

“WHEN WAS ANCIENT JERUSALEM DESTROYED?”

A critique of the two-part article published in the public editions of
The Watchtower of October 1, 2011, pages 26-31 and
The Watchtower of November 1, 2011, pages 22-28.

PART TWO

© Carl Olof Jonsson, Göteborg, Sweden, 2011

Contents

REVIEW OF “WHEN WAS ANCIENT JERUSALEM DESTROYED?” PART TWO.....	1
The Babylonian Chronicles.....	2
WT: “What are they?”	2
WT: “What have experts said?”	2
What did the experts <i>really</i> say?	2
Business tablets.....	4
WT: “What have experts said?”	4
What did the experts <i>really</i> say?	4
What does the Bible say?	5
WT: “What do the documents show?”	5
What do the documents <i>really</i> show?	6
Overlap Amel-Marduk/Neriglissar?	6
Bêl-shum-ishkun – was he a “king of Babylon”?	8
Astronomical tablets.....	12
WT: “What are they?”	12
Tablet BM 38462 (LBAT 1420)	12
WT: “What have experts said?”	14
What did the experts <i>really</i> say?	14
Astrology as a motive for Babylonian astronomy	16
WT: “What do the documents show?”	17
VAT 4956 –is the lunar eclipse <i>really</i> that of July 15, 588 BCE?.....	17
VAT 4956 – do the 13 lunar eclipses <i>really</i> fit 588 BCE?	18
VAT 4956 – are the names of the planets and their positions “unclear”?.....	20
VAT 4956 – are the measured time intervals (“lunar threes”) unreliable?	21
VAT 4956 – obverse line 3: day “9” or day “8”?	23
Conclusion.....	25

REVIEW OF “WHEN WAS ANCIENT JERUSALEM DESTROYED?” PART TWO



Part Two of the article “When was Ancient Jerusalem Destroyed?”, published in *The Watchtower* of November 1, 2011, pages 22-28, starts by repeating some of the points the authors claim to have “established” in Part One, including the following point:

“Secular historians base their conclusions *on the writings of classical historians and on the canon of Ptolemy.*” (p. 22) Emphasis added.

As was demonstrated in my critique of Part One, this statement is *thoroughly false*. The authors of the article are evidently aware of this, because in Part Two they contradict their earlier claim. They first state that “most scholars date the destruction of Jerusalem at 587 B.C.E.”, which “allows for only a 50-year exile,” and then ask, “Why do they conclude that?” They explain:

“They base their calculations *on ancient cuneiform documents* that provide details about Nebuchadnezzar II and his successors.” Emphasis added.

Thus it is admitted that scholars base their chronology for the Neo-Babylonian period “on ancient cuneiform documents”, not just “on the writings of classical historians and on the canon of Ptolemy” as claimed in Part One of their article.

Which ancient cuneiform documents are these? The writers of the article mention “three types of documents that scholars often rely on”:

“(1) The Babylonian chronicles, (2) business tablets, and (3) astronomical tablets.” (p. 22)

These three types of ancient cuneiform documents are discussed in Part Two of their article.

The Babylonian Chronicles

WT: “What are they?”

As the authors correctly point out, “the chronicles provide an incomplete record of important events.” Everyone who has studied the Neo-Babylonian period knows this. There are six extant chronicles that cover various parts of this period. On pages 100-105 of *GTR4* I discussed these chronicles and showed in a table on page 102 which years they cover, pointing out that “most of these chronicles are incomplete” and that “less than half” of the 87-year long Neo-Babylonian period (625-539 BCE) is covered by the preserved parts of the chronicles. Some information in the chronicles is valuable, however. One of them, BM 21946, explicitly states that Nabopolassar, the first king of the Neo-Babylonian period, ruled Babylon for 21 years and was succeeded by his son Nebuchadnezzar. The last one, the *Nabonidus Chronicle* (BM 35382), gives information about the fall of Babylon in the last regnal year of Nabonidus.

Pictures of all these six chronicles are also shown on page 23 of the *Watchtower* article, together with an illustration that shows which years of the period they give some information about.

WT: “What have experts said?”

Clearly, the chronicles are not sufficient for establishing the *total* length of the period. But there are numerous other cuneiform tablets that help to fill out what is missing in the chronicles. The next statement and quotation of the *Watchtower* writers, therefore, is surprising. The authors refer to R. H. Sack, called “a leading authority on cuneiform documents,” who correctly stated that “the chronicles provide an incomplete record of important events.” But then they immediately go on to say:

“He wrote that historians must probe ‘secondary sources ... in the hope of determining what actually happened.’ ” (p. 23)

The impression given here is that, as the chronicles are incomplete, scholars are forced to probe *secondary* sources to be able to determine the history and chronology of the period. Is this really what Sack was saying? It may be noted that some parts of the quotation are left out.

What did the experts *really* say?

Although the *Watchtower* writers usually give references to the works quoted or used, including two books written by R. H. Sack on Amel-Marduk and Neriglissar (references 6, 7 and 9 on page 24 to notes on page 28), there is no reference given here to the source of Sack’s statement. And there is a good reason for doing this.

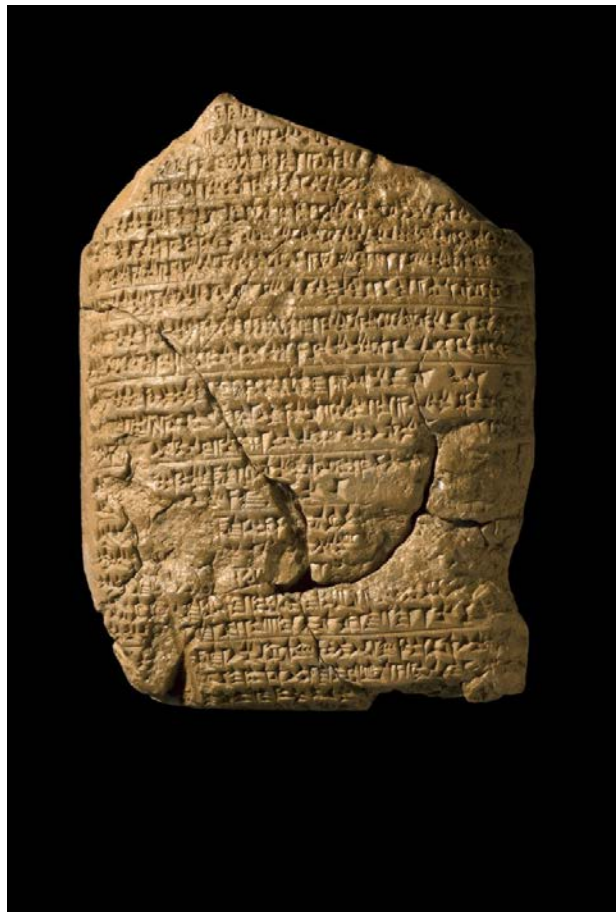
Before Sack’s book on Neriglissar was published in 1994 (*Neriglissar – King of Babylon*, *Alter Orient und Altes Testament*, Band 236), he had written a 21-page article on this king that was published 16 years earlier in *Zeitschrift für Assyriologie und Vorderasiatische Archäologie*, Band 68, 1978, pages 129-149. The quotation not referenced by the *Watchtower* writers is from page 129 of this article. The context shows that Sack was not dealing with chronology but with the “important events that may have taken place in southern Mesopotamia during the years 594-557 B.C.”, that is, between the eleventh year of Nebuchadnezzar and the third year of Neriglissar. As the extant chronicles do not cover the events during this *chronologically fixed* period, Sack stated (underlined parts are those left out by the *Watchtower* writers):

“As a result, the historian, for better or worse, is forced to probe the Hebrew, Greek and Latin secondary sources (as well as the dated cuneiform

contract tablets) in the hope of determining what actually happened during this period." (Underlining added.)

The authors of the *Watchtower* article left out Sack's reference to the particular period discussed (594-557 BCE), and also his reference within parenthesis to a group of *primary* sources, viz. the *contemporary dated cuneiform contract tablets*, as these provide important evidence for the chronology of the reigns of the Neo-Babylonian kings, including Amel-Marduk and Neriglissar. Up to year 2000 more than 150 tablets dated to the 2-year reign of Amel-Marduk and over 200 dated to the 4-year reign of Neriglissar had been published, according to the extensive web lists worked out by the Hungarian Assyriologist Janos Everling (no longer available on the web). In addition, many other contract tablets still remain to be published. None of the dated contract tablets add any additional years to these kings. They just confirm the traditional number of years they reigned.

In addition to the chronicle dated to year 3 of Neriglissar's reign and the more than 200 contract tablets dated to all his four years, Sack refers to a third contemporary group of cuneiform sources, namely "several cylinder inscriptions", that is, royal inscriptions. Although these do not provide any dates, they give detailed information about the "building activity in Babylon and elsewhere during the king's reign." – R. H. Sack, *Neriglissar – King of Babylon*, p. 1.



Reverse of the Babylonian Chronicle BM 21946.

This chronicle covers the period from Nabopolassar's 21st year (605/604 BCE) to Nebuchadnezzar's 10th year (595/594 BCE).

Business tablets

In this section the authors of the *Watchtower* article first explain the way the Babylonian scribes counted the regnal years when a king died. The year in which he died was assigned to his reign, while the remaining months of the year was considered the accession year of his successor. Their conclusion is that “tablets of the new ruler’s accession year should logically be dated during months after the last month of the former king.” (p. 23)

WT: “What have experts said?”

Based on the conclusion above, the *Watchtower* authors next go on to quote Sack as saying that two new business tablets he studied “completely upset” previous conclusions regarding the transition from Nebuchadnezzar to his son Amel-Marduk.

What did the experts *really* say?

The problem for Sack was that the latest document from the reign of Nebuchadnezzar is dated VI/26/43 (month 6, day 26, year 43), while the two “new” tablets he studied, BM 80920 and BM 58872 (numbers 56 and 79 in his work on Amel-Marduk), seemed to be dated earlier. Sack states:

“The texts (nos. 56 and 79 in the corpus), surprisingly enough, are quite clearly dated to the months Du’uzu and Abu (i. e., the fourth and fifth months of the Babylonian calendar year) of the accession year of Amel-Marduk, and thus clearly overlap the final, or forty-third year, of his father Nebuchadnezzar.” – Ronald H. Sack, *Amel-Marduk 562-560 B. C.* AOAT 4. Neukirchen-Vluyn: Neukirchener Verlag, 1972, p. 3. Cf. the *Watchtower* article, p. 28, note 7.

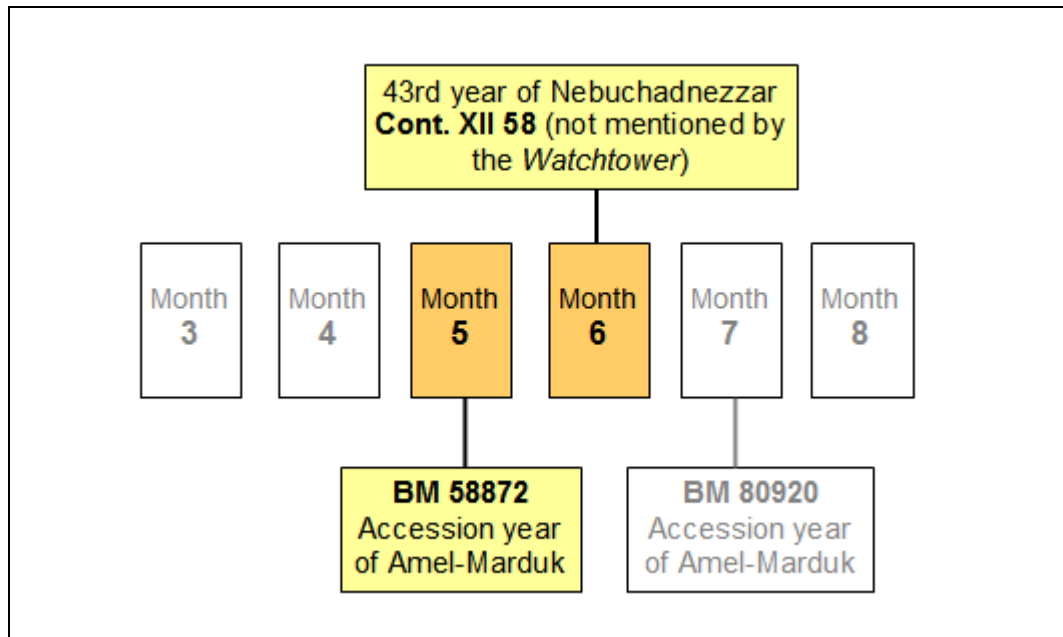
BM 80920, however, is not “quite clearly” dated to the *fourth* month. On my request, C. B. F. Walker at the British Museum collated the tablet in 1990. He found that the tablet was dated in month *seven* (in agreement with the date given in Vol. VIII of BM’s *CBT* catalogues: Erle Leichty, *Catalogue of the Babylonian Tablets in the British Museum [CBT]*, 1988, p. 245), not in month four:

“BM 80920 has Am 20/7/acc; CBT VIII p. 245 is correct; [Sack’s dating in] AOAT no. 56 is to be corrected. Dr Finkel here has also checked the tablet and agrees.” – Letter Walker-Jonsson, dated November 13, 1990.

This information was included in Walker’s list of “Corrections and additions to CBT 6-8” which has been circulated among scholars for years (my latest copy is dated March 18, 1996). The same information is also given in *GTR4*, p. 323, note 28, and in my web review of Furuli’s Vol. 2, published on this web site (<http://kristenfrihet.se/kf2/review3.htm>). I find it remarkable, therefore, that Walker’s correction was completely ignored by the authors of the *Watchtower* article, who preferred to publish the erroneous date.

Thus no tablets dated as early as in the *fourth* month of Amel-Marduk’s accession year have been found. However, the next tablet mentioned by the authors of the *Watchtower* article, BM 58872 (no. 79 in Sack’s book on Amel-Marduk), is clearly dated in the *fifth* month of his accession year. (*GTR4*, p. 323, n. 28) As the latest tablet from the reign of the predecessor, Nebuchadnezzar, is dated to the sixth month, we have an overlap of fully a month between the two.

This is well illustrated by Doug Mason in his critique of Part Two of the *Watchtower* article. The following diagram has been modified and is used with his permission. (See references to Mason’s critical article at the end.)



Does this prove that the 43rd year of Nebuchadnezzar was not his last year and that there were *additional years*, maybe even *other rulers*, between the two kings?

There is evidence to show that this is impossible. There must have been some other reason for the overlap. As suggested by Assyriologist Stefan Zawadzki, Nebuchadnezzar may have died some weeks earlier, but because of Amel-Marduk's bad reputation some scribes may have continued to date their tablets to the reign of his father for some time until he was generally recognized as the new ruler. (*GTR4*, p. 324)

What does the Bible say?

Actually, the Bible itself disproves the idea that Nebuchadnezzar ruled longer than 43 years, or that there was another ruler between him and Amel-Marduk. A comparison of 2 Kings 24:12 and 2 Chronicles 36:10 with Jeremiah 52:28 shows that Jehoiachin's exile began toward the end of Nebuchadnezzar's seventh regnal year (as is also directly stated in the Babylonian chronicle BM 21946; *GTR4*, pp. 342, 343). This means that at the death of Nebuchadnezzar in his forty-third year Jehoiachin had spent almost thirty-six years in exile (43-7=36), and that the *thirty-seventh* year of exile began later in the same year, in the accession-year of Amel-Marduk (the Biblical Evil-merodach). And this is exactly what we are told in Jeremiah 52:31:

“But in the thirty-seventh year of the exile of Jehoiachin king of Judah, in the twelfth month, on the twenty-fifth day of the month, Evil-merodach king of Babylon, in the year he came to the throne, pardoned Jehoiachin king of Judah and released him from prison.” — *Jerusalem Bible*. (Compare 2 Kings 25:27.)

Clearly, the Bible does not allow for any additional years and other possible rulers between the forty-third year of Nebuchadnezzar and the accession-year of Amel-Marduk.

WT: “What do the documents show?”

But the *Watchtower* authors try to show that other tablets, too, give evidence of overlaps that may indicate that extra years have to be added between some rulers. On page 24 they claim that “documents show that Nebuchadnezzar II was still ruling in his tenth month – six months

after his successor is assumed to have begun reigning.” In footnote 8 on page 28 they explain that a tablet in the British Museum, BM 55806, “is dated to the tenth month, 43rd year.”

What do the documents *really* show?

Again, the authors have not cared to collate the date. In 1987 I asked Professor D. J. Wiseman about the date on this tablet. The month name turned out to be damaged, and Wiseman concluded that, “The reading seems to be ab”, that is, month five, not ten. – Letter Wiseman–Jonsson, dated 7 October 1987. The same tablet was later also collated by C. B. F. Walker, who, in confirmation of Wiseman’s reading, states in his correction list:

“55806 Nbk 10+/5?/43? month appears to be written ITU.AD [= month 5]; year number highly uncertain, and partly erased. Pinches, CT 55, 138, copied ITU.AB = month 10. If the year is really 43, the month must be understood as AD = Abu [i.e., month 5].”

Pinches copied 2727 tablets back in 1892-1894, but they were not published until 1982 by the British Museum, in volumes 55, 56, and 57 of the *Cuneiform Tablets* (CT). Evidently, day, month, and even the year on BM 55806 are so damaged that no chronological conclusions can be based on this tablet.

Overlap Amel-Marduk/Neriglissar?

The *Watchtower* writers finally claim that “A similar discrepancy exists with the transition between Amel-Marduk and his successor, Neriglissar.” In footnote 9 they explain:

“Tablets BM 75106 and BM 61325 are dated in the seventh and tenth months of what is considered the last (second) year of the ruling king Evil-merodach. However, the tablet BM 75489 is dated in the *second month* of the accession year of Neriglissar, his successor.” – The BM catalogue *CBT* VIII, pages 25 and 35, is referred to, as well as Sack’s book on Neriglissar, page 232.

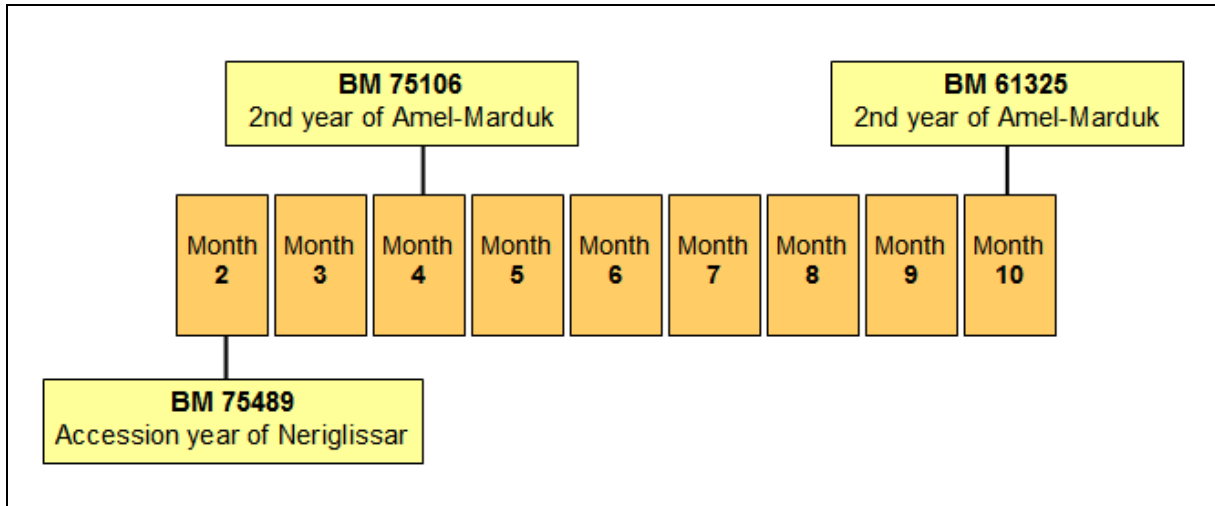
But BM 75106 is *not* dated to the seventh month of Amel-Marduk’s last (second) year, as the authors state. Walker’s correction list shows it is dated to the *fourth* month.

BM 61325 was collated by C. B. F. Walker, Dr. van Driel and Mr. Bongenaar on November 9, 1990. Walker says that, “The month is slightly damaged, but seems to be clearly ITI.AB (month X) rather than ITI.NE (month V). Not day 17 as previously stated. Collated with Dr. G. van Driel and Mr Bongenaar on 9/11/90.” The day number is 19. The date on this tablet, then, is X/19/02. This does not necessarily mean that it is correct.

BM 75489 is published as no. 91 in Sack’s work on Neriglissar. The tablet is clearly dated to month II, day 4, of Neriglissar’s accession year. This was confirmed by C. B. F. Walker, who collated the tablet several times, once together with the two Assyriologists mentioned above, Dr. G. van Driel and Mr Bongenaar, on November 9, 1990. (Walker, “Corrections,” 1996, p. 7; cf. *GTR4*, p. 326, n. 33.)

Although none of these dates add any additional *years* to the reigns of Amel-Marduk and Neriglissar, they create an overlap of some *months* between the kings that requires explanation.

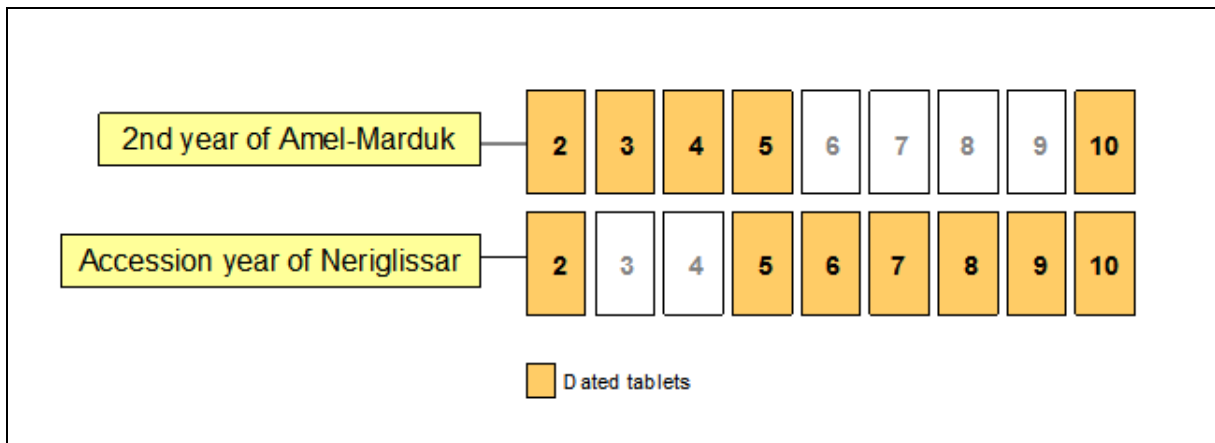
Again, this overlap is well illustrated by Doug Mason in his critique of Part Two. This diagram has been simplified and is used with his permission.



Of the six “anomalous tablets” referred to by the *Watchtower* writers, only three (BM 58872, BM 61325, and BM 75489) turn out to have “anomalous” dates. The first, BM 58872, creates an overlap of *fully a month* between Nebuchadnezzar and his son Amel-Marduk. As was seen, however, there is no chronological space for the insertion of additional years between these two rulers. As stated, a reasonable explanation argued by Assyriologist Stefan Zawadzki is that Nebuchadnezzar died some weeks earlier, but because of the known wicked character of Amel-Marduk he may have been opposed by some leading factions (including Neriglissar and his supporters), causing some scribes to continue dating their tablets to Nebuchadnezzar until it was clear who the successor would be. (See *GTR4*, p. 324, including n. 30.)

The second, third, and fourth tablets seem to create an overlap of eight and a half months between the reigns of Amel-Marduk and Neriglissar. (*GTR4*, p. 326) It should be noticed, however, that the dates on these tablets stand isolated from the other dates in the transition between the two reigns. The tablet dated in month II of Neriglissar’s accession year is not followed by tablets dated to his reign in the next two months, III and IV, while we have several tablets dated in each month of his accession year from month V and onward. Similarly, we have several published and unpublished tablets dated in each month of Amel-Marduk’s reign up to month V of his 2nd year, while the tablet from month X of his 2nd year is an isolated date that appears five months later. Normally, we should have several tablets from each of the four months between V and X dated to his reign, but we have none.

This illustration clearly shows these strange gaps in the documentary evidence:



What does this indicate?

Dr. G. van Driel, in his discussion of the tablet dated to day 4, month II of Neriglissar's accession year (BM 75489 = Sack, Neriglissar no. 91), says:

“The Sippar text R. H. Sack, Neriglissar no. 91, dated to 4 II accession year, would suggest a considerable overlap with the preceding king Awil-Marduk, to whom later Sippar texts (listed by Sack, p. 26, n. 19) are dated. ***A mistake in the date of AOAT 236, no. 91 is the easiest solution.*** It should be noted that the Uruk kinglist (J. J. A. van Dijk, UVB 18 [1962] pp. 53-60 obv. 9) gives N[eriglissar] 3 years and 8 months, which could exceptionally refer to the actual reign and not to a reign starting with the beginning of the first full year.” – G. van Driel in *Reallexikon der Assyriologie und Vorderasiatischen Archäologie*, Band 9 (Berlin, New York: Walter de Gruyter, 1998-2001), p. 228. Emphasis added. Cf. *GTR4*, p. 326.

The easiest and most natural explanation is that the two odd dates – Amel-Marduk year 2 month X (BM 61325) and Neriglissar acc. month II (BM 75489) – are scribal errors. As Rolf Furuli admits in his first volume on chronology, “one or two contradictory finds do not necessarily destroy a chronology that has been substantiated by hundreds of independent finds.” (Rolf Furuli, *Persian Chronology and the Length of the Babylonian Exile of the Jews*, Oslo, 2003, p. 22) This is certainly true of the two anomalous tablets discussed above.

Another possible explanation is based on the political situation during this period. As explained earlier, Berossus states that because Amel-Marduk “managed affairs in a lawless and outrageous fashion he was plotted against and killed by Neriglissaros [Neriglissar], his sister’s husband.” – S. M. Burstein, *The Babyloniaca of Berossus* (Malibu: Undena Publications, 1978), p. 28.

There is some evidence that Neriglissar, before his seizure of power, held the highest office (*qipu*) at the Ebabbara temple in Sippar, and that his revolt started in that city. This would explain why the earliest texts dated to his reign are from Sippar, indicating he was first recognized in that area while Amel-Marduk was still recognized in Babylon and elsewhere for several months. This could also explain the overlap. – S. Zawadzki, “Political situation in Babylonia During Amel-Marduk’s Rule,” in: J. Zablocka – S. Zawadzki (eds.), *Šulmu IV: Everyday Life in Ancient Near East* [Poznań 1993], pp. 309-317; cf. also J. MacGinnis in *Journal of the American Oriental Society*, Vol. 120:I (2000), p. 64.

Bêl-shum-ishkun – was he a “king of Babylon”?

At the end of their discussion of the business tablets, the *Watchtower* writers conclude on page 24:

“As mentioned earlier, gaps in the history documented by the Babylonian chronicles suggest that we may not have a continuous chronological record.¹⁰ Could others have ruled between the reigns of these kings? If so, additional years would have to be added to the Neo-Babylonian period.”

In support of this speculation the authors, in footnote 10 on page 28, further state:

“Consider the example of Neriglissar. A royal inscription regarding him states that he was ‘the son of Bêl-shum-ishkun,’ the ‘*king of Babylon.*’ ... Could this ‘king of Babylon,’ Bêl-shum-ishkun, have ruled for a time between the two? Professor R. P. Dougherty acknowledged that ‘the evidence of Neriglissar’s noble ancestry cannot be disregarded.’” – The

authors refer to page 61 of R. P. Dougherty's book on *Nabonidus and Belshazzar* published in 1929.

It is to be noted that R. P. Dougherty nowhere in his book suggests that Bêl-shum-ishkun ruled as king during the Neo-Babylonian period. Since his book on *Nabonidus and Belshazzar* was published in 1929 the "noble" position of Bêl-shum-ishkun has been clarified by other findings. He was never a "king of Babylon." This is refuted by texts that directly connect the 2nd year of Amel-Marduk with the accession year of Neriglissar, such as the "ledger" NBC 4897 (*GTR4*, pp. 131-133). It seems now clearly to have been a misinterpretation of the royal inscription. The phrase "king of Babylon," that occurs in one of Neriglissar's royal inscriptions, evidently refers to Neriglissar himself, not to his father.

The Neo-Babylonian royal inscriptions available a century ago were transliterated and translated into English by the British Assyriologist Stephen Langdon (1876-1937). The first volume, containing the royal inscriptions of Nabopolassar and Nebuchadnezzar, was published in 1905. The second volume, which included the inscriptions from the reign of Neriglissar, was never published in English. Langdon's manuscript was instead translated into German by Rudolf Zehnphund and published as *Die neubabylonischen Königsinschriften* (Vorderasiatische Bibliothek [VAB], Band IV, Leipzig 1912). The inscription that is supposed to give Bêl-shum-ishkun the title "king of Babylon" is listed as "Neriglissar Nr. 1" in this volume. The original Akkadian text as transliterated by Langdon reads in Col. I, line 14 (pp. 210, 211):

"mâr^{I ilu} bêl-šum-iškun šar bâbili^{ki} a-na-ku"

This was translated into German as,

"der Sohn des Belšumiškun, des Königs von Babylon, bin Ich"

210	Neubabylonische Königsinschriften.
⁸ i-ši-mu ši-ma-at-su ⁹ a-na ri-è-ú-ti ša-al-ma-at ga-ga-dam e-bi-e-šú ¹⁰ ilunabû aplu ki-i-nim iṣuḥaṭtu i-šá-ar-ti ¹¹ ú-šá-at-mi-ḥu ḫa-tu-uš-šú ¹² a-na e-ṭi-ri ni-šim ga-ma-lu ma-a-ti ¹³ ilugīr-ra šá-ga-pú-ru iláni id-di-nu-šú ka-ak-ku-šú ¹⁴ mâr I ilu bêl-šum-iškun šar bâbili ^{ki} a-na-ku	
Neriglissar Nr. 1.	
	211
⁹ dem zur Hut des schwarzköpfigen Volkes ¹⁰ Nebo, der getreue Sohn, das Zepter der Gerechtigkeit ¹¹ in seine Hand gegeben, ¹² dem zur Schonung des Volks, zur Erhaltung des Landes ⁽¹⁾ ¹³ Girra, der Machthaber der Götter, verliehen seine Waffen, ¹⁴ der Sohn des Belšumiškun, des Königs von Babylon, bin Ich.	

A more consistent rendering of the cases would give this translation:

"der Sohn des Belšumiškun, der König von Babylon, bin Ich"

A literal translation of this into English would be "the son of Belšumiškun, the king of Babylon, am I," not "I am the son of Bel-šum-iškun, king of Babylon." It is to be noted that a-

na-ku (“am I”), is at the end of the sentence and refers back to the preceding attributes Neriglissar gives to himself.

This seems to be what had been written in Langdon’s English manuscript. In W. H. Lane’s book *Babylonian Problems* (London, 1923), which has an introduction by Professor S. Langdon, a number of the English translations of the Neo-Babylonian inscriptions is published in Appendix 2 (pages 177-195). They are said to be taken from the work, “Building Inscriptions of the Neo-Babylonian Empire, by Stephen Langdon, translated by E. M. Lamond.” One of these royal inscriptions (the last one in the book) is “Neriglissar I” (pages 194, 195). Line 14 of the text says (p. 194):

“the son of Belšumiškun, King of Babylon, am I.”

It is obvious that this statement may be understood in two ways. Either the phrase “King of Babylon” refers back to Bêl-shum-ishkun as king or it refers to Neriglissar himself. As no contract tablets have been found that are dated to Bêl-shum-ishkun as king of Babylon, the statement would most likely be a reference to Neriglissar. Do we know anything about Bêl-shum-ishkun, more than that he was the father of Neriglissar?

It is known that Neriglissar, before he became king, was a well-known businessman. In several economic tablets he is referred to as “Neriglissar, the son of Bêl-shum-ishkun.” In none of these tablets is Bêl-shum-ishkun stated to be, or to have been, king of Babylon (šar bâbili^{ki}).

It is important to notice that Neriglissar mentions his father in another building inscription, “Neriglissar Nr. 2,” not as king (šar) but as “the wise prince” (rubû e-im-ga). The same title is also given him on a damaged clay cylinder kept in St. Louis Library. – Langdon, VAB IV (1912), pp. 214, 215; J. A. Brinkman, *Alter Orient und Altes Testament*, Vol. 25 (1976), pp. 41-50.

If Bêl-shum-ishkun really was, or had been, a king (šar), why would he be given the title “rubû”, even by his own son? A king of Babylon was always given the title “šar”. True, “rubû” means “ruler, prince, nobleman” and this title may also refer to a king (Simo Parpola *et al*, *Assyrian-English-Assyrian Dictionary*, Helsinki: University of Helsinki, 2007, p. 95), as the *Watchtower* writers point out in footnote 10 on page 28. But the common title of the “king of Babylon” was “šar bâbili^{ki}”.

Actually, the real position of Bêl-shum-ishkun is now known. The so-called “Court List,” a prism found in the western extension of Nebuchadnezzar’s new palace, mentions eleven district officials of Babylonia. One of them is Bêl-shum-ishkun, who is there described as the “prince (rubû)” or governor over “Puqudu,” a district in the north-eastern part of Babylonia. The officials on the “Court List” held their positions during the reign of Nebuchadnezzar. – Eckhard Unger, *Babylon* (1931), p. 291; D. J. Wiseman, *Nebuchadnezzar and Babylon* (Oxford: Oxford University Press, 1985), pp. 62, 73-75.

It is quite clear that the phrase in Akkadian is ambiguous. This is shown, for example, by J. M. Rodwell, who in an article in the work, *Records of the Past*, Vol. V (London, 1892), translated the phrase without the second comma sign (cuneiform, of course, did not use comma signs at all), so that the title “king of Babylon” is naturally given to Neriglissar: “son of BEL-SUM-ISKUN, King of Babylon am I”. (Page 139)

Modern experts on cuneiform agree that this translation is just as possible as the other one. One of my correspondents sent a question to Michael Jursa, an Assyriologist who is a leading specialist on cuneiform and the Akkadian language. In an email dated October 23, 2006, he explained:

“Dear Mr. ---,

The Akkadian is indeed ambiguous. If one wanted one could take ‘king of B[abylon]’ as referring to the preceding name, i.e. to Neriglissar’s father, rather than to Neriglissar himself. But the other explanation (i.e. the king is Neriglissar) is just as good, and we know of course that it is correct:

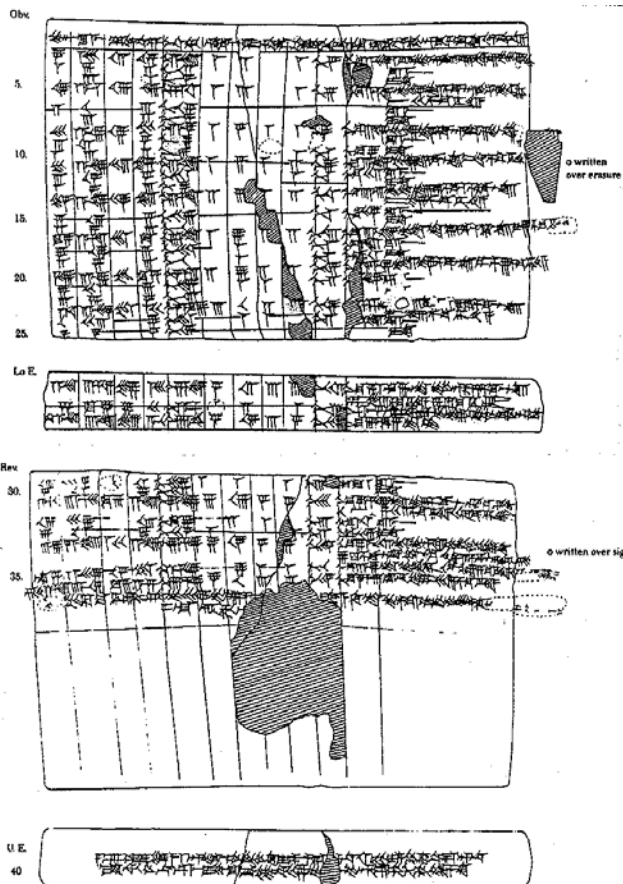
The passage means ‘I am N[eriglissar], son of BSHI [Bêl-shum-ishkun], the king of Babylon’ – or in German where this is clearer because of the case endings – ‘Ich bin N, der Sohn des BSHI, der König von Babylon’. It is more a problem of English language that a literal translation which preserves the word order of the original Akkadian makes BSHI a king, rather than his son. In Akkadian, this is not so. I am surprised that Langdon should have got it wrong – possibly the work of an uninformed translator who misunderstood the English original.

Yours sincerely,

Michael Jursa”

Bêl-shum-ishkun, then, was never a Neo-Babylonian king. No documents of any kind have been found that are dated to his supposed reign. In the politically neutral economic tablets he is never called “king” (šar), and Neriglissar himself calls him “prince” (rubû), which was evidently the correct title of Bêl-shum-ishkun. The claim that Neriglissar in one of his boastful building inscriptions calls him “king of Babylon” is clearly a misinterpretation.

The explanation suggested by the writers on page 24 of the Watchtower article, that “others” could



have ruled for “additional years” between Amel-Marduk and Neriglissar, is not only far-fetched but the idea is totally blocked by a number of astronomical tablets that record numerous dated observations during the reigns of the first two Neo-Babylonian kings, Nabopolassar and Nebuchadnezzar. The absolute chronology of their reigns is fixed by these observations.

Some cuneiform tablets connect one king with the next in a way that prevents the insertion of extra kings or extra years between them. This is the case with the **Ledger NBC 4897**, shown to the left, which tabulates the annual growth of a herd of sheep and goats belonging to the Eanna temple at Uruk for ten successive years, from the 37th year of Nebuchadnezzar to the first year of Neriglissar (568-559 BCE). This tablet alone shows there is no room for an extra king, such as Neriglissar’s father Bêl-shum-ishkun, between Nebuchadnezzar and his son Amel-Marduk and between Amel-Marduk and Neriglissar. (*GTR4*, pages 131-133.) Rolf Furuli’s attempt to explain away this ledger is examined in a critical article published on the web: <http://kristenfrihet.se/kf3/review4.htm>.

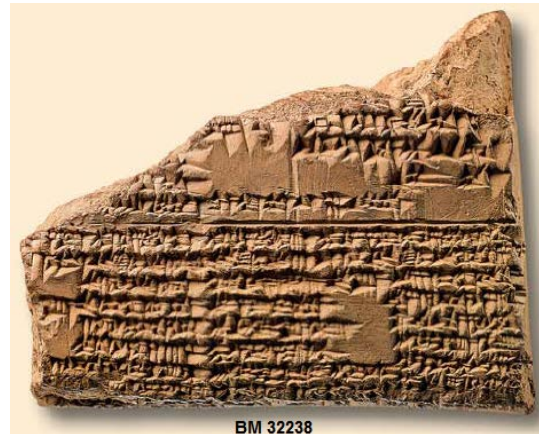
Astronomical tablets

WT: “What are they?”

In their discussion of the astronomical tablets, the *Watchtower* writers start by arguing that tablets recording eclipses may not contain observational reports, but *backward calculations from a much later period* (pages 24 and 25). They refer to a tablet, BM 32238 (No. 2 in Hermann Hunger [ed.], *Astronomical Diaries and Related Texts from Babylonia* [ADRT], Vol. V, 2001, pages 2-7), which contains reports of lunar eclipses and eclipse possibilities at 18-year intervals dated from year 1 of Mukin-zeri (731 BCE) to year 7 of Philip Arrhidaeus (317 BCE). The name of the latter is only partially preserved and is translated as “Pill[i-....]”.

The tablet is damaged and partially broken. The part that originally covered the period from 659 to 389 BCE is wholly missing. Besides, the only royal name preserved on the tablet in addition to the two mentioned above is “Antigonos” at the end of the tablet, preceded by his “Year 2” (316 BCE).

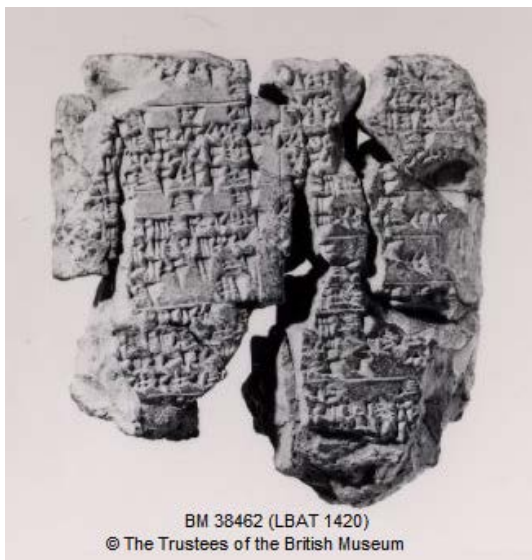
The tablet, then, has no direct bearing on the chronology of the Neo-Babylonian period (625-539 BCE). One may wonder why the authors chose to start by referring to this tablet, even showing a photo of it at the bottom of page 24, when there are several other tablets that describe lunar eclipses dated *directly* to reigns during the Neo-Babylonian period. (See *GTR4*, pages 171-185.)



BM 32238

Tablet BM 38462 (LBAT 1420)

In a discussion of the date for the destruction of Jerusalem in the 18th year of Nebuchadnezzar, a more appropriate and relevant tablet to discuss and show a photo of would have been BM 38462, listed as No. 1420 in A. J. Sachs, *Late Babylonian Astronomical and Related Texts* (LBAT), Providence, Rhode Island: Brown University Press, 1955. A transliteration and translation of this tablet by Hermann Hunger is published in ADRT V as No. 6 on pages 26-30. The tablet contains *annual lunar eclipse records dated to the first 29 years of Nebuchadnezzar* (604-576 BCE). As Professor John Steele notes, the tablet “was probably compiled shortly after -575,” i.e., shortly after 576 BCE. (ADRT V, page 391) This tablet alone is sufficient for fixing the 18th year of Nebuchadnezzar to 587 BCE and for disproving the Watchtower Society’s 607 BCE date for the destruction of Jerusalem!

BM 38462 (LBAT 1420)
© The Trustees of the British Museum

True, parts of the tablet is damaged, but there are still many records of lunar eclipses preserved. A number of these eclipses are *predictions*, but details of about a dozen of *observed* lunar eclipses are also preserved that make it possible to test their dates by the aid of a modern eclipse canon or a modern astronomical computer program. It would be tiresome to expose the reader to a detailed examination of *all* these reports. In an earlier discussion of this tablet, the examination of two entries was presented, namely, the entries for years 11 and 25 of Nebuchadnezzar. (*GTR4*, pages 180,

181) A third entry, the one for his year 17, is examined below. The tablet records two eclipses in this year:

“[Year] 17, month IV, [omitted.]

[Month] X, the 13th, morning watch, 1 *bēru* 5^o [before sunrise²]

all of it was covered. [It set eclips]ed.”

In the traditional chronology, the 17th year of Nebuchadnezzar began on 1 Nisan, 588 BCE (3/4 April). Month four (IV) began on 1/2 July. As often in eclipse texts, the day number for the eclipse is left out. The reason is, of course, that in the Babylonian lunar calendar the months always began at new moon. As eclipses always occur at full moon, the day of the eclipse always fell in or near the middle of the month, in this case in the morning of July 15. According to the program I use (SkyMap Pro 11), the eclipse began at 07:18. But as the moon had already set at 04:50 and was below the horizon at the beginning of the eclipse, this eclipse was “omitted”, that is, it was not visible in Babylonia.

The second eclipse occurred six months later, in month ten (X), which began on 26/27 December, 588 BCE (Parker & Dubberstein). Day 13, therefore, fell on 7/8 January, 587 BCE. As the text says the eclipse took place in the “morning watch”, it should be searched for in the morning of January 8. The text further says it began “1 *bēru* 5^o [before sunrise]”. As one *bēru* was two hours and 1^o (Akk. *uš*) was 4 minutes, the text gives the information that the eclipse began 2 hours and 20 minutes (5 *uš*) before sunrise.

This is fully confirmed by the astronomical program. It shows that the eclipse began at 04:51 in the morning on January 8, 587 BCE, and that sunrise that day occurred at 07:12, that is, 2 hours and 21 minutes later. The difference of one minute between the tablet and the program can be ignored, as the smallest unit of time used in this text is the *uš* (4 minutes).

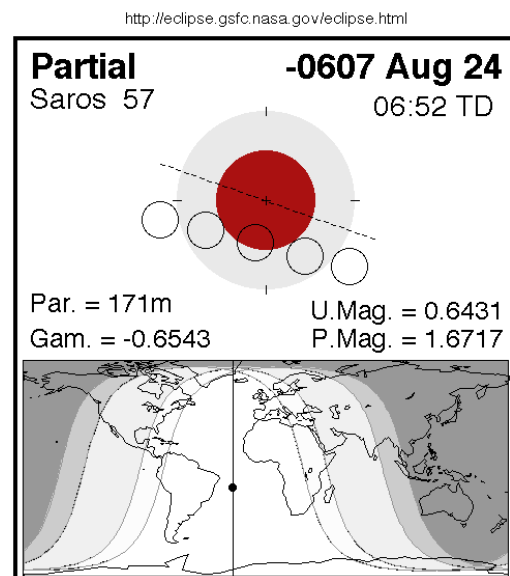
The text finally says that, “all of it was covered. [It set eclips]ed.” This means that the eclipse was total, and that the moon was still eclipsed at moonset. This, too, is confirmed by the program. It shows it was a total eclipse and that the totality began at 05:53 and lasted until 07:38. As moonset that morning occurred at 07:17, the moon was still totally eclipsed at moonset.

This entry, then, fully confirms that Nebuchadnezzar’s 17th year began on 1 Nisan 588 BCE, which means that his 18th year, when he desolated Jerusalem, began on 1 Nisan 587 BCE.

In the chronology of the Watchtower Society, however, the 17th year of Nebuchadnezzar began 20 years earlier, on 1 Nisan 608 BCE. True, there were two eclipses in that year, too. The first took place on August 24, 608 BCE, and the second on January 19, 607 BCE. The first, however, was not “omitted.” It was a partial eclipse that began at 03:06 and could be seen in Babylonia for nearly two and a half hours, until moonset at 05:29.

The second eclipse on the other hand was not “total.” It was a penumbral eclipse that was “omitted”, that is, it was invisible in Babylonia.

None of these eclipses fit any of the details recorded on BM 38462 (LBAT 1420).



Five Millennium Canon of Lunar Eclipses (Espenak & Meeus)
NASA TP-2009-214172

WT: “What have experts said?”

What about the claim that the Babylonian astronomers centuries afterwards were able to “project backward to calculate when eclipses had occurred in the past?” Could it be that they were able to retro-calculate, not only the time of eclipses in the distant past, but also other details recorded on the lunar eclipse tablets, like the time distance from the beginning of an eclipse until sunrise, as we find on BM 38462 discussed above?

On pages 24 and 25 the *Watchtower* writers quote two scholars who seem to support this idea. The first is Professor John M. Steele, who is quoted as stating that, “It is possible that some of the earliest predictions could have been made by projecting the scheme *backwards* when the text was compiled.” The source referred to in note 13 on page 28 is H. Hunger (ed.), ADRT V, page 391.

The second scholar is Dr. David Brown (erroneously styled “Professor” by the *Watchtower* writers), who states that it is conceivable that some of the predicted astronomical events were “*retrocalculations* undertaken by scribes in the 4th and later centuries B.C.” The source referred to in note 14 on page 28 is David Brown, *Mesopotamian Planetary Astronomy-Astrology* (2000), pages 164, 201-202.

The impression given the uninformed reader is that the Babylonian astronomers in the 4th century BCE and later were able to use mathematical calculations to determine when eclipses in earlier centuries had occurred, including those reported to be observations. The reader is not told (1) that the Babylonian astronomers in the 4th century and later were unable to correctly project eclipses backwards or forward for hundreds of years, and (2) that they were also unable to calculate several details about lunar eclipses reported on the tablets that could only have been directly observed. (See *GTR4*, pages 184, 185, 364-372.)

What did the experts *really* say?

On checking the sources referred to it becomes evident that the scholars quoted are not discussing astronomical “diaries” (like VAT 4956 discussed below) or texts containing consecutive eclipse observations or reports of individual eclipse observations, but *a particular group* of tablets on which eclipses are “arranged in columns such that each entry in a column is separated from the entry in the preceding column by one Saros [cycle] of 18 years.” Six tablets in the ADRT V volume belong to this group (category **ii** in John Steele’s classification of the eclipse texts, ADRT V, page 390), viz., Nos. 2, 3, 4, 9, 10 and 11. Nos. 2, 3, 4, 9 and 10 record *lunar* eclipses, while No. 11 records *solar* eclipses. No. 2, in fact, is the same tablet shown by the *Watchtower* authors on page 24, BM 32238. Nos. 2, 3, and 4 “all appear to be part of the same series containing lunar eclipses and were probably written by the same scribe,” says Steele. When complete the text would have contained 24 columns of Saros cycles, covering a period of 432 years from 747 to 315 BCE. (John Steele in ADRT V, page 391)

John Steele, who has examined these lunar eclipse tablets very carefully, concludes that all of them contain records of *both observations and predictions*. (John Steele in ADRT V, pages 395, 397; cf. also J. M. Steele, *Observations and Predictions of Eclipse Times by Early Astronomers*, 2000, and his article, “Eclipse Prediction in Mesopotamia,” *Archive for History of Exact Sciences*, Vol. 54, 2000, pages 421-454.) As stated above, the *observations* on the tablets often report details that could neither have been predicted nor retro-calculated. The question raised by both John Steele and David Brown is whether some of the *predictions* recorded may have been *retro-calculations*.

It is in this context that Steele suggests that “it is possible that some of the earliest predictions could have been made by projecting the scheme backwards when the text was compiled.”

This does not mean that Babylonian scholars in the 4th century BCE were able to project their periods hundreds of years backwards in time and correctly calculate the details about lunar eclipses that had occurred in the distant past. This is the impression given by the *Watchtower* writers. The increased accuracy of the periods and parameters used in the 4th century BCE and later were still rather rough compared to the much more exact data available to scholars today, and projecting them backwards would soon have caused increasingly erroneous results that would be easily detected today. Both scholars are misrepresented. See Steele's letter in the **Appendix** at the end.

However, a Babylonian scholar could have started with *a recorded observation* available from, for example, 685 BCE and calculate the approximate time of an eclipse that had occurred *shortly before* that year, perhaps even one Saros period (18 years and about 8 hours) earlier, in 703 BCE. This would give similar results as if it had been predicted *shortly before* 703 BCE, maybe five or six months, or perhaps a whole Saros cycle in advance. The errors in timings of such *calculated* lunar eclipses were usually about one and a half hours, while the errors of *observed* eclipse timings were about half an hour or less, according to the findings of John Steele. (*GTR4*, page 176, note 45) Extending the Saros cycles forward or backward over longer periods, however, would have soon caused gross errors.

Thus, by using the report of a genuine ancient observation dated to the day, month and year of a reigning king it would be possible for a Babylonian scholar living in the 4th century BCE or later to project backwards *from that observation*, to find the date of an eclipse that had occurred some 5 or 6 months earlier or, by using the Saros cycle, even 18 years earlier. These kinds of backward calculations presupposed, of course, that the tablets used reported *genuine* eclipse observations.

This "projecting the scheme backwards" is "possible," as Steele says. And David Brown agrees, although he finds it "much more likely" that lunar eclipses stated in the tablets to be "omitted" or "passed by" were predictions. In the statement partially quoted by the writers of the *Watchtower* article Brown concludes (the part quoted in the *Watchtower* is underlined):

"So, although it is conceivable that the eclipse predictions dating to 731, 686, 684, 677, 668, and 649 BC were actually retrocalculations undertaken by scribes in the 4th and later centuries BC, it is much more likely that they were *predictions* made and recorded shortly before each of those years, and that they were only later incorporated into the *Saros Canon*." – D. Brown, *op. cit.*, pages 201, 202.

Brown evidently designates the particular group of 18-year tablets discussed above as the *Saros Canon*. (*Op. cit.*, pages 182 note 425, 190, 201-202, and 261 § 39.) Strictly speaking, however, the *Saros Canon* is another tablet belonging to a different group of texts, category **v** in Steele's classification of the eclipse texts. The five tablets listed in this group are all *theoretical* texts. They do not record any observations or predictions at all, but just list eclipse possibilities at 18-year intervals. (Cf. *GTR4*, pages 173 notes 41 and 42, and 184 note 62.)

This *Saros Canon* tablet, BM 34597, gives regnal years and months of lunar eclipse possibilities from year 4 of Artaxerxes II (401 BCE) to year 40 of the Seleucid Era (272 BCE). The scheme, however, is the same as that of the group of texts discussed above: the lunar eclipses are grouped in columns at 18-year intervals. A discussion and translation of the *Saros Canon* is published in A. Aaboe *et al*, "Saros Cycle Dates and Related Babylonian Astronomical Texts," *Transactions of the American Philosophical Society*, Vol. 81:6 (1991), pages 12-22.

Astrology as a motive for Babylonian astronomy

In order to further undermine the *historical* and *chronological* value of the astronomical tablets, the *Watchtower* authors explain that the Babylonian interest in celestial phenomena was *astrologically motivated*. Scholar R. J. van der Spek is quoted as saying: “The compilers were astrologers, not historians.” For this reason the “more or less casual” historical remarks in the tablets must “be used with caution.” The source referred to in note 15 on page 28 is van der Spek’s article in *Bibliotheca Orientalis*, L No 1/2, 1993, pages 94, 102. (The reference to page 102 is wrong as it is blank. The article ends on page 101.)

But not all tablets recording astronomical observations were written for astrological reasons. The astronomical diaries, for example, give no indication of having been compiled for this purpose, although some scholars have claimed so. But other leading scholars disagree. In the work *Astral Sciences in Mesopotamia* (Leiden-Boston-Köln: Brill, 1999), Professor Hermann Hunger and Professor David Pingree present six reasons why the diaries are not connected with omens, but were compiled for astronomical purposes (pages 139-141). Many of the observations reported were not regarded as ominous by the Babylonians. These include weather, which was reported because it sometimes prevented observations. This also proves that the diaries normally, when the weather did not prevent celestial studies, reported *observations*, not backward calculations.

But even the astrological motive did not make the astronomical and chronological information on the tablets less reliable. On the contrary, as Dr. A. Pannekoek points out, “the astrological motive, by demanding greater attention in observing the moon, provided for better foundations in chronology.” As an example, he quotes the instruction to ancient scholars given in *Enuma Anu Enlil*, a collection of ancient omens dating in its final form from the Neo-Assyrian period:

“When the Moon is eclipsed you shall observe exactly month, day, night-watch, wind, course, and position of the stars in whose realm the eclipse takes place. The omens relative to its month, its day, its night-watch, its wind, its course, and its stars you shall indicate.” – A. Pannekoek, *A History of Astronomy*, London, 1961, pages 43, 44; *GTR4*, pages 332, 333.

Dr. David Brown emphasizes the result of the careful study of the supposed ominous phenomena in the sky by Assyrian and Babylonian scholars in the work quoted by the *Watchtower* writers:

“Both the subject matter and the choice of which any particular details should be recorded accurately were determined by the EAE [*Enuma Anu Enlil*] Paradigm. I noted that a continuous record over many decades, even centuries, was kept, and that the dates and times were *recorded with especial accuracy*.” ...

“The intention, or at least the result, was to produce *a large data base of material* that would enable some scholars, perhaps only those in later generations, to elicit periods and parameters relevant to each planet that would result in that planet’s ominous behaviour being predictable.” ...

“However, the core hypothesis was unchanging throughout the centuries – the *accurate record* of ominous phenomena provided the data from which could be elicited characteristic periods and parameters which rendered them predictable.” – David Brown, *Mesopotamian Planetary Astronomy-Astrology* (Groningen, 2000), pages 188, 189. Emphasis added.

According to Professor Hermann Hunger’s estimate, only ca. 5% of this “large data base” has been preserved. Originally, it may have contained about 210,000 dated records of observations accumulated during a period of 600 years, from the 8th century BCE down into the Seleucid era. (*GTR4*, page 369) The Babylonian scholars used this data base in order to examine and refine the periods of the moon and the planets. The data base provided an exact chronology for this whole period, which was an absolute condition for enabling them to improve their predictions. Adding or subtracting years to or from this chronology (adding 20 years to the Neo-Babylonian reigns, for example) would cause scholars to base their calculations of the parameters and periods on an erroneous chronology, making the periods increasingly inaccurate and useless.

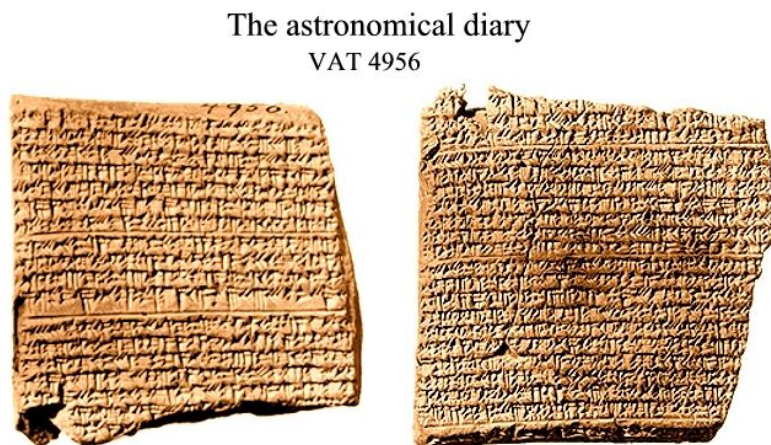
R. J. van der Spek’s statement that the occasional *historical* remarks in the “diaries” must be “used with caution,” finally, does not mean they are useless. On the contrary, van der Spek himself has shown in several articles that these notes usually are historically reliable and have contributed to the clarification of several historical problems, particularly in the last centuries BCE. See his articles in *Archiv für Orientforschung*, 1997/1998, pages 167-175, and *Bibliotheca Orientalis*, No. 1/2, 1993, pages 91-101, and No. 5/6, 2005, pages 546-553.

WT: “What do the documents show?”

VAT 4956 –is the lunar eclipse *really* that of July 15, 588 BCE?

Although the subtitle of this section promises to deal with “the [astronomical] documents”, the *Watchtower* authors discuss *only one* document – the astronomical “diary” VAT 4956.

This is understandable, because this tablet alone completely destroys the chronology of the Watchtower Society. So it cannot be ignored. The authors start by admitting that the about 30 positions of the moon and planets recorded on this tablet and dated to particular days and months of the 37th year of Nebuchadnezzar fit the year 568/567 BCE.



They also admit that a lunar eclipse mentioned on the tablet “calculated as occurring on the 15th day of the third Babylonian month, Simanu” corresponds to an eclipse that occurred “on July 4 (Julian calendar) of this month during 568 B.C.E.” (Page 25) But then they add:

“However, there was also an eclipse 20 years earlier, on July 15, 588 B.C.E.”

This is true. The first problem with this eclipse, however, is that it is also recorded on the tablet discussed above in the section ‘Tablet BM 38462 (LBAT 1420)’. This tablet dates the eclipse to month *four* (IV) of Nebuchadnezzar’s 17th year, not to month *three* (III) of his 37th year, as is the eclipse on VAT 4956.

In the chronology of the Watchtower Society the 17th year of Nebuchadnezzar fell in 608/607 BCE. As was shown in the discussion above, none of the two eclipses recorded on BM 38462 as occurring in the 17th year of Nebuchadnezzar fit the year 608/607 BCE!

A second problem with the transferring of the eclipse on VAT 4956 from 568 to 588 BCE is that the *third* Babylonian month, Simanu, never began as late as in July. If Simanu 15 corresponded to July 15, the 1st of Simanu would have corresponded to June 30/July 1. Then the new year that began two months earlier on 1 Nisan would also have fallen very late, on May 2/3, 588 BCE, as the *Watchtower* writers admit in note 17 on page 28.

A third problem is that all these dates would have fallen too late in the Babylonian calendar. The Babylonian New Year never began as late as in May. As shown by Parker & Dubbstein's *Babylonian Chronology* it always began in March or April. This was true, not only during the Neo-Babylonian period and earlier, but also during the Persian and Seleucid periods and later, even into the first century of the Christian era. For 700 years the New Year *always* began in March or April, never in May.

If the *Watchtower* authors insist that the New Year *once* during this long period, viz. in 588 BCE, began as late as on May 2/3, this was unique. For an unbiased and serious scholar, the obvious conclusion is that this idea is an invention by the *Watchtower* writers in a desperate attempt to re-date a tablet that in itself totally destroys the *Watchtower* chronology.

The observation in note 17 on page 28, that line 6 of VAT 4956 shows there was an *extra month*, an intercalary Addaru, added at the end the preceding year, does not support the 588 BCE date, as the *Watchtower* writers seem to believe. In the *Watchtower* chronology the Babylonian calendar year that preceded 588 BCE, namely 589/88 BCE, fell already so late (14/15 April) that it did not require an extra month! It is this *extra month* that moves 1 Nisan of 588 BCE too late in the Babylonian calendar. The problem disappears if VAT 4956 is dated where it belongs, to 568 BCE, because the extra month in the preceding year (569/568) moves 1 Nisan of 568 BCE only to 22/23 April that year.

VAT 4956 – do the 13 lunar eclipses *really* fit 588 BCE?

On page 25 the *Watchtower* writers explain what other kinds of celestial phenomena that are reported on VAT 4956, stating that “there are 13 sets of lunar observations on the tablet and 15 planetary observations. ... There are also eight time intervals between the risings and settings of the sun and the moon.” Most of these observations fit the year 568 BCE excellently. But how do they tally with the year 588 BCE?

Very badly, in fact. That is why the *Watchtower* authors, in notes 18 and 18a on page 28, start by explaining why they do not discuss the last two groups, the planetary observations and the eight time intervals. Of the 15 planetary positions they claim that,

“some of the signs for the names of the planets and their positions are unclear. ... Because of this, the planetary observations are open to speculation and to different interpretations.” (Note 18)

And on the eight time intervals they go on to say in note 18a:

“These time intervals (‘lunar threes’) are the measurement of time from, for example, sunset to moonset on the first day of the month and during two other periods later in the month. ... For ancient observers to measure this period required some sort of clock. Such measurements were not reliable.” (Note 18a)

These arguments, evidently presented to get rid of observations that do not fit the year 588 BCE, will be examined below. But first we will take a look at how they treat the 13 lunar observations on the tablet.

As explained in my critique of Part One of the *Watchtower* article, the discussion by the authors seems clearly to be based on Rolf Furuli's two books on chronology. The first edition of his volume 2, *Assyrian, Babylonian and Egyptian Chronology*, was published in the autumn of 2007. One fourth of the book (about 90 pages) was devoted to a discussion of VAT 4956. Later in the same year (2007) Part I of my critical review of this first edition of the book was published on a website, <http://kristenfrihet.se/kf2/review.htm>. It was demonstrated that Furuli's attempt (in chapter 6 and Appendix C) to re-date the 13 lunar observations recorded in the astronomical diary VAT 4956 was mistaken. Evidently due to my criticism, Furuli rewrote parts of his discussion of VAT 4956 and quickly had a second revised edition of his book published in May, 2008. He even sent e-mails to persons who had received the first edition and reclaimed copies he had sent out about that time, including review copies to scholarly journals, telling the recipients that he would send them a copy of the new, 2nd edition.

An examination of Furuli's revisions in the 2nd edition, however, shows them to be just another failed attempt to overcome the historical evidence attested by VAT 4956. Very few changes were made in the rest of the book. In my discussion of the 13 lunar observations, his dates of the first six observations have been left unchanged, while the dates of the rest have been moved back one day. An examination of these new dates shows that the observations still do not fit in 588 BCE.

As an example, the text for Addaru 2 (month XII, day 2) says:

“Night of the 2nd, the moon was balanced 4 cubits [8°] below η Tauri.”

In the first edition, Furuli dated Addaru day 2 to 25 March 587 BCE. In the night of that day, at c. 19:00, the moon was about 10.5° southeast of η Tauri (also known as Alcyone, the most brilliant star in the star cluster Pleiades). Later in the night the distance was even longer (12.3° at 23:00, for example). This fit was definitely not “excellent”, as Furuli had written.

In the second edition Furuli has moved the date one day back to 24 March 587 BCE (page 330). In that night the distance was not “4 cubits” as Furuli states, but 6.2 cubits [12.4°] below η Tauri. Furuli declares that this is an “excellent” fit, which it is not. It is even worse than that on his earlier date (March 25)!

In the conventional chronology day 2 of Addaru corresponded to 15 March, 567 BCE. The computer program shows that at 19:00 that day the moon was 4 cubits (8°) below η Tauri. This position agrees exactly with that given on the tablet, so it is an excellent fit!

To give another example, the text for Simanu 10 (month III, day 10) says:

“Night of the 10th, first part of the night, the moon was balanced 3 ½ cubits above α Scorpii.”

In the first edition Furuli had dated this observation to July 10, 588 BCE (page 325). His comment was: “The moon was 3½ cubits (7°) above α Scorpii, so *the fit is excellent*.” However, in the “first part of the night” the moon was *more than 5 cubits (over 10°) north-east* of α Scorpii. The fit was clearly not “excellent”. It was bad compared to the fit in 568 BCE, when on Simanu 10 (June 29) the computer program shows that the moon stood 4 cubits (8°) above (north of) α Scorpii. This is a good fit, the difference between the text and the computer program being just 0.5 cubits (1°).

In the second edition of volume 2, Furuli has moved the date back to July 9, 588 BCE (page 325). Remarkably, his comment still is: “The moon was 3½ cubits ($7^{\circ}16'$) above α Scorpii, so

the fit is excellent.” But the computer program shows that the moon in the “first part of the night” was 5 cubits north-west of α Scorpii, so the fit is *just as bad* as on his earlier date (July 10).

None of the other new dates in the 2nd edition are “excellent” either. The conclusion at the end of my website article, therefore, still stands:

“In summary, at least 10 of the 13 lunar positions examined fit the 568/567 BCE date quite well, one (no. 10) is acceptable, while two (nos. 2 and 5) are acceptable only if the dates are moved back one day. Of Furuli’s dates in 588/587 BCE only one (no. 12) fits well, while 9 do not fit at all. The fits of the remaining three (9, 10, and 11) are far from good but acceptable.

The conclusion is, that the observations were made in 568/567 BCE. The year 588/587 BCE is definitely out of the question.”

Scholars who have examined Furuli’s claim, including leading experts on the astronomical tablets, agree that the lunar positions support 568/567 BCE but not Rolf Furuli’s 588/587 BCE date. See Professor Hermann Hunger’s comments on the lunar observations in his web review of Furuli’s book, section C6, pp. 316-333, at

<http://kristenfrihet.se/kf4/reviewHunger.htm>

In view of this, the conclusion by the *Watchtower* writers on pages 25 and 27 is astounding:

“Because of the superior reliability of the lunar positions, researchers have carefully analyzed these 13 sets of lunar positions on VAT 4956. They analyzed the data with the aid of a computer program capable of showing the location of celestial bodies on a certain date in the past. What did their analysis reveal? While not all of these sets of lunar positions match the year 568/567 B.C.E., *all 13 sets* match calculated positions for 20 years earlier, for the year 588/587 B.C.E.”

Who are these “researchers” that are stated to “have carefully analyzed” the 13 lunar positions? The names of scholars quoted in the article are usually referred to in the footnotes. But strangely, the “researchers” referred to here are not identified. However, the claim reflects the conclusion of Rolf Furuli, who on pages 332 and 333 of the second edition of his volume 2 states that the application of *all* the 13 lunar eclipses to year 588/587 BCE is “excellent.” He is the only researcher I know of who has made such a claim.

The only conclusion I can draw from this is that the authors of the *Watchtower* article are either unable to handle an astronomical computer program correctly and therefore did not check the claim, or they are lying. In view of the fact that all “information” in the article is based on the books of *Watchtower* apologist Rolf Furuli, I conclude that *he* alone constitutes the unnamed “researchers.”

VAT 4956 – are the names of the planets and their positions “unclear”?

As stated earlier, the *Watchtower* authors chose not to discuss the 15 *planetary* observations recorded on VAT 4956, claiming that “some of the signs for the names of the planets and their positions are unclear. ... Because of this, the planetary observations are open to speculation and to different interpretations.” The source referred to is David Brown, *Mesopotamian Planetary Astronomy–Astrology*, 2000, pages 53-57.

It is true that David Brown is discussing the signs for the names of the planets on the pages referred to. It is also further true that different names could sometimes be used of the planets, and that the same names sometimes were used also of other planets, stars, or constellations.

But what the *Watchtower* authors do not tell the readers is that David Brown, on pages 55-56, shows that the planets also had *unique names* not used of any other planets, stars, or constellations. **The diary VAT 4956 consistently uses only these unique names of the planets.** They are:

Names unique to the five visible planets used on VAT 4956

Mercury	^d gu ₄ -ud (^d GU ₄ -UD)
Venus	^d dele-bat
Mars	an (AN)
Jupiter	^d sag-me-gar (^d SAG-ME-GAR)
Saturn	genna and ^d sag-uš (^d GENNA and ^d SAG-UŠ)

As it does not require much research to find out that these unique names are consistently used on VAT 4956, one may wonder why the *Watchtower* writers do not reveal this. The identification of the planets on VAT 4956 is clear and unambiguous and creates no problems whatsoever. The sole reason why the *Watchtower* authors chose to ignore the planetary positions recorded on VAT 4956, therefore, seems clearly to be that they fit year 568 BCE but not year 588 BCE.

An additional matter to consider is the fact that the planets move along the ecliptic at different speeds due to their different distances from the sun. The Babylonian scholars knew (roughly) the speed of each planet, and by observing their positions along the ecliptic regularly, day by day and month by month, they knew which planet they were looking at.

The movement of the planets along the ecliptic

Mercury	1° in ca. 6 hours
Venus	1° in ca. 15 hours
Mars	1° in ca. 2 days
Jupiter	1° in ca. 12 days
Saturn	1° in ca. 30 days

When modern scholars find that a tablet uses a different name for a certain planet, or that a planet in a planetary text *is not named at all*, they can still identify it by checking its positions recorded on the tablet, day by day, month by month, and year by year. Even for such tablets, therefore, the problems raised by the *Watchtower* writers usually do not exist.

VAT 4956 – are the measured time intervals (“lunar threes”) unreliable?

As stated earlier, VAT 4956 reports eight time intervals (“lunar threes”), which the *Watchtower* writers explain to be “the measurement of time from, for example, sunset to moonset on the first day of the month and during two other periods later in the month.” The reason why the *Watchtower* authors chose not to discuss them is stated to be that they are unreliable: “For ancient observers to measure this period required some sort of clock. Such measurements were not reliable.” (Note 18a, page 28) Is this correct?

The clock used for measuring these time intervals is generally believed to have been some kind of water clock. One of the words used is *maltaktum*, which is interpreted to mean “water clock.” These clocks were used already during the Old Babylonian period, but short-time measurements (down to the nearest UŠ, 4 minutes) do not appear until the 7th century BCE

and later. – David Brown, John Fermor, and Christopher Walker, “The Water Clock in Mesopotamia,” *Archiv für Orientforschung*, Band 46-47, 1999/2000, pages 132, 142.

True, the accuracy of these clocks was rather rough. But time distances given for “lunar threes” and “lunar sixes” were better than timings of lunar eclipses. As Professor Peter Huber notes,

“Small time intervals (below $6^{\circ} = 24$ minutes) are measured without noticeable errors ... Larger intervals are measured with relative random errors of 8-10%,” sometimes more. (P. Huber, “Babylonian Short-Time Measurements: Lunar Sixes,” *Centaurus*, Vol. 42, page 233.)

In any case, they were good enough for chronological purposes, as will be shown below.

The “lunar threes” distances reported on VAT 4956 were examined and compared with modern computations by F. R. Stephenson and D. M. Willis in an article published in *Under One Sky: Astronomy and Mathematics in the Ancient Near East* (J. M. Steele and A. Imhausen [eds.], Münster 2002), pp. 423-428. Their conclusion is that the traditional date, 568/7 BCE can be “confidently affirmed.” Their results are shown in a table on page 424.

In his review of Rolf Furuli’s second volume on chronology, Professor Hermann Hunger reproduces their table, which he introduces with the following explanation:

“These are the following time intervals: sunset to moonset (SS-MS) on the first evening of the month; sunrise to moonset (SR-MS) on the first morning on which the almost full moon set after sunrise; and moonrise to sunrise (MR-SR) on the last morning on which the moon was visible before conjunction.”

Year 568/7 BC, beginning April 22/23

Month	Day	Julian Date	Interval	Text	Computed	Difference
I	14	568 May 5	SR-MS	4	3.5	0.5
II	26	568 Jun 17	MR-SR	23	23.2	0.2
III	1	568 Jun 20	SS-MS	20	22.7	2.7
XI	1	567 Feb 12	SS-MS	14.5	17.0	2.5
XII	1	567 Mar 14	SS-MS	25	25.7	0.7
XII	12	567 Mar 26	SR-MS	1.5	0.7	0.8

“As Stephenson and Willis say, each interval increases by about 12° per day, so the correct day can usually be identified by comparing text with computation. I have repeated their computations for 568/7 BC, and I agree with their results. In the following, I do the same computations for the year 588/7 BC, both for the dates given by Parker & Dubberstein, and for those claimed by F[uruli], which are shifted by about one month.”

Below only the second of Hunger’s two tables is shown, as it is based on a New Year beginning of May 2/3 for 588/7 BCE – the date selected by Rolf Furuli and the *Watchtower* writers.

Year 588/7 BC, beginning May 2/3

Month	Day	Julian Date	Interval	Text	Computed	Difference
I	14	588 May 16/17!	SR-MS	4	1	3
II	26	588 Jun 27/28!	MR-SR	23	18.3	4.7
III	1	588 Jul 1/2!	SS-MS	20	17.8	2.2
III	15	588 Jul 15/16!	SR-MS	7.5	15.3	7.8
XI	1	587 Feb 22/23	SS-MS	14.5	9.8	4.7
XII	1	587 Mar 24/25	SS-MS	25	21.5	3.5
XII	12	587 Apr 6/7!	SR-MS	1.5	4.8	3.3

Hunger concludes:

“The dates with an exclamation mark disagree with the calendar, in the sense that the measurements of the intervals could not have been taken on the date given on the tablet if the tablet were referring to year 588/7. The differences between text and computation are in both cases much larger than in 568/7 BC. Using the words of Stephenson and Willis, 588/7 BC can be confidently excluded.” (<http://kristenfrihet.se/kf4/reviewHunger.htm>)

Other scholars, too, have compared the lunar three time intervals on VAT 4956 for years 568/7 BCE and 588/7 BCE and arrived at the same conclusion. Two of them, AnnOMaly and Alleymon (Marjorie Alley), both very competent scholars, published their results on the JWN debate forum on 21 September, 2011. They have used and compared various astronomical programs to show that the differences between them are negligible:

Page 1: <http://www.jehovahs-witness.net/watchtower/bible/216056/1/VAT-4956-Comparison-Of-The-Lunar-Three-Time-Intervals-For-Years-568-7-BCE-and-588-7-BCE>

Page 2: <http://www.jehovahs-witness.net/watchtower/bible/216056/2/VAT-4956-Comparison-Of-The-Lunar-Three-Time-Intervals-For-Years-568-7-BCE-and-588-7-BCE>

VAT 4956 – obverse line 3: day “9” or day “8”?

The last argument of the *Watchtower* authors is based on a lunar observation recorded on VAT 4956, obverse, line three, and which belongs to the first month, Nisanu:

“Night of the 9th (error for: 8th), beginning of the night, the moon stood 1 cubit in front of β Virginis. The 9th, the sun in the west [was surrounded] by a halo [... The 11th]” – Sachs/Hunger, ADRT I, page 47.

In 568 BCE the 9th of Nisanu began in the evening of April 30. However, the scholars who first translated and examined the tablet back in 1915, P. V. Neugebauer and E. F. Weidner, found that the lunar position did not fit on this date. But it did fit in the previous evening, on April 29. They concluded that day “9” must be an error for day “8”. – P. V. Neugebauer & E. F. Weidner, “Ein astronomischer Beobachtungstext aus dem 37. Jahre Nebukadnezars II. (–567/66),” *Berichte über die Verhandlungen der Königlich Sächsischen Gesellschaft der Wissenschaften zu Leipzig*. Philologisch-Historische Klasse, 67. Band, Leipzig 1915, pages 34, 41, 67.

The *Watchtower* authors try to make a big fuss about this detail. They devote the whole page 26 to show the tablet and details from the translation of line 3. And in a paragraph on the next page they claim that “the lunar position in line 3 finds an *exact match* on Nisanu 9 of 588 B.C.E.”

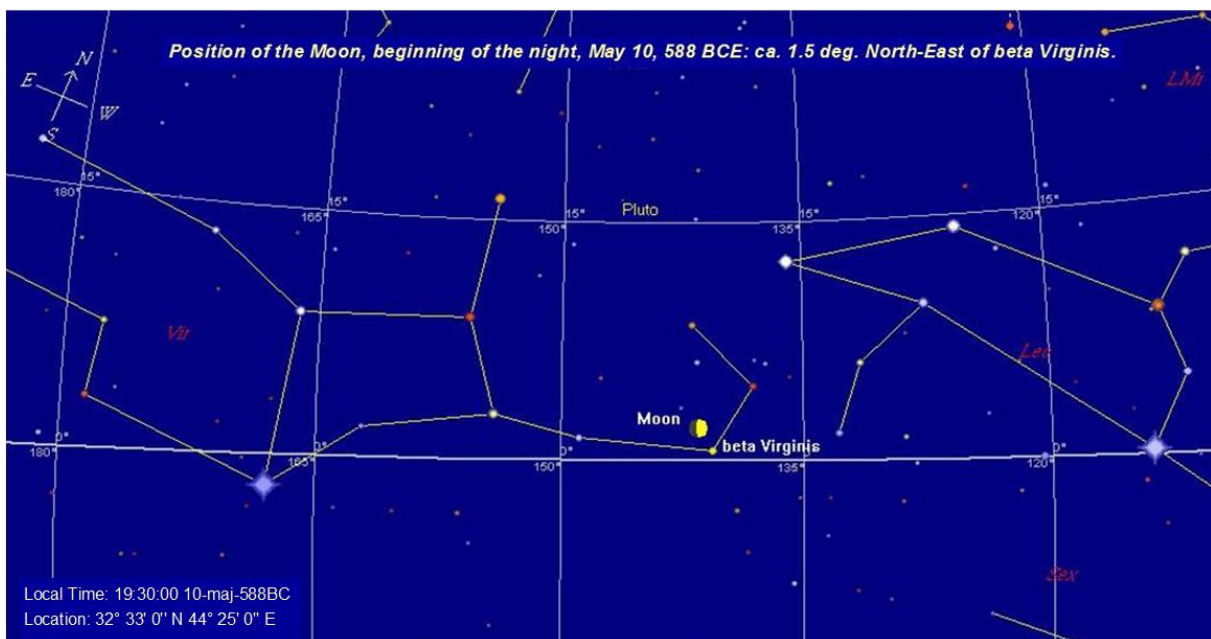
This claim is based on Rolf Furuli’s book, *Assyrian, Babylonian and Egyptian Chronology*, Volume II, 2nd edition 2008, where he states on page 321: “On Nisan 9 [dated to May 10, 588 BCE in the 2nd edition], the moon stood 1 cubit (2^0) in front of β Virginis, exactly what the tablet says.”

Unfortunately, this is not true. Although the Babylonian astronomers often gave the position and distance of a planet in relation to a “normal star” without using any coordinate system, their use of a specification such as “in front of” was not related to the horizon (altitude and azimuth coordinates), but to *the ecliptic*. To the Babylonian astronomers, therefore, “in front of” meant “west of” – the apparent motion direction of the sun, the moon, and the planets along or parallel to the ecliptic. As N. M. Swerdlow explains,

“The specifications ‘above’ and ‘below’, ‘in front of’ and ‘behind’ refer roughly to the direction of the planet’s motion. Since the planet moves more or less parallel to the ecliptic, above or below are more or less perpendicular to the ecliptic, but are not a coordinate of latitude and are often quite skewed; in front of and behind are to the west and east, but not a coordinate of longitude.” – N. M. Swerdlow, *The Babylonian Theory of the Planets* (Princeton: Princeton University Press, New Jersey, 1998, page xi.

This means that in the beginning of the night (19:30) on May 10, 588 BCE, the moon stood 1.5° north-east of β Virginis. The moon then gradually lay further towards north-east. This is definitely not an exact match. Even if the distance might be acceptable, the compass direction is wrong. The date of the *Watchtower* authors, May 10, 588 BCE, therefore, has to be rejected.

As practically all lunar and planetary positions and also the eight “lunar threes” reported on the tablet fit 568/567 BCE, not 588/587 BCE, and as the lunar position in line 3 fit April 29 instead of April 30, 568 BCE, a scribal error of one day is the most reasonable explanation.



[Click here for larger picture](#)

Conclusion

In the critical review above of Part Two of the *Watchtower* article it has been demonstrated that the *Watchtower* writers throughout their discussion have misrepresented, misinterpreted and misapplied cuneiform sources, misquoted authorities on these documents, and even lied in their efforts to find some support for the Watchtower Society's 607 BCE date for the destruction of Jerusalem. In their last section on page 27, called "**Why Trust the Bible?**" they try to give the impression that the Bible supports this date, claiming "the Bible writers Jeremiah and Daniel clearly state that the Jews were in exile for 70 years, not 50 years."

As was demonstrated in the review of Part One, this claim is false. The Bible nowhere states that the Jewish exile lasted for 70 years. Jeremiah clearly states that the 70 years would be a period of Babylonian rule ("seventy years for Babylon"), when the nations in the Near East would "serve the king of Babylon." (Jeremiah 29:10; 25:11) This servitude ended in 539 BCE, when the king of Babylon was punished. This would take place *after* the 70 years had ended. (Jeremiah 25:12) As long as the *Watchtower* apologists persist in denying this, they are forced to misrepresent, misapply, and twist the Bible. By their insistence on the 607 BCE date, they have created an artificial conflict between the Bible and the secular sources that does not exist, and *never has* existed. Their claim to be trusting the Bible, when they are just trusting in a chronological calculation that conflicts both with the Bible and the historical evidence, is nothing but hypocrisy.

APPENDIX TO THE DISCUSSION OF RETROCALCULATIONS:

In answer to a question about the *Watchtower* authors' quotations of Professor John Steele and Dr. David Brown, John Steele sent the following answer to Marjorie Alley, dated September 2, 2011:

Dear Ms Alley,

Thank you for your email concerning the citation of my work in the recent *Watchtower* article. As you suggest the author of this piece is completely misrepresenting what I wrote, both in what they say about the lunar three measurement, and in what I say about the possibility of retrocalculation of eclipses (my comments on the latter were restricted to a distinct and small group of texts which are different to the Diary they are discussing). Just glancing through the *Watchtower* article I can see that they have also misrepresented the views of other scholars by selective quotation out of context.

I've looked at the date of VAT 4956 on several occasions and see no possibility that it can be dated to anything other than the conventional date.

Regards,

John Steele

ENDNOTE: Among other scholars who have written critiques of the Watchtower Society's two-part article in defence of its chronology, the most extensive is that of Doug Mason in Australia. It is very well done and richly illustrated. The links to his critique of Part One and Part Two are:

The URL for "Part 1" (October WT):

http://www.jwstudies.com/Critique_of_When_Was_Ancient_Jerusalem_Destroyed.pdf

The URL for "Part 2" (November WT):

http://www.jwstudies.com/Critique_Part_A_of_Jerusalem_Destroyed_part_2.pdf