

Die Rolle der
Astronomie
in den Kulturen Mesopotamiens

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Scientific Astronomy in Pre-Seleucid Babylon

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After -502 the shaded spots indicate deviations from the basic 19-year intercalation scheme, which continued in use throughout the Seleucid Era. A week ago the picture looked much tidier with only one such blotch, but Christopher Walker has been busy adding new ones, so that now we have four – at least potentially. While they add some uncertainty as to the consistency of intercalations within 19-year cycles before -475, they do not affect the conclusion that intercalations reflected a 19-year periodicity beginning in -502.

Two aspects of this process bear mention. One is that the 19-year cycle, which implies that 235 synodic months precisely equal 254 sidereal months and thus also 19 years, was evidently known in Babylon prior to the 5th century B.C. This is hardly surprising, given the attention paid to eclipses, since this cycle is directly observable from lunar eclipses separated by 235 months, which recur at almost precisely the same sidereal longitude.

The second is that the introduction of the 19-year intercalation scheme ended a persistent, if uneven, slippage in the seasonal date of the beginning of the Babylonian year, with the result that after -502, the Babylonian year almost never began earlier than the vernal equinox. This may be seen at the top of Figure 2, where the first line gives the julian date of the equinox, and the second the date of Nisan 1 in the first year in each column. The resulting calendar was thus in close accordance with the Old Babylonian convention that the vernal equinox should occur in Addaru, in contrast to the Assyrian convention, evident in Mul.Apin and also at the time of Nabu-našir, where the equinox occurs in Nisan.