

REYNOLDS, F. — A Babylon Calendar Treatise. Scholars and Invaders in the Late First Millennium BC. Edited with Introduction, Commentary, and Cuneiform Texts. Oxford University Press, Oxford, 2020. (25 cm, XXXII, 464). ISBN 978-0-19-953994-9. \$ 140.00.

This book originated as a doctoral thesis at the University of Birmingham under the supervision of the late Wilfred Lambert. It was completed in the 1990s and since then substantially expanded and revised for publication, resulting in a many-faceted and erudite 464-page study. The subject of study is a Late Babylonian scholarly composition referred to as “A Babylon Calendar Treatise”. The book consists of four main sections: Introduction, Edition, Commentary, and Cuneiform Texts, of which the Introduction and the very detailed Commentary occupy more than 400 pages. The difficulties of interpreting this multilayered and strongly intertextual composition are indeed severe. In total 169 lines are at least partly preserved in three manuscripts from Hellenistic Babylon. There appear to be no parallels for its combination of calendrical, ritualistic, mythological, astronomical, astrological, historiographical, and commentarial elements. The basic structure of the composition is determined by the Babylonian calendar. There were at least 14 sections, each covering a month or a portion thereof, starting with Nisannu (month I) and ending with Addaru (month XII). The bad state of preservation adds to the difficulties of interpretation, perhaps more so than acknowledged by the author. The sections for Simānu, Ulūlu, Tašrītu, and Tebētu are relatively well preserved, but those for Nisannu, Ayyaru, Dūzu, Abu, and Addaru are badly damaged, and nothing or almost nothing remains of the sections for Araḥsamna, Kislīmu, and Šabātu.

Some of the better preserved sections share the following four elements: 1) A report about the past enactment or omission of an apotropaic ritual. They include *namburbû* rituals, other substitution rituals, temple rituals, and lamentations. The reports are vague in the sense that they do not mention

who performed the rituals and in which year or in whose reign they were performed, so that they are presumably fictive. 2) A statement identifying the catastrophic event averted by the ritual, such as an attack by Elam or Subartu, a change of rule in Babylon, or Marduk abandoning Babylon. 3) Statements about planets, stars, constellations, and celestial phenomena, some in the form of omens announcing the catastrophic event, thus triggering the enactment of the ritual. 4) Exegetical statements and glosses about the rituals, catastrophic events, and celestial phenomena, and statements linking them to events from Enūma Eliš involving Marduk, Ti'amāt, and Qingu. The reports about past enactments of rituals contrasts with proper ritual texts which are formulated as instructions in the present tense. According to the author, the composition therefore served a historiographical purpose, namely to “demonstrate the validity of rituals as apotropaic measures against invasion by enemies”, so that it “can be described as a calendar treatise on the ritual aversion of foreign invasion” (p. 12). These may well be apt descriptions, but the author does not explicitly substantiate them by systematically building upon the research presented throughout the book. The suggestion that the rituals can be viewed as simulations of the events which they aim to avert (e.g. p. 24) is one of many interesting observations about the composition that also warrants a more systematic treatment. The historiographical layers are discussed in great detail on pp. 80–101. The topic of the removal of Marduk's statue by Elam and its return to Babylon is traced back primarily to events during the reign of Nebuchadnezzar I (pp. 82–92). Based on historical passages from the astronomical diaries and other sources the author argues for a date of composition in the second century BCE, when Babylon was under threat from the kingdom of Elymais, while downplaying the possibility that the composition reflects Babylonian experiences with Achaemenid rule (p. 98–101).

The remainder of this review focusses on astronomical and astrological aspects, which the author discusses in the Introduction (pp. 30–50) and the Commentary (pp. 225–410). The text is infused with numerous references to stars, constellations, solstices and equinoxes, planets, synodic phenomena, sun, moon, eclipses, and astrological concepts such as the planetary “places of secrecy” (*ašar niširtu*). Most of these topics are closely related to forms of astral science known from the omen series Enūma Anu Enlil and related texts about celestial divination, and the astral compendium Mul. Apin, all of which continued to be copied and interpreted in the Hellenistic period. Given the innovative nature of the treatise and its estimated date of composition in the Hellenistic period (p. 14–17), one might expect it to also contain more innovative astronomical and astrological material that reflects the introduction of the zodiac, which triggered innovations such as mathematical astronomy, horoscopy, the microzodiac, and new forms of astro-medicine. But, as the author clarifies on p. 32, the zodiac is only marginally represented in the preserved portions. In particular, the months are not systematically identified with zodiacal signs, as is done in the contemporaneous Calendar Texts, and that there are no references to the microzodiac, or any other subdivision of the zodiacal signs. The possible evidence for zodiac-based astral science is limited to three passages identified by the author, which warrant a brief discussion.

1) *ina di-ib-bi ša₂ dtaš-me-tu₄ mul^{ab}.sin mul ša₂ kur^{elam}.ma^{ki} lu-maš ša₂ dtaš-me-tu₄ šu-u₂*, “by the words of Tašmētu,

the Furrow, the star of Elam, is the *lumāšu* of Tašmētu” (§9 iii 22), where the ambiguous term *lumāšu* can mean constellation or zodiacal sign. As pointed out by the author, the association between the Furrow and Elam presupposes the zodiac. It is first attested in BM 47494, a Late Babylonian text about astral geography in which each of the twelve zodiacal signs is assigned to a country (Hunger 2004). As mentioned by the author (p. 49), the same associations, but with months instead of zodiacal signs, occur in the pre-zodiacal Great Star List, attested since the Neo Assyrian era. The association between Elam and the Furrow is clearly rooted in the zodiac, but nothing else in §9 indicates that the Furrow is a zodiacal sign. The author understandably refrains from expressing a preference for either interpretation (p. 338).

2) *ina qaq-qarⁱⁱ ab ip-ḥu-ru (...) ina qaq-qa-ri mul²maš₂ ti-amāt (...) šal-tu du₃-uš*, “in the region of Tebētu they assembled (...) in the region of the Goat-Fish Ti'amāt (...) made war” (§13 iv 2–4). As proposed by the author (348–349) both regions probably refer to the zodiacal sign Goat-Fish (Capricorn). In Late Babylonian zodiacal astrology months and zodiacal signs are connected and often interchangeable, so that a zodiacal sign can be referred to by the corresponding month. Since the passage juxtaposes a “region of Tebētu” (month X) and a “region of the Goat-Fish”, it is plausible that Goat-Fish denotes the tenth zodiacal sign here.

3) In §4 (month Dûzu) Mars and the moon are said to “have taken up height” (i 26': NIM DIB.MEŠ = *šūqa šabtū*) and Jupiter and the sun are said to “have taken up depth” (i 27': *šu-pul DIB.MEŠ*). As astronomical terms, “height” and “depth” are attested only in mathematical astronomy and some Late Babylonian astrological sources, nearly always in the sense of distance (latitude) below or above the ecliptic, the circle at the center of the zodiac (Ossendrijver 2012: 34, 599). The author therefore translates “had height (maximum latitude)” and “had depth (minimum latitude)”, respectively (194, 268–269). A minor point of criticism concerns the unexplained restriction to maxima and minima. An astronomically problematic aspect of the passage is that “depth” is assigned to the sun, even though the sun is confined to the ecliptic in the astronomical texts. The author acknowledges the problem and proposes that it reflects schematic reasoning (p. 268). Is another interpretation possible that does not imply a basic error on the part of the scholars? In a few unusual procedures (Ossendrijver 2012 No. 53 P9'.b, P.11.b) “height and depth” is ascribed to the sun, but in the sense of distance above and below the celestial equator, roughly corresponding to declination. This alternative meaning is alluded to but not pursued by the author (p. 268 footnote 215; p. 276) – as it turns out for good reasons. Recall that celestial equator and ecliptic intersect at the equinoxes, so that half the ecliptic, from Aries to Virgo, is above the celestial equator and the other half, from Libra to Pisces, is below it. The sun therefore has “height” in Aries–Virgo (signs 1–6) and “depth” in Libra–Pisces (signs 7–12). In Dûzu, month IV, the sun is roughly in Cancer (sign 4), so that it should have “height”, but according to the passage it has “depth”. Therefore neither of the two known meanings of “depth” results in an astronomically possible interpretation of the passage. Given the heavily exegetical and mythological nature of the composition, it is perhaps not surprising to encounter astronomical concepts being used in situations where they are strictly speaking invalid according to the astronomical texts. Such extended usage might be attributed to schematic reasoning as suggested by the author, i.e. “depth” is assigned to the sun by analogy to

Jupiter's "depth". One might even speculate that the scholars consciously introduced an astronomically impossible configuration for exegetic or dramatic purposes, a possibility which the author seems to hint at on p. 269.

Two sections (§4, §13) preserve references to phenomena of the planets Mars and Jupiter, including first appearances and stations, which function as cosmic correspondences to episodes from the battle between Marduk and Ti'amat. A potential further reference to Jupiter's motion occurs in §9, which describes an apotropaic ritual involving Marduk's throne leaving Babylon and returning after six days as a substitute for a twelve-year absence caused by Elam. The section ends with the following exegetical statement (iii 26): "The six days that it (Marduk's throne) moved around in the countryside are for twelve years ... [...]". The author attributes the twelve years to number speculation, but it may be noted that twelve years is also a Babylonian value of the period in which Jupiter completes a full round through the zodiac, so that it could function as a cosmic correspondence to Marduk's return to Babylon after six days. This also raises the question of whether there were further references to planetary motion in the missing portions of the composition.

One may add that the integration of historiography and astral science probably reflects a broader development in Late Babylonian scholarship aimed at reconstructing and interpreting the past using astronomical and astrological methods, so that one might speak of astrological historiography. Other possible examples of this development are the astronomical diaries and related texts, astrological procedures for predicting weather and market prices, and certain Late Babylonian chronicles with references to astronomical phenomena.

The author is to be congratulated with publishing this monumental, deeply erudite and fully up-to-date study, which constitutes a milestone in research on a very difficult and tantalizing scholarly composition and the historical and intellectual context that produced it. It is somewhat unfortunate that the vast amounts of research which are presented in the book are not synthesized into more easily readable, systematically structured sections, with auxiliary information relegated to appendices. However, dedicated readers with an interest in the composition or in Late Babylonian priestly scholarship will find the book to be an inspiring treasure trove and the starting point for much further research.

References

- Hunger, H. 2004, 'Stars, cities, and predictions', in C. Burnett, J. P. Hogendijk, K. Plofker, and M. Yano (eds.), *Studies in the History of the Exact Sciences in Honour of David Pingree*. Leiden: Brill, 16–32.
- Ossendrijver, M. 2012, *Babylonian Mathematical Astronomy – Procedure Texts*. New York: Springer.

Institut für Wissensgeschichte Mathieu OSSENDRIJVER
des Altertums /
Project ZODIAC – Ancient Astral Science in
Transformation (ERC Advanced Grant 885478)
Freie Universität Berlin
Arnimallee 10
14195 Berlin
September 2022