

WALTHER SALLABERGER  
*Ludwig-Maximilians-Universität, München*

## The Emergence of Calendars in the Third Millennium BCE:

### Deities, Festivals, Seasons, and the Cultural Construction of Time

This contribution investigates the earliest calendrical systems in Syro-Mesopotamia in the Early Bronze Age, i.e. the third millennium BCE.<sup>1</sup> From the middle of the millennium onwards, month names or month counts appear in the written record. In studies of ancient Mesopotamia, a regular sequence of month names is called a “calendar.” In the third millennium, the age of early urbanism and of city-states as polities, not only one calendrical system or set of similar calendars appeared, but various methods co-existed for counting the months of a year and for naming them. These authoritative sequences of month names represented a cultural construction of time beyond purely measuring it, since the ancient inhabitants of Mesopotamia and Syria lived “in” their calendars.

Beyond exploring the chronological and geographical reach of various calendrical systems, one wonders how these specific constructions of time can be placed in the worldview, the society and the role of the individual in the Early Bronze Age. By reference to dates, especially with the use of month names, a social group attributed meaning to time.<sup>2</sup> In ancient Mesopotamia, calendars (i.e., the fixed sequences of month names) by definition conceptualized time as what is commonly called “cyclical,” whereas the counting of years obviously referred to its “linear” aspect (see below pp. 6 and 26).

In this investigation, our sources are cuneiform texts, namely legal and mostly administrative documents. The latter texts document transactions of goods or services that had occurred or were scheduled at the time of writing, and therefore the concepts of calendrical time as they transpire in the notation of dates must reflect the notion of time in that specific historical situation (regarding time, place, political, social and economic situation). Given the situational

1 At the generous invitation to the conference in Tsukuba in March 2016, Shigeo Yamada and Daisuke Shibata asked me to deal with the Tell Beydar calendar, since this was located in the same region as Tell Tābān, whose new calendar stood at the centre of this conference. The final article incorporates results from other projects as well: from a research stay at the University of Verona in autumn 2016 dedicated to a history of third millennium religion; the work on Early Bronze Age festivals together with Adelheid Otto in the Centre of Advanced Studies of LMU Munich in 2016/17; and the kind invitation by Roland Färber and Sophie Remijns to the conference “Social Time in the ancient world: Rhythms and rituals” at the University of Amsterdam, 2018, May 24–26. I am very grateful to have been offered so many occasions to develop the ideas presented here. Last but not least, I thank heartily Anna Glenn for her competent correction of the English and her suggestions, and Daisuke Shibata and Shigeo Yamada as the editors of this volume for their patience.

2 With this research agenda, I obviously refer to the concept of “social time” which takes time as a socially embedded feature of a culture. From the relevant literature, I cite only Geertz 1966 = 1973: 360–411, who analyzed correlations between parameters as social interaction and the measurement of time. This perspective led to the best results in detecting the role of redistribution in Presargonic Ĝirsu month names (§ 3).



context of administrative and legal documents, it would therefore be incorrect to assume a (social or conceptual) “gap” between a “scribal” or “scholarly” worldview and the respective historical situation. The high variation in the reference to time that can be observed between various historical situations (as defined by period, city, social context of a document, a text group or an archive) proves the suitability of this approach.

As will become clear in the discussion below, various traditions and social, political, or religious parameters determine the use of calendars in a given historical situation. After having described the historical context in which a certain system was used to identify time, we will turn to the “vocabulary” that refers to units of time, mostly the series of month names. Which parameters were chosen to identify a specific time unit? In this way, the reference to time is integrated within a specific worldview that focuses on aspects that are relevant for a given society and its individuals.

After (1) an introduction on calendars as cultural constructs in a specific historical context, this paper discusses (2) the counting of months by numbers, then proceeds to (3) the series of festivals in the Presargonic state of Lagaš, looks at (4) the structurally similar local calendars of Ebla and Nabada (Tell Beydar) and (5) the Early Semitic Calendars in use from the 26<sup>th</sup> to the 23<sup>rd</sup> centuries, and finally (6) the Nippur calendar, as well as (7) the similar calendars of Southern Mesopotamia used until the end of the Third Dynasty of Ur (2033 BCE).

Since the beginnings of Assyriology in the late 19<sup>th</sup> century, the reconstruction of local calendars has always been a primary task. B. Landsberger’s 1915 monograph represents a milestone in the study of ancient Mesopotamian calendars. He concentrated on the periodicity of all forms of religious life, whether determined by certain days within a month or a year or by months (Landsberger 1915: 1). For the third millennium, on which this article focuses, Landsberger (1915: 17) used local series of month names as primary source to reconstruct local festive calendars. Although he (1915: 23) admitted that, e.g., most Nippur month names had an agricultural background and thus were of limited value to reconstruct the cultic festival calendar of Nippur, he grouped the festivals according to these month names; in the detailed discussions, however, he investigated diligently whether a month was named after a festival or *vice versa*. Cohen (1993; 2015) adopted a similar perspective, and discussed all series of month names known from cuneiform traditions and took these as a basis for festive calendars. He grouped calendars according to their regional dissemination as I. “parochial or native,” II. “ethnic,” III. “national” and IV. “universal” calendars (Cohen 2015: 1–2). Whereas Cohen (1993; 2015) started from the month names, Sallaberger (1993) studied the cultic festivals attested in documents and investigated their periodicity. Beyond these monographs on cyclical festivals in the third millennium, Assyriological research has concentrated on reconstructing the various calendars and their geographical and chronological distribution (see the references in the following pages). When the era of the city-states and their successors, the provinces in the kingdom of Ur, ended around 2000 BCE, the large variety of local calendars disappeared for ever. Studies on the meaning of time counts in Mesopotamia in later periods, especially during the first millennium BCE (from, e.g., Langdon 1935 to Steele 2011; Verderame 2017), refer to a very different historical situation with other cultural parameters, and can therefore not be integrated in this study.

Throughout this article, various ancient methods to identify months are discussed, and this must be reflected in the designations as well. Therefore, counts of months, monthly allocations or years are numbered 1, 2, 3, ...; references to fixed series of month names in



calendars are indicated by Roman numbers I, II, III, ...; and the month names of Nabada, the sequence of which remains unknown, by a, b, c, ...

## 1. On calendars, now and then

Before dealing with the first calendars of the cuneiform world, an overview of the current calendrical situation may help to explain the research agenda. According to the calendars of western Christianity, most prominently the Roman Catholic and Protestant churches, the Tsukuba conference of March 23–24, 2016 CE, took place in the week before Easter Sunday, a date fixed by a combination of various parameters: Easter is an annual festival, celebrated after the spring equinox, which marks the annual cycle of the sun (of 365.24219 days). Furthermore, Easter dates after the first full moon following the spring equinox, thereby introducing the second natural parameter in a calendrical system, namely the cycle of the moon, originally defining a month of 29 or 30 days. Finally, Easter is celebrated on a Sunday and thus bound to the most important time count in the Jewish and dependent later traditions, namely the week of seven days; this is not a natural, but a religious and thus culturally defined way to measure time. The Easter date thus explains very well the correlation of natural cycles of sun and moon and cultural definitions. The historical development of the date of Easter may illustrate the cultural implications of time counts. Julius Caesar in 45 BCE fixed the annual calendar as we know it today, with twelve months of various but fixed lengths of mostly 30 or 31 days, and a leap year every four years; Caesar broke completely with the Roman tradition, where the month was defined by the moon, as in ancient Mesopotamia. Due to the long lasting and wide-stretching dominion of the Roman empire, its subjects used this calendar widely, and it was handed down for centuries. However, a year of the Julian calendar was slightly longer than the solar year — exactly 11 minutes and 14 seconds — and after one and a half millennia this caused problems for determining the date of Easter Sunday correctly. Because the year according to human counting was longer or “slower” than the “real” cosmic year, it could happen that a Christian remained in the time of mourning and fasting — forty days before Easter Sunday — while in fact, by a cosmic count, the jubilation of the Easter Sunday should rule. At a time when Roman-Catholic religion was of the greatest influence, Pope Gregorius XIII adjusted the calendar in 1582 CE, and this is the civilian calendar we use today. However, since the decision for a calendrical change derived ultimately from theological considerations, the Gregorian calendar reform was not accepted by other Christians; for example, it was not accepted by the Christian Protestants until c. 1700 CE, and it is not yet used for the ecclesiastical year by Orthodox and Oriental Christian Churches. As a Western calendar, the Gregorian calendar was eventually taken over by all countries in the world, as a consequence of colonialism and socio-economic networks; it was introduced in Japan in 1873 CE, and finally in China in 1949 CE. Thus, from a historical perspective, the calendar we use daily tells one less about the cycles of sun and moon, but more about political and religious history, the reforms of strong personalities like Caesar, the role of the Roman Empire and of the Christian churches, or the spread of Western culture.

With this in mind, we turn our attention to the ancient Near East. In Mesopotamia and neighbouring regions, the beginning of the new month was defined by the appearance of the new crescent. One month thus lasted 29 or 30 days, as in fact documented by monthly accounts over 29 or 30 days stemming from Southern Mesopotamia, and dating to the 21<sup>st</sup>



century BCE (Sallaberger 1993: 11–14). In the same period, the monthly celebration of the “New Crescent” (Sumerian  $u_4$ -šakar) often included an “observation of the moon” ( $^d$ nanna igi du<sub>8</sub>-a), thus proving that the viewing of the crescent was central for the time count (ibid.: 55). The observance of an  $u_4$ -šakar “New Crescent” as a cultic day reaches back into Presargonic times (24<sup>th</sup> century BCE). The observation of the thin crescent above the western horizon in the evening sky prompted the beginning of a month, so every single person could immediately see and know that a new month had occurred. Each month, then, the days were counted in the same way: full moon occurred on the 14<sup>th</sup> or 15<sup>th</sup> day, the first quarter on the seventh, the last quarter around the 21<sup>st</sup>. Obviously every person living in such a time counting system knew more or less exactly the day of a month by simply looking at the moon in the sky.<sup>3</sup> The months directly followed the lunar cycle, since, for example, series of documents about the feeding of animals over a month vary between months of 29 and 30 days (Sallaberger 1993: 11–14). Differences in month-lengths recorded in calendar dates, as they appear through a comparison of data from two sites, Umma and Puzriš-Dagan in the Ur III period,<sup>4</sup> indicate that the dating of documents was based on observation and estimation. For an early Mesopotamian state, it can thus almost certainly be excluded that a centre existed to set or to control the length of months. The division of the month according to lunar phases is indirectly attested by offerings at New Moon ( $u_4$ -šakar) in Presargonic texts from Southern Mesopotamia, and in Ebla by the division of the month into periods of seven days (Catagnoti 2019).

The beginning of a new day in the evening after sunset fits perfectly in a system of counting lunar days by observation. The moon directly indicated the day of the month, so people already knew the date in the evening or during night before they started their work early next morning. The beginning of the day in the night can be documented for the Ur III period (21<sup>st</sup> century BCE) by the sequence of the times of day: “at dawn” ( $a_2$ -ĝe<sub>6</sub>-ba-a, literally “time when the night is given away/closes”)<sup>5</sup> precedes “in the evening” ( $a_2$ - $u_4$ -te-na, literally “time when the day becomes cool”) in accounts concerning sacrifices on the same day, or

3 In a similar way, a quick look at a traditional watch tells us the exact time, even if the twelve hours are not at all marked on the clock-face.

4 This is based on an unpublished compilation of all then (ca. 2000/2001) known month-lengths in the Ur III period with a temporal correlation between the *Reichskalender* and the Umma calendar. Instead of yielding a reliable basis for a series of month-lengths, it turned out that more often than not the month-lengths of the two calendars disagreed.

5 Traditionally, this term was understood as “at midnight”; see, e.g., PSD A/2 62–64; Sigrist 1992: 125–126 with previous literature. Behrens and Steible (1983: 141 s.v.  $g_{i_6}$ -ba-a) remark: “Frühe Schreibung für  $g_{i_6}$ -BAR =  $g_{i_6}$ -sa<sub>8</sub>?” Did they imply that ba could have been understood as an unorthographic writing for the only (?) lexically attested  $ba_{(MAŠ)} = bāntum, mišlum$  “half”? PSD B 23 s.v.  $ba_3$  does not refer to our location. Høyrup (2002: 31 with n. 53) points to the use of B.A.A as Sumerograms for *bāntum* “moiety” in Old Babylonian mathematical texts, and although Høyrup assumes an abbreviated writing for the Akkadian word *bāntum*, this B.A.A could in fact be a Sumerian term meaning “half” that appears also in our term  $a_2$ -ĝe<sub>6</sub>-ba-a, thus perhaps justifying a translation “midnight” (I am very grateful to Anna Glenn for pointing out this reference to me). The lexical entry OBG T I 803 (MSL 4: 59) provides the following explanation:  $a_2$   $u_4$ -te ĝe<sub>6</sub>-ba = *mūškašāt*, a compound of *mūšu* (cf. ĝe<sub>6</sub>) and *kašū* (cf. te), translated by Hallock and Landsberger (1956) as “the cool (second) part of the night”; the compound *mūškašāt* is translated by AHw. 684b “nachts gegen Morgen,” but by CAD K 263b “day and night.” The time of day before sunrise was the holy period in Mesopotamia throughout the second and first millennia, but also Gudea presented his sacrifices at sunrise (Cyl. B v 19–21). The sequence of the times of day can already be attested for the Presargonic period: Meals took place “at dawn” (ĝe<sub>6</sub> ba-a=k), “in the morning” (interpreting  $u_4$  sa<sub>2</sub>-(a)=k as “when the day had arrived,” which remains uncertain) and “at nightfall” (ĝe<sub>6</sub> an-na=k, literally “night in the sky”) according to



by the series “at dawn,” [“in the morning”], “at noon,” “in the evening” in a document (SET 188); note also the travel within one day by king Šulgi, who starts in the night and returns before sunset.<sup>6</sup>

Since the monthly lunar calendar was visible in the sky, it was possible to fix the exact date of annual festivals, which were mostly bound in their timing to the appearance of the New Crescent and the Full Moon. By looking at the evening or night sky, people thus knew in advance the date to arrive at a festival, and they could prepare the gifts for the offerings. Full Moon of the seventh month marked, for example, the beginning of Inana’s Festival at Nippur in the Ur III period,<sup>7</sup> so everybody expected there — including the temple’s employees, priests from other temples, administrators and urban officials as well as various guests — could prepare easily and appear at the main festival on the correct day.

Whereas the temporal rhythms of days and months thus became evident to everybody by looking at the celestial bodies sun and moon, the beginning of an annual cycle of twelve months demanded more sophisticated observations. A year is defined by the course of the sun, which conditioned not only the lengths of day and night, but also determined the climate, including rainfall, humidity, temperature, etc., and thus also the rising and falling of water levels in the rivers. In Syro-Mesopotamia, the passing of seasons organized the year; summer heat and rainy winters, harvest in spring, sowing in autumn and other agricultural activities were ultimately bound to the solar year. According to later Babylonian evidence, New Year happened before the spring equinox from the late second millennium onwards, but after the spring equinox in Old Babylonian times (Britton 2007: 118–119). Seasonal work (harvest, canal work, etc.) as documented in dated texts attests to a similar beginning of the year in the third millennium. Month I thus corresponds roughly to April, etc. Most probably, the beginning of a year was determined astronomically by the heliacal rising of stars, already in the third millennium.<sup>8</sup> When month names refer to agricultural or other seasonal activities, they relate usually to the beginning of the respective duties, probably because the festivals were performed when the people were still in the cities, before they worked in the fields (Sallaberger 1999); thus the “harvest” month (mostly months XII–I, thus March–April) always predated the actual harvest.<sup>9</sup>

the Reform Texts of Urukagina (c. 2320 BCE) (Ukg. 4 = RIME E1.9.9.1 ex. 1 xi 4–6). The sequence of meals thus reflects a daily rhythm that began before sunrise and ended at nightfall.

6 For references see Sallaberger 1993: 5.

7 Zettler 1992; Zettler and Sallaberger 2010.

8 Gudea (around 2140 BCE) hints at an astronomical determination of the beginning of the year in his Cylinder B iii 5–6: “The year was gone, the month was finished. / A new year stepped on the sky (mu gibil an-na im-ma-gub), / a (new) month entered into its house.” The phases of the moon were called “houses” in Sumerian. The Lugalbanda Epic, first attested in a manuscript of the Ur III period (21<sup>st</sup> c. BCE), but mainly from the Old Babylonian period (19<sup>th</sup>–18<sup>th</sup> c. BCE) refers to astronomical calculations of time, as observed by Wilcke (2015: 209–211): “Sternenbeobachter kannten also am Ende des 3. Jahrtausends v. Chr. die regelhaft variablen Perioden von Sichtbarkeit und Unsichtbarkeit der Venus im Verhältnis zur Bewegung der Sonne durch den Tierkreis und konnten sie berechnen. Das überrascht nicht so sehr. In höchstem Maße erstaunt aber, daß dieses Wissen nicht auf einen kleinen Kreis astronomisch-astrologisch gebildeter Fachleute beschränkt blieb und — anders als in heutiger Zeit — allgemeines Bildungsgut war, das der Dichter bei Hörern und Lesern voraussetzen konnte” (ibid. 211). On the observation of the stars for the correct timing in the Farmer’s Instructions (Old Babylonian manuscripts) see Verderame 2017: 126.

9 References to modern harvest dates in Syria or Iraq, as they can often be found in the scholarly literature, are usually mistaken, since nowadays wheat is cultivated which has a longer vegetation cycle than barley that was cultivated predominantly in ancient Mesopotamia.



In order to correlate the seasons with the months, every few years leap months were inserted when needed. Whereas day and month and the sequence of seasons could be observed by any person, the fixing of leap months and the counting of years fell to a political leader.

## 2. Counting the months of a year

The control of time is central in the administration of goods and services. Cuneiform writing was invented in Southern Mesopotamia to allow for a better management of people, production and storage, and for a fair distribution of services and of goods. It is no wonder then that already the archaic documents from the late fourth and early third millennium present an administrative counting of time. The scribes used an idealized system with months of 30 days and years of twelve months, or 360 days (Englund 1998: 125). It is unknown how they determined the difference between the ideal administrative month or year and the real month or year in order to settle the accounts. The archaic documents of the late fourth and beginning of the third millennium indicated only periods of time (i.e., a certain number of days or months), while they abstained from dating a tablet, and this remained the case for the archaic texts of Ur (perhaps 28<sup>th</sup>/27<sup>th</sup> century BCE).

The first month dates appear in two documents from Fara (c. 26<sup>th</sup> century BCE), in both instances indicated by a number: (1) in a monthly allocation of grain to persons, with the subscript in a separate column: “month' (iti' (UD)) seven” (TSS 150 = EDATŠ no. 10, monthly register), and (2) in a registration of grain (CT 50 10). No month name is known from the Fara documents.<sup>10</sup> Chronologically, the first usage of month names is documented soon thereafter in Abū Šalābīḥ, with two names from the Early Semitic Calendar (see below, § 5).

Counting, however, did not disappear from the calendars of Southern Mesopotamia during the subsequent Presargonic period. The most prominent case is the city-state of Umma, where the scribes used numbers, not month names, to identify a month in documents. Both months and years were counted, and the format of a date thus was *x mu y iti* (or *x mu iti y*) “year *x*, month *y*.” Although only rarely identified by name, the years always referred to the regnal years of the city-ruler (*ensi*<sub>2</sub>) of Umma. This dating system was kept even when Umma lost its independence and became a province in the state of Akkade (c. 2300–2170 BCE); even then, the numbers of years apparently referred to the local city-rulers and not to the king of Akkade.<sup>11</sup> The appearance of a “month 13” shows that leap months were counted within the system. The dating of tablets by counted months may be seen as stemming from the administration, and, of course, one cannot exclude that also in daily life, the ancient inhabitants of Umma who lived within a redistributive economy counted their months as well.

10 Martin et al. 2001: nos. 107 and 108a and TSS 882, UD UR<sub>2</sub>-NUN-U<sub>5</sub> (v.s.) was read as a month name “iti UR<sub>2</sub>-nun-u<sub>5</sub>” by Martin et al. 2001 or in CDLI. However, it seems that “UD UR<sub>2</sub>-nun-u<sub>5</sub>” (according to the copies in both cases UD, not iti, as read by the editors) is a monthly “occasion” for deliveries of grain (to UR<sub>2</sub> in TSS 882). — CT 50 10 cited above, is neither listed by Krebernik 1998: 257 nor by Sallaberger and Schrakamp 2015a: 34.

11 For the arguments, see Sallaberger and Schrakamp 2015a: 38–40. The document from the Umma province published by Alkhafaji 2019 bears both a numbered year according to the Umma practice and a year date of king Maništušu. The number of the year is not preserved, but only [1] seems to fit the space; if so, this was obviously not the first year of the ruling king, since the year was named after the building of the fortress Bad-/Dūr-Maništušu, and not after the fact that Maništušu had taken over kingship.



In the state of Lagaš, Umma's neighbour and mighty rival, years were likewise counted according to a city ruler's reign. In organizations different from the palace, such as in the "Lady's House" (*Emunus*; also called "House of Ba'u") directed by the ruler's wife, or in cities outside the capital, such as in the tablets from Zabalam in the state of Umma, reference to time was by counting years of the ruler. This practice was not only used at Lagaš and Umma, but also in other places of the Fara and Presargonic periods (26<sup>th</sup> to 24<sup>th</sup> centuries): also at Abū Ṣalābīḥ, Mari and, we may add, Presargonic Ur,<sup>12</sup> years were marked by numbers of regnal years. This annual count does not seem noteworthy at first glance, but this apparently unimpressive practice clearly proves the centrality of the ruler in the Early Bronze Age city-states, since every person of a city-state counted his or her years according to regnal years. The ruler's name was usually omitted in documents, apparently because it was common knowledge and self-evident in various administrative contexts.

In the Presargonic archive of the "Lady's House" from Ġirsu (24<sup>th</sup> century), the capital of the state of Lagaš, monthly administrative procedures were equally fixed in time. The distributions of grain from the communal grain-stores to the members of the organization or for various expenditures (including, e.g., fodder for animals, beer for the ruler) were carefully noted in large tablets. Each of these lengthy documents bears a subscript giving the precise number: "n<sup>th</sup> allocation" (*n ba*) of barley for persons, or "n<sup>th</sup> supply" (*n ġar*) of barley for various purposes.

Monthly expenditures thereby formed annual series from "1" to "12" or even "13." This administrative system was not only handled by the managers in the Lady's House, but evidently also by its members, who received their grain allotments every month. Some persons, those with subsistence fields, received grain for the last four or five months of the year only, and so their first annual allotment corresponded to the ninth or eighth of other groups. This is stated as such in some documents.<sup>13</sup> So at Ġirsu, the reference to time functioned basically according to the administration, first according to the monthly allocations of grain, by numbering them, and secondly by counting the regnal years of the city-ruler.

This administrative regime and its precise organization were central to maintaining the redistributive system, where every member of a communal organization like the *Emunus* contributed his or her work in a specialized profession, and he or she received a fixed share from the collectively harvested barley and from its wool deposits. The monthly numbering reflects perfectly the distributive justice (*Verteilungsgerechtigkeit*) inherent in the well-balanced system of monthly allocations.<sup>14</sup> The respective documents define the very centre

12 UET 2 Supplement nos. 18 (3 mu, iti a-[...]) and 22 (1 mu, iti um'(URUDU)); for an edition see Alberti and Pomponio 1986.

13 First allocation of individuals with a field allotment field = eighth allocation of personnel: DP 154 (U2/08), subscript: lu<sub>2</sub> šuku dab<sub>5</sub>-ba 1 ba-am<sub>6</sub>, lu<sub>2</sub> iti-da-ke<sub>4</sub> 8 ba-am<sub>6</sub> 2. "for the individuals with a field allotment it is allocation number one, for the personnel (receiving grain) monthly, it is allocation number 8; (year) 2"; see also VS 25 12 (L5/09): lu<sub>2</sub> šuku dab<sub>5</sub>-ba no. 1 = lu<sub>2</sub> iti-da no. 9, also in VS 14 101 (L6/09); lu<sub>2</sub> šuku dab<sub>5</sub>-ba no. 2 = lu<sub>2</sub> iti-da no. 10; VS 25 23 (L6/10); lu<sub>2</sub> šuku dab<sub>5</sub>-ba no. 3 = lu<sub>2</sub> šuku nu-dab<sub>5</sub>-ba (i.e., lu<sub>2</sub> iti-da) no. 10; MCS 2 15 no. 3 (L2/10); lu<sub>2</sub> šuku dab<sub>5</sub>-ba no. 4 = lu<sub>2</sub> iti-da no. 11; VS 25, 73 (U1/11); lu<sub>2</sub> šuku dab<sub>5</sub>-ba no. 5 = lu<sub>2</sub> iti-da no. 12; STH 1 3 (U2/12). Thus four months in years Lugalanda 5 and 6, but five months in Urukagina 1 and 2.

14 How sophisticated this system was becomes most evident in the crisis of the last years of Urukagina in this series. In these years, step by step various dispensable expenditures were stopped, such as the feeding of animals with barley, and the highest monthly barley allocations were drastically reduced. I owe such observations to Aron Dornauer, who has prepared a detailed economic study of the Presargonic grain accounts from Ġirsu.



of the highly complex management of a redistributive economy, and the monotonous series of numbers represents in fact the basic rhythm of social organization and of urban life.<sup>15</sup> Although written evidence is missing in that regard, one might assume that a monthly distribution of grain took place on certain days every month. Since the month was defined by the moon, and the appearance of the new crescent on the evening sky marked a month's first day, every member knew the monthly calendar and even herdsmen, fishermen, gardeners or others working outside of the city could arrive in time to receive their barley allocations.

### 3. The emergence of a calendar in Presargonic Ĝirsu: Festivals as the focal points of a redistributive society

Despite the bureaucratic counting of allocations treated in the preceding section, months were named at Presargonic Ĝirsu, and they were often noted in the subscript of the texts: "in month NN" (iti NN-a). However, as is well known, there are many more than twelve, namely almost thirty different designations of months (Landsberger 1915: 40–43). Since the barley expenditure documents include both the number of the allocation or the supply and the month name, it is possible to fix the larger part of the month names within the year (Table 1).<sup>16</sup>

The picture that emerges from such a tabulation for the nine years between Lugalanda 5 and Urukagina 6 (Table 1) shows clearly that there existed no mandatory series of twelve month names, although the designations of months mostly dated to the same season of the year. Sometimes two or three references for the same allocation exist, and they used the same month names (underlined in the table). In other cases, however, the scribes noted different month names for the same number of allocations. Furthermore, the indication that an allocation had occurred "at the end" (til-la-ba) or "after" (egir<sub>4</sub>) a month contributes to the difficulties for determining a coherent series. Finally, we note that the distance between the same month names does not always remain the same in different years, and therefore intercalation alone cannot explain the naming of months at Ĝirsu. In Urukagina year 3, iti gud-ra<sub>2</sub> NE mu<sub>2</sub>-a, an untranslatable designation relating to oxen (gud), is followed directly by iti siki ba-a "month of wool allocation," whereas two months separate them in the accession year of Urukagina. This indicates that the designation of a month referred to the actual distribution of wool that happened in a certain season, but not always during the same month.<sup>17</sup> The fact that a designation referred to a unique incident, like the entrance of Ninĝirsu into his new temple Antasura (U4/7) or the appearance of a shining star (U4/6), points in the same direction, namely that this calendar did not yet know a fixed series of month names. This is corroborated by the labelling "after" or "at the end" of a certain month, since apparently it was not yet certain how to name the next month. In a fixed series of months, one would have

15 On the consequences of the monthly allocation for daily life and the living conditions, see Sallaberger and Pruß 2015.

16 Selz (1995: 306–313, Table I/1 to I/7) offered a more detailed table with the same data concerning the sequence of months. Cohen (2015: 29–33) did not take into account the fact that the four annual allocations for the lu<sub>2</sub> šuku dab<sub>5</sub>-ba (numbered 1 to 4) date only to the four last months of the year, and thus failed to reconstruct the Lagaš calendar.

17 This and similar observations go back to Landsberger 1915: 40–42.



used the next month name instead — May is “May,” and not “after April.”<sup>18</sup> In this regard, considering also the practice of occasion-based month names, the designations of months in Presargonic Ĝirsu do not in any sense represent a fixed and obligatory calendar.

The cultic festivals referred to in month names appear in the same sequence, but not always separated by the same number of months. There is always a two months’ distance between the festival of Ba’u at the end of the year and the “grain-eating festival of Nanše” at the beginning of the following year. But the “malt-eating festival of Nanše” preceded Ba’u’s festival by two (Ue, also U4 — note U4/13!) or by three months (L6, U2, U3), and Ningġirsu’s “malt eating” did not appear every year in month names; it occurred between the malt eating of Nanše and Ba’u’s festival. There was variation even at the same sanctuary: the “malt eating” of Nanše followed her “grain eating” by seven (Ue/2 and 9, U4/2 and 9) or by eight months (U3/1 and 9).<sup>19</sup> Does this indicate that each temple independently fixed its own cultic year? In any case, communication happened within the city-state concerning the sequence and the correct timing of the annual festivals of Ningġirsu, Ba’u, and Nanše.

A sequence of the most prominent cultic festivals existed at Presargonic Ĝirsu, but their dates did not correspond directly to the grain allocations. It can be assumed that the allocations of grain, with all their regular single payments, happened every month at about the same time, but even then some variation of month names remains possible. Since some grain allocations occurred explicitly “at the end” of or “after” a month, they probably dated to the turn of the month, thus on day 30 (or 29) or day 1 of the lunar calendar. In this way, some variation occurs easily if two consecutive allocations were given out at the end or the first day of two months. As a model, the following sequences can be assumed:

	Year x	Year y	Year z
allocation no. 1	Month name A (end)	Month name A (end)	Month name B (day 1)
allocation no. 2	Month name B (end)	Month name C (day 1)	Month name C (day 1)

This model explains such entries in Table 1 where month name A corresponds to month name B in another year for the same allocation, but month name B could also be used for the subsequent allocation, as could month name C, etc.

According to their designations, it appears that the month names at Presargonic Ĝirsu represented a basic pattern of annual festivals for Ningġirsu, Ba’u, and Nanše, as well as the mother-goddess Lisin. But in a way similar to the later practice of naming years after important events and deeds of the ruler, the actual name of a month could refer to a special occasion and deviate from the basic pattern. With a unique month name of this sort, all inhabitants of a city-state would be informed about a specific event of general importance.

Was the basic pattern of cultic festivals used for month names in every organization of the city-state? In the Emunus organization of the lady of Ĝirsu, from which the documents ultimately stem, the goddess Ba’u figured most prominently, whose husband was Ningġirsu, and so his festivals were included as well. Furthermore, the lady of Ĝirsu, wife of the ruler, also cared for festivals of Nanše, and thus the Emunus administration focused on at least

18 During the last third of the third millennium in Mesopotamia, when years were officially named after important deeds of the ruler, a year could likewise be called “year following” (mu us<sub>2</sub>-sa) such-and-such event.

19 TSA 36, the text for U3/1, is now largely eroded and cannot be collated, see CDLI-photo P221397.



Table 1: Month names in Presargonic Girsu, Emunus archive (24<sup>th</sup> century)

year month	L5	L6	Ue	U1	U2	U3	U4	U5	U6
1			L7/1: še KIN ku <sub>5</sub> -ra <sub>2</sub>	U1/1: i. še gu <sub>7</sub> 𐎠𐎢𐎲𐎠-ka		U3/1 <sup>?</sup> : [i.] še gu <sub>7</sub> 𐎠𐎢𐎲𐎠-ka U3/1: NIĜ <sub>2</sub> buru <sub>x</sub> -maš-ka			U6/1: i. še gu <sub>7</sub> 𐎠𐎢𐎲𐎠-ka
2			Ue/2: i. še gu <sub>7</sub> [𐎠𐎢𐎲𐎠]-ka				U4/2: i. še gu <sub>7</sub> 𐎠𐎢𐎲𐎠 til-la-ba	U5/2: egi <sub>r</sub> <sub>4</sub> iti še KIN ku <sub>5</sub> -ra <sub>2</sub> -ta	
3			Ue/3: i. 𐎠nin- gi <sub>r</sub> <sub>2</sub> -su-ka maš aša <sub>5</sub> -ba	U1/3: [egi <sub>r</sub> <sub>4</sub> iti] lu-ub <sub>2</sub> še duru <sub>5</sub> 𐎠nin- gi <sub>r</sub> <sub>2</sub> -su-ka-ta				U5/3: kuru <sub>13</sub> im-du <sub>8</sub> -a	
4			Ue/4: i. [še] gu <sub>7</sub> [𐎠nin-gi <sub>r</sub> <sub>2</sub> -su- ka(-ka)]		U2/4: egi <sub>r</sub> <sub>4</sub> iti kuru <sub>13</sub> im-du <sub>8</sub> - a-ta	U3/4: lu-ub <sub>2</sub> še duru <sub>5</sub> il <sub>2</sub> -la	U4/4: kuru <sub>13</sub> dub-ba-a	U5/4: egi <sub>r</sub> <sub>4</sub> iti kuru <sub>13</sub> im du <sub>8</sub> -a-ta	
5			Ue/5: gud- ra <sub>2</sub> NE mu <sub>2</sub> -a (𐎠𐎢𐎲𐎠-ka)			U3/5: lu-ub <sub>2</sub> še duru <sub>5</sub> (𐎠nin-gi <sub>r</sub> <sub>2</sub> - su-ka) til-la-ba			
6			Ue?/6		U2/6: gud-ra <sub>2</sub> NE mu <sub>2</sub> -a	U3/6: gud-ra <sub>2</sub> NE mu <sub>2</sub> -a	U4/6: mul UD saĝ e-ta-ru-a-a		
7			Ue/7: izim 𐎠i <sub>3</sub> sin-ka-ka			U3/7: siki-ba-a	U4/7: 𐎠nin-gi <sub>r</sub> <sub>2</sub> -su an-ta-sur-ra-ka-na i <sub>3</sub> -ku <sub>x</sub> -ra <sub>2</sub> -a		



year month	L5	L6	Ue	U1	U2	U3	U4	U5	U6
8	L5/8: izim ʔi <sup>s</sup> in-ka-ka		Ue/8: siki- ba(-a)		U2/8: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka		U4/8: izim ʔi <sup>s</sup> in-ka		
9	L5/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka	L6/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka	Ue/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka		U2/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnin-ḡir <sub>2</sub> -su- ka(-ka)	U3/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka	U4/9: i. munu <sub>4</sub> gu <sub>7</sub> ʔnašše-ka		
10		L6/10: i. AB-e <sub>3</sub> -ka L6/10*: i. ʔlugal-iri- bar[-ra]	Ue/10: i. munu <sub>4</sub> gu <sub>7</sub> ʔnin-ḡir <sub>2</sub> - su-ka-ka		U2/10: ʔlugal- iri-bar-ra-ke <sub>4</sub> a e <sub>2</sub> -ša <sub>3</sub> -ga i <sub>3</sub> -tu <sub>17</sub> -a-a	U3/10: i. AB-e <sub>3</sub> lagas <sup>ki</sup> -ka U3/10*: i. munu <sub>4</sub> gu <sub>7</sub> ʔnin-ḡir <sub>2</sub> -su- ka-ka	U4/10(-12): i. munu <sub>4</sub> gu <sub>7</sub> ʔnin-ḡir <sub>2</sub> -su-ka-ka		U6/10: i. AB-e <sub>3</sub> -ka
11		L6/11: i. AB-e <sub>3</sub> [ti]- la-ba		U1/11: izim ʔba-u <sub>2</sub> -ka	U2/11: izim ʔba-u <sub>2</sub> -ka	U3/11: siki ʔba-u <sub>2</sub> e-ta-ḡar-ra-a			
12		L6/12: izim ʔba-u <sub>2</sub> -ka			U2/12: amar a-a si-ga	U3/12: izim ʔba-u <sub>2</sub> -ka			
13							U4/13: i. še gu <sub>7</sub> ʔnašše-ka	U5/13	

Dates are given in the format L6/11 = regnal year/number of monthly “allocation” (ba) or “supply” (ḡar); /10\* = reconstructed allocation number, based on the number of the allocation for the lu<sub>2</sub> šuku da b<sub>3</sub>-ba (with four or five allocations at the end of the year)  
 L = years of Lugalanda, U = royal years of Urukagina, Ue = accession year (“ensi<sub>2</sub> year”) of Urukagina; see Sallaberger and Schrakamp 2015a: 73  
underlined dates: 2 or more references for the same correlation  
*dates in italics*: distribution “at the end” (ti-l-la-ba) or “after” (e gir ... a-ta) a certain named month  
 Abbreviation: i. = izim “festival”  
 For the references see Selz 1995: 306–313 (Tabelle I); note that the “VAT” texts are now published in VS 25 and VS 27. Minor differences include: L5/8: RTC 53, delete “munu<sub>4</sub>-kú” of Selz; L5/9: VS 25 12 (= VAT 4421), read -ka for Selz’ -ku; Ue/3: listed by Selz as Uk<sub>g</sub>. E 1/5? “itu-ezem-ʔnin-ḡir-su-a ti-l-la-ba.”



three different deities. Based on our comparatively good knowledge of the pantheon of Presargonic Lagaš,<sup>20</sup> other Ĝirsu deities are hardly to be expected among the state's most important festivals. It thus seems confirmed that the annual cultic festivals were celebrated in a fixed sequence, and by referring to these festivals, the inhabitants of the city-state organized their time.

The most important festivals of the Presargonic city-state of Lagaš are presented in Table 2 (based on the tables prepared by Selz 1995).

Table 2: Festivals and month names in the Presargonic state of Lagaš

Top 8 Festivals	City	Month names
—		month 7/8: Festival of Lisin
Malt-Eating Festival of Nanše	Niĝen	month 8/9
Malt-Eating Festival of Ninĝirsu	Ĝirsu	month 9/10
Bathing of Lugal-iribara	near Ĝirsu(?)	month 10
Lugalurub / <i>ab'e</i> Festival	Urub/Lagaš	month 10
Bau's Festival	Ĝirsu	month 11/12
NinMAR.KI (amar a-a si-ga)	Gu'aba	month 12
Barley-Eating Festival of Nanše	Niĝen	month (13)/1/2
Barley-Eating Festival of Ninĝirsu	Ĝirsu	month <i>nn</i>

The festival season lasted for half a year, from month 8 to months 12/1, or from ca. November to March/April. In the agricultural circle, it started after the seeding work and ended shortly before harvest, in a period when there was low water in the rivers, and the climate was cool. Feasting is defined as communal consumption of food and drinks (Dietler and Hayden 2001: 3), and the redistribution of foodstuffs contributed to a cooperative spirit of the community (Sahlins 1972: 190). Beyond the members of a temple and invited guests, such as neighbours, musicians, craftsmen and elites of the city-state (Sallaberger and Kröss 2019), the preparations of fresh food for the feasting involved many more individuals in other temples and large organizations of the city-state.<sup>21</sup> Thus, including the preparatory service and the processions and feasting on the festival days, the cultic calendar affected large parts of the population. The evolving series of month names referring to festivals can thus be contextualized in a constant communication about festivals and their deities, the symbolic lords and ladies of the land, involving the inhabitants living in the various cities of the city-state of Lagaš.

The other month names of the Presargonic Ĝirsu calendar concentrate on agricultural work, “cutting of grain” (še KIN ku<sub>5</sub>, month 1), “harvest of the yield” (buru<sub>x</sub> maš=k, month 1) or the “yield of the fields” (maš aša<sub>5</sub>-ba, month 3), the “(filling of) bags with fresh grain” (lu-ub<sub>2</sub> še duru<sub>5</sub>, month 2/3/4), work on “granaries” (kuru<sub>13</sub>, month 3/4), whereas other month names refer to oxen (unclear: gud-ra<sub>2</sub> NE mu<sub>2</sub>-a, month 5/6) and the annual “allocation of wool” (siki ba, month 7/8). Harvest and storage were not only regular events shared by most members in an agricultural society, but were of highest importance in the redistributive economy of the Early Bronze Age. Significantly, seeding and other preparatory field work are missing among the month names. Along similar lines, the annual “allocation

<sup>20</sup> See the detailed study of Selz 1995.

<sup>21</sup> As studied for the *mašdaria* contributions to Ba'u's Festival by Sallaberger 2019.



of wool” became a month name in Presargonic Ĝirsu, thus confirming how central the role of redistribution was in communication about the structure of time.<sup>22</sup>

In conclusion, Ĝirsu offers the fascinating case of a calendar *in statu nascendi*. Despite obvious preferences for certain month names and their sequence, a fixed series of twelve month names had not yet evolved. Instead, counting the monthly allocations represented the basic form in the structuring of time in the redistributive economy of the Early Bronze Age city-state. Months had already received names, and these were taken from the series of the main annual religious festivals and from events such as harvest, storage and wool allocation; occasionally, though, other events would have been used to name a month. The names given to months thus created a meaningful organization of time in the redistributive society of an Early Bronze Age city-state.

About a century later, in the Sargonic period, scribes at Ĝirsu dated their tablets with the month names taken from a local calendar of twelve months in a fixed sequence (Cohen 2015: 55–57), resembling the name-giving of the Nippur calendar (see § 6). The largest part of this series of month names remained in use until the end of the millennium.

#### 4. Ebla and Nabada: Presargonic calendars in Syria and in Upper Mesopotamia

Cuneiform archives are known from various regions dating to the decades shortly before the rise of Sargon of Akkade (2324–2283 BCE)<sup>23</sup> around 2310/2300 BCE, and this data allows for a comparative view of various calendrical systems. As discussed in § 2 above, during this period, the counting of months was still widespread in Southern Mesopotamia, as evidenced by the numbering of months at Umma (and partly at Nippur, see n. 38), and of the barley allocations at Ĝirsu. There, at Ĝirsu, month names appeared around c. 2330–2315 BCE, but the irregularities in their use and the sheer number of almost thirty month names indicate that no fixed series of twelve month names was achieved yet (§ 3). The archives from the Royal Palace G of Ebla date to the same period (c. 2360–2310 BCE), whereas the tablets from Tell Beydar, ancient Nabada, are only one generation earlier (around 2360 BCE). Different from the southern Mesopotamian practice, however, the calendars both at Ebla, in ancient Syria,<sup>24</sup> and at Nabada, in Upper Mesopotamia, used a consistent calendar of twelve month names (with only marginal variation), and at Ebla their standardized sequence can also be reconstructed. Neither at Ebla nor at Nabada were months numbered, and both calendars concentrate on local deities and thus ultimately their festivals, as do many month names of Ĝirsu.

The sources do not, however, allow an easy comparison of the social role of these calendars. The documents from Tell Beydar are fewer and far less informative than those from Ĝirsu. The Ebla documents stem from a royal palace, and this obviously dictates the reach of the

22 Month names appear also at Presargonic Ur; see Cohen 2015: 71. At Adab some documents are dated to the local calendar (TCBI 1 18. 19. 23; CUSAS 11 74); these belong to a text group linked to the city-ruler Meskigala, who was active under Lugalzagesi of Umma and Sargon of Akkad.

23 All dates follow Sallaberger and Schrakamp 2015 based on the Middle Chronology (MC).

24 The term “Syria” as designation of a historical region pertains to the area west of the Euphrates and thus does not correspond to the extension of the modern state of Syria. The Hābūr plain forms part of “Upper Mesopotamia.”



sources: festivals, for example, appear basically as targets of royal offerings, especially of sheep, or of dedications. At Ġirsu, on the other hand, the ruler's contributions to festivals remain largely unknown, since only building and dedicatory inscriptions unveil his religious activities. Festivals most probably played a similar social role in the state of Ebla as in the southern state of Lagaš, but textual evidence for this is more circumstantial; at some festivals, for example, several members of the royal family dedicated offerings, or royal gifts were presented to various cultic actors, which hints at the participation of diverse groups of people. Much more compelling is the fact that “markets” (KI.LAM<sub>7</sub>) were held during festivals, where people met and economic exchange evolved alongside feasting; such markets are attested for the festivals of Adamma in month I and of Kamiš in month IV (Biga 2002: 280–281). These markets appear in the documents because the palace bought wool or textiles there for its needs, and in this way the palace contributed to the circulation of silver in the land. The mercantile aspect of festivals may well have existed in the South as well, but it remains unattested, due to the perspective of the available documentation focused on subsistence economy.

The “Local Calendar” of Ebla (see Table 3)<sup>25</sup> was used regularly in the internal administration concerning cereals and oil (in the archive L.2712; Archi 2017: 186) and partly concerning sheep for slaughter (Archi 2017: 182). The chancery documents from the main archive L.2769, however, were dated according to the “Early Semitic Calendar” (see § 5).

Table 3: The “Local Calendar” of Ebla (after Pettinato 1979: xxxvi; Milano 1990: 353–354; Archi 2017: 185–186)

I	<sup>d</sup> a-dam-ma(-um), <sup>d</sup> a-da-ma-um
II	ŠE.KIN(.KU <sub>5</sub> )
II <sup>2</sup>	ŠE.KIN(.KU <sub>5</sub> ) MIN
III	<sup>d</sup> AMA.RA
IV	NIĠDABA <sup>d</sup> ga-mi-iš
V	be-li / ĠES.ĠÁL.TAKA <sub>4</sub>
VI	(NIĠDABA) <sup>d</sup> aš-da-bil <sub>2</sub>
VII	NI.DU
VIII	(NIĠDABA) <sup>d</sup> ʾà-da
IX	NI-la-mu, ir-me, ir-mi
X	ḫur-mu, ḫu-lu-mu, ḫu-la-mu, ḫu-ru <sub>12</sub> -mu / NE.ĠAR
XI	È
XII	ŠUKU

Archi (2017) has shown that most month names relating to deities, as well as some others, refer to festivals held in the state of Ebla. It suffices to list them in their calendrical order:

- I: festival of Adamma, wife of Rašap in Adani (Archi 2017: 186)

25 Formerly known also as the “New Calendar,” since it appears in documents of local relevance that are all dated to Ebla's last years (Archi 2017: 186). Charpin (1982) established the beginning of the year in the month *i-si* of the Early Semitic Calendar // Adamma, and more recently Archi (2017: 195–201) returned to this problem and confirmed the conclusion of Charpin.



- III: <sup>d</sup>AMA.RA (or better AN/DIGIR.AMA.RA) is the name of a rite with offerings to various deities (Archi 2017: 187)
- IV: festival of Kamiš of NI.lab (Archi 2017:187)
- V: ĠEŠ.ĠÁL.TAKA<sub>4</sub>, “Opening,” indicates a ceremony performed in honour of the important Eblaite god Nidabal (Hadabal) at his cult-place Larugadu in the western region of the kingdom, the Orontes valley (Archi 2017: 189–91)
- VI: festival of Aštabil (Archi 2017: 191), perhaps a warrior god and widely venerated in the Ebla region (Archi 2015: 603f.)
- VIII: festival of the storm-god Hadda of Ḫalab (Archi 2017: 190)

Ebla’s festivals took place in a period from the first and third to the eighth month, i.e. from April and June to November, and thus one avoided the rainfall season during winter in this region. Moreover, the festivals that formed the calendar pertained to various centres in the state of Ebla, from Larugadu in the Orontes valley to Ḫalab (Aleppo) in the northeast. As was the case in Ġirsu (§ 3), various local festivals thus formed the core of an annual cycle in the communication about time. Furthermore, in the same way as discussed for Ġirsu, these festivals must have played a decisive role in establishing social and economic contacts between the inhabitants of the state’s various cities, from the visitors of the markets and the people bringing festival donations to the members of an elite that participated at various festivals.

The names of only two or perhaps three of the other months can be translated, but, as Archi (2017: 186–192) has made clear, no festival of major importance is known for these months. Month II, corresponding to May, was called “cutting of grain” and thus referred fittingly to the beginning of the grain-cutting season (Archi 2017: 186). The designation of Month XII as ŠUKU “allotment field” perhaps referred to an annual organization of land. Month X, i.e. January, namely *hurmu* and NE.ĠAR might refer to a period when braziers were used (Catagnoti 2019). The designations of months VII (NI.DU), IX (NI-*la-mu* with the administrative activity *ir-me/mi*), and XI (Ē “exit”) remain unclear (Archi 2017: 189–192), and thus their role in the society cannot be guessed. Most importantly, it remains unknown in what way redistributive economy prevailed in Early Bronze Age Ebla beyond the realm of the palace; the annual distribution of simple clothes to the employees (in various months of the year) at least gives a hint in that direction (Archi 2018: 189).

At Tell Beydar, in the Ḫābūr plain, the Syro-European excavations of 1992 to 2010 discovered over 240 cuneiform tablets from the Presargonic period, almost all of them administrative in nature.<sup>26</sup> Tell Beydar, ancient Nabada, was a second-rank provincial centre in the state of Nagar, modern Tell Brak. The bulk of the cuneiform tablets found there from the Early Jezirah 3b phase date approximately to the time of the early texts from Ebla, or around MC 2360 BCE (Sallaberger and Schrakamp 2015b: 303). Exactly twelve month names appear in these texts (see Table 4). Nine of these month names are found in the group of 16 written documents stemming from an earlier stratum at Tell Beydar (Milano 2014: nos. 221–236), dating to the end of the 25<sup>th</sup> century.<sup>27</sup>

26 Published in *Subartu* 2 12 and 33 (except the earlier texts nos. 221–236; see the following note).

27 C. 2440–2380 BCE after Sallaberger and Schrakamp 2015b: 304; c. 2450–2420 BCE after Milano 2014: 151.



The sequence of the twelve month names remains unknown; only the sequences a–b (in no. 89, also in no. 226)<sup>28</sup> and d–h, that is, month h directly follows month d (no. 111) are indicated by the documents. Therefore, they are listed according to the number of attestations in descending order (Table 4).

Table 4: Month names in documents from Nabada (Tell Beydar) listed according to the number of attestations

	Month name	translation	main archive	early texts	city gate, cult
a	ITL.SAR <sup>d</sup> UTU	“Month of the Sun-god”	25	2	gate, cult
b	ITL.SAR <sup>d</sup> BE- <i>lí</i> ZI	“Month of the Lord of ... (zi)”	14	2	gate
c	ITL.SAR <sup>d</sup> BE- <i>lim</i> /BE	“Month of the Lord”	11	1	gate
d	ITL.SAR <sup>(d)</sup> BE-( <i>lí</i> ) <i>su-lum</i> <sup>ki</sup>	“Month of the Lord of Sulum”	8	1	cult
e	ITL.SAR <sup>(d)</sup> BE- <i>lí sa-la</i>	“Month of the Lord of ...”	8	–	
f	ITL.SAR <sup>(d)</sup> <i>ešhara</i> <sub>x</sub>	“Month of Ešhara”	7	2	
g	ITL.SAR AN.SAG	“Month of ...”	5	1	
h	ITL.SAR <sup>d</sup> <i>ša-ma-gan</i>	“Month of Šamagan”	3	1	cult
i	ITL.SAR <sup>(d)</sup> <i>ma-se-ii-tim</i>	“Month of (god) Mašetum”	3	–	
j	ITL.SAR <sup>d</sup> LUGAL-GI-GI-KA	“Month of (god) L.”	1	1	
k	ITL.SAR <sup>d</sup> NE.NE.GAR	“Month of the divine brazier(?)”	1	1	
l	ITL.SAR AN-NI- <i>na</i> -DUG?	“Month of ...”	1	–	

Many texts are dated by a month name, but neither year nor day is indicated at all. Already in the early texts, the month can always be found at the very end of the text, thus serving as a subscript relating to the complete document. Two early texts (nos. 222 and 232) explicitly state “in Month NN” (*in* MN). The month name thus formed the basic reference to time, and this becomes clear in several examples: the accounts for the plucking of sheep all date to one specific month, the month of the Sun-god (month a in Table 4), which therefore must refer to the first month of the standard Mesopotamian year, corresponding more or less to the time of April. The expenditures of grain to various persons, including travellers, and fodder for the donkeys of the lord of the capital Nagar, who stayed at Tell Beydar for a number of days, are dated by month name, as are the monthly documents about the grain distributions given as salary to the working population of Nabada.

Apparently all twelve month names of the Tell Beydar Calendar refer to deities or to divine aspects. Three divine names reappear in the designations of the city gates of Tell Beydar, and are thus well known in the region and also referred to in the organization of the urban space. The settlement Sulum where the “Lord of Sulum” was venerated, was a city within the province of Nabada. The occasionally attested delivery of animals for offerings to Sulum suggests that this was a relatively important cultic centre; also, the king of Nagar once travelled there (*Subartu* 2 nos. 9, 42 and 122). Ešhara was the only female figure in

28 No. 226 is dated to month UD.SAR <sup>d</sup>UTU; a reference is made to a transaction in the following month *iš* <sub>13</sub> UD.SAR <sup>d</sup>BE-*lí-zi* vii 3–5 (differently Milano 2014: 170).



the list of deities, and Šamagan was venerated as god of the wild animals of the steppe, donkeys and gazelles. Šamagan's cult is attested by two documents dated to the Ešharamonth (Sallaberger 1996: 87), one recording the delivery of sheep (*Subartu* 2 no. 33) and one recording the presence of the ruler there (*Subartu* 2 no. 101). Although these datings seemingly contradict the notion that Šamagan's festival took place during the month named after Šamagan, this evidence remains too meagre to argue for a different model of naming months than in the states of Lagaš or Ebla.

All data point to a fixed local calendar: first of all, the continuity in its use from the earlier to the later archive, a period of perhaps half a century; secondly, the relationship of the divine names to the city itself, namely in the cult and in the names of the city gates; and finally, the regional relevance of Šamagan and the "Lord of Sulum." There is no hint whatsoever that the scribes should have used this calendar only as an administrative tool, so the reference to months by name was the self-apparent and most simple way to indicate time in ancient Nabada. There was no other system for counting time in competition with the series of month names. Unfortunately, no texts from Nabada's capital, Nagar (Tell Brak), are known from this period, so it remains unknown whether Nabada and Nagar shared the same calendar. However, one would have expected at least the "Lady of Nagar" to be commemorated in one of the month names, and also other centres besides Sulum may have appeared. So it seems that the calendar of the Nabada province dates back to a time when this region was still an independent city-state, a state evidenced archaeologically by the throne room complex on the acropolis (i.e., Phases 1–2; Lebeau 2003: 21–26); evidently the traditional calendar was kept even after Nabada had become a province in the regional state of Nagar.<sup>29</sup>

## 5. The Early Semitic Calendar: Cultural and political implications of the first seasonal calendar

The Tell Beydar tablets (§ 4) surprisingly offered an otherwise unknown series of month names, whereas experts might have expected the use of the so-called "Early Semitic Calendar," a calendar used both at Mari and Ebla during the same period, the late 24<sup>th</sup> century BCE. After Pettinato (1979) had reconstructed the calendar from the tablets found at Ebla in 1975, Charpin (1982) determined the correct beginning of the year with the help of the Presargonic tablets from Mari (see Table 5). At Mari, the month names appear in texts regulating the local distribution of grain and cereal products;<sup>30</sup> at Ebla they were used in the main archive of the Royal Palace G (L. 2796) and other text groups (Archi 2017: 183–185).

As a glance at Table 5 shows, this calendar has a completely different setup than the local Presargonic calendars from Lagaš (Table 1), Ebla (Local Calendar, Table 3) or Tell Beydar (Table 4): not a single month is named after a deity, but the names apparently refer to seasons or to seasonal activities. The uncertain etymologies of the month names allow much speculation. So month VI may be related to "sowing" ("it seeded," *yiHriš*), month III may be related to the word known in Akkadian as *šēnu* "small cattle," month II could mean "it became cold" (cf. Akkadian *kašû* "cold"). But why in May? An explanation may be suggested by referring to the seasonal effect known in German as "*Schafskälte*," a typical

29 On the regional state of Nagar and the size of the province of Nabada, see Sallaberger and Ur 2004.

30 Presargonic tablets from the archaeological excavations at Mari were published by Charpin 1987 and 1990; Cavigneaux 2014; some from lootings by Horioka 2009.



Table 5: The Early Semitic Calendar at Ebla and Mari (24<sup>th</sup> century BCE)

	Ebla	Mari
I	<i>i-si</i> , NI- <i>si</i> (1×)	<i>i-si</i>
II	<i>ig-za</i> (+ MIN)	( <i>i</i> -) <i>ig-za</i> , <i>i-ig</i>
III	<i>za</i> <sup>3</sup> à- <i>tum</i> , <i>za</i> <sup>2</sup> à- <i>na-at</i> , <i>za</i> <sup>3</sup> à- <i>na</i>	<i>za</i> <sup>3</sup> à- <i>tum</i>
IV	<i>gi-ni</i> , <i>igi-ni</i> (1×)	<i>gi-ni</i>
V	<i>ḥa-li</i> , <i>ḥa-li-ni</i> , <i>ḥa-li-du</i>	<i>ḥa-li</i>
VI	<i>i-rí-sá</i> , <i>rí-sá</i>	<i>i-rí-sá</i> , <i>i-rí-iš</i>
VII	<i>ga-šúm</i>	<i>ga-šúm</i>
VIII	NI- <i>nun</i> , NI- <i>nun-na</i> , NI- <i>nun-na-at</i>	NI- <i>nun(-na)</i>
IX	<i>za-LUL</i>	<i>za-LUL</i>
X	<i>i-ba<sub>4</sub>-sa</i>	<i>i-ba<sub>4</sub>-sa</i>
XI	MA×GĀNA <sub>4</sub> .-SAG	MA×GĀNA <sub>4</sub> .-SAG
XII	MA×GĀNA <sub>4</sub> .-ÚGUR	MA×GĀNA <sub>4</sub> .-ÚGUR

meteorological feature in early and mid-June, when temperatures sink and snow falls in the mountains, doing harm to the sheep that were shorn in April. In ancient Mesopotamia and Syria, sheep were plucked in spring, around the first month. In May, the weather changed to the summer climate, but the nights could still be cold, and after the last rainfall in April, cyclones could appear, and, especially in the interior of Syria, thunderstorms without rainfall are not rare (Wirth 1971: 87–88). Perhaps this was the background for the month name *yiqsa*?

The Early Semitic Calendar appears in the Ebla texts already in the earliest documents — for example, in the texts dated to the time of Arrukum (published in ARET 15), ca. 40–35 years before the end of Ebla and thus chronologically close to the main archive of Tell Beydar. Similarly to Tell Beydar, the Ebla scribes noted the month as the temporal reference at the end of the tablet, especially in the largest group of documents from the Ebla archives, the monthly accounts of expenditures of textiles. Although sometimes an occasional note referred to an important event of the year, the month names remained the basic dating system at Ebla, in this way comparable to Tell Beydar. The Mari cuneiform texts date slightly later than those from Tell Beydar and those from Ebla, and they often indicate the regnal year by a simple number (*x* MU, “year *x*”), similarly to the Southern Mesopotamian system (see § 2). At Mari, the documents deal with local matters such as provision with cereals or the breeding of donkeys, and the only dating system employed is the Early Semitic Calendar; it was thus the usual way to refer to months in this city, and since the capital Mari saw no major interruption in the preceding centuries (since the foundation of its “Ville II”), chances are high that the Early Semitic Calendar had already been the standard dating system at Mari for some time.<sup>31</sup>

At Ebla, the situation was different, with the parallel use of a local calendar that referred to the festivals and deities of the larger Ebla region (see § 4). Therefore, the implementation and use of the Early Semitic Calendar at Ebla needs an explanation. This can easily be achieved by pointing to Ebla’s political situation in the early years of the archives, i.e. 50 to 40 years

31 Some of the Presargonic Mari tablets found in 1999 (Cavigneaux 2014) date slightly earlier than those published by Charpin mainly from Chantier B; also these early texts use the same month names (ibid. 295–297 nos. 1, 6 and 7); on the dating see Cavigneaux 2014: 310.



before the destruction, when Ebla was a tributary of Mari, as testified, e.g., by the enormous quantities of silver and gold that were sent to Mari every year (e.g., Archi 2015: 3–12). This political dependence also led to cultural influences, including, most importantly, the introduction of the cuneiform writing system by Mariote scribes in the Ebla palace. The political and cultural background thus accounts for the use of the Early Semitic Calendar in the palace, the political centre of the state, especially in the documents of the central archive relating to the royal treasury. The dating system was then kept in Ebla's central archive until the end, when Ebla had become a respected power of its own, and this calendrical usage reflects the fact that the central archive dealt with superregional matters as well, relating to gift exchange between ruling families, messengers or military expeditions. Furthermore, the state of Ebla had apparently extended beyond the region covered by the deities and festivals of the local Ebla calendar, and so, for state matters, the reference to a widely distributed calendar seems more appropriate.

The earliest attestations for the same Early Semitic Calendar, however, do not come from Syria or Upper Mesopotamia, but from distant Abū Ṣalābīḥ in Southern Mesopotamia, a place situated north-west of Nippur. The cuneiform texts found there date to the Fara period, i.e. the 26<sup>th</sup> century, and two of its administrative tablets were dated: one (IAS 513) by a month name only, the other (IAS 508) with the number of the regnal year and a month name (which corresponds exactly to the format known from the Mari tablets).<sup>32</sup> The use of the “Early Semitic Calendar” seems appropriate in the bilingual context of Abū Ṣalābīḥ, where about 40 % of the personal names are Semitic (Krebernik 1998: 265). Akkadian words appear in one of these two tablets, IAS 508 (*in* “in,” *ù* “and”), as well as in IAS 519 (*mi-at, li-im*); these three single tablets with Semitic features (IAS 508, 513 and 519) stem from one single findspot, “Area E,” perhaps a temple.<sup>33</sup> The evidence does not allow us to draw further conclusions — whether, for example, we are dealing with the archival remains of an organization that dealt with superregional matters, and/or whether Abū Ṣalābīḥ at that time was directly controlled by the king of Kiš (as appears probable).

Concerning the appearance of two month names from the Early Semitic Calendar at Abū Ṣalābīḥ, the dominant role of Kiš in the Fara period has to be acknowledged. This role is attested textually, for example, by the movement of troops from the cities of Sumer to Kiš<sup>34</sup> and, more importantly, by the power of the “king of Kiš,” as exemplified by Mesilim “king of Kiš,” who was an overlord for the local rulers both at Adab and at Ġirsu prior to the Urnanše dynasty — thus in a period not too distant from the Abū Ṣalābīḥ texts. Furthermore, close links existed between Mari and Babylonia in this early period, as testified, for example, by the pearl from king Mesanepada of Ur found at Mari or, on the other hand, a personal name *Ikūm-Mari* at Abū Ṣalābīḥ.<sup>35</sup> The politically dominant centre of Kiš might well have served as a hub in the exchange between the regions. New evidence for the political power of Kiš before the Fāra period comes from the testimony of the so-called “Prisoner Plaque,” which is dated to ED I–II (Steinkeller 2013). Furthermore, Veldhuis (2014) argued that a major branch

32 IAS 508: 2 mu iti *i-si*; IAS 513: [iti] *za-’ā-tum*; see also Sallaberger and Schrakamp 2015a: 34.

33 Krebernik 1998: 270 points to IAS 508 and IAS 519; no further Semitic words or month names are attested among the new tablets published by Krebernik and Postgate 2009: 18–21 (see Index; thereby excluding uncertain *iš*). On the findspot see Postgate in Krebernik and Postgate 2009: 1–8.

34 In Fāra documents; for a summary see Sallaberger and Schrakamp 2015a: 64.

35 IAS 554; Krebernik in Krebernik and Postgate 2009: 14 also points to an attestation of “Mari” in an UD.GAL.NUN text from Fara and Abū Ṣalābīḥ.



of the Early Dynastic lexical tradition that is attested from Abū Ṣalābīḥ and Fara to Ebla can in fact be connected with the city of Kiš.

In this context it is impossible not to think of the concept of the Kiš Civilization as formulated by I. J. Gelb (1981), which he defined as extending from Kiš and Abū Ṣalābīḥ in the south to Ebla and Mari in the north: “With all the existing and potential variations, it is still necessary to recognize a cultural entity encompassed under the term ‘Kish Civilization,’ but only in the broad sense of a Semitic cultural area as contrasted, in our case, with the Sumerian cultural area.” (Gelb 1981: 72). Gelb was careful to differentiate between language and cultural features, and he did not see a “unified political control over all lands of the Kish Civilization” (ibid.). “Among the cultural features that characterize all or some of the lands of the Kish Civilization, we find a more or less unified system of writing, scribal contacts within the whole area, the use of the decimal system, certain aspects of the systems of measures, year dates, month names, and religion” (ibid.). With the discovery of Tell Beydar, the situation has become more varied: Beydar shared the capacity measures with Mari, but differed from Ebla; the pantheon was completely different at all three centres; and Mari and the palace of Ebla shared the calendar with Babylonian Abū Ṣalābīḥ, whereas Beydar and the city of Ebla followed their own traditions. Thus the concept of a homogeneous northern cultural tradition fades away, and also the southern boundary is less certain than often assumed. The “king of Kiš” Mesilim was acknowledged in the Sumerian cities Adab and Ġirsu; troops were sent from southern cities to Kiš, and the title “King of Kiš” was assumed also by southern rulers (from Ur, Ġirsu, Uruk); Ur and Mari may have formed an alliance against Kiš (Archi 2015: 6); texts from the Kiš tradition were transmitted in the south as well<sup>36</sup> — so it appears more and more difficult to draw a border between “Sumer” and “Kiš,” as Gelb had hypothesized.

Whether using the term “Kiš Civilization” or not, the special geopolitical situation of the Presargonic period (24<sup>th</sup> century BCE) should not be forgotten: city-states with a dense population, especially in Upper Mesopotamia, stretched from Syria, with Mari and Ebla and all the other cities known from the Ebla texts, across Upper Mesopotamia (with, e.g., Tell Khuera and Nagar/Tell Brak) to the Diyala region and to Babylonia. The political contacts between Ebla, Mari, Kiš and Nagar and other cities, as testified in the trade networks and the exchange of messengers, treaties, dynastic marriages and wars, demonstrate how densely interconnected this region was. This large region was a multi-centred nexus of various city-states, with specific roles played by the main cities (e.g., Ebla, Mari, Nagar, Kiš), but it included culturally distinct regions like, e.g., the *badalum* area (around Ḥarrān) or the *Kranzhügel* culture. This large network of states declined and partly collapsed late in the 24<sup>th</sup> century, probably because of the political disasters preceding the rise of Sargon of Akkade, and with this collapse the geopolitical situation had changed forever. The widespread use of the Early Semitic Calendar at the centres of power and of writing, from Abū Ṣalābīḥ to Mari and from there to its vassal Ebla, is one example to show the interconnectedness of the region. The documents from Ebla provide ample evidence for individuals travelling from Babylonia through Mari to Ebla or to Nagar, and this communicative network forms the setting for a common use of a calendar. Therefore, I would take the appearance of the

36 See Veldhuis 2014: 243 on “ED Lu E” also from Fāra/Šuruppak, and the unprovenanced manuscript of “Geography” (CUSAS 12 6.2.5) may in fact stem from the lootings in the Umma region, although this remains uncertain.



Early Semitic Calendar at Ebla not as a scribal practice, as suggested by Michalowski<sup>37</sup> and accepted by Archi (2015: 33), but as reflection of the entanglement of the Early Bronze Age city-states from Syria to Babylonia. The spread of the calendar before the Sargonic period is furthermore confined to a region with a dominant or at least significant proportion of speakers of a Semitic language.

The Early Semitic Calendar (Table 6) survived the collapse of the Presargonic states, and it continued to be used in the Sargonic period (in Babylonia MC c. 2300–2150 BCE). Month names of this version of the calendar are known from documents found in an even wider region than during the Fara and Presargonic periods: from Tell Brak, in Upper Mesopotamia, and most numerous from Babylonian cities, namely from Ešnunna and the Diyala region, from Kiš, Nippur, Adab, Umma, and Ĝirsu. Most month names of the Presargonic Mari and Ebla calendar, namely eight out of twelve, reappear in the Sargonic version of the Early Semitic Calendar. Another five month names were added, but local variations of this calendar cannot yet be reconstructed (see Table 6).

Obviously, the spread of the Sargonic version of the Early Semitic Calendar can be directly correlated to the communicative network existing in the state of the kings of Akkade. A closer look at the situation in cities where dates from a local Sumerian calendar also occur corroborates this suggestion: at Ĝirsu, the Semitic calendar appears in some of the few texts written in Akkadian and not in Sumerian, which thus belonged to the Sargonic state administration; at Nippur, Semitic month names are restricted to the so-called “Akkadian texts” (Westenholz 1987: 21–58), and they do not appear in the other Presargonic or Sargonic dossiers and tablets which use the Nippur calendar (see § 6). At Adab, mainly a special archive or dossier used the Semitic month names (Maiocchi and Visicato 2012: 7–8), whereas tablets from the archive of the city-ruler are dated by the local Sumerian Adab calendar. One can therefore safely conclude that a successor or branch of the Presargonic Early Semitic Calendar became the state calendar in the kingdom of Akkade, from Tell Brak in the north to Ĝirsu in the south. Sargon of Akkade, the founder of the ruling dynasty, cast himself most overtly in the tradition of Early Dynastic Kiš by calling himself “King of Kiš.”

After the Sargonic period, the Early Semitic Calendar disappears from the hitherto known cuneiform documentation. Only one single month name, *Tiru*, can also be found in the Amorite calendars of the early second millennium, and therefore no direct calendrical tradition existed that would have led from the Early Bronze Age, with the dominance of Kiš and Akkade, down to the Amorite period of the Middle Bronze Age. This break reflects well the catastrophes of the late third millennium that completely changed the population

37 “Two facets of the conventional nature of writing systems may be brought into the discussion at this point. The first is the fact that throughout Southern and Northern Mesopotamia as well as in Syria during the pre-Sargonic period there was in use, *in written texts*, a common set of month names, labels which were, as all evidence suggests, Semitic in origin. At no other time prior to the spread of the Nippur calendar during the Old Babylonian period, was there such unity of calendrical usage in the Near East. One needs to think only of the Ur III dynasty, a time of unprecedented administrative unity and centralization and yet a period when more than six calendars were in contemporary usage. The use of the same calendar throughout third millennium Syria and Mesopotamia thus stands out as an unusual example of the spread of writing conventions over a very large area that was not by any means unified politically.” (Michalowski 1987: 173). Of course this statement was written from the perspective of its time; nowadays (2019), hardly any serious specialist would call the Ur III period “a time of unprecedented administrative unity and centralization,” as so many differences in various aspects of administration (e.g., messenger texts, administration of grain, expenditures for the cult, etc.) are known between, first of all, Umma and Ĝirsu.







	Presargonic			Sargonic							
	Ebla	Mari	Abū Šalābīḥ (OIP 99)	Gasur (HSS 10)	Ešnunna / Diyala (MAD 1)	Kiš & T. Brak	Nippur	Adab	Umma	Ġirsu	Unknown
total:	12	12	2	4	8	1 & 1	2	5	1	5	1
XII	MA × GĀNAL- ŪGUR	MA × GĀNAL- ŪGUR									
a					<i>ba-l̪i-ir</i> MA (154 <sup>E</sup> )		<i>ba-l̪i-ir</i> IGI. ME (OSP 2 6, 9)	<i>ba-l̪i-ir</i> IGI (*; OIP 14 92)			
b					<i>ba-l̪i-ir</i> EGIR (184 <sup>E</sup> )			<i>ba-l̪i-ir</i> EGIR (*; Adab 973)		<i>ba-l̪i-ir</i> EGIR (JTT 1 1079)	
c					<i>ti-ru</i> (287 <sup>P</sup> )						
d				<i>ga-da-ad</i> (166, 184; Glassner 1983; no. 1)							
e								<i>ša-ni-i</i> (OIP 14 117)		<i>ša-ni-i</i> (Scheil 1925: 153)	

Month names attested only in the Presargonic and those attested only in the Sargonic period are indicated by two different grades of grey.

Sargonic month names: references to texts from the region of Sumer and written in Akkadian in *italics*, written in Sumerian in **bold**.

References taken mostly from Cohen 1993, Cohen 2015, Colonna d'Istria 2009: 257ff., with some additions; Ebla month names after Pettinato 1979: xxxiv–xxxvi (forms grouped after number of references).

Ešnunna/Diyala: with the references to texts from MAD 1, the provenance is noted by <sup>E</sup> or <sup>P</sup>, respectively.

Tell Brak: TB = Eidem et al. 2001: 111 no. 41.

Adab: \* = Semitic month names in the “A-NI-za archive”; see Maiocchi and Visicato 2012: 7–8.

Umma: MCS 9 233 = Cripps 2010: no. 30.



patterns and the interregional contacts of larger Mesopotamia, namely the decline of Upper Mesopotamia before the coming of Sargon at the end of the 24<sup>th</sup> century, and the collapse of the Ur III kingdom and the end of Sumer around and shortly after 2000 BCE.

## 6. An annual calendar with reference to seasons: Nippur

As the evidence presented so far has made clear, different modes existed to refer to the time at which a cuneiform text was written in the Presargonic period (24<sup>th</sup> century BCE). Dating texts was not as widespread in the Presargonic period as it was later — for example, in the Ur III or Old Babylonian periods — and thus the pure absence of dates cannot serve as an argument that dating did not yet exist. Nippur offers a special case, since two or three tablets from the Presargonic texts are still dated by numbers.<sup>38</sup> But later, in texts from the decades from Enšakušana of Uruk up to and including Sargon of Akkade (MC c. 2330 to 2284 BCE), month names of the standard Nippur calendar were used instead. The new form of dating first found on Nippur tablets eventually developed into the standard model for future centuries. Its basic features are:

- 1) a month name taken from a firm sequence of twelve month names,
- 2) whereby the month names refer mostly to seasonal aspects;
- 3) a day date;
- 4) a year date commemorating deeds of the ruler or other political events.

*Ad 1)* Different from the counting of months at Umma (§ 2) or earlier at Nippur (n. 38), or from the conventional but to some extent *ad hoc* designations of months in Ġirsu (§ 3), Nippur used a fixed sequence of twelve month names (Table 7) and thus follows the model known from the northern cities Ebla and Nabada (§ 4), but, most importantly, from the Early Semitic Calendar (§ 5). The references for month names and some sequences thereof in Presargonic and Early Sargonic Nippur texts do not permit an independent reconstruction of the calendar yet, but no month names other than those known from the Ur III Nippur calendar appear in the documents, and no evidence contradicting the sequence can be found.<sup>39</sup>

*Ad 2):* The Nippur calendar differs markedly from the local calendars of Ġirsu, Ebla, and Nabada (Tell Beydar) that refer mainly or even exclusively to festivals and deities venerated in the city-state. In the Nippur calendar, the only deity mentioned in a month name is Inana (month VI), admittedly a goddess with an important sanctuary at Nippur, but one looks in vain for Enlil, Ninlil, Ninurta or Nuska. This does not mean that they were not venerated, and in fact the festival of month II was a festival for Ninurta, and the “Holy Mound” (du<sub>6</sub>-ku<sub>3</sub>)

38 Whereas month names appear in the late Presargonic texts (end of 24<sup>th</sup> c.), earlier texts count the months: iti 6 OSP 1 22; u<sub>4</sub> 2 iti 11 (?) OSP 1 80 (also TMH 5 31?).

39 The only change during the third millennium is of course the introduction of the name ab-e<sub>3</sub> for month X during the Ur III period. For the sequence of month names, some evidence from Presargonic and Early Sargonic texts exists: ECTJ 138: 7–10 refers to an annual grain transaction from month II to month I; and *ibid.* in ll. 14–15, the period from month IV to month IX is qualified as “of 6 months” (i.e., including both ends); OSP 1 15, a label of a tablet basket for months II and III; in Classical Sargonic texts the sequence III–IV in OSP 2 116; the sequence IV–V–VI–VII in OSP 2 136; and various indications “from month y to month y” corresponding to the sequence in the year.



Table 7: The Nippur Calendar in the Presargonic and Sargonic periods

	Month name		References in Presargonic and Early Sargonic texts	References in Classical Sargonic texts
I	para <sub>10</sub> za <sub>3</sub> ġar	“placing the ... soele” (?)	ECTJ 117, 138 (in text, + mu), 151 (+ mu); OSP 1 73	OSP 2 114, 164 (in text)
II	(izim)* gud-si-su <sub>3</sub> /su <sup>#</sup>	“(festival) to align oxen”	ECTJ 76*, 112*, 123, 138*# (in text, + mu); OSP 1 15# (in text), 41*#, 84*#, 105*	OSP 2 116* (in text), 153 (in text, [ges] [u <sub>4</sub> ?]-sub)
III	seg <sub>12</sub> ges <sub>12</sub> u <sub>3</sub> -šub (-ba)* (ges <sub>2</sub> )-ġar	“placing a brick in the brick-mold”	ECTJ 90, 135; OSP 1 15 (in text), 16, 53* (+ u <sub>4</sub> ), 54* (+ u <sub>4</sub> )	ECTJ 92* (in text, ges <sub>2</sub> sub-...); OSP 2 116* (in text), 153 (in text, [ges] [u <sub>4</sub> ?]-sub)
IV	šu-nuġun	“sowing”	ECTJ 80 (+ mu), 138 (in text, + mu), 150 (+ mu), 182 (+ mu); OSP 1 52 (u <sub>4</sub> ), 55 (+ u <sub>4</sub> ), 99	OSP 2 116 (in text), 136 (in text)
V	ne-NE-ġar	“placing of <i>braziers</i> (?)”	ECTJ 32 (+ u <sub>4</sub> ), 79, 103, 154; OSP 1 76 (+ mu), 91	OSP 2 136 (in text)
VI	kiġ <sub>3</sub> -d <sub>4</sub> -inana	“message(?) of Inana”	ECTJ 153, 158 (+ mu), 206 (+ u <sub>4</sub> ); OSP 1 58 (+ u <sub>4</sub> ), 86	OSP 2 136 (in text), 169
VII	du <sub>6</sub> -ku <sub>3</sub>	“Holy Mound”	ECTJ 81 (+ mu), 84, 89, 109 (+ u <sub>4</sub> ), 162, 166; OSP 1 77 (+ mu), 103 (+ mu)	OSP 2 119 (in text), 136 (in text)
VIII	ges <sub>2</sub> apin tu <sub>3</sub> -a	“unhitching the plough”	ECTJ 38 (+ u <sub>4</sub> ), 100 (+ mu); OSP 1 57 (+ u <sub>4</sub> ), 71	ECTJ 7 (+ mu), 94
IX	gan-gan (mu-)*e <sub>3</sub>	“leaving ...”	ECTJ 138 (in text, + mu), 163*; OSP 1 72	OSP 2 114, 153 (in text)
X	ku <sub>3</sub> -su <sub>3</sub> (šim)	“ear”	ECTJ 129, 156; OSP 1 66, 101 (+ mu)	ECTJ 37 (+ mu); OSP 2 135
XI	ud <sub>2</sub> -durus	“fresh emmer”	ECTJ 82 (+ mu), 86 (+ mu), 87 (+ mu), 165; OSP 1 108, 152	OSP 2 119 (in text), 137
XII	SE.KIN ku <sub>3</sub>	“cutting grain”	ECTJ 35 (+ u <sub>4</sub> ), 40, 99, 106, 110 (+ mu), 198, 203, 211 (in text); OSP 1 31 (in text), 34, 56, 75, 102 (+ mu), 145 (+ mu)	

Note: The division between “Early” and “Classical” Sargonic is not absolutely certain in each case. Month names attested in the Sargonic “Šu-ilisu archive” from Maškan-ili-Akkade/Umm el-Hafriyat (Milano and Westenholz 2015: 16): I (CUSAS 27 53), II (gud-si-su, ibid. 46, 53), III (seg<sub>12</sub>-šub-ba-ġar, ibid. 53), IV (ibid. 34, 53), V (ibid. 35, 53), VI (k<sub>3</sub>in<sub>3</sub>(UNKEN)-d<sub>4</sub>-inana, ibid. 53), VII (ibid. 53), VIII (ibid. 53), IX (ga-an-ga-mun-e<sub>3</sub>, ibid. 36; ga-an-ga-an-e<sub>3</sub>, ibid. 53), X (AB-e<sub>3</sub> nibru<sup>u</sup>, ibid. 37; AB-e<sub>3</sub>, ibid. 53), XI (ibid. 45, 53), XII (ibid. 38, 53).



of month VII was situated in Enlil's temple; but the main deities of Nippur do not appear in the month names.

Seasonal and agricultural activities dominate the Nippur calendar, and in this regard the Early Semitic Calendar (§ 5) offers the best comparison. Some of the activities like “aligning the oxen” (month II) or “unhitching the plough” (month VIII) were not only activities rooted in the agricultural year, but they also gave their name to festivals held in various temples. Whether or not some month names reflect domestic festivities remains unknown, but it seems well possible. Only the month referring to the cutting of grain can be found in Presargonic Ĝirsu as well; thus apparently the Nippur calendar did not focus on the redistributive economy in the same way as was the case at Ĝirsu (§ 3).

*Ad 3):* In Presargonic and Sargonic Nippur, the reference to a month name remained the basic method to date a cuneiform text. In some instances, the day's number in the lunar month was added, but it usually followed the month name and thus occupied the same place on the tablet as the newly introduced year name. In this regard, the counting of months and years in the mu-iti-system of Umma, where day dates were widely added already in the Sargonic period, proved to be more flexible. The standard system of dating tablets by day, month name and year date fully developed only in the Ur III period.

*Ad 4):* On Presargonic and Early Sargonic tablets from Nippur, month names appear often together with a year name referring to important events, sometimes naming one of the kings Enšakušana or Lugalzagesi of Uruk or Sargon of Akkade. With the evidence available, it remains unknown whether the Nippur system became the standard for dating texts in Sargonic and Ur III Mesopotamia, or whether it was by chance that the first Presargonic year dates were found at Nippur.<sup>40</sup> However, no standard reference to years is found at contemporaneous Tell Beydar and Ebla (§ 4, excluding occasional notes on important events), whereas the regnal year was indicated by a number at Mari (§ 5), Umma (§ 2), Ĝirsu (§ 3) and Ur (see n. 12). Thus Nippur during the period of Enšakušana may indeed have been among the first places (perhaps besides Adab) to use such a dating system. It effectively combined reference to the political ruler, by promulgating his deeds, with the local cultic and seasonal calendar. With every single date written on a tablet, the scribe and those involved in the transaction thus set themselves in a time count dominated by the cycle of seasons and festivals of the local calendar and by the line of political events. With the year dates, politics had entered the life of most Mesopotamians, since the administrative texts dealt with real-world transactions involving many more individuals than just scribes.

## 7. The end of the millennium: Local calendars in the Sargonic and Ur III periods

Nippur was the uncontested religious centre in the regions of Sumer/Kiengi in the south and Akkade/Uri in the north, and so it is not impossible that the Nippurite way of determining time really did serve as a model for other city-states. Adab may have developed a local calendar at the same time. The first month names stem from tablets dated to the Presargonic period,<sup>41</sup>

40 For a concise overview of how years were named in the third millennium, see Sallaberger and Schrakamp 2015a, 33–44.

41 Such-Gutiérrez 2013: 330 Tab. II with references from texts in CUSAS 11 dating to the period before Meskigala according to the editors. The dating, however, rests on tablet format and paleography, only.



and the complete series of twelve months appears first under Meskigala, city governor under Lugalzagesi of Uruk and Sargon of Akkade (Maiocchi and Visicato 2012: 15).

In the local calendars of Sargonic Adab or Ĝirsu or in the various local calendars of the Ur III provinces (Table 8), seasonal activities played an important role, as they did at Nippur, including harvest, ploughing, and work in the fields, plucking of animals, gardens, or the preparation of bricks. Festivals appeared by their names (e.g. a<sub>2</sub>-ki-ti “Akiti festival” at Adab and Ur). Although the large annual festivals were celebrated in the main temples of the cities, the deities appearing in the month names were at most of secondary importance in the respective cults. Both at Umma and at Ĝirsu, Lisin (months IX Umma, III Ĝirsu, IV Irisaĝrig) and Dumuzi (months IV and XII, respectively) appear in month names, but of the great gods, only Ba’u is referred to, in one Ĝirsu month name (VIII). At Ur, the gods Ninazu and the otherwise unknown Mekiĝal are known from month names (months V, VI, XII), although festivals in their honour are not attested; however, we look in vain for Nanna, Ningal or other deities from their entourage. Apparently, by the Ur III period, the divine names of the month names no longer refer to the most important local festivals (as had been the case in Presargonic Ebla or Ĝirsu). Perhaps the deities referred to in Sargonic and Ur III month names expressed “principles” of human life, and related to personal or family celebrations? Lisin’s could have been the month of motherhood, Dumuzi’s the month of love or of weeping; but this must remain speculative at the moment. The scarcity of corresponding festivals in the respective cities, however, suggests that deities in month names not necessarily refer to annual festivals of the cultic calendar.<sup>42</sup>

With this background in mind, it is even more striking to note the introduction of festivals that honoured the Ur III kings Šulgi (in all local calendars), Amar-Suena (at Umma), and Šu-Suen (at Ur) in the traditional series of month names. Thus, in referring to time, the inhabitants of the Ur III state not only memorialized the king’s deeds through the year dates, but also, once a year, a festival of kingship was performed and referenced in a month name. These royal festivals can mainly be characterized as drinking parties for the population at large and as occasions for sports contests, while being less characterized by elaborate cultic rituals (Sallaberger 1993: 312). The largest portion of the impressive mass of administrative documents written in the state of Ur was dated by one of the local calendars — thus in everyday references to time, at the level below year-dates, a month “Festival of Šulgi” (or Amar-Suena, or Šu-Suen) was the most effective way to refer to the ruling king or his dynasty.

The comparative perspective of this article finally leads one to consider the successor to the Early Semitic Calendar, which was employed in state matters in the Sargonic kingdom. During the Ur III period, this function was accomplished by the so-called *Reichskalender*, a series of month names used by the royal administration of Puzriš-Dagān or in other cities in crown-related contexts. But whereas the Sargonic state calendar had been widespread in earlier centuries and its month names referred to seasons, the Ur III *Reichskalender* corresponded largely to the calendar of the dynasty’s capital, Ur.<sup>43</sup> In this way, one formerly

42 Both izim-<sup>4</sup>lisin (III) and izim-<sup>4</sup>dumu-zi (VI) at Ĝirsu consisted mainly in offerings to the dead (Cohen 2015: 63 and 66). Lisin was not celebrated in her month (IX) at Umma (Cohen 2015: 185); ki-siki <sup>4</sup>nin-a-zu (Ur V) is not known as a festival name, either.

43 Sallaberger 1993: 172–174 has shown that under Šulgi, a month bore the same name according to the Ur calendar and the *Reichskalender*, although a new year started one month later in the *Reichskalender* (thus *Reichskalender* month IX was contemporary with Ur calendar month VIII). After some years, with various regulations of the calendar, the two calendars became basically identical by Šu-Suen, year 3.



Table 8. Local calendars of the Sargonic and Ur III periods (23<sup>rd</sup> to 21<sup>st</sup> century BCE; selection)

	Nippur (Sargonic, Ur III)	Adab (Sargonic)	Ĝirsu (Sargonic/ Gudea)	Ĝirsu (Ur III)	Irisaĝrig (Ur III)	Umma (Ur III)	Ur (Ur III)	Reichskalender (Ur III, until Šu- Suen 2)
I	para <sub>10</sub> -za <sub>3</sub> -ġar(- ra)	S še-še:SE.KIN-a	S izim-buru <sub>x</sub> - maš	S buru <sub>x</sub> -maš <sub>2</sub>	šu-ġar-ra	S SE.KIN-ku <sub>5</sub> S še-saġ-ku <sub>5</sub>	S SE.KIN-ku <sub>5</sub>	mašda-gu <sub>7</sub>
II	F? ġud-si-su/su <sub>3</sub>	S (aša <sub>3</sub> -)DUBSI(- eš <sub>2</sub> -ġara <sub>3</sub> -šu- ġar(-ra))	S ġud-ra <sub>2</sub> -NE- mu <sub>2</sub> -mu <sub>2</sub>	S ġud-ra <sub>2</sub> -NE- mu <sub>2</sub> -mu <sub>2</sub>	šu-ġar-ġal	S šeg <sub>12</sub> -š <sup>65</sup> i <sub>3</sub> -šub- ba-ġar-ra	maš-ku <sub>3</sub> -gu <sub>7</sub> , mašda-gu <sub>7</sub>	šeš-da-gu <sub>7</sub>
III	S šeg <sub>12</sub> -š <sup>65</sup> u <sub>3</sub> - šub-ba-š <sup>65</sup> u <sub>3</sub> -ġar / šeg <sub>12</sub> -ga	S še-saġ-kala- ġa/sa <sub>6</sub> -ga	izim- <sup>d</sup> lisin	F <sub>D</sub> izim- <sup>d</sup> lisin	S š <sup>65</sup> apin	S še-kar-ra- ġal <sub>7</sub> -la	F? šeš-da-gu <sub>7</sub>	u <sub>3</sub> -bi <sub>2</sub> -gu <sub>7</sub>
IV	S šu-nuġun(- na/-a)	šu-ġar	(izim-)šu-nuġun	S šu-nuġun	izim- <sup>d</sup> lisin	F nisag	F? u <sub>3</sub> /ub-bi <sub>2</sub> <sup>mušen-</sup> gu <sub>7</sub>	ki-siki- <sup>d</sup> nin-a-zu
V	F? ne-NE-ġar	a <sub>2</sub> -ki-ti	(izim-)munu <sub>4</sub> - gu <sub>7</sub>	munu <sub>4</sub> -gu <sub>7</sub>	izim-a-be <sub>2</sub>	RI	ki-siki- <sup>d</sup> nin-a-zu	izim- <sup>d</sup> nin-a-zu
VI	F kiġ <sub>3</sub> - <sup>d</sup> inana	ab-e <sub>3</sub> -zi-ga	UR	F <sub>D</sub> izim- <sup>d</sup> dumu- zi	S ge-sig-ga	S šu-nuġun	F <sub>D</sub> izim- <sup>d</sup> nin- a-zu	a <sub>2</sub> -ki-ti
VII	F du <sub>6</sub> -ku <sub>3</sub> (-ga)	S ġa <sub>2</sub> -udu-ur <sub>4</sub>	izim- <sup>d</sup> ba-u <sub>2</sub>	UR F izim- <sup>d</sup> sul-ge	izim- <sup>d</sup> sul-ge	min-eš <sub>3</sub> F izim- <sup>d</sup> amar- <sup>d</sup> EN.ZU	F a <sub>2</sub> -ki-ti	izim- <sup>d</sup> sul-ge
VIII	S š <sup>65</sup> apin-tuġ-a	du <sub>6</sub> -ku <sub>3</sub>	mu-šu- <sup>d</sup> du <sub>8</sub>	F izim- <sup>d</sup> ba-u <sub>2</sub>	niġ <sub>3</sub> - <sup>d</sup> en-lil <sub>2</sub> -la <sub>2</sub>	F e <sub>3</sub> -iti-6	F izim- <sup>d</sup> sul-ge	šu-eš-ša



	Nippur (Sargonic, Ur III)	Adab (Sargonic)	Ĝirsu (Sargonic/ Gudea)	Ĝirsu (Ur III)	Irisaĝig (Ur III)	Umma (Ur III)	Ur (Ur III)	Reichskalender (Ur III, until Šu- Suen 2)
IX	gan-gan-e <sub>3</sub>	S niĝ <sub>2</sub> -kiri <sub>6</sub>	mes-en-du(-še- a-nu <sub>2</sub> )	mu-šu-du <sub>7</sub>	S kir <sub>11</sub> -si-aka	F <sup>d</sup> iisin	šu-eš-ša F? izim- <sup>d</sup> šu- <sup>d</sup> EN. ZU	izim-maĝ
X	S ku <sub>3</sub> -su <sub>4</sub> F? <sub>D</sub> ab-e <sub>3</sub>	mu-ter	(izim-)amar-a- a-si	amar-a-a-si(-ge)	S niĝ <sub>2</sub> -eg <sub>2</sub> -ga	UR F izim- <sup>d</sup> sul-ge	F izim-maĝ	izim-an-na
XI	S u <sub>d</sub> <sub>2</sub> -duru <sub>5</sub>	<sup>d</sup> subi <sub>3</sub> -nun	S še-(SE.)KIN-a	S SE.KIN-ku <sub>5</sub>	izim-a-tara <sub>4</sub>	S? pa <sub>4</sub> -u <sub>2</sub> -e	izim-an-na	izim-( <sup>d</sup> )me-ki- ĝal <sub>2</sub>
XII	S SE.KIN-KU <sub>5</sub>	S SE.KIN-KU <sub>5</sub>	S izim-še-il <sub>2</sub> -la	S (izim) še-il <sub>2</sub> -la	S SE.KIN-ku <sub>5</sub>	F <sup>d</sup> dumu-zi	(izim)-( <sup>d</sup> )me-ki- ĝal <sub>2</sub>	SE.KIN-ku <sub>5</sub>

F = month name derived from a monthly festival (or a deity of place related to that festival) that was actually celebrated in the Ur III period.

F<sub>D</sub> = festival concentrating on the cult of the dead.

S = month name referring to seasonal activities or to a festival celebrating seasonal activities.

The month names are taken from Cohen 2015 and Sallaberger 1993 with the following additions:

Adab: Reconstruction follows Maiocchi and Viscato 2012: 8–20, who use and improve the findings of Such-Gutiérrez 2013; variants to the left dominate in earlier texts (e.g. ka la-ga “strong” in Early/Middle Sargonic, but sa<sub>6</sub>-ga “good” in Middle/Late Sargonic).

Ĝirsu (Sargonic): Another month name is it<sub>1</sub> AB-e<sub>3</sub> in STT 2 = Foster 2018: L. 2891.

Irsaĝig (Ur III) after Ozaki 2016.



local calendar became an important point of reference for every citizen of the Ur III kingdom. Furthermore, two month names referred precisely to two central festivals at the city of Ur itself, namely Month VI/VII (*akiti*) to the Akiti-Festival, and *izim-mah* “August Festival” to Nanna’s main festival in Month IX/X<sup>44</sup> — and indeed, these festivals had become state matters with participants from the whole kingdom and from abroad. The *Reichskalender* thus propagated strongly the notion of a capital at Ur with its festivals integrated into the perception of time throughout the state.

The fall of the Third Dynasty of Ur marked the end of the era of the city-states, which had survived as provinces in the state of Ur, and this fact implied the end of the traditional local month names as well. The Isin dynasty established a strict centralism unknown under the preceding Ur III dynasty, with Nippur as the ideological centre, and in this context the Nippur calendar became the new point of reference instead of the former *Reichskalender* of Ur, but with a much more widely encompassing usage for texts of every kind.<sup>45</sup>

## Bibliography

Alberti, A. and F. Pomponio

1986 *Pre-Sargonic and Sargonic Texts from Ur Edited in UET 2, Supplement*, Studia Pohl Series Maior 13, Rome.

Alkhafaji, N.

2019 “A Double Date Formula of the Old Akkadian King Manishtusu,” *JCS* 71, 3–9.

Archi, A.

2015 *Ebla and its Archives: Texts, History, and Society*, SANER 7, Boston and Berlin.

2017 “The Two Calendars of Ebla,” *Or* 87, 181–201.

2018 *Administrative Texts: Allotments of Clothing for the Palace Personnel (Archive L. 2769)*, ARET 20, Wiesbaden.

Attinger, P.

2019 “Lexique sumérien-français (textes traduits dans Attinger, <http://www.iaw.unibe.ch/attinger>), février 2019,” online at <https://zenodo.org/record/2585683> (last access 2019/09/29).

Behrens, H. and H. Steible

1983 *Glossar zu den altsumerischen Bau- und Weihinschriften*, FAOS 6, Stuttgart.

Biga, M. G.

2002 “Les foires d’après les archives d’Ébla,” in: J.-M. Durand and D. Charpin (eds.), *Florilegium marianum VI: Recueil d’études à la mémoire d’André Parrot*, Paris, 277–288.

Britton, J. P.

2007 “Calendars, Intercalations, and Year-Lengths in Mesopotamian Astronomy,” in: J. M. Steele (ed.), *Calendars and Years: Astronomy and Time in the Ancient Near East*, Oxford, 115–132.

44 Of the three main festivals of Ur, the third one was referred to by the month name *SE.KIN-KUŠ* “Cutting of Grain” (Month XII/I), a name met in most local calendars that pointed both to a seasonal activity and to festivals.

45 This switch can be documented for the so-called “Isin Craft-Archive” where some of the earliest texts from Išbi-Erra 4, 5 and 8 were still dated according to the Ur III *Reichskalender*, before the scribes referred to the months of the Nippur calendar from Išbi-Erra 6 onwards (Van De Mieroop 1987: 128–130).



- Catagnoli, A.  
 2019 "The Subdivision of the Month at Ebla According to the *Liturgical Calendar* TM.75.G.12287+ and the *Royal Rituals* (ARET XI 1–3)," *Studia Eblaitica* 5, 15–34.
- Cavigneaux, A.  
 2014 "Nouveaux textes de Mari Ville II (campagnes 1998 a 2007)," in: P. Butterlin et al. (eds.), *Mari, ni est ni ouest? 75 ans de decouvertes a Tell Hariri*, Syria suppl. 2, Paris, 265–290.
- Charpin, D.  
 1982 "Mari et le calendrier d'Ebla," *RA* 76, 1–6.  
 1987 "Tablettes présargoniques de Mari," *MARI* 5, 65–100.  
 1990 "Nouvelles tablettes présargoniques de Mari," *MARI* 6, 245–252.
- Cohen, M. E.  
 1993 *The Cultic Calendars of the Ancient Near East*, Bethesda, MD.  
 2015 *Festivals and Calendars of the Ancient Near East*, Bethesda, MD.
- Colonna d'Istria, L.  
 2009 *Evolution des traditions culturelles dans la vallee du moyen Euphrate de la fin du Bronze Ancien au debut du Bronze Moyen*, Thèse du doctorat Université Lyon II-Lumière.
- Cripps, E. L.  
 2010 *Sargonic and Presargonic Texts in the World Museum Liverpool*, British Archaeology Reports Int.Ser. 2135, Oxford.
- Dietler, M. and B. Hayden (eds.)  
 2001 *Feasts: Archaeological and Ethnographic Experience on Food, Politics, and Power*, Washington.
- Eidem, J., I. Finkel, and M. Bonechi  
 2001 "The Third-Millennium Inscriptions," in: D. Oates et al. (eds.), *Excavations at Tell Brak*, Vol. 2: *Nagar in the Third Millennium BC*, London, 99–120.
- Foster, B. R.  
 2018 *Sargonic Texts from Telloh in the Istanbul Archaeological Museums*, Part 2, Atlanta.
- Geertz, C.  
 1966 "Person, Time and Conduct in Bali: An Essay in Cultural Analysis," *Yale Southeast Asia Program, Cultural Report Series* 14, New Haven; reprinted in: *The Interpretation of Cultures. Selected Essays*, 1973, New York, 360–411.
- Gelb, I. J.  
 1981 "Ebla and the Kish Civilization," in: L. Cagni (ed.), *La lingua di Ebla: Atti del convegno internazionale (Napoli, 21–23 aprile 1980)*, Napoli, 9–73
- Glassner, J. J.  
 1983 "Textes et fragments," *JCS* 35, 209–217
- Hallock, R. and B. Landsberger  
 1956 "Old Babylonian Grammatical Texts," *MSL* 4, 45–127.
- Horioka, H.  
 2009 "Additional Early Dynastic Tablets Possibly from Mari," *Orient* 44, 121–150.
- Høyrup, J.  
 2002 *Lengths, Widths, Surfaces: A Portrait of Old Babylonian Algebra and Its Kin*, New York, Berlin, and Heidelberg.



- Ismail, F., W. Sallaberger, P. Talon and K. Van Lerberghe  
 1996 *Administrative Documents from Tell Beydar (Seasons 1993–1995)*, Subartu 2, Turnhout.
- Krebernik, M.  
 1998 “Die Texte aus Fāra und Abū Ṣalābī,” in: P. Attinger and M. Wäfler (eds.), *Mesopotamien: Späturuk-Zeit und Frühdynastische Zeit*, OBO 160/1, Fribourg and Göttingen, 235–427.
- Krebernik, M. and J. N. Postgate  
 2009 “The Tablets from Abu Salabikh and their Provenance,” *Iraq* 71, 1–32.
- Landsberger, B.  
 1915 *Der kultische Kalender der Babylonier und Assyrer*, Leipziger Semitistische Studien 6/1–2, Leipzig.
- Langdon, S.  
 1935 *Babylonian Menologies and the Semitic Calendars*, The Schweich Lectures of the British Academy 1933, London.
- Lebeau, M.  
 2003 “Le Bloc Officiel de Tell Beydar: Introduction aux fouilles du chantier F,” in: M. Lebeau and A. Suleiman (eds.), *Tell Beydar, the 1995–1999 Seasons of Excavations: A Preliminary Report*, Subartu 10, Turnhout, 21–26.
- Maiocchi, M. and G. Visicato  
 2012 *Classical Sargonic Tablets Chiefly from Adab in the Cornell University Collections*, Part II, CUSAS 19, Bethesda, MD.
- Martin, H. P., F. Pomponio, G. Visicato, and A. Westenholz  
 2001 *The Fara Tablets in the University of Pennsylvania Museum of Archaeology and Anthropology*, Bethesda, MD.
- Michalowski, P.  
 1987 “Language, Literature, and Writing at Ebla,” in: L. Cagni (ed.), *Ebla 1975–1985: Dieci anni di studi linguistici e filologici*, Napoli, 165–175.
- Milano, L.  
 1990 *Testi amministrativi: assegnazioni di prodotti alimentari*, ARET 9, Roma.  
 2014 “Third Millennium Cuneiform Texts from Tell Beydar (Seasons 2004–2009),” in: L. Milano and M. Lebeau (eds.), *Tell Beydar: Environmental and Technical Studies*, Volume 2, Subartu 33, Turnhout, 151–214.
- Milano, L., W. Sallaberger, P. Talon, and K. Van Lerberghe  
 2004 *Third Millennium Cuneiform Texts from Tell Beydar (Seasons 1996–2002)*, Subartu 12, Turnhout.
- Milano, L. and A. Westenholz  
 2015 *The “Šuilisu Archive” and Other Sargonic Texts in Akkadian*, CUSAS 27, Bethesda, MD.
- Ozaki, T.  
 2016 “On the Calendar of Urusaḡrig,” *ZA* 106, 127–137.
- Pettinato, G.  
 1979 *Catalogo dei testi cuneiformi di Tell Mardikh – Ebla*, Materiali epigrafici di Ebla 1, Napoli.
- Sahlins, M.  
 1972 *Stone Age Economics*, Chicago and New York.



Sallaberger, W.

1993 *Der kultische Kalender der Ur III-Zeit*, UAVA 7, Berlin and New York.

1996 "Calendar and Pantheon," in: F. Ismael et al., *Administrative Documents from Tell Beydar (Seasons 1993–1995)*, Subartu 2, Turnhout, 85–87.

1999 "Riten und Feste zum Ackerbau in Sumer," in: H. Klengel and J. Renger (eds.), *Landwirtschaft im Alten Orient: Ausgewählte Vorträge der XLI. Rencontre Assyriologique Internationale. Berlin 4.–8.7.1994*. BBVO 18, Berlin, 381–391.

2019 "Festival Provisions in Early Bronze Age Mesopotamia," *Kaskal* 15, 171–200.

Sallaberger, W. and K. Kröss

2019 "Who Is Elite? Two Exemplary Cases from Early Bronze Age Syro-Mesopotamia," in: G. Chambon et al. (eds.), *De l'argile au numérique: Mélanges assyriologiques en l'honneur de Dominique Charpin*, PIPOAC 3, Louvain, 893–922.

Sallaberger, W. and A. Pruß

2015 "Home and Work in Early Bronze Age Mesopotamia: 'Ration Lists' and 'Private Houses' at Tell Beydar/Nabada," in: P. Steinkeller and M. Hudson (eds.), *Labor in the Ancient World*, International Scholars Conference on Ancient Near Eastern Economics 5, Dresden, 69–136.

Sallaberger, W. and I. Schrakamp

2015a "Philological Data for a Historical Chronology of Mesopotamia in the 3<sup>rd</sup> Millennium," in: W. Sallaberger and I. Schrakamp (eds.), *ARCANE: Associated Regional Chronologies for the Ancient Near East and the Eastern Mediterranean 3: History & Philology*, Turnhout, 1–136.

2015b "Conclusion," in: *ibid.*, 297–303.

Sallaberger, W. and J. Ur

2004 "Tell Beydar/Nabada in its Regional Setting," in: L. Milano et al. (eds.), *Third Millennium Cuneiform Texts from Tell Beydar (Seasons 1996–2002)*, Subartu 12, 51–71.

Scheil, V.

1925 "Le mois Šanî," *RA* 22, 153–154

Selz, G. J.

1995 *Untersuchungen zur Götterwelt des altsumerischen Stadtstaates von Lagaš*, Occasional Publications of the Samuel Noah Kramer Fund 13, Philadelphia.

Sigrist, M.

1992 *Drehem*, Bethesda, MD.

Steele, J. M.

2011 "Making Sense of Time: Observational and Theoretical Calendars," in K. Radner and E. Robson (eds.), *The Oxford Handbook of Cuneiform Culture*, Oxford, 470–485.

Steinkeller, P.

2013 "An Archaic 'Prisoner Plaque' from Kiš," *RA* 107, 131–157.

Such-Gutiérrez, M.

2013 "Der Kalender [*sic*] von Adab im 3. Jahrtausend," in: L. Feliu et al. (eds.), *Time and History in the Ancient Near East: Proceedings of the 56<sup>th</sup> Rencontre assyriologique internationale at Barcelona 26–30 July 2010*, Winona Lake, 325–340.



- Van De Mierop, M.  
1987 *Crafts in the Early Isin Period: A Study of the Isin Craft Archive from the Reigns of Išbi-Erra and Šū-ilišu*, OLA 24, Leuven.
- Veldhuis, N.  
2014 "The Early Dynastic Kiš Tradition," in: L. Sassmannshausen (ed.), *He Has Opened Nisaba's House of Learning: Studies in Honor of Åke Waldemar Sjöberg on the Occasion of His 89<sup>th</sup> Birthday on August 1st 2013*, Leiden, 241–259.
- Verderame, L.  
2017 "The Moon and the Power of Time Reckoning in Ancient Mesopotamia," in: J. Ben-Dov and L. Doering (eds.), *The Construction of Time in Antiquity: Ritual, Art, and Identity*, Cambridge, 124–141.
- Westenholz, A.  
1987 *Old Sumerian and Old Akkadian Texts in Philadelphia, Part Two: The Akkadian Texts, the Enlilemaba Texts, and the Onion Archive*, Carsten Niebuhr Institute Publications 3, Copenhagen.
- Wilcke, C.  
2015 "Vom klugen Lugalbanda," in: K. Volk (ed.), *Erzählungen aus dem Land Sumer*, Wiesbaden, 203–272.
- Wirth, E.  
1971 *Syrien: Eine geographische Landeskunde*, Darmstadt.