A. Aaboe, J. P. Britton, J. A. Henderson, O. Neugebauer, & A. J. Sachs, *Saros Cycle Dates and Related Babylonian Astronomical Texts*. (Transactions of the American Philosophical Society, Volume 81, Part 6). Philadelphia: American Philosophical Society, 1991. Pp. 75. No price indicated.

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This slim volume contains eight astronomical texts from seven cuneiform tablets, one of them so perplexing that the volume has been under way for about 20 years, as told in the introduction. Four of them regard the distribution of eclipse possibilities within the Saros cycle, three lunar (A, B, C) and one solar (D); one (it appears) calculates the last appearance of Mercury as an evening star (M); and three list various luni-solar astronomical functions (L, F, G). Several of them concern Achaemenid dates; as pointed out by the authors, however, they must have been written or at least finished after the events described (pre-Seleucid years were counted according to the actual king, and no astronomical text »predicts« a king to have lived longer than he actually did).

Text C (BM 34 597, the "Saros Canon") is a republication, correcting mistakes made in earlier publications. In the new interpretation, the text turns out to have contained at least 8 complete Saros cycles, reaching from –400 to –257; a missing part will in all probability have gone back to –490, perhaps to –526. This is remarkable since the actual distribution of 5- versus 6-month-distances between eclipse possibilities shown in the scheme does not hold outside the interval –526 to –257. The use of the technical term for a 5-month interval in eclipse reports as far back as –746 suggests, however, that a scheme of a similar nature though differing in details was used for the earlier period; since *reports* are involved and not all eclipse possibilities result in observable eclipses, one might even surmise that a similar scheme was used *in* the earlier period, a conclusion which the authors are too cautious to draw explicitly.

A revised reading removes a supposed anomaly from the sequence of intercalary months, showing these to have been inserted according to the regular 19-years cycle (a Saros cycle plus 12 months) already since the beginning of the fifth century B.C.

Text B is a fragment of a table similar to Text C, covering –454 to –434. Text A, equally damaged but larger (and less carefully made than Text C), covers –490 to –374 in the conserved part. Both are consistent with the system of Text C. With the exception of two lines (in all repetitions of the cycle), the same is true *mutatis mutandis* for the solar eclipse Text D, which covers (at least) –347 to –258.

Text M (–423 to –401) is interesting for elucidating the incompatible schemes in the Mercury procedure text ACT No. 816 and by showing that a correction suggested by Neugebauer in order to harmonize these should after all not be made. The present text, indeed, calculates the columns separately according to one of the schemes from starting points which derive from another. The authors confess to "have failed to discover any justification, astronomical or otherwise, for employing incompatible schemes in a single text when consistent and simple alternatives were so close at hand" (p. 40).

Text L (–416 to –380), located on the reverse of the tablet containing Text M on its obverse, lists longitudes and "magnitudes" for possible lunar eclipses during two Saros cycles. Apart from an enigmatic disconnected corner containing the expected numbers but in wrong places and improper order (the fragment which delayed publication by two decades and now published "so that others may try their hand") is a new function for the distance of the full Moon from the inferior eclipse limit (the nodal elongation plus 12°, known as the "eclipse magnitude"). The function is discussed at length and shown to presuppose a model based upon uniform motion and an eclipse cycle which is less precise but arithmetically more convenient than the Saros. The corrections superposed on this coarse model turn out to map the actual events with high precision within precisely these 38 years, while they become less satisfactory outside. The adjustments are suggested to have been made empirically, and not from purely theoretical considerations. The model is argued to "antedate both [Lunar] System A and B, while possessing attributes which appear related to each". –380 should thus be a *terminus a quo* for these—but since, as it is pointed out, precisely the two Saros cycles treated here are interesting for containing the only triplets of eclipses visible at Babylon between –746 and –310, they may have been singled out at any later date as particularly sensitive and thus particularly suited for the construction of an eclipse magnitude scheme.

Text F (–264 to –258), which already seems anachronistic for paleographic and terminological reasons, employs a still simpler version of a crude model used in Text L to compute possible eclipse longitudes. Text G is an additional fragment of an earlier published text belonging to the same "family" as F and L and dealing with solar eclipse possibilities between –474 and –456. It is not dealt with in detail in the present publication but elsewhere (*Centaurus* **32**, 1–52) by one of the authors.

As it is seen, the texts presented and discussed in the book justify the title under which it was referred to in 1975 in Neugebauer's *History of Ancient Mathematical Astronomy*, *viz* "Some Atypical Astronomical Cuneiform Texts III". They constitute a significant supplement to the corpus of already published texts, providing us with certain cues to the emergence of mathematical astronomy in Babylonia but probably with more challenges regarding this and other matters. Needless to say, given the names of the authors, the presentation is careful and clear, technical but pedagogical and conscientiously provided with cross-references to the standard literature on the topic.

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