°14  | 27° 2 | 26° 6  | 0°27  | 1°59  | 1°25  | 23°48 | 19° 5  | 24°43  | 23°25  | 11°26 | 19°49  |   |   |   |   |   |   |   |   |
| W 9  | 5 11 48 | 17° 4'16 | 11♏50  | 15°51  | 28°17 | 25°51  | 0°36  | 1°56  | 1°23  | 23°50 | 19° 4  | 24°36  | 23°22  | 11°33 | 19°50  |   |   |   |   |   |   |   |   |
| T 10 | 5 15 45 | 18° 5'12 | 23°52  | 14°30  | 29°32 | 25°37  | 0°44  | 1°54  | 1°20  | 23°51 | 19° 3  | 24°30  | 23°19  | 11°40 | 19°50  |   |   |   |   |   |   |   |   |
| F 11 | 5 19 41 | 19° 6'09 | 5♏46   | 13°12  | 0♏47  | 25°24  | 0°53  | 1°51  | 1°18  | 23°53 | 19° 2  | 24°27  | 23°15  | 11°47 | 19°51  |   |   |   |   |   |   |   |   |
| S 12 | 5 23 38 | 20° 7'06 | 17°36  | 12° 2  | 2° 3  | 25°11  | 1° 2  | 1°49  | 1°15  | 23°54 | 19° 1  | 24°D26 | 23°12  | 11°53 | 19°51  |   |   |   |   |   |   |   |   |
| S 13 | 5 27 34 | 21° 8'04 | 29°26  | 11° 0  | 3°18  | 24°59  | 1°11  | 1°46  | 1°13  | 23°56 | 19° 0  | 24°26  | 23° 9  | 12° 0 | 19°52  |   |   |   |   |   |   |   |   |
| M14  | 5 31 31 | 22° 9'03 | 11°Y23 | 10° 8  | 4°33  | 24°48  | 1°20  | 1°44  | 1°10  | 23°57 | 18°59  | 24°27  | 23° 6  | 12° 7 | 19°53  |   |   |   |   |   |   |   |   |
| T 15 | 5 35 28 | 23°10'02 | 23°31  | 9°26   | 5°48  | 24°37  | 1°29  | 1°42  | 1° 8  | 23°58 | 18°58  | 24°R28 | 23° 3  | 12°13 | 19°54  |   |   |   |   |   |   |   |   |
| W16  | 5 39 24 | 24°11'02 | 5♏56   | 8°56   | 7° 4  | 24°28  | 1°38  | 1°40  | 1° 5  | 24° 0 | 18°57  | 24°27  | 23° 0  | 12°20 | 19°54  |   |   |   |   |   |   |   |   |
| T 17 | 5 43 21 | 25°12'02 | 18°40  | 8°37   | 8°19  | 24°19  | 1°48  | 1°38  | 1° 3  | 24° 1 | 18°56  | 24°24  | 22°56  | 12°27 | 19°55  |   |   |   |   |   |   |   |   |
| F 18 | 5 47 17 | 26°13'03 | 1♏48   | 8°D29  | 9°34  | 24°11  | 1°57  | 1°37  | 1° 0  | 24° 2 | 18°56  | 24°19  | 22°53  | 12°33 | 19°56  |   |   |   |   |   |   |   |   |
| S 19 | 5 51 14 | 27°14'05 | 15°18  | 8°31   | 10°50 | 24° 4  | 2° 7  | 1°35  | 0°57  | 24° 3 | 18°55  | 24°11  | 22°50  | 12°40 | 19°57  |   |   |   |   |   |   |   |   |
| S 20 | 5 55 10 | 28°15'07 | 29°10  | 8°43   | 12° 5 | 23°58  | 2°17  | 1°33  | 0°55  | 24° 5 | 18°54  | 24° 1  | 22°47  | 12°47 | 19°58  |   |   |   |   |   |   |   |   |
| M21  | 5 59 7  | 29°16'10 | 13♏19  | 9° 3   | 13°20 | 23°53  | 2°27  | 1°32  | 0°52  | 24° 6 | 18°53  | 23°50  | 22°44  | 12°53 | 20° 0  |   |   |   |   |   |   |   |   |
| T 22 | 6 3 4   | 0♏17'14  | 27°41  | 9°31   | 14°36 | 23°48  | 2°37  | 1°31  | 0°50  | 24° 7 | 18°52  | 23°39  | 22°41  | 13° 0 | 20° 1  |   |   |   |   |   |   |   |   |
| W23  | 6 7 0   | 1°18'18  | 12♏8   | 10° 6  | 15°51 | 23°44  | 2°47  | 1°29  | 0°47  | 24° 8 | 18°51  | 23°30  | 22°37  | 13° 7 | 20° 2  |   |   |   |   |   |   |   |   |
| T 24 | 6 10 57 | 2°19'23  | 26°35  | 10°48  | 17° 6 | 23°41  | 2°58  | 1°28  | 0°45  | 24° 9 | 18°51  | 23°23  | 22°34  | 13°13 | 20° 3  |   |   |   |   |   |   |   |   |
| F 25 | 6 14 53 | 3°20'28  | 10♏56  | 11°34  | 18°22 | 23°39  | 3° 8  | 1°27  | 0°42  | 24°10 | 18°50  | 23°18  | 22°31  | 13°20 | 20° 5  |   |   |   |   |   |   |   |   |
| S 26 | 6 18 50 | 4°21'35  | 25° 9  | 12°26  | 19°37 | 23°38  | 3°19  | 1°26  | 0°39  | 24°11 | 18°49  | 23°16  | 22°28  | 13°27 | 20° 6  |   |   |   |   |   |   |   |   |
| S 27 | 6 22 46 | 5°22'42  | 9♏12   | 13°23  | 20°52 | 23°D37 | 3°29  | 1°25  | 0°37  | 24°12 | 18°48  | 23°D16 | 22°25  | 13°33 | 20° 8  |   |   |   |   |   |   |   |   |
| M28  | 6 26 43 | 6°23'49  | 23° 4  | 14°23  | 22° 8 | 23°38  | 3°40  | 1°25  | 0°34  | 24°13 | 18°48  | 23°R16 | 22°21  | 13°40 | 20° 9  |   |   |   |   |   |   |   |   |
| T 29 | 6 30 39 | 7°24'57  | 6♏46   | 15°26  | 23°23 | 23°39  | 3°51  | 1°24  | 0°32  | 24°14 | 18°47  | 23°16  | 22°18  | 13°47 | 20°11  |   |   |   |   |   |   |   |   |
| W30  | 6 34 36 | 8°26'06  | 20°18  | 16°33  | 24°38 | 23°40  | 4° 2  | 1°24  | 0°29  | 24°15 | 18°46  | 23°13  | 22°15  | 13°53 | 20°12  |   |   |   |   |   |   |   |   |
| T 31 | 6 38 33 | 9♏27'16  | 3♏39   | 17♏42  | 25♏54 | 23♏43  | 4♏13  | 1♏23  | 0♏27  | 24♏16 | 18♏46  | 23°Y 7 | 22°Y12 | 14♏0  | 20♏14  |   |   |   |   |   |   |   |   |

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