New Perspectives on 2 Enoch

No Longer Slavonic Only

Edited by

Andrei A. Orlov and Gabriele Boccaccini

Associate Editor

Jason M. Zurawski

BRILL

LEIDEN • BOSTON
2012

 ISBN 978 90 04 23013 2

CONTENTS

 ISBN 978 90 04 23013 2

CONTENT AND CONTEXT OF 2 ENOCH

PART TWO

ADAM, ENOCH, AND MELCHIZEDEK:
MEDIATORIAL FIGURES IN SECOND TEMPLE JUDAISM

ADAMIC TRADITIONS

 ISBN 978 90 04 23013 2

 ISBN 978 90 04 23013 2

CALENDRICAL ELEMENTS IN 2 ENOCH

Basil Lourié

It is widely known that 2 Enoch is rich in calendrical material of both luni-solar and solar nature. The early attempts to reconstruct the corresponding calendrical schemes failed due to the general unawareness of the pre-Qumran scholarship of the real variety of the Jewish calendars in the Hellenistic period. This early epoch of the calendrical studies of 2 Enoch has been closed by André Vaillant[1] in his critical edition of the shorter recension. However, since the 1950s, especially in the studies of Annie Jaubert,[2] the structure of the luni-solar calendar[3] implied in 2 Enoch has been described as being based on the 364-day year. Jaubert noticed that the solar calendar in 2 Enoch has a structure of its own, but limited herself to a description of its general outlook with no comments on its origin and meaning. The next important contribution is that of Francis Andersen[4] who précised several manuscript readings in the calendrical sections, already knowing that the luni-solar calendar was based on the 364-day year.[5]

It is only in the 1990s that it became clear, due to the Dead Sea Scrolls studies, that the 364-day calendars themselves could be quite varied,[6] and so, the question of the further specification of 2 Enoch's luni-solar calendar comes to our attention. An earlier attempt at a detailed reconstruction

---

[1] A. Vaillant, A., *Le Livre des secrets d'Hénoch. Texte slave et traduction française*, Textes publiés par l'Institut d'Études slaves 4 (Paris: Institut d'études slaves, 1952; reprint 1976).

[2] A. Jaubert, *La date de la Cène. Calendrier biblique et liturgie chrétienne*, Études bibliques (Paris: Gabalda, 1957). See also an important study by J. van Goudoever, *Fêtes et calendriers bibliques*, Troisième édition revue et augmentée. Traduit de l'anglais par M.-L. Kerremans, Théologie historique 7 (Paris: Beauchesne, 1967), 163–167.

[3] This calendar is in fact solar rather than luni-solar and could be called "luni-solar" only in the sense that it presupposes a 12-month division of the year. It is useful, nevertheless, to call it "luni-solar" and to reserve the name of "solar" calendar for another calendaric scheme of 2 Enoch which presupposes a division of the year into 10 solar "months."

[4] F. Andersen, "2 (Slavonic Apocalypse of) Enoch," in *The Old Testament Pseudepigrapha*, ed. J. H. Charlesworth (New York: Doubleday, 1983), 1:91–221.

[5] See 2 En 16:2 in Andersen, "2 (Slavonic Apocalypse of) Enoch," 128–129, and note *d*. There is no manuscript which preserves all relevant readings without distortion.

[6] J. C. VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, The Literature of the Dead Sea Scrolls (London: Routledge, 1998).

 ISBN 978 90 04 23013 2

of the luni-solar calendar of 2 Enoch has been offered by the present author in 2006.[7] The solar calendar of 2 Enoch has not been touched upon since Jaubert.

1. *Preliminaries: Chronological Markers*

To obtain some criteria for choosing between different manuscript readings in the scheme of the luni-solar calendar in 16:2 we start with an analysis of the important dates within the narrative.

1.1. *The Problem of 6.III: Pentecost or Not?*

One of the most important dates of the narrative is the 6th day of the 3rd month, 6.III, which is involved in the plot of the narrative in several ways. Even the early scholarship has suggested that this is the date of Pentecost, because such is the date of Pentecost in the rabbinic calendar.[8]

This solution is not without problems. On the one hand, the rabbinic calendar has no luni-solar nature and does not contain 364 days a year. On the other hand, in well-known luni-solar 364-day calendars, especially in that of the Book of Jubilees, the date of Pentecost is 15.III. So, there are doubts as to whether 6.III corresponds to Pentecost.

We will go back to the problem, taking into account two considerations. First, the data of 2 Enoch on the number of days in each month are quite peculiar and so far ignored in previous interpretations of 6.III. The months from the first to the third contain the following number of days: 30/31, 35, 30/31 (the slash divides different manuscript readings). Second, let us take into account another important feature of most 364-day calendars: the count of the 50 days of the Pentecost period is started, not on the day following the day of the Passover, but one week later, after the

[7] B. Lourié, Лурье, *Метатрон* и *Прометая*: *Вторая книга Еноха* на перекрестке проблем [*Metatron* and *Prometaya*: *Second book of Enoch* on the crossroad of problems], *Scrinium* 2 (2006): 371–407.

[8] Cf., e.g., van Goudoever, *Fêtes et calendriers bibliques*, 166–167, who notes the coincidence of the date 6.III with Pentecost in rabbinical Judaism but reaches a farfetched conclusion that this could be a result of the intervention of a late Jewish (!) editor. Andersen is much more cautious when he, following J. Morgenstern, supposes that the date 6.III "was the portentous date of the Festival of Firstfruits;" Andersen, "2 (Slavonic Apocalypse of) Enoch," 196, note *c* to ch. 68.

 ISBN 978 90 04 23013 2

Omer ceremony.[9] We need to discuss this point in more detail, because there are two possibilities here.[10]

1.2. *The Sunday 364-Day Calendar*

The day of the Passover is always 14.I (Lev 23:5). It is followed by the seven-day feast of Unleavened Bread, 15–21.I (Lev 23:6–8). The counting of the seven weeks of Pentecost must be started "from the day after the Sabbath (מִמָּחֳרַת הַשַּׁבָּת), from the day on which you bring the sheaf of the elevation offering" (Lev 23:15 NRSV). The latter verse raised difficulties for the creators of Jewish calendars.

In rabbinic Judaism, the mention of Sabbath was ignored in its literal sense (in both Lev 23:15 and Lev 23:11: "He shall raise the sheaf . . . on the day after the Sabbath"). Thus, the day of the raising of the sheaf is 15.I, the first day of counting of the seven weeks is 16.I, and the Day of Shavuoth (Pentecost) is 6.III (the first month having 30 and the second month having 29 days). Of course, the rule that the Day of Pentecost must fall on Sunday (Lev 23:16: "the day after the seventh Sabbath") is also ignored in its literal sense.

In the 364-day calendars of 1 Enoch and Jubilees, as Jaubert pointed out, the situation is quite different. All the rules of Lev 23 regarding the Sabbath are kept in their literal sense. In these calendars, 14.I is Tuesday. Thus, the final day of Unleavened Bread, 21.I, is Tuesday as well. However, the first day of counting of the seven weeks must be the Sunday after the feast of Unleavened Bread. The first Sunday after 21.I is 26.I. Thus, the Day of Pentecost is Sunday 15.III (both the first and second months having 30 days). However, these calendars presuppose a breaking of the commandment, in its literal sense, in the second part of the verse Lev 23:15 ". . . from the day on which you bring the sheaf of the elevation offering." The same situation occurs in other 364-day calendars, still unknown to Jaubert (e.g., that of the Temple Scroll).

All these calendars, presupposing that the Day of Passover, 14.I, is a Tuesday, presuppose that the beginning of calendar, 1.I, is a Wednesday,

---

[9] On this Pentecost count, see especially J. P. Audet, "Jésus et le « Calendrier sacerdotal ancien ». Autour d'une variante de *Luc* 6, 1," *Sciences ecclésiastiques* 10 (1958): 363–383.

[10] I am especially grateful to Steven Fraade for his discussion of this point, as well as for other notes and corrections given in his reply to my paper at the Fifth Enoch Seminar and in our private discussions.

 ISBN 978 90 04 23013 2

the day when the luminaries were created. However, we know another tradition where the 364-day calendar starts on the day of the creation of the world, Sunday. So far, it was known only from the calendar discussions among the Christians who were following different traditions of 364-day calendars.[11]

Supposing that 1.I is Sunday, we have 14.I on Saturday, that is, the Passover falling on the Sabbath. It is very interesting, because, for example, the tradition of the Passover on the Sabbath is reflected in the Epistle to the Hebrews.[12]

If the Day of Passover, 14.I, is the Sabbath, the days of the Unleavened Bread festival are from 15.I to 21.I, from Sunday to Saturday. The day of the raising of the sheaf is the Sunday immediately after the end of the festival of Unleavened Bread, 22.I, which is in perfect correspondence with Lev 23:11. The same day is the beginning of the counting of the seven weeks, again, in perfect correspondence with the commandment of Leviticus (23:15): to start on the Sunday but on the day of the raising of the sheaf.

Thus, as Steven Fraade pointed out,[13] the Sunday 364-day calendar is the only calendar in which all the commandments regarding the counting of the seven weeks of Shavuoth are kept, that is, honored in their literal sense.

1.3. *6.III in 2 Enoch: Pentecost*

Given that the calendar of 2 Enoch is a 364-day one, we have to choose between two kinds of such calendars. Of course, in the case of the Wednesday calendar, 6.III is by no means the day of Pentecost. For this calendar, we must start counting the seven weeks (49 days) on 26.I. Therefore, taking into account the number of days in the first two 2 Enoch months (30/31 and 35), the day of Pentecost would be either 10.III or 9.III (depending on the number of days in the first month, 30 or 31).

In the case of the Sunday 364-day calendar, we must start counting on 22.I, which leads us to either 5.III or 6.III as the day of Pentecost, depending

[11] M. van Esbroeck, "Deux homélies pseudo-basiliennes sur le Dimanche et le Vendredi," *Parole de l'Orient* 16 (1990–1991): 49–71.

[12] B. Lourié, "Calendrical Implications in the Epistle to the Hebrews: Seven questions concerning the liturgy of the Sabbath rest," *Revue biblique* 115 (2008): 245–265.

[13] In his response to this paper at the Fifth Enoch Seminar, and now, also, in S. D. Fraade, "Theory, Practice, and Polemic in Ancient Jewish Calendars" in Fraade, *Legal Fictions: Studies of Law and Narrative in the Discursive Worlds of Ancient Jewish Sectarians and Sages* (Leiden: Brill, 2011), 255–284.

 ISBN 978 90 04 23013 2

on the number of days in the first month. Such a correspondence with an important date in 2 Enoch could not be merely coincidental.

This means, in turn, that the date of 6.III in 2 Enoch is either Pentecost itself (accepting the reading "30" for the number of days in the first month) or the second day (Monday) after the Sunday of Pentecost (accepting the reading "31"). The latter is extremely improbable due to the most important nature of the events fixed on 6.III and no specific importance of the day after the Pentecost in any known traditions.

Therefore, it is reasonable to conclude that 6.III is, indeed, the day of the Pentecost, and that the genuine reading of the number of days in the first month is 30 (and not 31).

1.4. *Two Ascensions of Enoch: A Difficulty in the Narrative*

The narrative of 2 Enoch contains a confusion in the plot. There is a consensus among scholars that the text is distorted.

The first ascension of Enoch takes place on an otherwise unspecified, "assigned" (*naročitij* = ἐπισήμιος) day of the first month (1:2).[14] Then, in the heavens Enoch spends two periods of 30 days, in sum 60 days (during the first 30-day period he is instructed himself, during the second period he writes his books for humankind, 23:3–6).[15] Then, he returns to the earth where he passes 30 days more, and, then, ascends into heaven permanently. The latter date, the date of the second ascension of Enoch, is 6.III, and the same is the date of the carnal birth of Enoch (68:3, longer recension only). Then, the festival of the consecration of Methusalam takes place "on the third day" after the second ascension of Enoch (69:1).

The date of the second ascension contradicts the date of the first ascension (even if the latter is imprecise) because there is no place for a 90-day period within the gap between any date in the first month and 6.III.

Most scholars are inclined to consider the date of 6.III as that of the return of Enoch, while the date of his second ascension must be 30 days later, that is, in the fourth month.

---

[14] In some manuscripts there is an exact date here, 1.I. On its inauthenticity, Andersen, "2 (Slavonic Apocalypse of) Enoch," 105, note *d* to ch. 1. Vaillant, *Le Livre des secrets d'Hénoch*, 3, supposes, on the basis of the parallels from Lev 23:7 and Num 28:12, that the genuine reading here could be "on the first, assigned day."

[15] Therefore Vaillant's attempt to see in 23:6 not a repetition of a 30-day period but an addition of two times 30 days = 60 days (which would lead to 90 days for the whole time of Enoch's heavenly journey) looks very strange, not to say unfounded in this text; *Le Livre des secrets d'Hénoch*, 36–37. Andersen rejects such an interpretation; "2 (Slavonic Apocalypse of) Enoch," 140–41.

 ISBN 978 90 04 23013 2

There are several new reasons to enforce this position of the previous scholarship. Andrei Orlov[16] wrote much on the "Mosaic polemics" in 2 Enoch, and I tried to enlarge his dossier.[17] Enoch is also a legislator, like Moses—both reveal to humankind a divine law. If so, the descent of Enoch from heaven is a kind of Pentecost, a parallel to the descent of Moses from Sinai (where Moses, like Enoch, saw, in his way, the structure of heavens, the heavenly Tabernacle; cf. Ex 25:9 and its various exegetical traditions). Therefore, given that 6.III is the day of Pentecost, it is natural that this is the day of two arrivals of Enoch, that is, of both his descent from heaven and his carnal birth.

As to the carnal birth of a messianic figure on Pentecost, there is also a strong tradition going back to the birth of Isaac according to the Book of Jubilees and reaching to the Palestinian dating of the birth of Jesus Christ on May 15.[18]

Our reconstruction of the plot of 2 Enoch corroborates the previous conclusion that 6.III is the date of Pentecost and, moreover, makes us assign to the fourth month another important feast, that of the consecration of Methusalam.

1.5. *The Date of the First Ascension of Enoch*

It is obvious that the day of the first ascension of Enoch could be found from the equation:

$$x + 60 = 6.\text{III}.$$

Given that the first month contains 30 days (not 31), x = 11.I.

Then, a problem arises: Is it possible that 11.I is an "assigned" (ἐπισήμιος) day? Of course, it is hardly probable within the pre-Passover period according to Leviticus.

The situation is quite different in the calendars where the greatest feasts are preceded by a specific strict fast for 3.5 days. On the Passover, this fast has to be terminated after the immolation of the Passover lamb

[16] A. Orlov, *The Enoch-Metatron Tradition*, TSAJ, 107 (Tübingen: Mohr Siebeck, 2005).

[17] Lourié, Лурье, *Метатрон* и *Прометая*: *Вторая книга Еноха* на перекрестке проблем.

[18] W. D. Ray, *August 15 and the Development of the Jerusalem Calendar*. A Dissertation / Directors: P. F. Bradshaw, M. E. Johnson. Notre Dame University, Department of Theology (Notre Dame, IN, 2000) (unpublished).

 ISBN 978 90 04 23013 2

"in twilight" on 14.I (Lev 23:5),[19] covering only one-half of the day 14.I (given that the day starts at the morning, not at the evening). Therefore, the days from 11 to 13 of the first month belong to the fast in full. The day 11.I is the first day of this pre-Passover fast, and so, it is certainly "assigned."

Thus, the day 11.I, Wednesday in the Sunday 364-day calendar, is analogous to the day of "taking off of the bridegroom" of the Gospel's Passion Narrative, perfectly suited for the day of the disappearance of Enoch before his second coming.

1.6. *Midpentecost on the Heaven: The Meaning of 30 + 30*

For the sake of completeness, I want to mention here a date that will not be directly involved in our subsequent restoration of the 2 Enoch calendar, but is nevertheless interesting for a general understanding of 2 Enoch.

The 60-day period spent by Enoch in the heavens is subdivided into two halves, each of 30 days. Given that 60 days cover the interval between the beginning of the pre-Passover strict fast and the Pentecost, it is probable that the middle of the 60-day period is the feast of Midpentecost.

Van Goudoever hypothesised that the earliest meaning of the Midpentecost had been as a memory of the Flood.[20] His hypothesis is corroborated by the data of a Hellenistic Jewish Alexandrian calendar preserved as the theoretical scheme lying behind the Ethiopian Easter computus.[21] We know little about this calendar, but its origin is not very distant from that of 2 Enoch because both were used in some parts of the Jewish milieu in Egypt.

This could be an interesting starting point for further research into the, so-called, "Noahic polemics" (as Orlov coined it) in 2 Enoch. Possible parallels between Enoch's 60-day heavenly sojourn and Noah's navigation in the ark are still to be explored.

---

[19] See, for the details, B. Lourié, "Les quatre jours « de l'intervalle »: une modification néotestamentaire et chrétienne du calendrier de 364 jours," in *L'église des deux Alliances. Mémorial Annie Jaubert (1912–1980)*, ed. M. Petit, B. Lourié, A. Orlov, Orientalia Judaica Christiana, 1 (Piscataway, NJ: Gorgias Press, 2008), 103–133. The earliest document from which that kind of the pre-Passover fast could be reconstructed seems to be the Book of Tobit.

[20] Van Goudoever, *Fêtes et calendriers bibliques*, 193–4.

[21] B. Lourié, "Computus," in *Encyclopaedia Aethiopica*, ed. S. Uhlig (Wiesbaden: Harrasowitz, 2003), 1:784–787.

 ISBN 978 90 04 23013 2

1.7. *Problem of* Pamovus(a)

One of the crucial problems of the 2 Enoch chronology is the meaning of the word *Pamovus*(*a*) that one of the manuscripts (R) has where the others have *Tsivan* (= *Siwan*).[22] This question is not especially important for understanding the calendrical scheme as such, but it is quite important in the search of the *Sitz im Leben* of the calendar. It is especially important to appreciate the possible gap between the origin of the calendar used in 2 Enoch and the origin of the book itself. Indeed, unlike 1 Enoch, this text does not contain any indication that its goal is to introduce a new calendar. On the contrary, it is limited to the events covering only four months of an already existing calendar.

Andersen stated that the name *Pamovus*(*a*) is an Egyptian equivalent of *Siwan*,[23] though he offers no proof. Other scholars—Vaillant,[24] van Goudoever,[25] and Böttrich[26]—identify it with *Tammuz*, considering *Tsivan* of the remaining manuscripts an error.[27] Both sides use the same method, trying to find an appropriate calendrical meaning for either *Siwan* or *Tammuz*. Nobody says anything on the etymology of *Pamovus*(*a*).

---

[22] 2 Enoch 48:2 (on the days of solstices, quoted here below), 68:1, 3 (6 *Tsevan*/*Pamovusa* as the birthday and the day of the second ascension of Enoch). Cp. discussion of the manuscripts in Andersen, "2 (Slavonic Apocalypse of) Enoch," 196 *b* to chap. 68. The calendric data of ch. 73 (longer recension only) relating to the chronology of the Flood are a late interpolation from a Byzantine source—thus Vaillant and Andersen, see Andersen, "2 (Slavonic Apocalypse of) Enoch," 212—, and so, will not be discussed here.

[23] Andersen, "2 (Slavonic Apocalypse of) Enoch," 175, note *e* to ch. 48.

[24] Vaillant, A., *Le Livre des secrets d'Hénoch*, 109, 112–13.

[25] Van Goudoever, *Fêtes et calendriers bibliques*, 166–67.

[26] C. Böttrich, *Das slavische Henochbuch*, JSHRZ V, 7 (Gütersloh: Gütersloher Verlagshaus, 1995) 813.

[27] Vaillant, followed by van Goudoever, considers the second ascension of Enoch to be appointed on the feast of *Tammuz* 17 known from the later Jewish sources. Böttrich thinks that the same Jewish feast is the date of the consecration of Methusalam, while he acknowledges the difficulty to harmonize the joyful nature of the festivity in 2 Enoch with the sorrowful Jewish feast of *Tammuz* 17 (commemoration of the destruction of the walls of Jerusalem in 70 C.E.). Thus, Böttrich thinks that 2 Enoch's festival represents some pre-70 C.E. form of the same Jewish feast. The original nature of the feast on *Tammuz* 17 is, according to Böttrich, the summer solstice (but one should note that there is no source indicating the summer solstice on *Tammuz* 17!). Thus, Böttrich accepts the conjecture in 2 Enoch 48:2, 68:1, 3 correcting 17 of *Siwan*/*Pamovus*(*a*) to 17 of *Tammuz*. Orlov, *The Enoch-Metatron Tradition*, 328–330, argues against Böttrich's attempt to establish a link between the radiance of the face of Methusalam and the solar cult. From the liturgical point of view, Böttrich's attitude seems to me a step backward in comparison with that of van Goudoever. The latter put forward a hypothesis about a connection between the date of *Tammuz* 17 and the death of Moses that is represented in several traditions as the ascension into heaven. This intuition seems to me correct, except for the date of *Tammuz* 17 itself.

 ISBN 978 90 04 23013 2

The *crux interpretum* is here 48:2 (existing in the longer recension only): "From the month Tsivan [= *Siwan*], from the 17th day, he [sun] descends until the month Theved [= *Tebet*]; and from the 17th day of Theved he ascends." It is clear that the verse describes the solstices, and *Tebet* 17 (17.X) is apparently a non-problematic date for the winter solstice. But the 17th day of *Pamovus*(*a*)/*siwan* is a very problematic date for the summer solstice.

If the winter solstice is 17.X, then, the month of the summer solstice is IV, not III, that is, *Tammuz*, not *Siwan*.[28] These astronomical reasons, however, are not applicable to 2 Enoch in which the sun's movement in the heavens, from solstice to solstice, is not dividing the year into two equal halves (see below, point 3.4). Moreover, there are some facts suggesting that *pamovus*(*a*) roughly corresponds to Julian June.

1.8. Pamovus(a): *Linguistic Considerations*

Andersen does not explain why he thinks that the name *Pamovus*(*a*) is Egyptian, but we can suppose that he meant the name of the month φαμενὼθ, Coptic *Paremhotep*, Old Egyptian *p-n-jmnḥtp* ("[month] of Amenḥotep"). There is no, at least, relatively similar month name of the Egyptian calendars in any of the languages of Egypt (that is, Greek, Coptic, and Old Egyptian). However, Coptic *Paremhotep* is roughly Julian March, which is scarcely the month of the summer solstice. The month of the summer solstice should be roughly Julian June. It is possible for the third month, *Siwan*, in some calendars of Asia Minor (this is why, in Syriac, the month name *Siwan* is an equivalent of Julian "June") where the name of the first month of the Babylonian calendar, *Nisannu*, has been identified with April and its equivalents, not with March. This is of no help in the case of φαμενὼθ.

However, there is a known historical situation where Egyptian *p-n-jmnḥtp*, Semitic *Siwan* and the month of the summer solstice roughly corresponding to Julian June occur together. This is in the calendar of the Jewish community in Elephantine in Egypt, in the fifth-century B.C.E. This calendar is neither Jewish nor Egyptian but Babylonian.[29] The month names of this calendar are Babylonian, but well-known in Hebrew and

[28] See Andersen, "2 (Slavonic Apocalypse of) Enoch," 175, note *e* to ch. 48.

[29] S. Stern, "The Babylonian Calendar at Elephantine," *Zeitschrift für Papyrologie und Epigraphik* 130 (2000): 159–171.

 ISBN 978 90 04 23013 2

Aramaic texts, too. The Elephantine papyri are written in Aramaic, but the dates given according to the Elephantine calendar are translated into the contemporary Old Egyptian calendar with its movable Sothic year. *Siwan* in the Elephantine papyri occurs five times,[30] where it is always rendered in Egyptian as *pmnḥtp* (a word unknown elsewhere in Hebrew or Aramaic texts).

All these five dates belong to Julian June that corresponds to the Sothic year in the fifth-century B.C.E. The later correspondence between φαμενῶθ and March reflects the situation in the time of the calendaric reform in 30 B.C.E. when the Sothic year was abrogated and the calendar of Alexandria was transformed into a variation of the Julian calendar.

Therefore, the situation in which a month called *Siwan* is equivalent to the Old Egyptian *p-n-jmnḥtp* and roughly to June would correspond to the calendar of some Jewish community in Egypt about 400 B.C.E.

Now we are prepared to pose another question, that is, whether the Slavonic *hapax legomenon, Pamovus*(*a*), could reflect Old Egyptian *p-n-jmnḥtp*, or more simply its known Semitic (Aramaic) rendering *pmnḥtp*.

From the Greek (of course, much later than 400 B.C.E.) φαμενῶθ we know that the final *p* disappeared and the pharyngeal *ḥ* became voiceless leading to the prolongation of the vowel *ō*. Moreover, there was no phonological difference, in either Old Egyptian/Coptic or Egyptian Greek, between aspirated and non-aspirated consonants, including *p* and *f*.[31] This is why the initial *p* became φ in φαμενῶθ.

Therefore, Aramaic *pmnḥtp* could be pronounced, especially in a later epoch, somewhat as **pamenōt*(*h*) (the first two short vowels are reconstructed tentatively, the aspiration of the final consonant is not phonological). Such a pronunciation corresponds, in Hebrew and Aramaic writing systems, to **pmnwt*.

Being transliterated into another writing system, such as Greek, **pmnwt* could easily result in *παμοουουτ /*pamowut*/ with subsequent simplification of orthography into *παμοβουτ. The consonants *n* and *w* could be easily confounded, being quite similar in the Aramaic and Hebrew writing systems of the Second Temple period (both were written as almost

[30] According to the database of the *Comprehensive Aramaic Lexicon* (*CAL*): http://calı .cn.huc.edu/.

[31] F. Th. Gignac, *A Grammar of the Greek Papyri of the Roman and Byzantine Period*, Vol. I. *Phonology*, Testi e documenti per lo studio dell'Antichità, LV [1] (Milano: Cisalpino-Goliardica, 1976), 90–95.

 ISBN 978 90 04 23013 2

right strokes).[32] This is sufficient for **pmnwt* to lose its *n*. Then, the letter *waw* could be read as *ū* as easy as *ō*. The simplification of orthography is likely under the influence of the Coptic milieu. In Coptic, the digraph ⲟⲩ when it signifies /*w*/ and the letter ⲃ are interchangeable. This norm could affect the Egyptian Greek spelling of a foreign word, if its digraph ου were misread as /*w*/.

The only problem that remains is the final *t*(*h*): I do not see how it could be transformed into the Slavonic letter *slovo* (*s*), neither through a Greek intermediary nor otherwise.

Be that as it may, our etymology for *Pamovus*(*a*) seems to be probable:

Pamovus(*a*) < *παμοβουτ < *παμοουουτ < **pmnwt* < *pmnḥtp* < *p-n-jmnḥtp*

And, most important, our etymology explains why *Pamovus*(*a*), being an Egyptian month name, is equated with *Siwan* but, at the same time, is the month of the summer solstice, that is, roughly June. This linguistic reconstruction could be accepted if and only if it results in a meaningful reconstruction of the astronomy of 2 Enoch. We will revisit this question below (point 4.2). However, there is one point that would be more convenient to discuss now, anticipating our future astronomical confirmation of the present linguistic reconstruction.

1.9. Pamovus(a) *and the Age of the 2 Enoch Calendar*

As is seen from my linguistic reconstruction, I do not consider the available Slavonic form *pamovus*(*a*) as a direct reflection of the older Aramaic form *pmnḥtp*. *Pamovus*(*a*) should reflect (through Greek) an Aramaic form existing at the time of the composition of 2 Enoch, probably **pmnwt*. Nevertheless, the calendar itself could be as early as about 400 B.C.E., around the same date as the calendar of 1 Enoch. Such is the conclusion from the comparison of the 2 Enoch calendar with the Old Egyptian one: our calendar bears a mark of the period when the Egyptian Sothic year presupposed the correspondence of *p-n-jmnḥtp* with June and (Elephantine Babylonian) *Siwan*.

Such a remote date is, nevertheless, quite probable, even if it is earlier than that of the Astronomical Book of 1 Enoch (3rd cent. B.C.E.). As

[32] See for example, the comparative tables by J. Euting in Th. Nöldeke, *Kurzgefasste Syrische Grammatik*, Zweite verbesserte Auflage (Leipzig: Tauchnitz, 1898), and S. Segert, *Altaramäische Grammatik mit Bibliographie, Chrestomathie und Glossar* (Leipzig: Verlag Enzyklopädie, 1975), 60–61.

 ISBN 978 90 04 23013 2

Matthias Albani has demonstrated,[33] the calendar of 1 Enoch is, from the astronomical point of view, the calendar of the Babylonian treatise MUL.APIN ("Polar Star"), now dated to about 1000 B.C.E.[34] This astronomical tradition is also presented in other Babylonian texts roughly datable from the twelfth century B.C.E. onward.[35] There is, thus, plenty of room to invent another Jewish modification of the MUL.APIN calendar than that known from 1 Enoch.

Francis Andersen once said that the Semitic originals of 1 Enoch and 2 Enoch might be "even of comparable antiquity."[36] While unlikely in a literal sense, Andersen does appear to be correct with respect to their calendars.

1.10. *Chronology of the Feast of Consecration of Methusalam*

Now we will skip van Goudoever's interesting speculations as to the possible connection between the date of the second ascension of Enoch and Moses's death,[37] as well as my own considerations on the same topics.[38] It is quite possible that there is here an expression of Orlov's so-called "Mosaic polemics."[39]

The date of the second ascension of Enoch is 6.III + 30 = 5/6.IV (depending on the number of days in the third month). The counting is exclusive, that is, the day 6.III, the day of Enoch's arrival after his first ascension, is not included into the number 30 (the number of days passed by Enoch on the earth). We have already used the same manner of exclusive counting when we did not include the day of Enoch's first ascension into the number of days passed by him in the heavens.

The day of the second ascension of Enoch is the first day of a large feast, concluded by the consecration of Methusalam (68:5–7). The text contains an important statement that after the last day of the festival, before the night, the people "went off to their own shelters, each one of them" / "went

---

[33] M. Albani, *Astronomie und Schöpfungsglaube. Untersuchungen zum Astronomischen Henochbuch*, WMANT, 68 (Neukirchen—Vluyn: Neukirchener, 1994).

[34] H. Hunger and D. Pingree, MUL.APIN. *An Astronomical Compendium in Cuneiform*, Archiv für Orientforschung. Beiheft 24 (Horn: F. Berger & Söhne, 1989).

[35] H. Hunger and D. Pingree, *Astral Sciences in Mesopotamia*, Handbuch der Orientalistik, I, 44 (Leiden: Brill, 1999).

[36] Andersen, "2 (Slavonic Apocalypse of) Enoch," 94.

[37] Van Goudoever, *Fêtes et calendriers bibliques*, 173–75.

[38] Lourié, Лурье, *Метатрон и Прометая*: *Вторая книга Еноха* на перекрестке проблем, 387–89.

[39] Orlov, *The Enoch-Metatron Tradition*, 274–75.

 ISBN 978 90 04 23013 2

off to their houses" (69:19, longer/shorter recensions). The consecration of Methusalam starts "on the third day," "at the evening" (69:1) and is continued the next morning by the animal sacrifices (ch. 69).

Thus, for the third day after the ascension of Enoch, we obtain the date 7/8.IV and, for the date of consecration of Methusalam, 8/9.IV. The day, as always, begins at the morning, and so, the end of the feast at the evening of the fourth day (thus, in the middle of the twenty-four hours) means that the whole feast continues for 3.5 days. Such a structure has no parallels in other known calendars among the feasts, but does have parallels among the fasts.[40]

The whole cycle of the first ascension, return and second ascension of Enoch is opened by a fast for 3.5 days and is closed by a feast for 3.5 days.

2. *The Structure of the 12-Month Cycle of the Luni-Solar Calendar*

2.1. *The Structure of the Luni-Solar Year: General Principles*

The Enoch narrative covers, in total, 94 days: the day of the first ascension + 60 days in the heavens + 30 days on the earth of which the last one is the first day of the feast + 2.5 days of the continuation of the feast. This number cannot be coincidental in the 364-day calendar because the number 364 is divisible into four 90-day periods plus four extra days. These four additional days can be distributed within the year in different ways. In the earliest 364-day calendars (1 Enoch, Book of Jubilees, Temple Scroll) they are distributed uniformly, in adding one day at the end of each quarter of the year. There are other 364-day calendars of the Second Temple period (e.g., those that I have reconstructed for the Passion narrative and for the Book of Tobit) where these four days are introduced as one 4-day "epagomenal" period.[41] This period is especially convenient for the 3.5-day fast.

The importance of the 90-day period in 2 Enoch is expressed in the narrative where the plot covers a total of 94 days, expressed in three periods of 30 days, plus the four extra days.

[40] Lourié, "Les quatre jours « de l'intervalle »: une modification néotestamentaire et chrétienne du calendrier de 364 jours."

[41] Lourié, "Les quatre jours « de l'intervalle »: une modification néotestamentaire et chrétienne du calendrier de 364 jours."

 ISBN 978 90 04 23013 2

Thus, it would be legitimate to suppose that the rest of the year contains three periods of 90 days. Such a supposition has a confirmation in, what is at first glance, a very strange feature of our calendar: the number of days in the last (twelfth) month is 22. This number turns out quite natural on the condition that the 90-day periods have more importance than the months. If so, this 22-day month is to be united with the first ten days of the first month (divided by the starting date of the first 94-day period on 11.I) resulting in a 32-day period comparable with other months.

The same reasoning forces us to decline one manuscript reading (ms P) where the twelfth month contains 28 days. Another argument against this reading is the extremely high total number of days in the year according to the same manuscript, 373 (instead of the correct number 364).

Let us sum up our previous considerations on the manuscript readings.

Only for two months have we already chosen the exact number of days: 30 for the first month and 22 for the twelfth month. Moreover, we have assumed, despite some previous scholars, that the number of days of the second month, 35 (with no variant reading in the manuscripts) is the correct one.

The number of days in the remaining months may be reconstructed according to the following principles:

1. The year is divided into four quarters, 94 + 90 + 90 + 90 days.
2. Each of these periods must have some festival at the beginning and/or at the end.
3. Among these festivals, we know only the earliest. Besides the Passover and Pentecost, these are only the Day of Atonement (10.VII) and the feast of Tabernacles (15.VII). The rest of them could be unknown to us in the same manner as the feast of 5–8/6–9.IV.
4. It is probable that each of the 90-day cycles is divided into three parts each of them being marked by some "assigned" (ἐπισήμιοι) days of a minor importance.

We shall use all these principles in deciding between the variant manuscript readings.

 ISBN 978 90 04 23013 2

2.2. *Luni-Solar Calendar in 16:2: Manuscript Readings*

The table that follows is adapted from Andersen.[42] The sigles of the manuscripts are those Orlov uses.[43] [$\mathfrak{A}_1$], [$\mathfrak{A}_2$] and $\mathfrak{A}$ are different stages of the reconstruction of the archetype readings.

The first stage of reconstruction, [$\mathfrak{A}_1$] is our present step: only two choices are accepted, 30 days for the first month and 22 days for the last.[44]

	P	J	R	A	U	B	[$\mathfrak{A}_1$]	[$\mathfrak{A}_2$]	$\mathfrak{A}$
I	(3)1[44]	31	31	31	31	30	30	30	30
II	35	35	35	35	35	35	35	35	35
III	30	30	30	31	31	30	30/31	30	30
IV	30	30	30	30	30	30	30	30	30
V	31	31	31	31	31	30	30/31	30	30
VI	31	—	31	31	31	31	31	*30/31	*30
VII	30	—	30	30	30	30	30	30	30
VIII	31	31	31	31	31	31	31	*30/31	31
IX	35	31	31	31	31	31	31/35	35	35
X	30	30	30	30	30	—	30	30	30
XI	31	31	31	31	31	—	31	*30/31	31
XII	28	22	22	*22	*22	—	22	22	22
Σ	373		363	*364	*364		364	364	364

The last row, Σ, for the columns with the manuscript readings, contains the sum for the column, but only for the manuscripts where the figures for all the twelve months are preserved. The asterisks indicate the readings of

[42] Andersen, "2 (Slavonic Apocalypse of) Enoch," 128–29, note *d* to ch. 16.

[43] Orlov, *The Enoch-Metatron Tradition.*

[44] One letter in the manuscript is lost but all the editors fill the lacuna in the only possible and obvious way.

 ISBN 978 90 04 23013 2

A and U reconstructed by Andersen where these manuscripts have lacunae (month XII), as well as the corresponding figures in the row Σ (364). Andersen already knew that the total number of days in the year must be 364, and not 365 (*pace* Vaillant).

The figure in row Σ for the column [$\mathfrak{A}_1$], 364, is not a sum but is taken as known from the data apart from 16:2.

2.3. *Second Stage of Reconstruction,* [$\mathfrak{A}_2$]*: Possibilities among the Manuscript Readings*

Andersen has already put forward a reconstruction of the luni-solar 2 Enoch calendar based on the manuscripts AU. His arguments, both palaeographic and calendaric, are convincing in the sense that AU represent a consistent recension of the calendar corresponding to some stage of the history of the text. Andersen's conjecture for the month XII in AU coincides with our reconstruction in [$\mathfrak{A}_1$]. This stage is not, however, $\mathfrak{A}$, the archetype. For the reasons explained above, we cannot accept as belonging to the archetype the reading of AU for month I (31 vs. 30 in B and in [$\mathfrak{A}_1$]), and so, we cannot accept the reading of AU for, at least, one more month from II to XI (the total number of days for the year being equal to 364).

As Andersen noted himself, the manuscript R is the best in preserving the figures for each month, even if it is *a priori* not blameless because the total number of the days in the year is, according to R, 363, one day less than one needs. Taking into account that even in R the number of days in the month I is excessive (31 instead of 30), there are not one but two days that are lost in the structure of the year in R. If so, the figures for the months from II to XI in R are corrupted in that two days are lost.

There is another interesting *lectio difficilior*, the figure 35 for the month IX in P (all others manuscripts have here 31). This figure turns out to be symmetrical to the same figure (35) in the month II: both months have the middle place in the corresponding quarters (the first and the third), and the quarters themselves are symmetrical within the year. Let us recall that the figure 35 for the month II is confirmed in the two possible ways, palaeographical (by the agreement of the six manuscripts) and calendrical (see above our computations for 6.III as the Day of Pentecost).

The symmetry of the four quarters is the first principle of the 2 Enoch calendar that we have formulated above (see point 2.1). This principle

 ISBN 978 90 04 23013 2

demands a counterpart to the anomaly in the length of the month II, and such a counterpart must be located in the symmetrical month IX. On the contrary, if the month II is the only 35-day month in the year, the calendar becomes sharply asymmetrical. Moreover, the fact that the figure 35 is a *lectio difficilior* is itself an argument *pro*. Therefore, we have to choose the figure 35 for the month IX, too. Nevertheless, below we will look at the probability of this reconstruction once more when dealing with the structure of the year as a whole.

Having established the reading "35" for the month IX, we are now in a position to return to the manuscript R that contains, normally, the best readings. As we have noticed above, in this manuscript, there are two days "lost." Now, in correcting its reading "31" to "35" for the month IX we have "found" not two days, but four. This fact has consequences for our further reconstruction. Now, we may basically accept the readings of "improved" R (with 35 days in the month IX) but still need to subtract from these readings two more days. The readings for the months I, II, IX, and XII are already established, and so, not subject to further revisions.

Our "basic agreement" with R forces us to accept its reading "30" for the month III: it is now extremely unlikely that there is a reading in our "improved" R that is to be corrected incrementally. Our reconstruction of the figure for the month III turns out to be in accordance with the majority of manuscripts PJB but against the recension represented by AU.

Therefore, all that is left to us for the further corrections are the readings of R for the months IV, V, VI, VIII, and XI. We still need to subtract two days from these five months.

In one case, we have direct support from the manuscripts. One of them, B, gives us the reading "30" against "31" in R and the others for the month V. It is reasonable to accept this reading as genuine.

After this, we still must find one "excessive" day somewhere in the months IV, VI, VIII, or XI but with no direct support from the manuscripts: there is no manuscript reading that fits our conditions.

According to our already established rule that the readings of our "improved" R are not to be corrected incrementally, we must accept as genuine also the figure 30 for the month IV where all six manuscripts agree.

Thus, we have exhausted our possibilities to reconstruct the luni-solar calendar without conjectures. At the corresponding stage of reconstruction, [$\mathfrak{A}_2$] we still have one "excessive" day concealed somewhere in three months, VI, VIII, and XI. For all these months, we have an agreement

 ISBN 978 90 04 23013 2

between the manuscripts (while not a perfect one, due to the lacunae) demanding the figure 31. However, we need, in one case from three, to correct this figure to 30. This is possible on the basis of the calendrical considerations.

Already at the stage [$\mathfrak{A}_2$], after having established the genuine reading for the month III, we can establish the precise date of the second ascension of Enoch and that of the consecration of Methusalam: 6.IV and 9.IV, respectively.

2.4. *Reconstruction of the Archetype of the Luni-Solar Calendar,* $\mathfrak{A}$

Our further calendrical considerations will deal with the part of the year outside the plot of 2 Enoch, that is, from 10.IV to 10.I. This interval contains 270 = 90 × 3 days.

So far, at the stage [$\mathfrak{A}_2$], we have three alternative variants of the structure of the year, depending on the month for which we accept the conjectural reading "30" instead of "31."

According to the main principles formulated above (point 2.1, nr 2 and 3), the festivities on 10.VII and 15.VII (Day of Atonement and Feast of Tabernacles) must be marked, in one way or another, within the structure of the 90-day quarters.

The conjecture in either the VIII or XI month affects the place of the festival dates in the month VII within the structure of the year in the same way. This is why these dates will be relevant to discern between only two schemes:

[$^1\mathfrak{A}_2$], where the conjecture is accepted for either VIII or XI month,
[$^2\mathfrak{A}_2$], where the conjecture is accepted for the month VI.

For both schemes, the conjecture is the same: "30" instead of "31."

The area of comparison is the border between the second and the third quarters.

According to the [$^1\mathfrak{A}_2$] scheme, the third quarter starts at 9.VII. According to the [$^2\mathfrak{A}_2$] scheme, at 10.VII, that is, exactly at the Day of Atonement.

According to the principle nr 2 (from the point 2.1 above), we must prefer the second scheme, [$^2\mathfrak{A}_2$], that presupposes the conjecture in the month VI.

This scheme has greater agreement with one of the most common trends of the Jewish calendars of the Second Temple period, that is, the

 ISBN 978 90 04 23013 2

symmetry between the first and the seventh months.[45] In our scheme, in both the first and seventh months one opens a half-year period not only by a great festival, but also by a day of strict fasting.

Within the context of the whole year, we can reassert our previous conclusion that the reading "35" is genuine for the month IX. Let us suppose the contrary, that is, that the authentic reading for the month IX is "31," the actual reading in R with the majority of manuscripts. Then, we have four extra days to be distributed within the year. However, no one day could be added to the months from I to VI without affecting the plot of the Enoch story and/or the start of the third quarter at the Day of Atonement. Moreover, no one day could be added to the month XII. So, these four days should be added to the months from VII to XI only. It is also extremely unlikely, in consideration of symmetry, that any of these months could be longer than 31 days. Therefore, the extra days could be added only to the months VII and X, by one day to each of them. However, we have to add not two, but four days. Therefore, our initial assumption that "31" is the genuine reading for the month IX is wrong. We obtain an additional confirmation to our previous conclusion that the *lectio difficilior* "35" is genuine.

Let us recall that our scheme [$^{2}\mathfrak{A}_{2}$] presupposes only one reading that is not contained in the manuscripts.

Therefore, our main conclusion is the following:

$$[^{2}\mathfrak{A}_{2}] = \mathfrak{A},$$

that is, the scheme [$^{2}\mathfrak{A}_{2}$] is the genuine structure of the luni-solar year in 2 Enoch.

2.5. *General Outline of the Liturgical Year*

The structure of twelve months with the feasts allotted to some days of these months has never been abrogated, but in the 364-day calendars, they ceased to be the most important within the liturgical years. Thus, we have such calendars as that of Songs of the Sabbath Sacrifice in which the most important structure is the cycle of seven pentecontads (49-day periods) within the year. In our 2 Enoch calendar, we have another important structure, that of four 90-day quarters.

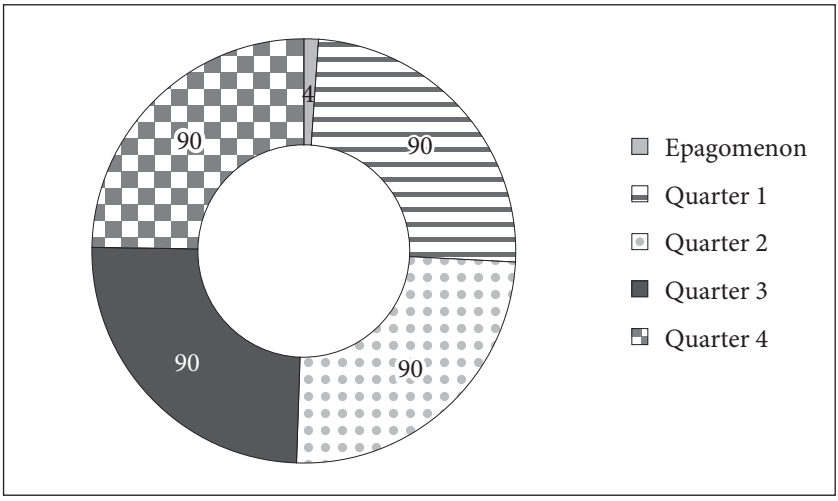
---

[45] J. B. Segal, *The Hebrew Passover from the Earliest Times to A. D. 70*, London Oriental Series 12 (London: Oxford University Press, 1963), 117–27.

 ISBN 978 90 04 23013 2

Another important feature is the manner of the insertion of the four "epagomenal" days that are in all such calendars, the days of some solemn mourning. An "epagomenal" period placed just before the Passover is the feature of the calendar that I have reconstructed for the Passion narrative.[46] In 2 Enoch's calendar these four "epagomenal" pre-Passover days have an even more isolated place because they are not included within the count of the 90-day quarters. Instead, they are inserted before the first quarter, somewhat as a "zero-period" of the year.

The general outline of the year is the following:



Structure of the year. "Epagomenon" (4 days) + First (Passover) quarter (90 days) + Second quarter (90 days) + Third (Day of Atonement) quarter (90 days) + Fourth quarter (90 days).

First quarter	from 11.I	to 9.IV
Second quarter	from 10.IV	to 9.VII
Third quarter	from 10.VII	to 3.X
Fourth quarter	from 4.X	to 10.I

[46] Lourié, "Les quatre jours « de l'intervalle » : une modification néotestamentaire et chrétienne du calendrier de 364 jours."

 ISBN 978 90 04 23013 2

The borders of the months do not coincide with the borders of the quarters.

Two quarters, the first and the third, are opened by the most important festivals (Passover and Day of Atonement, respectively) and are closed by some less important and less widespread feasts.

For the first quarter, we know that its closing feast is the feast of the consecration of Methusalam. For the last days of the third quarter, that is, 3.X and several days before, we know nothing, because it belongs to the part of year that is outside the plot of the 2 Enoch. Despite this, it is reasonable, in consideration of symmetry, to suppose that there was some feast ending on 3.X.

Be that as it may, a specific festal nature of the uneven quarters in comparison with the even ones is obvious. This is another kind of symmetry in the structure of our calendar.

It is also interesting to note that the existence of a feast terminated on 3.X is hardly compatible with the existence of the feast of Hanukkah, eight days starting from 25.IX (cf. 1 Mac 4:59). In our calendar in which the month IX contains 35 days, the Hanukkah period would cover the days from 25 to 32.IX. Such a feast would compete with the necessary closing feast of the third quarter a few days later. However, the feast of Hanukkah was established after 164 B.C.E., that is, much later than the date of our calendar (about 400 B.C.E.).

The first quarter, according to the plot of 2 Enoch, is divided into three parts by some remarkable dates, one of them being the Pentecost. It is possible that the same structure should be postulated for the third quarter. If so, the days 10.VIII and 9.IX are also festal dates. So far, however, we have no evidence and no liturgical parallel to confirm this.

3. *2 Enoch Solar Calendar*

3.1. *General Outlook*

Fortunately, the structure of the solar calendar (13:3–4) is preserved perfectly, in complete accord between the best manuscripts of both recensions, R (longer) and AU (shorter), despite the corruptions in other manuscripts. No reconstruction is needed.

The year contains ten solar months, while the text avoids naming them "months" using the term "gates" (of the sun). The sun runs through six heaven gates as follows (solar month numbers are added by me):

 ISBN 978 90 04 23013 2

Solar month number	Gate number	Number of days
I	I	42
II	II	35
III	III	35
IV	IV	35
V	V	35
VI	VI	42
VII	V	35
VIII	IV	35
IX	III	35
X	II	35
Σ		364

3.2. *Two-Calendar System and Its Parallel in Athens*

The year divided into 10 months is not unknown in the Ancient World. The most familiar example is the Old Roman calendar. However, it had no precise structure, and, what is most important, was not synchronised with another 12-month calendar.

There is, nevertheless, a close parallel to 2 Enoch's two-calendar system in two co-existing calendars of Athens, which had been synchronised in the late fifth-century B.C.E.[47] There were, in Athens, one luni-solar festival calendar for the religious events containing 12 months per year and another business calendar of the so-called prytanies containing 10 months per year.

The Athenian parallel to the 2 Enoch two-calendar system is especially important because it is roughly contemporary (and, most probably, a bit earlier) than the luni-solar 2 Enoch calendar.

[47] On their synchronisation, see especially F. M. Dunn, "Tampering with the Calendar," *Zeitschrift für Papyrologie und Epigraphik* 123 (1998): 213–231, and Dunn, "The Council's Solar Calendar," *American Journal of Philology* 120 (1999): 369–380.

 ISBN 978 90 04 23013 2

In 2 Enoch we have a very similar scheme: a luni-solar 12-month calendar for the religious events and another 10-month solar calendar synchronised with the former in a very strict way but with no precise purpose indicated, but in the context of a cosmological treatise. It is, therefore, not improbable that the solar calendar of 2 Enoch was a business (secular) calendar of the community that followed the 2 Enoch luni-solar calendar in its religious life. However, even in this case, it remains saturated with a liturgical symbolism, as we shall see below.

An Athenian influence is likely both for the author(s) of 2 Enoch, a text written in a Hellenized milieu, and for the earlier milieu in which the calendar traditions underlying 2 Enoch were elaborated.

We have no specific arguments for dating the 2 Enoch solar calendar, but the Athenian parallel suggests that its origin may be early, very probably more or less contemporary to the luni-solar 2 Enoch calendar.

3.3. *Astronomical Innovations*

The sun going through the six heaven-gates forward and backward within a one-year time span, from solstice to solstice, is familiar from the Astronomical Book of 1 Enoch (see, especially on the heavenly gates and the sun's motions, 1 Enoch, ch. 72). Otto Neugebauer analyzed this section in his now classic study,[48] reprinted in its main part by Black[49] and continued by Albani.[50]

However, in 1 Enoch, the six gates are responsible for the 12–(= 6 + 6) month structure of the luni-solar year. This is a fundamental feature of Babylonian cosmology, with its exceptional value of the number 6, and its multiples. Therefore, in the Babylonian cosmology of 1 Enoch, the sun passes the first and the sixth gates two times: the sixth gate it passes forward and immediately backward, and the first gate it passes forward at the beginning of the year and backward at the end.

---

[48] O. Neugebauer, *The 'Astronomical' Chapters of the Ethiopic Book of Enoch* (*72 to 82*). *Translation and Commentary. With Additional Notes on the Aramaic Fragments by Matthew Black*, Det Kongelige Danske Videnskabernes Selskab, Matematisk-fysiske meddelelser 40:10 (København, 1981).

[49] M. Black, *The Book of Enoch or 1 Enoch: A New English Translation. With Commentary and Textual Notes by Matthew Black. In Consultation with James C. VanderKam. With an Appendix on the 'Astronomical' Chapters* (*72–82*) *by Otto Neugebauer*, SVTP, 7 (Leiden: Brill, 1985).

[50] Albani, *Astronomie und Schöpfungsglaube.*

 ISBN 978 90 04 23013 2

In 2 Enoch, the sun passes each gate only one time a year. This is why the number of solar months is 10, not 12. The first and the sixth gates are still marked, however, by a longer period (number of days) needed for the sun to pass them.

The rationale of such an innovation is clear from the number of days in the months: 35 (normally) or 42 (first and sixth months only). Both 35 and 42 are multiples of 7.

In the 1 Enoch calendar, there is no specific unit stressing the importance of the number 7, except the week and the year itself that contains an integer number of weeks, 52 ($52 \times 7 = 364$). Let us recall that the importance of the number 7 in the 1 Enoch calendar's structure is not a Jewish development, but a raw borrowing from late Babylonia.

Transplanted to a Jewish milieu, the 364-day calendar obtained a general trend to develop more units based on the number 7, on both intra-year and extra-year levels. On the intra-year level, the most known 7-based units are the pentecontad cycles (from the three 49-day cycles in the Temple Scroll to the seven such cycles in the Songs of the Sabbath Sacrifice), still absent in the early Jewish 364-day calendars of 1 Enoch and Jubilees. A preponderance of the pentecontad cycles in such calendars as those of the Temple Scroll or of the Songs of the Sabbath Sacrifice, by necessity, led to an overshadowing of the 12-month structure (remnant of a Babylonian 6-based structure).

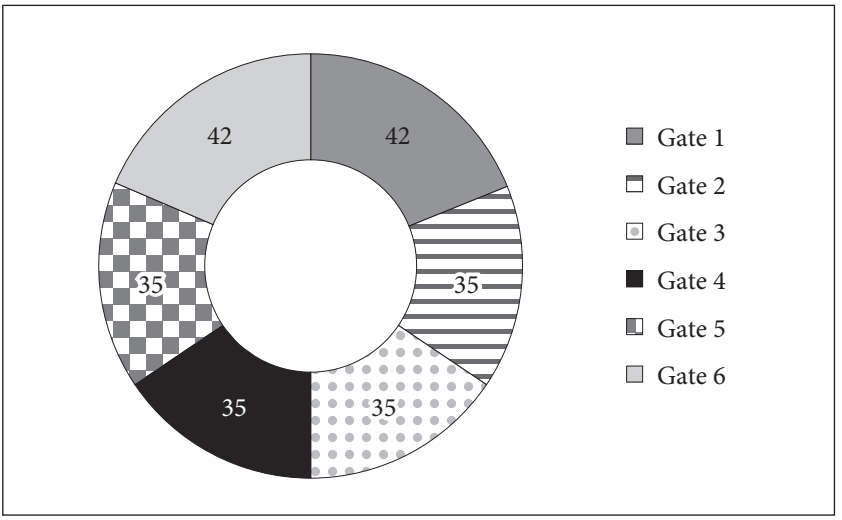
The calendar of 2 Enoch proceeds along another path but with the same effect of a partial overshadowing of the 12-month structure. It forms a separate 7-based structure of the whole year.

If there is a need to create a 7-based unit with a duration of about one month (approximately 30 days), then, there is only one alternative: 28 or 35 days per unit. In the latter case, we obtain our 2 Enoch solar calendar. In the former case, we obtain a perfectly even structure of the year comprising 13 months each of 28 days.

It is difficult to say why our calendar chose 10 solar months and not 13. Is the Athenian parallel of any importance here? The latter possibility is especially probable because the Athenian prytanies calendar was used for regulating business, and the solar calendar of 2 Enoch is used for regulating the days of rest, Sabbaths, by the very fact that it is directly grounded on the week division of the year.

Here I omit any discussion of the cosmological aspect of this reconsideration of the notion of heavenly "gates." Indeed, these tunnel-like long "gates" are quite different from the heavenly gates used for the daily

 ISBN 978 90 04 23013 2



Structure of Heaven

motion of the sun, moon, and stars, known from 1 Enoch and Babylonian astronomy, where they are also called "gates": *abullu* = ideographic KÁ.GAL.[51] However, these tunnel-like "gates" are known in 3 Baruch, and they also have Babylonian precedents in the cosmological concept of the heavenly "ford/ferry" (*neberu*; cf. *Enūma elīš* 5:5–8). I briefly elaborate on this elsewhere.[52]

3.4. *Asymmetry of Solstices*

Now, knowing the way of the sun's movement through the six heaven-gates, we must acknowledge that the apparent error in 48:2 (see above, point 1.7) where 7 and not 6 months separate the two solstices, is not an error. Such an asymmetry between the solstices, despite its blatant contradiction to the astronomy, is a consequence of the peculiar structure of 2 Enoch's heaven.

---

[51] W. Heimpel, "The Sun at Night and the Doors of Heaven in Babylonian Texts," *Journal of Cuneiform Studies* 38 (1986): 127–151.

[52] B. Lourié, "Review of A. Kulik, *3 Baruch: Greek-Slavonic Apocalypse of Baruch*," *JSP* (forthcoming).

 ISBN 978 90 04 23013 2

According to 2 Enoch's structure of the heavens, the sun goes forward for 224 days and then goes backward for 140 days. The solstice is the day when the sun changes the direction of its movement. Thus, one solstice, according to 2 Enoch, is 1.I of the solar year, and another solstice is solar 1.VII. The text (13:4) tells us that after the sixth gate the sun "does an about-turn and goes back" (longer recension) / is "turning around" (shorter recension).

If so, the distribution of the two solstices between *Siwan* and *Tebet* (months III and X) in 48:2 is right. The two solstices are separated not by 182 days but by 224/140 days. The longer part of the solar year is its first part, and the shorter one is its second. Because the months of solstice are the third and the tenth, our text implies the beginning of the solar year on the summer solstice—as it is explicitly stated in 48:2 and as it was in the Babylonian astronomy, especially in the MUL.APIN.[53] Thus, solar 1.I is the summer solstice, and solar 1.VII is the winter solstice.

What is certainly not right in 48:2 is the figure "17," either in one case or in both. If the luni-solar date of the winter solstice 17.X is right, the date of the summer solstice must be 9.III. If the luni-solar date of the summer solstice 17.III is right, the date of the winter solstice must be 25.X. As it seems, some later editor was trying to make these dates more symmetrical than they were intended to be. The figure "17" makes sense, nevertheless, within the context of other calendrical schemes, which will be discussed below.

The asymmetry of solstices has no precedent in the known calendar systems. The only possible exception is one of the Slavonic recensions of 3 Baruch, where Baruch's journey occupies 224 days. However, the origin of this recension as well as its possible connection to 2 Enoch are unclear.[54] Anyway, it is difficult to imagine the exact structure of the heavens that is so sharply asymmetrical.

It seems very probable that the astronomy in the 2 Enoch has fallen victim to the Sabbath. The solar calendar became an imaginary ground for the regulation of the weeks, with their working and rest days.

[53] Hunger and Pingree, MUL.APIN. *An Astronomical Compendium in Cuneiform*, 75.
[54] Lourié, "Review of A. Kulik, *3 Baruch: Greek-Slavonic Apocalypse of Baruch*."

 ISBN 978 90 04 23013 2

4. *Other Calendrical Schemes*

4.1. *Lunar and Julian Calendars*

The presence of the 19-year lunar cycle and the 28-year solar cycle within the text of 2 Enoch was noticed even by the early scholars, but Steven Fraade is the first who used this fact to demonstrate the plurality of the calendaric schemes presented in the extant text of 2 Enoch (in both recensions). As Fraade states:

> . . . in 16:8 we find acknowledgement of the Metonic luni-solar cycle of seven month-long intercalations every nineteen years, as employed in the 354-day (before intercalation) rabbinic calendar, but irrelevant to either of 2 Enoch's solar calendars: "And the moon has a sevenfold intercalation, and a period of revolution of nineteen years. And she begins once again from the start." Additionally, 15:4 recognizes a twenty-eight-year cycle by which the sun returns, as it were, to its starting place at the same time of day and day of the week (presuming a solar year of 365.25 days), known in rabbinic parlance as *birkhat ha-ḥammah*: "and the cycle of him [the sun] goes on for twenty-eight years, and begins once more from the start."[55]

In his response to my Enoch Seminar paper, Fraade justly continues: "However, since it seems to me that more than two calendars are evidenced in 2 Enoch, we might ask to what extent it needs be assumed that they all necessarily functioned in practical terms, and whether at least some could have been exercises in calendrical imagination, that is as schematizations of how the cycles of the cosmos and those of religious life and memory might be brought into greater, if not perfect, harmony with one another."

Both 19-year and 28-year cycles make sense only with regard to the 365.25-day solar year. The 19-year luni-solar cycle ("Metonic") appeared in the fifth-century B.C.E. almost simultaneously in Babylonia and in Greece; it remains unclear whether the Greeks borrowed it from Babylonia or invented it themselves.[56] In any case, it could constitute a part of the Babylonian legacy of 2 Enoch's astronomical theory.

The presence of the 28-year solar cycle is much more interesting. It implies the knowledge of the Julian calendar. This cycle results from

---

[55] Fraade, "Theory, Practice, and Polemic in Ancient Jewish Calendars."

[56] O. Neugebauer, *A History of Ancient Mathematical Astronomy*, Studies in the History of Mathematics and Physical Sciences 1 (New York: Springer-Verlag, 1975), 4, 354–57, 541–42.

 ISBN 978 90 04 23013 2

combination of the 4-year intercalation cycle specific to the Julian calendar with a 7-day week cycle, and so, it makes sense in the frame of the Julian calendar only and not in any other 365-day calendar (i.e., those which have different rules of intercalation; e.g., the Old Egyptian 365-day calendar with the Sothic year).

This fact has some importance for dating 2 Enoch: the Julian calendar was introduced by Julius Caesar in 46 B.C.E., came into force in Rome in 45 B.C.E., and was introduced in Alexandria (in a localized design) by Augustus in 30 B.C.E.

4.2. *Solstices and Traces of MUL.APIN Theoretical Legacy*

Now, knowing that there are several calendaric schemes in 2 Enoch besides the two main 364-day calendars, we can revisit the problem of the two solstices, 17.X and 17.III.

The number 17 as the solstice day seems to be established. In the MUL.APIN and related Babylonian texts, the solstices were defined theoretically for the ideal calendar: 15.IV and 15.X. The equinoxes were defined in the same way: 15.I, 15.VII.[57] Thus, the year was divided symmetrically into the four 91-day quarters. Such a division makes sense if only the four days of the year, which are added to the twelve 30-day months, are distributed throughout the four quarters symmetrically as well. However, if all four days are collected somewhere in the first quarter, the rules of symmetry require different dates. Namely, in such a modification of the MUL.APIN-type 364-day calendar, for the solstices, we would have either 13.IV for the summer solstice and 15.X for the winter solstice or 15.IV for the summer solstice and 17.X for the winter solstice.[58] Therefore, only one middle-month date of the solstice would be preserved.

In the MUL.APIN calendar, from the two solstice days, the day of the summer solstice was more important being the beginning of the solar year. Therefore, it is *a priori* more likely that the hypothetical creators of the modified MUL.APIN calendar where the four additional days are collected somewhere in the first quarter would choose not to touch the day

[57] Hunger and Pingree, *Astral Sciences in Mesopotamia*, 66.

[58] Here I avoid as irrelevant the discussion of the possible impact of such a modification of the calendar on the dates of equinoxes. They will depend on the exact way of introducing of these four days into the first quarter and of the possible need to maintain the vernal equinox on 15.I.

 ISBN 978 90 04 23013 2

of the summer solstice, and so, to change the day of the winter solstice to 17.X.

It is therefore reasonable to conclude that the date of the winter solstice, 17.X, is a possible trace of the described above modification of the 364-day calendar belonging to the MUL.APIN tradition.

The shift of the date of the summer solstice from 15.IV to 17.III could be understandable based on the Egyptian evidence. In Egypt, the summer solstice was rather a geophysical than astronomical phenomenon. The summer solstice was preceded by the heliacal rising of Sirius (the key astronomical event in Egypt) and was followed in several days by the inundation of the Nile (the key annual event in the whole life of Egypt). The summer solstice was the beginning of the Egyptian civil year. Thus, in the Egyptian calendars, the date of the summer solstice has had to be relatively close to its astronomical value, that is, to 25–27 of Julian June.[59] However, from the Elephantine documents we know that these dates belonged rather to the third month of the Jewish/Babylonian calendar than to the fourth.

[59] According to the data for the period from 431 B.C.E. to 140 C.E. collected by Ptolemy in his *Almagest* 3:1. These dates already converted into the Julian calendar could be obtained from any commented translation of the *Almagest*; C. Ptolemy, Клавдий Птолемей, *Альмагест, или Математическое сочинение в тринадцати книгах.* Пер. с древнегреческого И. Н. Веселовского. Прим. Г. Е. Куртика, М. М. Рожанской, Г. П. Матвиевской (Moscow: Nauka, 1998), 496).

 ISBN 978 90 04 23013 2