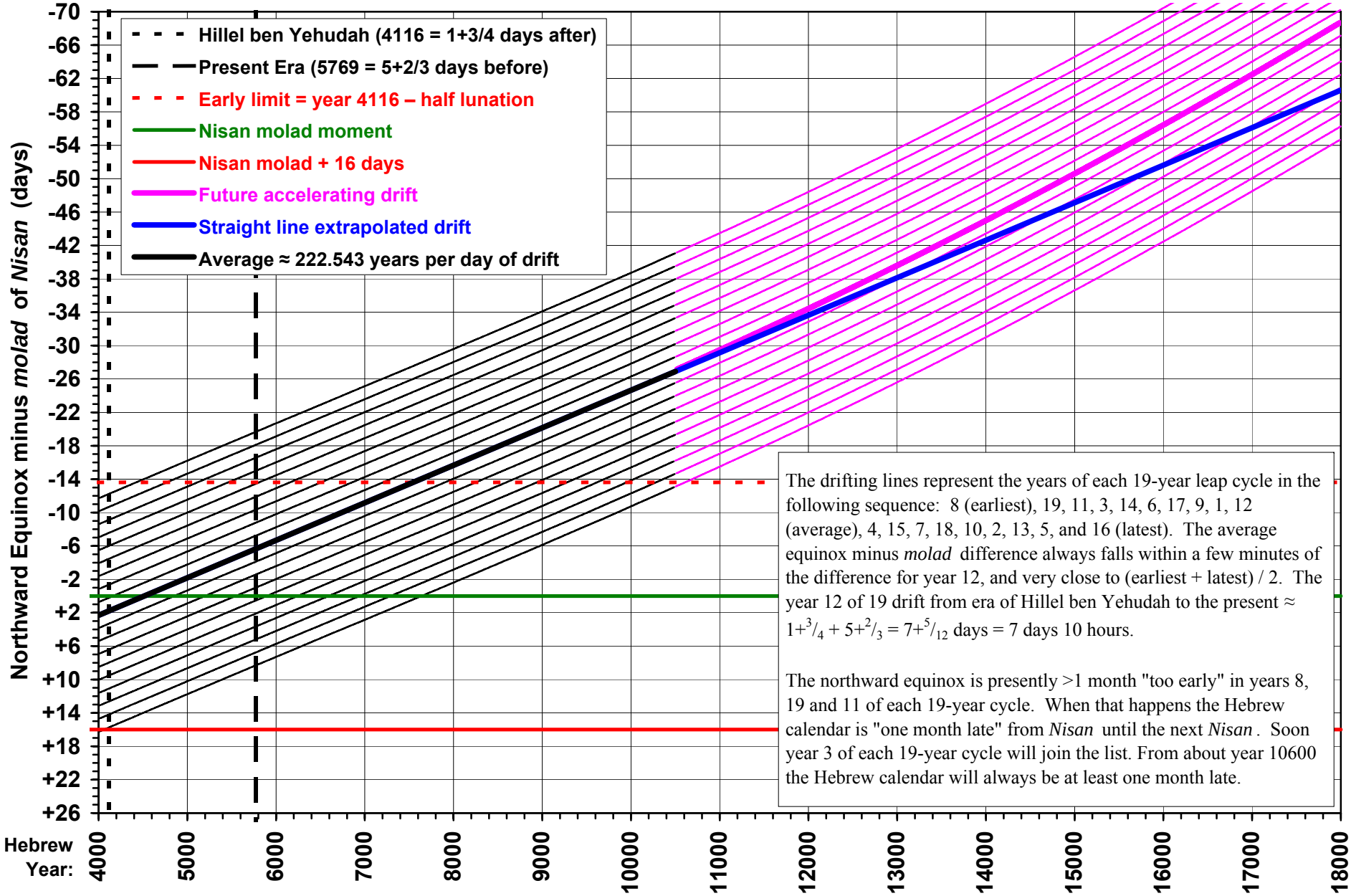
Astronomical Northward Equinox minus *molad* of *Nisan*

Nile-Euphrates Midpoint = Jerusalem Mean Solar Time +16 minutes, SOLEX 9.1 numerical integration, NASA Jan 2007 Espenak-Meeus Delta T polynomials



The drifting lines represent the years of each 19-year leap cycle in the following sequence: 8 (earliest), 19, 11, 3, 14, 6, 17, 9, 1, 12 (average), 4, 15, 7, 18, 10, 2, 13, 5, and 16 (latest). The average equinox minus *molad* difference always falls within a few minutes of the difference for year 12, and very close to (earliest + latest) / 2. The year 12 of 19 drift from era of Hillel ben Yehudah to the present ≈ $1+{}^{3}/_{4} + 5+{}^{2}/_{3} = 7+{}^{5}/_{12}$ days = 7 days 10 hours.

The northward equinox is presently >1 month "too early" in years 8, 19 and 11 of each 19-year cycle. When that happens the Hebrew calendar is "one month late" from *Nisan* until the next *Nisan*. Soon year 3 of each 19-year cycle will join the list. From about year 10600 the Hebrew calendar will always be at least one month late.

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