
THE MESOPOTAMIAN STELLAR TABLEAU THAT MAY HAVE INSPIRED REVELATION 12.1-6

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Abstract

The Book of Revelation 12.1-6 recounts a vision that John of Patmos had witnessed in the sky, in which a red dragon appears before a pregnant woman in the throes of labour; the dragon attempting to devour the new-born upon its birth. Remarkably, pre-Christian cuneiform astronomical texts catalogue Leo's brightest star, Regulus, as an 'Infant', and Mesopotamian astronomers connected Leo's Tail stars with Coma Berenices and western Virgo to form a Pregnancy-goddess asterism depicted anthropomorphically as a divine 'Pregnant-Woman' like the one observed by Saint John. Beneath the 'Pregnant-Woman' constellation and 'Child' star stretches Hydra, whose Sumerian title, MUŠ-ĜUŠ, 'Red-Dragon', corresponds precisely with the 'red dragon' in John's vision. When plotted on a star map it becomes apparent that the Child, Pregnant-Woman, and Red-Dragon stand in close proximity and form a distinct tableau in the heavens. John's knowledge of these Mesopotamian star-figures betrays a familiarity with Mesopotamian astrological precepts. One conviction held that the starry sky embodied 'heavenly-writing' that imparted inviolable truth through the conduit of wordplay - what seventh century BC Assyrian king, Esarhaddon, called *lumāši*-, or 'constellation'-writing. This paper cites circumstantial evidence implying that John was familiar with the aforementioned Mesopotamian astrological esoterica and envisioned the Pregnant-Woman constellation, Child star, and Red-Dragon constellation as the basis for his 'vision'. It then demonstrates that *lumāši*-writing wordplay enciphered in the Pregnant-Woman and Red-Dragon constellations correspond to their surreal appearances: the Pregnant-Woman being 'clothed with the Sun', having 'the moon under her feet', and 'a crown of twelve stars upon her head' when 'she gave birth to the child'; the dragon possessing seven, diadem-adorned heads and ten horns. The conclusion argues that John had utilized these sacred puns as the foundation for his 'Woman, Child, Dragon' narrative.

Keywords: celestial, mythology, Revelation, wordplay, astrology

1. Introduction

Discerning the meaning behind the enigmatic imagery recorded in the Book of Revelation remains one of the most perplexing aspects of New Testament studies. Yet one vignette recounts an unequivocally astronomical

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motif. Revelation 12.1-6 reads: “12.1 And a great sign was seen in heaven; a woman clothed with the sun, with the moon under her feet, and on her head a crown of twelve stars. 12.2 And she was pregnant and crying out in birth pangs, in the agony of giving birth. 12.3 Then another portent appeared in heaven: a great red dragon, with seven heads and ten horns, and seven diadems on his heads. 12.4 His tail swept a third of the stars of heaven and threw them down to the earth. Then the dragon stood before the woman who was about to bear a child, so that he might devour her child as soon as it was born. 12.5 And she gave birth to a son, a male child, who is to shepherd all the nations with a rod of iron. But her child was snatched away and taken to God and to his throne; 12.6 and the woman fled into the wilderness, where she has a place prepared by, God, so that there she can be nourished for one thousand two hundred sixty days.” [1]

In Revelation 1.9 the Book’s author, whom identifies himself as ‘John’ (Iōannēs), confides that he was exiled to the isle of Patmos because of prophecies regarding his testimony to Jesus. Here lays our first clue regarding John’s vision. A. Yarbro Collins comments that banishment “was a common punishment used during the Imperial period for a number of offenses. Among such offenses were the practices of magic and astrology. Prophecy was viewed by the Romans as belonging to the same category, whether Pagan, Jewish, or Christian. Prophecy with political implications, like that expressed by John in the book of Revelation, would have been perceived as a threat to Roman political power and order.” [2]

The notion that John was banished to Patmos due to astrological prognostication accords with the language of the passage. In verses 1 and 3 John refers to the both the Sun-wearing woman with the Moon under her feet and the red dragon as a “sign” or “portent” (sēmeion) that was seen “in Heaven” (en tōi ouranōi). Since “heaven”/ouranōi is the dative case form of ouranos, “sky, firmament”, John’s vision manifested in the realm where the constellations are located [Tufts University Greek Word Study Tool: ouranōi, <http://www.perseus.tufts.edu/hopper/morph?l=ou%29ranw%7C%3D&la=greek>, accessed on 12.07.2019]. And while the Greek sēmeion did indeed mean “sign, omen, portent”, it also meant: “a sign from the gods, an omen, especially of the constellations” [3]. Remarkably, pre-Christian Mesopotamian astronomical-astrological texts inscribed on clay tablets in the cuneiform script catalogue Leo’s brightest star, Regulus, as an ‘Infant’. Mesopotamian astrologers also envisioned Leo’s ‘Tail’ stars, Coma Berenices, and western Virgo as a composite constellation that embodied the Pregnancy-goddess, i.e. a divine ‘Pregnant Woman’ like the one reported by John. Immediately south of the Pregnant-Woman constellation and Child-star stretches Hydra, whose Sumerian title, MUŠ-ĪUŠ, ‘Red-Dragon’, forges a direct correlate with the Greek ‘red dragon’ (drakōn purros) reported by John. When plotted on a star map for the latitude (Patmos, approximately 37° North) and date (late first century AD) that Revelation was purportedly written [4], we find that the “Pregnant-Woman”, “Child”, and “Red-Dragon” form a tableau “in Heaven” - precisely as John proclaims. Moreover, John’s cognizance of these three indigenous

Mesopotamian star-figures betrays a familiarity with the autochthonous astrological constructs from which they were derived.

An esteemed tenet of the Mesopotamian astrologer held that the starry sky comprised divine ‘heavenly writing’ that imparted inviolable wisdom through the conduit of wordplay; a cryptic script labelled *lumāši-*, or ‘constellation’-writing by seventh century BC Assyrian king, Esarhaddon. Puns encrypted in the cuneiform spellings of the Child star, Pregnant-Woman, and Red-Dragon constellations embodied an envelope of terms that correspond to the surreal appearance of the characters reported in John’s ‘Woman, Child, Dragon’ narrative. This article cites circumstantial evidence implying that John had become privy to the aforementioned Mesopotamian astrological precepts before writing Revelation, and concludes that he then arranged these wordplays into coherent Greek sentences that became the basis for the sun-wearing Woman with the moon under her feet, the Infant she-gave-birth-to, and the seven-headed, ten-horned Red-Dragon with seven diadems upon its heads.

To ascertain the Mesopotamian astrological precepts that expose a direct correlate to the ‘Pregnant-Woman, Child, Red-Dragon’ tableau of Revelation 12.1-6, we must first turn to celestial wisdom that arose in the Fertile Crescent, was transmitted to Jewish sages during the Babylonian captivity, and was indeed circulating in scholarly enclaves throughout Greece, Mesopotamia, and Syria during John of Patmos’ lifetime. (I use the terms ‘astronomer’ and ‘astrologer’ indiscriminately in this essay since there was no clear differentiation between the two disciplines until the seventh century AD writings of the encyclopedist Isidore of Seville [5, 6].)

2. The Stellar tableau of the Pregnant-Woman, Child and Red-Dragon

The main characters in the Revelation 12.1-6 consist of a ‘woman’ (*gunē*) who was ‘pregnant’ (*en gastri echousa*), the ‘infant’ (*teknon*) ‘she-gave-birth-to’ (*eteken*), and a ‘red dragon’ (*drakōn purros*) that wishes to devour the new-born. Each actor directly correlates to a constellation or star listed in a pre-Christian, cuneiform star atlas.

The 686 BC cuneiform star atlas ‘MUL-APIN’ unequivocally identifies the ‘Tail’ stars of the zodiacal Lion as the ‘Date-Frond’ asterism that embodied *Eru*, the Mesopotamian Goddess of Pregnancy [7]. A Late Babylonian (600 BC-100 AD) astronomical citation adds, *Sissinnu ina qāt imitti*, “the Date-Frond in the right hand” [8]. Thus, although cuneiform astronomical texts do not allow us to pinpoint the exact stars that comprise the Pregnancy-goddess, astronomical listings imply that she was comprised of Leo’s Tail, some or all of Coma Berenices, and some of Virgo’s western stars, possibly *b h n x o p* Virginis [9-11]. Hence, the available evidence indicates that the Pregnancy-goddess embodied a constellation \approx Leo’s Tail + Com + w. Virgo. Like most Mesopotamian deities, *Eru* was conceptualized anthropomorphically, and thus conjured the image of a divine ‘Pregnant-Woman’, evidenced by the fact she held a ‘Date-Frond’ in her ‘right hand’ (Figure 1). (All sketches are based on

sidereal reconstructions done on Stellarium, 37° North, 90 AD and are the copyright of the author.)

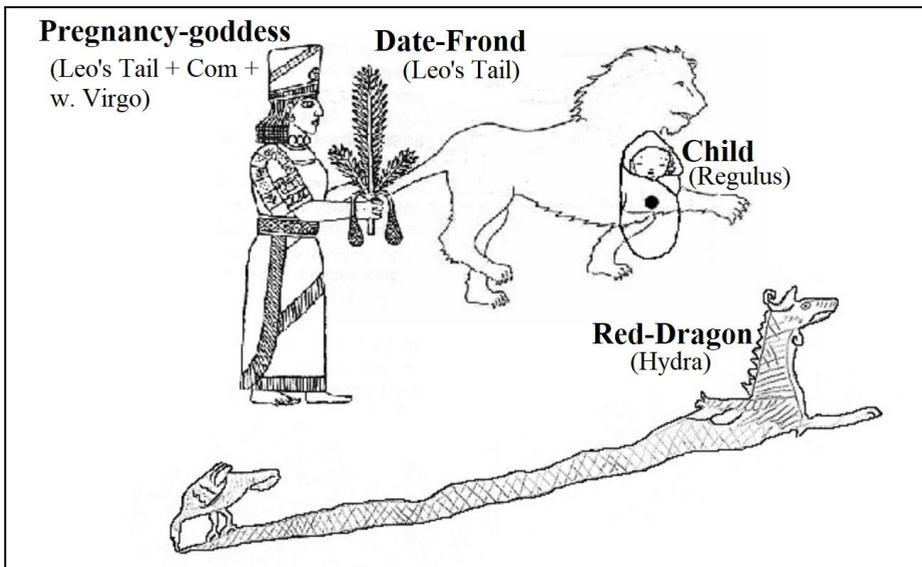


Figure 1. Babylonian star atlases describe Leo's Tail, Coma Berenices, and western Virgo as a divine 'Pregnant-Woman' constellation. Regulus is listed as the 'Infant-Child' star, and Hydra is labelled the 'Red-Dragon' constellation.

Worth emphasizing here is that *Eru's* simultaneous identification as a Date-Frond and Pregnancy-goddess apparently came from wordplay. Cuneiform literature attests to multiple spellings for her name, including *Eru* ($E_4\text{-}ru_6$) and *Erû* ($E_4\text{-}ru_6\text{-}u_8$) [12]. The former spelling, *Eru*, formed a homophone with the Akkadian *eru*, 'date-frond', which may explain why she was depicted astronomically as a Woman holding a 'Date-Frond' asterism in her hand (Figure 1) (*Eru* is a dialectical variant of *aru*'date-frond' [8, vol. 1, p. 311].) The Pregnancy-goddess' latter spelling, *Erû*, divulged her prenatal condition, as the name *Erû* forged a homophone with the Akkadian verb *erû*, 'to be pregnant' [8, vol. 4, p. 325]. Noteworthy is that this 'Pregnant-Woman' constellation was visible 'in the heavens', which is precisely what John reports in Revelation 12.1-2.

Positioned immediately west of the Pregnant-Woman (\approx Leo's Tail + Com + w. Virgo) was Leo's brightest star, Regulus, which went by the title *Šarru*, 'King', and forged a homonym with *Šarru*, 'Infant, Baby, Young Child' [8, vol. 17, p. 317; 9, vol. IV, pp. 1, 216; 13]. Proof that Mesopotamian astronomers sometimes conceptualized *Šarru*-Regulus as an 'Infant' is visible in this star's infrequent logogram, TUR, which served as the logogram for *Šerru/Šarru*, 'Infant, Young Child' (Figure 1) [9, vol. IV, pp. 1, 216].

Extending beneath the Pregnant-Woman constellation and Child star (α Leo) hovered Hydra, which Mesopotamian astrological texts equated with a horned Dragon known in Akkadian as the *Mušhuššu* [8, vol. 10, p. 270; 9, vol.

IV, pp. 112-113; 14]. The *Mušḫuššu*-dragon's older Sumerian title, MUŠ-ḪUŠ, 'Red-Dragon', provides a direct correlate with the 'red dragon' (*drakōn purros*) described by John [Å.W. Sjöberg and E. Leichty (eds.), *The Electronic Pennsylvania Sumerian Dictionary*, 2006, <http://psd.museum.upenn.edu/epsd/nepsd-frame.html>]. When plotted on a star map the Pregnant Woman, Child, and Red Dragon form a distinct tableau in the heavens; an astral still-frame that would have been visible to John at the time and place that Revelation was written (Figure 1).

Because the Pregnant-Woman and Red-Dragon constellations and Child-star were embedded in the arcana of the Mesopotamian astrologer, John's awareness of them implies a familiarity with the astrological convictions in which these constellations arose. And it is two arcane, Mesopotamian, astrological principles that elucidate how John came to envision the Pregnant-Woman's celestial adornment (i.e. wearing the Sun and a crown of twelve stars, with the Moon positioned beneath her feet), her labour and birth to the 'Infant', as well as the Red-Dragon's phantasmagorical form (i.e. possessing seven heads, ten horns, and wearing a diadem on each of its seven heads).

3. Envisioning the starry sky as divine, cuneiform 'writing'

John's knowledge of the Babylonian-Assyrian 'Pregnant-Woman' and 'Red-Dragon' constellations and 'Baby' star imply some level of indoctrination with the curriculum of a Mesopotamian astrologer. The title of the Babylonian or Assyrian astrologer-astronomer was *tuṣṣarru*, literally, "writer, scribe", i.e. an expert in the usage of the celestial divination practices outlined in the series *Enūma Anu Enlil* [8, vol. 19, 152-153; 15; 16]. As the designation *tuṣṣarru*/'writer' indicates, Mesopotamian astrologers were skilled grammarians, adroit in their mother tongue, Akkadian, while also possessing some degree of aptitude with Sumerian, the extinct language that was preserved as a 'sacred' script from which to compose religious and 'scientific' texts [17]. Cuneiform astrological-astronomical tablets indeed affirm that numerous star and constellation sobriquets retained their archaic, Sumerian spelling [18].

The Mesopotamian astrologer's expertise extended beyond the disciplines of Astronomy and astrology, demonstrating facility in subjects we today would categorize as 'religious', e.g. the Flood story, *Gilgamesh Epic*, and creation epic *Enuma Elish* [19]. Salient here is Mesopotamian astrologers' acumen with the numerous Sumerian-Akkadian 'dictionaries' compiled between circa 1800-1600. The Sumerian-Akkadian dictionaries equated Sumerian logograms with their Akkadian meanings; a Sumerian logogram consisting of a cuneiform sign that was pronounced like a Sumerian word followed by its equivalent meaning in Akkadian [16, p. 209-236; 19; 20]. Note that modern linguists transliterate Sumerian logograms into capital letters and Akkadian into italics as seen in Figure 2.

	MUL = <i>kakkabu</i> , “star”, <i>šīirtu</i> , “inscription”, <i>šītru</i> , “writing” MULU = <i>amīlu</i> , “man”
	MUL ₂ = <i>kakkabu</i> , “star” TE = <i>simtu</i> , “ornament”, <i>saḫālu</i> , “to pierce”
	MUL ₃ = <i>kuzāzu</i> , “wood wasp” SUR ₃ = <i>ḥarru</i> , <i>sūru</i> , “watercourse”
	MUL ₄ = <i>kakkabu</i> , “star” UL = <i>inbu</i> , “fruit”
	MUL ₅ = <i>kakkabu</i> , “star” IKU = <i>ikū</i> , “field”
	MUL _x = <i>kakkabu</i> , “star” AB ₂ = <i>arḫu</i> , “cow, month”

Figure 2. The Sumerian logograms that were read ‘MUL’ (capitalized), an alternate logographic reading (capitalized), and the Akkadian words they represented (italics).

The Sumerian-Akkadian dictionaries equate the Sumerian logogram MUL (‘star’ in Sumerian) with the Akkadian word *kakkabu*, “star” [8, vol. 8, p. 45-46]. Yet MUL also served as the logogram for other Akkadian words including *šīirtum*, “inscription”, and *šītru*, “writing” [8, vol. 17, p. 144]; a concept best exemplified by the entry: USAN *šītir kakkabū*, “Evening [is] the writing of the stars” [21]. MUL was also the celestial determinative, thus it was placed before all planet, star, and constellation titles [12, p. 302]. Because the celestial bodies were considered the embodiment of deities this writing was sacrosanct, i.e. the ‘writing’ of the star-gods [5, p. 15]. This conception is evinced in cuneiform literature with the terms: *šītir šamē*, *šīirti šamāmi*, or *šītir burūmē*, “heavenly writing” [5, p. 64, 163, 294, 299; 8, vol. 17, p. 144].

Thus, cuneiform literary data verifies that the Babylonian-Assyrian astrologer-astronomer (*tupšarru*) was an adroit ‘writer’ who construed the astral heavens as divine cuneiform ‘writing’.

3.1. The pervasiveness of polysemy in cuneiform writing

Because the Babylonian-Assyrian astrologer was literally a *tupšarru* ‘writer’, he was well aware of the manner by which polysemy, ‘the coexistence of many possible meanings for a word or phrase’, emerged in the six-hundred cuneiform signs that comprised their writing system. One factor involved the phenomenon by which a single cuneiform sign could serve as a

logogram for multiple Akkadian words. We have noted that the Sumerian logogram MUL represented the Akkadian word *kakkabu* 'star', as well as *šīirtum* 'inscription' and *šītrul* 'writing'. Yet MUL could also be read MULU, which represented the Akkadian word *amīlu*, "man" [8, vol. 1, p. 48]. Thus, when a Mesopotamian astronomer read or wrote the cuneiform sign MUL, 'star', it could also impart the meanings 'inscription, writing', or 'man' via polysemy.

The potential for polysemy was amplified by the vast number of homophones (e.g. *there, their, they're*) present in cuneiform writing. In fact, the cuneiform script possessed so many homophones that modern linguists were forced to invent a transliteration system that allowed one to distinguish which cuneiform sign appears on a tablet. This convention is illustrated using the six cuneiform signs that could be read 'MUL', the Sumerian word for 'star'. The cuneiform sign that displays the most frequent reading of 'MUL' does not have a subscript; the cuneiform sign that displays the second most frequent reading of 'MUL' is transcribed MUL₂; the sign with the third most frequent reading of 'MUL' is transliterated MUL₃ and so forth. Noteworthy is that the cuneiform sign AB₂ was sometimes used as an esoteric form of "MUL", and is therefore transliterated MUL_x [22]. The six cuneiform signs read 'MUL' are shown in Figure 2. Essential to remember is that *all subscripts are based on our modern transliteration scheme*; ancient astronomers would have read each one of these signs as 'MUL'.

Furthermore, each of the six MUL signs bore alternate logographic readings which in turn represented additional Akkadian words; a phenomenon displayed in Figure 2. Hence, when a Mesopotamian astrologer read or inscribed one of the cuneiform signs read 'MUL' it could impart the words 'star, inscription, writing, man, ornament, pierce, wood wasp, watercourse, shine, fruit, field, cow, month' through polysemy. Astoundingly, Figure 2 proffers only a smidgeon of the polysemous meanings for the cuneiform signs read 'MUL'.

The thousands of homophones prevalent among Sumerian logograms, the potential for many logograms to bear multiple readings with alternate logographic meanings, and Babylonian-Assyrian astrologers' proclivity to attribute several Akkadian words to a single logogram resulted in an expansive opportunity for wordplay to emerge in cuneiform writing [23].

One aspect of punning was unquestionably related to the 'heavenly writing' of the celestial sky. On an inscribed monument, Assyrian king Esarhaddon (680-669 BC) boasted of writing his name in *lumāši*, or 'constellation'-writing. The pertinent verse states, *lumāši tamšīl šītir šumiya ēsiq šēruššun*, "I carved on them constellations, the image [i.e. equivalent] of the writing of my name" [24]. Although Esarhaddon never disclosed what had compelled him to write his sobriquet in the cuneiform signs, words, and images that were used to spell and depict the constellations S. Noegel does - citing copious, esoteric, scholarly commentaries which proclaim that *amāt niširti* ('hidden words', i.e. polysemy) are indeed *pirištu ša ilī*, "the secrets of the gods" [25]. Thus we can infer that Esarhaddon's use of *lumāši*'constellation'-writing was an esoteric practice in which one could commune with the star-gods by

encoding enigmatic messages in the cuneiform signs and images used to spell-out the constellation-gods' titles. M. Roaf and A. Zgoll maintain that this cryptic, astral script was "derived from scribal knowledge of the forms of cuneiform signs, [and] from equivalences between Sumerian logograms and Akkadian words" [24, p. 291-292].

Esarhaddon's use of polysemy encrypted pictorially and linguistically in the constellation images and titles (i.e. *lumāšī*-writing) suggests it was a recognized scholarly practice. And although Esarhaddon is the only ancient author to overtly claim to have written his name in *lumāšī*-writing, researchers infer that enigmatic iconography seen in temples built by his grandfather, Sargon II (721-705 BC), tacitly testify to the use of 'constellation'-writing [24]. A. R. George posits a plausible explanation for the dearth of references to *lumāšī*-writing: "Some of this esoteric scholarly lore was committed to writing, but it may be that much of it will always remain hidden from us because it was passed down orally as secret knowledge" [26].

The author argues that, by writing his name in *lumāšī*'constellation'-writing, King Esarhaddon had either inadvertently or brazenly divulged a trade secret of the Mesopotamian astrologer-astronomer. Namely, the constellations embodied divine cuneiform 'writing' that could impart hallowed messages through the conduit of punning.

3.2. Polysemy as revelation

Although wordplay is construed as a type of witticism in contemporary life, in the ancient world it held a far more sobering role - often as the medium through which revelation was imparted. S. Noegel explains why: "We tend to think of puns as a literary device - a sign of humor, rhetoric ... In antiquity, puns were not used in that way, because the conception of words was so different. Writing was considered of divine origin... Puns provided diviners with interpretative strategies..." [S.B. Noegel, *Why Freud Should Credit Mesopotamia*, A & S Perspectives, 2002]

The "diviners" to whom Noegel refers were the *ummānus* or "scholars" that included the astrologer [15]. He then elucidates the archaic rationale behind this conviction: "... Perhaps because the written word evolved from pictographs in Mesopotamia, words were considered the embodiment of the object or idea they represented. While we read the word 'dog' and know that refers to a dog, ancient Mesopotamians would view the word 'dog' as a dog in a concentrated form. As a result, individual words contained the power of essence, in this case the essence of a dog. *There was a whole envelope of information that came with every sign or part of a word.*" [S.B. Noegel, *Why Freud Should Credit Mesopotamia*]

Thus, because most cuneiform signs had multiple readings and meanings, every constellation title was ripe with potential forms of esoteric interpretations derived from polysemy. And the discovery of such double entendre was believed to divulge a hidden aspect of the entity it described.

This may explicate why Mesopotamian scholars - which included astrologer-astronomers - construed polysemous words and phrases as divine communiqués, or what we today describe as *revelation*. Because this pun-deduced wisdom was considered an interlocution between the god(s) and the scholar that had deciphered it, sharing the message with the ‘uninitiated’ was deemed spiritually dangerous. Thus wisdom discerned from wordplay was typically accompanied with some form of admonition to keep it secret [16, p. 209-219; 25; 27; 28].

An instance where polysemy served as a revelation that elucidated the composition of the sky is found with the Babylonian commentary claiming that the ‘skies’ or ‘heavens’ were comprised ‘of water’. The Akkadian cuneiform reads: *šamê ša mē*, “skies (mean) ‘of water’” [27, p. 33; 29]. This revelation was based on the fact that the genitive-case Akkadian word for ‘skies, heavens’ (*šamê*) simultaneously spelled ‘of water’ (*ša* = ‘of’; *mē* = ‘water’); double entendre which revealed that the ‘skies, heavens’ were composed ‘of water’. The solemnity of the discovery is seen with the stern admonition that follows: “... a secret of the scholar. The uninitiated shall not see.” [27, p. 33]

Furthermore, Mesopotamian scholar-astrologers frequently analysed divine appellations for polysemous meanings that exposed some previously unknown aspect of a deity. George explains: “In ancient cuneiform scholarship the writing of a name can be adapted to impart information about the nature and function of its bearer... Babylonian scholars themselves were fond of the speculative interpretation of names in particular. *This was not a trivial pursuit but a means of revealing profound truth about the nature and function of deities and their attributes*” [26]

Therefore, when a Mesopotamian astrologer discerned a pun from a star-god’s sobriquet, he was inclined to conceptualize this concealed meaning as a revelation that had been divulged directly from the deity, and which revealed some previously unknown attribute possessed by that particular god.

An extensive example of this practice is seen with tablet VII of the Babylonian-Assyrian creation myth, *Enuma Elish*. There, Mesopotamian scholar-astronomers decoded wordplay from the fifty epithets for the preeminent Babylonian deity, Marduk, the deity embodied in Jupiter, and then arranged them into coherent statements that exposed facets of his identity and powers [30, 31]. Moreover, the scholarly commentaries on *Enuma Elish* VII were utilized as a reference manual by astrologers [19].

To summarize, the Babylonian-Assyrian astrologer-astronomer/*tupšarru* was literally a ‘writer’ who envisioned the astral sky as a sacrosanct cuneiform ‘text’ that imparted epiphanies through polysemous readings of cuneiform signs used to spell out the titles and epithets of the stellar deities. And one of the astrologer’s esteemed reference manuals included the esoteric, scholarly commentaries recorded in *Enuma Elish* tablet VII; which illustrated how to discern synonyms, homonyms, homophones, and other forms of double entendre from the star-gods’ names and epithets and utilize them as exegetical wisdom that divulged revelation. The latter claim is supported by seminal research that

has demonstrated direct correlates between *lumāši*-writing wordplays and the ‘Birth story’ of Pegasus, Jesus’ ‘Sea-Walk’ miracle, and Samson’s massacre of a thousand men with a donkey’s jawbone [32-34].

We will now see that the Mesopotamian astrological esoterica was circulating in scholarly enclaves accessible to John in the late first century AD.

4. How John gained access to Mesopotamian astrological wisdom

How John may have become inculcated with the aforementioned Mesopotamian astrological wisdom is intimated in the ancient record. The renowned Babylonian astrologer-priest, Berossus, opens an astrological school on the Hellenic isle of Cos sometime shortly after 281 BC [35-37]. Here lay unequivocal proof that Mesopotamian astrological esoterica was being disseminated into the Greek-speaking intellectual sphere almost four centuries before Revelation was written.

Another plausible manner of transmission is found in the archaic custom whereby conquering monarchs conscripted the foreign scholars of newly vanquished territories into their entourage. Daniel 1.1-6 describes how this Old Testament prophet and his three countrymen were enlisted into the court of Babylonian king, Nebuchadnezzar II (Daniel 1.1-6). Verse 5.11 confirms that Daniel had become the supervisor of all of the practitioners of the occult arts including the astrologers. Since Ezra 2.64 reports that a total of 42,360 Jews were exiled to Babylonia by Nebuchadnezzar II, it seems likely that far more than just Daniel and his three compatriots were indoctrinated with Mesopotamian astrological wisdom. Textual evidence implies that Ezekiel had also been inculcated with Babylonian arcana [38]. M.J. Geller cites interactions between Jewish and Babylonian astrologers in Babylonia through the third century AD [28]. The implication being that Jewish scholars gained access to Babylonian astrological esoterica during their sixth century BC exile, and preserved this wisdom in scholarly enclaves into the early centuries AD.

Along the same lines, Pliny the Elder (23-79 AD), in *Natural History*, declares that a similar conscription resulted in astronomy-astrology’s importation into Rome, “... slaves on sale that had been imported from overseas; instances of these being Publilius of Antioch the founder of our mimic stage and his cousin Manilius Antiochus the originator of our astronomy ...” [39]. Geller recounts how a Babylonian scholar was taken during the Emperor Trajan’s campaign in AD 116 and sold as a slave in Syria, where he eventually became the tutor for the Syrian author Iamblichus [28]. He then adds, “It is rather well-documented by now that cults and shrines of Mesopotamian gods proliferated in neighbouring Syria, to a surprising extent; paganism survived side-by-side even in a Christian city like Edessa until at least the sixth century AD” [28, p. 55].

Finally, bilingual cuneiform-Greek inscriptions dating circa first century BC or AD demonstrate that the Sumerian-Babylonian dictionaries and Babylonian star atlases were being translated into Greek at this time; the latest

datable cuneiform tablet (75 AD) consisting of an astronomical almanac contemporaneous with John [28, 40, 41].

The aforementioned historical data verifies that the Mesopotamian, astrological curriculum was being preserved and transmitted via scholarly enclaves in Greece, Syria, and Mesopotamia into the third century AD. Even the last non-Christian Emperor of the Roman Empire, Julian, alludes to Mesopotamian astronomical-astrological schemes as late as AD 362 [42]. Thus, John's knowledge of the Mesopotamian 'Pregnant-Woman' (\approx Leo's Tail + Com + w. Virgo) and 'Red-Dragon' (Hydra) constellations and 'Infant-Child' star (Regulus) insinuates a familiarity with the astrological ideology in which these star-figures were embedded.

When we re-evaluate Revelation 12.1-6 from the perspective that John of Patmos was well-acquainted with the Mesopotamian astrological conviction that the astral sky depicted sacrosanct cuneiform 'writing' that channelled revelation through the medium of wordplay (i.e. lumāši-writing), then it is possible to expose a direct correlation between polysemy encrypted in the stellar tableau of the 'Pregnant-Woman', 'Red-Dragon', and 'Infant' and the bizarre imagery he records.

5. "A great sign was-seen in the sky..."

John's suspected familiarity with Mesopotamian astrological precepts sheds new light on his 12.1 declaration that "A great sign was-seen in heaven ..." Mesopotamian astrological arcana would have apprised him that Leo's 'Tail' stars depicted a 'Date-Frond' asterism, Sissinnu, and that this Date-Frond was being held in the right hand of the Pregnancy-goddess, Eru, whose astronomical representation extended into Coma Berenices and western Virgo (Figure 1) [7]. Mesopotamian astrological arcana also availed him to the numerous synonyms for 'Date-Frond' listed in the ancient Sumerian-Akkadian dictionaries, one being the Sumerian logogram: GIŠ AN-NA GIŠIMMAR (sissinnu/'date-frond-spadix') [8, vol. 15, p. 325]. (Note that *sissinnu* represented the 'spadix' of the date-frond and is often translated simply 'date-frond' [7].) And here lay the impetus for John's opening words. GIŠ represented išu, 'tree, wood' in Akkadian, but an esoteric commentary listed in a Sumerian-Akkadian dictionary confirms that GIŠ also stood for the Akkadian word ittu, "sign" [8, vol. 7, p. 304]. And two different Sumerian-Akkadian lexical texts affirm that GIŠ represented the Akkadian word rabû, "great" [8, vol. 14, p. 27]. AN-NA meant "in the skies/heavens" [43]. An astrologer inculcated with Mesopotamian arcana would have also known that there were multiple synonyms for 'Date-Frond', one being PA [8, vol. 1, p. 311]. And PA phonated PA₁₀, an alternate reading for the logogram more commonly read IGI, "to see" [8, vol. 1, p. 5-6; 8, vol. 11, p. 121; 43, p. 120]. Esoteric commentaries on Enuma Elish VII exemplified how such verbs were then conjugated from the infinitive ('to see') into a finite form to suit the needs of the wordplay; which

included the third-person, past-tense, passive form, i.e. the cuneiform equivalent to the Greek *ōphthē*, “was seen” [30].

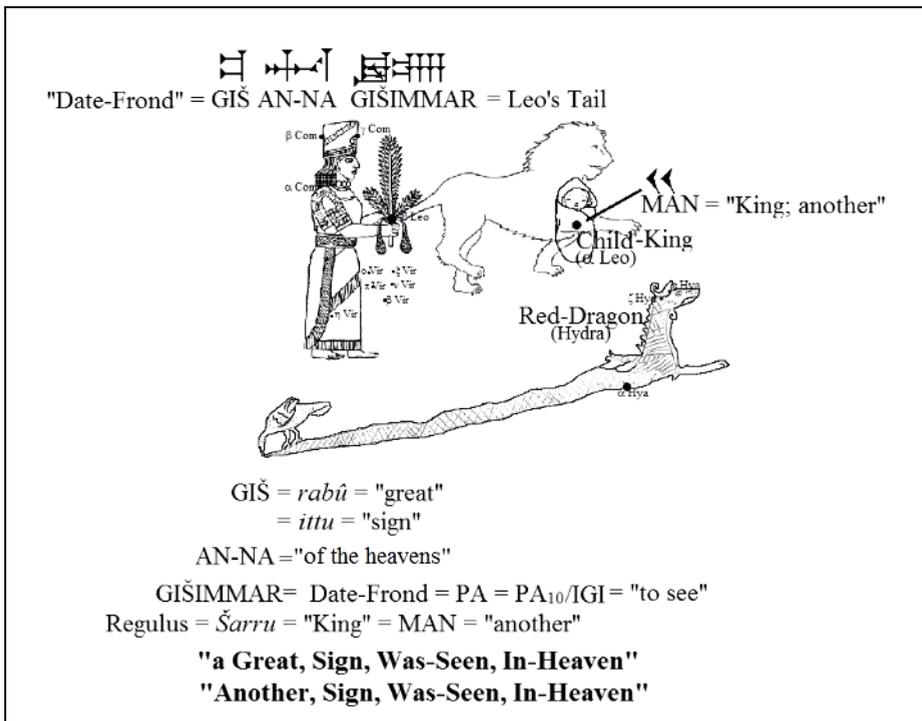


Figure 3. The opening words in Revelation 12.1 and 3 correspond with lumāši-writing puns encrypted in the tableau of the ‘Pregnant-Woman’, ‘Child’ and ‘Red-Dragon’.

Hence, embedded as constellation-writing puns in Leo’s ‘Tail’ stars were the terms: ‘Great, Sign, In-the-Heavens, Was-Seen’; words that correlate to the opening lines of Revelation 12.1 (Figure 3).

Two verses later John repeats almost verbatim the initial words in Rev 12:1, writing that “another (allo) sign was seen in heaven” (*ōphthē allo sēmeion en tōi ouranōi*). Remarkably, the *Šarru* ‘King’ star, Regulus, was sometimes written with the logogram MAN, which also served as the logogram for *šanû*, “another” [8, vol. 17, p. 388-389; 32, p. 404]. Here lies the cuneiform equivalent to John’s *allo* ‘another’ and the rest of the opening words in verse 12.3 (Figure 3).

5.1. The pregnant, labouring woman and her celestial adornments

In verse 12.1 John reports that he saw a “woman” (*gunē*) that was “clothed with the Sun”, had “the Moon beneath her feet”, and was wearing on her head “a crown of twelve-stars”. All of this phantasmagorical imagery was encrypted as polysemy in the stellar tableau of the Pregnant-Woman, Child, and Red-Dragon.

Although the concept of ‘woman’ was pictorially expressed in the ‘Pregnancy-goddess’ anthropomorphic appearance as a ‘Pregnant-Woman’, the word ‘woman’ can be traced to wordplay in the ‘Date-Frond’ constellation. John would have known that GIŠIMMAR was a logogram for Eru, “Date-Frond”, and that GIŠ-GIŠIMMAR was a common Sumerian logograms for ‘date-palm tree’ from which the “date-frond” grew [8, vol. 5, p. 102; 30, p. 371]. Yet John’s familiarity with the cuneiform Sumerian-Akkadian dictionaries would have apprised him that “date-palm-tree”/GIŠ-GIŠIMMAR could just as accurately be written without the determinative for “wooden-objects”/GIŠ, i.e., GIŠIMMAR. Moreover, an ancient Sumerian-Akkadian dictionary equates GIŠ-GIŠIMMAR/‘date-palm-tree’ with the Sumerian logogram MUNUS, which represented sinnišu/‘female’ [20, p. 112]. And any scholar indoctrinated with the curriculum of the Mesopotamian astrologer would have known that MUNUS more commonly functioned as the logogram for sinništu/‘woman’ [30, p. 450]. Hence a common Sumerian term for ‘date-palm-tree’ and ‘date-frond’ - GIŠIMMAR - was also imbued with the meaning MUNUS/‘woman’. Thus, embedded in the ‘Date-Frond’ asterism lay a lumāši-writing pun that correlates directly with John’s Greek gunē/‘woman’.

The notion that the woman was wearing the sun as a garment (peribēblēmēnē ton hēlion), and had the ‘moon under her feet’ (selēnē hupokatō tōn podōn autēs) can be readily traced to alternate spellings for the ‘Date-Frond’ constellation, Eru. In Figure 4 we showed that a frequent logogram for ‘Date-Frond’/Eru was PA. Yet any astrologer would have known that PA was endowed with at least forty other readings, one being MU₆; which phonated MU₄, “to wear clothes” [8, vol. 9, p. 17]. Moreover, because the Pregnant Woman was partly embodied in Leo’s ‘Tail’-stars she was an asterism within the zodiacal Lion. Leo’s brightest star, Regulus, was called the “King”/Šarru star in Akkadian, a word that could be represented by the logogram MAN, which simultaneously meant Šamaš, “Sun” [8, vol. 17, p. 335; 30, p. 404]. Thus, encrypted as polysemy in the constellation titles for stars of Leo + Com + w. Virgo where the words ‘a Woman, Wearing, the Sun’ (Figure 4).

The Moon’s position beneath the woman’s feet can also be found encrypted in the same constellations. Leo could be written with a host of Sumerian and Akkadian sobriquets, one being the logogram PIRIG, ‘Lion’ [<http://psd.museum.upenn.edu/epsd/nepsd-frame.html>]. Yet PIRIG was also read GIR₃, “foot”, and when joined by the logogram for šina/“two”, meant, “feet” [8, vol. 17, p. 32, 294]. Amazingly, one of the logograms for Regulus - MAN - also meant “two”. Hence, celestial puns in Leo imparted the reading: GIR₃-MAN (‘foot-two’), or ‘feet’ (Figure 4).

Another potential logographic spelling for Leo during the first century was MUL_x UR-A [9, p. 64-65]. The cuneiform sign UR phoneticized UR₅, “her” [8, vol. 17, p. 163]. The A sign represented the Akkadian ina, “with”, and was alternately read DUR₅, which phonetically imparted DUR₂, “under, below” [8, vol. 7, p. 141-142]. And with the celestial determinative MUL_x (the AB₂ sign) we find the astronomical logogram for “Moon” [8, vol. 1, p. 259].



Figure 4. ‘Constellation’-writing puns enciphered in the ‘Pregnant-Woman’ asterism and Leo correspond with the former’s celestial accoutrements.

After conjugating the verb for coherence, the lumāši-writing puns encrypted in titles of the Pregnant-Woman asterism (Leo + Com + w. Virgo) yield: ‘a Woman, Wearing, the Sun, With, the Moon, Under, Her, Feet’; words which match precisely the words recorded by John in Rev 12.1 (Figure 4).

The verse 12.1 assertion that the woman was wearing “on her head a crown of twelve-stars” (epi tēs kephalēs autēs stephanos asterōn dōdeka) correlates to additional puns in the Pregnant-Woman, Child, and Red-Dragon tableau.

Above we showed that one of the cuneiform spellings for the Pregnancy-goddess, Eru, was: DINGIR E₄-ru₆. Because she was a deity, the Pregnancy-goddess had the divine determinative DINGIR (‘deity’) affixed to her name. And one of the ancient Sumerian-Akkadian dictionaries equated DINGIR with SAG, the Sumerian word for “head” [8, vol. 14, p. 277]. The ru₆ sign in E₄-ru₆ served as the logogram for the Akkadian šēru, “on, upon” [8, vol. 16, p. 138; 30, p. 311]. Because she was a constellation, E₄-ru₆ had the celestial determinative affixed to her title; a common form in John’s era being the cuneiform sign MUL_x [22]. During his schooling, John surely would have encountered numerous instances where a Sumerian singular noun served to represent the

plural [44]; implying that MUL_x ('star') could represent 'stars'. Moreover, MUL_x was comprised of the cuneiform signs U and TAB; the U sign meant "ten", while TAB meant "two", thereby yielding: "twelve" [30, p. 297, 394] (Figure 5).

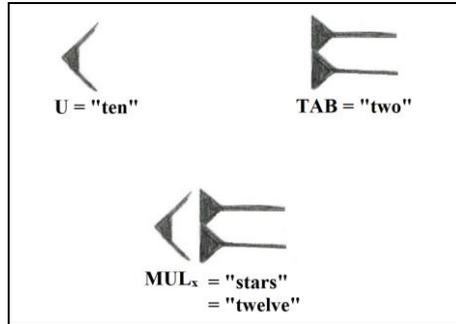


Figure 5. The celestial determinative MUL_x (AB₂) was a composite cuneiform sign that embodied the words, 'twelve, star(s)'.

Because the Woman was an asterism within Leo she was endowed with the zodiacal Lion's readings and meanings. We have seen that Leo's brightest star, Regulus, could be written with the logogram MAN ("King"), which was also a logogram for agû, "crown" [8, vol. 1, p. 153]. And Figure 4 illustrated that a common logogram for 'Lion', UR, phoneticized UR₅, 'her'.

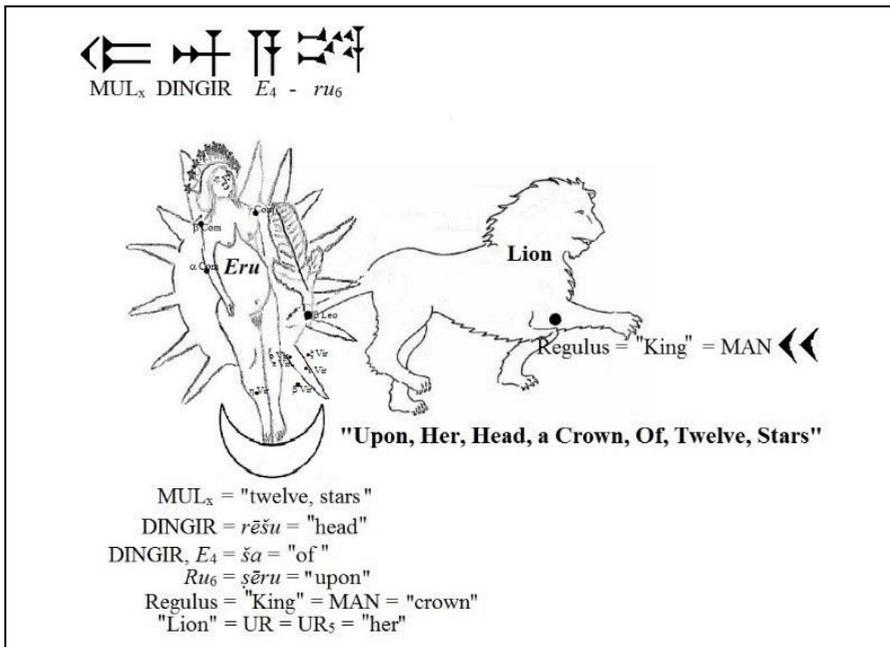


Figure 6. Lumāši-writing puns encoded in the 'Pregnant-Woman' and 'Lion' constellations corresponds to the type of crown she wore on her head.

Altogether, the lumāši-writing puns in Leo impart: ‘a Crown, Of, Twelve, Stars, Upon, Her, Head’; words that correspond with the final portion of Revelation 12.1 (Figure 6).

In line 12.2 John describes the woman as ‘pregnant’ (en gastri echousa) and ‘crying-out (in) birth pangs’ (krazei ōdinousa) from ‘being-in-pain (of) giving-birth’ (basanizomenē tekein). A precise correlate to these words can be found encrypted as lumāši-writing wordplay in the Pregnancy-Woman constellation. Recall that an acceptable spelling for this deity-constellation was Erû, which formed a homophone with the Akkadian stative verb erû, ‘to be pregnant’. Yet Erû also forged a homophone with erû, “eagle” [8, vol. 4, p. 324]. Thus John presumably knew that the typical logographic spelling for ‘eagle’ was TI₈-MUŠEN, literally, “eagle-bird”. Remarkably, MUŠEN was also the logogram that meant pušqu, ‘distress (of childbirth)’ in Akkadian [8, vol. 12, p. 543-544].

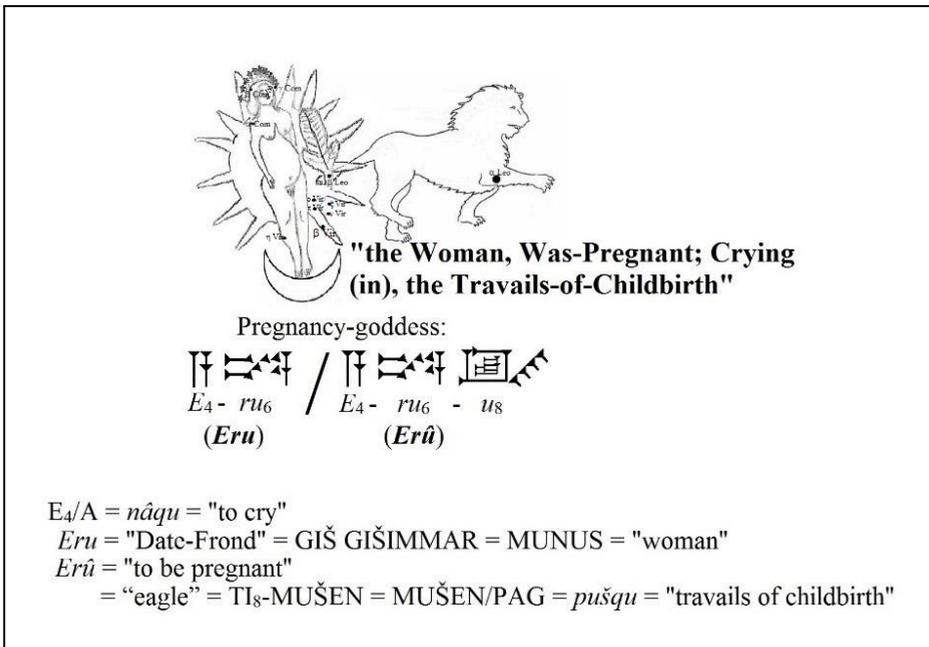


Figure 7. ‘Constellation’-writing wordplay in the ‘Pregnant-Woman’ constellation’s title corresponds to her confined condition and behaviour in Revelation 12.2.

Moreover, E₄ sign in Erû’s cuneiform spelling (E₄-ru₆-u₈) was more commonly read A and served as the logogram for the Akkadian *nâqu*, “to cry” and *ina*, “in” [8, vol. 7, p. 141-142; vol. 11, p. 341]. Thus, lumāši-writing puns encrypted in the Pregnancy Goddess’ titles yielded: ‘the Pregnant, Woman, Crying, In, the Travails-of-Childbirth’; words that correspond to John’s Greek in verse 12.2 (Figure 7).

5.2. The seven-headed, ten-horned red-dragon

The corresponding cuneiform terms for John’s ‘great red dragon’ (drakōn megas purros) are found in one of Hydra’s frequent cuneiform identities as the Mušḫuššu-dragon. The latter’s Sumerian logographic spelling exposes its resemblance to the “red dragon” observed by John: MUL DINGIR MUŠ-ḪUŠ, literally, “constellation, god, Dragon-Red” [8, vol. 10, p. 270; 14]. This Red-Dragon accords with the “red dragon” of Revelation, a creature John intermittently referred to as an ophis, “snake” (Revelation 12.9, 14, 15).

Further puns correspond with the rest of the verse. Astronomical and mythological texts verify that Hydra was a DINGIR, “deity” [7, p. 32]. And we have shown that a Sumerian-Akkadian dictionary equated DINGIR, “god”, with SAG, which typically served as the logogram for the Akkadian rēšu/“head”, but also functioned as the logogram for rabû/“great” and qarnu/“horn” [8, vol. 14, p. 27, 277; vol. 13, p. 134].

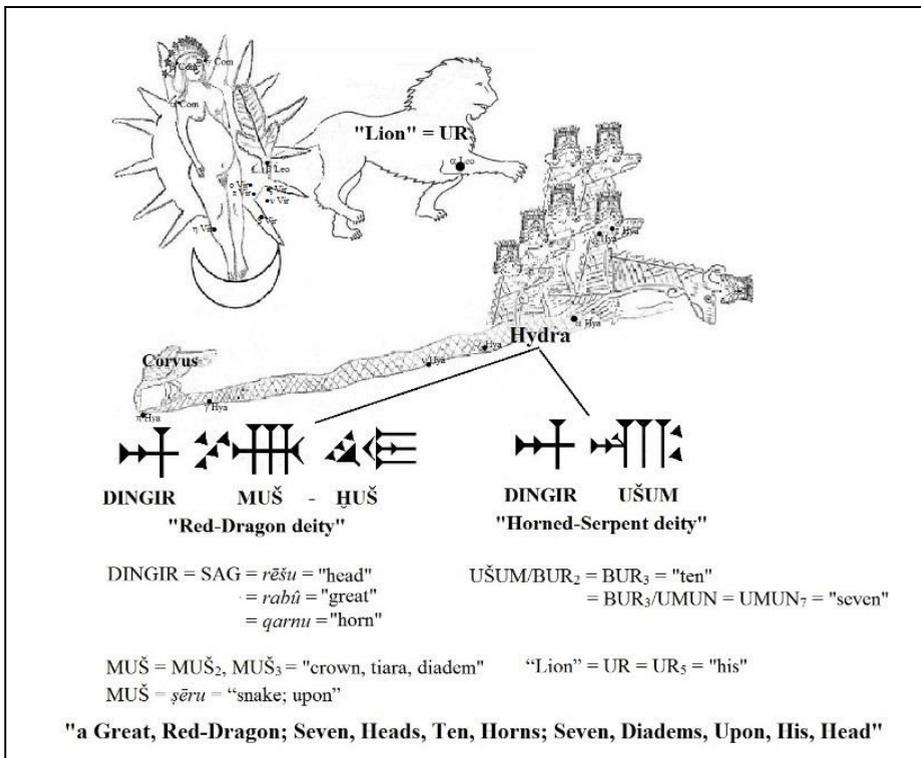


Figure 8. Lumāši-writing wordplay in the ‘Red-Dragon’ and ‘Lion’ constellations’ titles correspond to the former’s appearance in Revelation 12.3.

Ancient lexical tablets verify that Hydra was also identified as Bašmu, the “Horned-Serpent” deity-constellation that was sometimes spelled with the logogram UŠUM, a sign that was more commonly read BUR₂ [8, vol. 2, p. 141]. The latter phoneticized BUR₃, the logogram that meant “ten” and was alternately

read UMUN, which phonated UMUN₇, “seven” [8, vol. 15, p. 203]. Finally, the Sumerian term for “Snake, Dragon”, MUŠ, phoneticized MUŠ₂ and MUŠ₃, both Sumerian words rendering “diadem, crown, tiara” [45, p. 239]. The MUŠ portion of MUŠ-ĦUŠ meant Šēru/“Snake” in Akkadian, a homonym with šēru, “on, upon” [8, vol. 16, p. 138, 148].

All told, polysemy embedded in the cuneiform titles for Hydra rendered: “Great, Red-Dragon, Seven, Heads, Ten, Horns, Seven, Diadems, Upon, His, Heads”; words that correspond to the Greek terms in Revelation 12.3 (Figure 8).

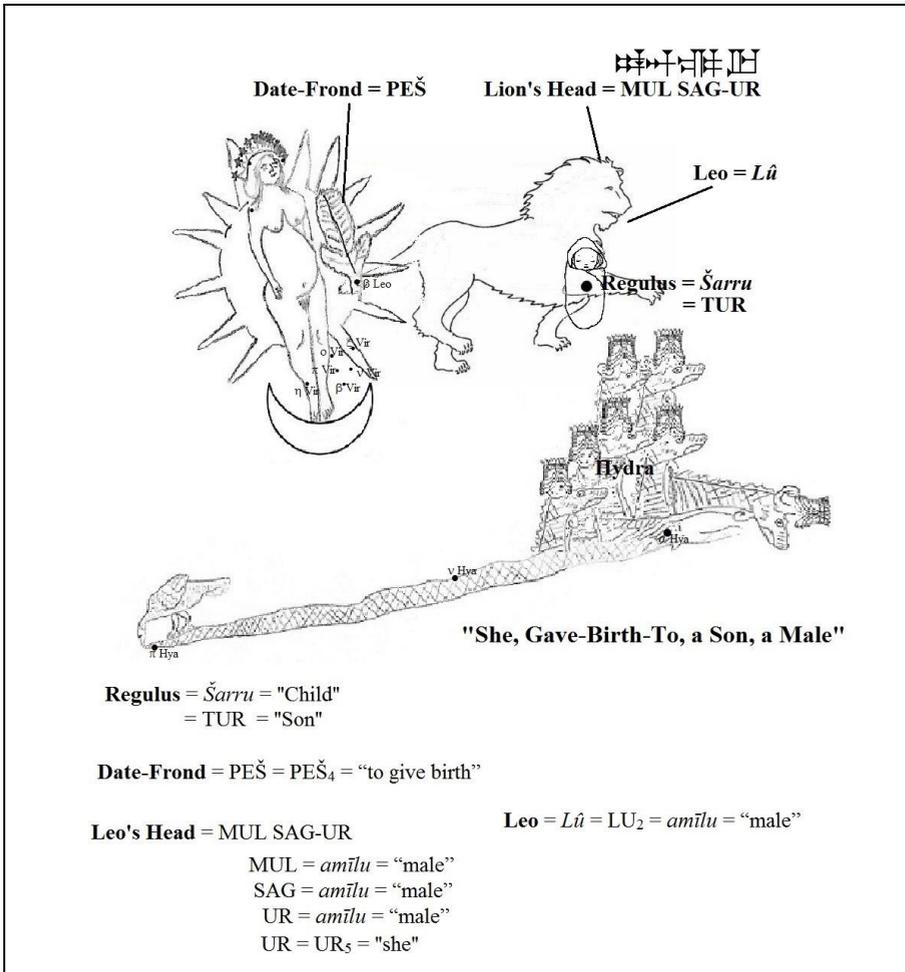


Figure 9. The words of Revelation 12.5 bear a direct correlation to lumāši-writing puns encrypted in the cuneiform titles for Leo, western Virgo, and Coma Berenices.

5.3. The Infant's Birth

The verse 12.5 claims that the Woman “gave-birth-to a son, a male ...” (eteken huion arsen) bears a direct correlates with constellation-writing in Leo. The “Date-Frond” asterism in the Pregnant-Woman constellation’s hand could

be written logographically as PEŠ, which phonated PEŠ₄, “to-give-birth” [8, vol. 1, p. 288]. John’s unnecessary reiteration that the newborn ‘son’ (huion) was ‘male’ (arsen) is easily explained if his testimony was based lumāši-writing puns. Regulus’ Akkadian title, Šarru, “Infant, Baby”, does not indicate sex [8, vol. 17, p. 317]. However, the Sumerian logogram for Regulus, TUR, can render “son” - a correlate with John’s huion/“son” [8, vol. 10, p. 308].

John’s superfluous compulsion to include the word *arsen*/‘male’ to define the word ‘son’/huion may have been derived from additional constellation-writing wordplay. Recall that Leo was a constellation that could be written logographically as UR (“Lion”), and thus could assume the celestial determinative MUL, and its “Head” (SAG) was defined as an asterism in astrological-astronomical tablets [9, vol. IV, p. 160, 162] (Figure 9). Hence a Mesopotamian astrologer could refer to the ‘Lion’s Head’ asterism as MUL SAG-UR, ‘constellation Head-(of-the)-Lion’. Each of these logograms - MUL, SAG, UR - represented amīlu, a word that could mean “man” or “male” [8, vol. 1, p. 48]. Furthermore, Leo’s Akkadian spelling as Lû (‘Lion’) exactly produces the pronunciation for LU₂, which is another logogram that rendered amīlu/‘male’. Thus, if John had analysed the cuneiform titles for the Pregnant-Woman, Child, Red-Dragon for exegetical enlightenment through wordplay, he would have encountered four different ways (MUL, UR, SAG, Lû) to write ‘male’. This may be the reason he needlessly defined the ‘son’/huion in Revelation 12.5 as a ‘male’/arsen.

6. Conclusions

The current essay has shown that the Pregnant-Woman, Red-Dragon, and Child that comprised John’s ‘vision’ in Revelation 12.1-6 corresponds exactly with constellations and stars catalogued in Mesopotamian star atlases. The Pregnant-Woman corresponds with the Pregnancy-goddess, Eru (≈ Leo’s Tail + Com + w. Virgo), the Red-Dragon matches Hydra, and the Child corresponds to Regulus. When plotted on a star map it becomes evident that the Pregnant-Woman and Red-Dragon constellations and Infant star form a conspicuous tableau in the constellations. Moreover, John’s knowledge of the aforementioned star and constellations implies an awareness of the Mesopotamian astrological precepts in which these star-gods were embedded. Thus John had presumably undergone the scholarly indoctrination of a Mesopotamian astrologer - a ‘writer’/ṭupšarru taught to perceive the starry sky as a divine cuneiform ‘text’ that imparted sacred wisdom through the conduit of wordplay; what Assyrian king, Esarhaddon, dubbed lumāši-, or ‘constellation’-writing.

It has been demonstrated that polysemous readings enciphered in the cuneiform titles for the Child star and Pregnant-Woman and Red-Dragon constellations bear wordplays that correlate directly with the surreal details recorded in Revelation 12.1-6. Specifically, ‘constellation’-writing puns correspond with the Pregnant-Woman’s appearance as ‘a Woman wearing the Sun’, ‘with the Moon beneath her feet’, and ‘a crown of twelve stars upon her

head' as 'she-gave-birth-to the infant'. Additional wordplay imparted that Hydra depicted a 'Red-Dragon' with 'seven heads', 'ten horns', and 'seven diadems on its heads'.

From the proffered data the author concludes that John was familiar with Mesopotamian astrological arcana and utilized the aforementioned cuneiform *lumāši*-writing wordplays as the template for his 'vision', which he then translated into coherent Greek as Revelation 12.1-6. It is important to note that the author has discerned a one-to-one correlation between *lumāši*-writing puns and every word from Revelation 12.1-6, an exposition that far exceeds the space limitations of this journal.

References

- [1] R.K. Brown and P.P. Comfort (eds.), *The New Greek-English Interlinear New Testament*, Tyndale House Publishers, Carol Stream (IL), 1990.
- [2] A.Y. Collins, *Patmos*, in *Harper's Bible Dictionary*, P.J. Achtemeier (ed.), Harper, San Francisco, 1985, 733.
- [3] H.G. Liddell and R. Scott, *An Intermediate Greek-English Lexicon; Founded upon the Seventh Edition of Liddell and Scott's Greek-English Lexicon*, Clarendon Press, Oxford, 1997, 727.
- [4] V.D.N. Freedman (ed.), *The Anchor Bible Dictionary*, vol. V, Doubleday, New York, 1992, 700-702.
- [5] F. Rochberg-Halton, *Aspects of Babylonian Celestial Divination: The Lunar Eclipse Tablets of Enūma Anu Enlil*, Verlag Ferdinand Berger & Söhne Gesellschaft M.B.H., Horn, 1988, 5.
- [6] T. Barton, *Ancient Astrology*, Routledge, Taylor & Francis Group, London, 1994, 5.
- [7] H. Hunger and D. Pingree, *MUL-APIN; an Astronomical Compendium in Cuneiform*, Verlag Ferdinand Berger & Söhne Gesellschaft M.B.H., Horn, 1989, 21.
- [8] M.T. Roth, E. Reiner, R.D. Biggs, J.A. Brinkman, M. Civil, W. Farber and M.W. Stolper (eds.), *The Assyrian Dictionary of the Oriental Institute of the University of Chicago*, vol. 15, The Oriental Institute and J.J. Augustin Verlag Buchshandlung, Chicago & Glückstadt, 1956-2010, 326.
- [9] P.F. Gössmann, *Planetarium Babylonicum, order Die Sumerisch-Babylonischen Stern-Namen*, in *Šumerisches Lexikon*, P.A. Deimel (ed.), Teil IV, Bd. 2, Verlag des Papstl. Bibelinstituts, Rom, 1950, 46-47.
- [10] E.F. Weidner, *Handbuch der Babylonischen Astronomie*, Erster Band, J.C. Hinrichs schein Buchhandlung, Leipzig, 1915, 137.
- [11] G. White, *Babylonian Star-Lore; An Illustrated Guide to the Star-lore and Constellations of Ancient Babylonia*, Solaria Publications, London, 2008, 112-114.
- [12] R. Borger, *Mesopotamisches Zeichenlexikon*, Ugarit-Verlag, Münster, 2004, 436.
- [13] E. Reiner and D. Pingree, *Babylonian Planetary Omens 2, Enūma Anu Enlil, Tablets 50-51*, Udena Publications, Malibu, 1981, 15.
- [14] G. Dossin, *Revue D'assyriologie et D'Archéologie Orientale*, **35(4)** (1935) 181.
- [15] D. Brown, *Mesopotamian Planetary Astronomy-Astrology*, in *Cuneiform Monographs*, vol. 18, Styx Publications, Netherlands, 2000, 33-36.

- [16] F. Rochberg, *The Heavenly Writing; Divination, Horoscopy, and Astronomy in Mesopotamian Culture*, Cambridge University Press, Cambridge, 2004, 41, 45, 71, 219.
- [17] M.L. Thomsen, *The Sumerian Language; An Introduction to Its History and Grammatical Structure*, Akademisk Forlag, Copenhagen, 1984, 17.
- [18] W. Hartner, *J. Near Eastern Stud.*, **24(1/2)** (1965) 2.
- [19] W.G. Lambert, *A Late Assyrian Catalogue of Literary and Scholarly Texts*, in *The Kramer Anniversary Volume; Cuneiform Studies in Honor of Samuel Noah Kramer*, B.L. Eichler (ed.), Verlag Butzon & Bercker, Kevelaer, 1976, 313-318.
- [20] J. Huehnergard, *A Grammar of Akkadian*, Scholars Press, Atlanta, 1997, 107-111.
- [21] W. von Soden (ed.), *Akkadisches Handwörterbuch*, vol. III, Otto Harrassowitz, Wiesbaden, Germany, 1981, 1253.
- [22] E. Reiner, *T. Am. Philos. Soc.*, **85(4)** (1995) 5.
- [23] V.A. Hurowitz, *Alliterative Allusions, Rebus Writing, and Paronomastic Punishment, Some Aspects of Word Play in Akkadian Literature*, in *Puns and Pundits; Word Play in the Hebrew Bible and Ancient Near Eastern Literature*, S.B. Noegel (ed.), CDL Press, Bethesda, 2000, 66.
- [24] M. Roaf and A. Zgoll, *Zeitschrift für Assyriologie und vorderasiatische Archäologie*, **91(2)** (2001) 266.
- [25] S.B. Noegel, *Nocturnal Ciphers, The Allusive Language of Dreams in the Ancient Near East*, American Oriental Society, New Haven, 2007, 37.
- [26] A.R. George, *The Babylonian Gilgamesh Epic; Introduction, Critical Edition and Cuneiform Texts*, vol. I, Oxford University Press, Oxford, 2003, 86-87.
- [27] A. Livingstone, *Mystical and Mythological Explanatory Works of Assyrian and Babylonian Scholars*, Clarendon Press, Oxford, 1986, 1.
- [28] M.J. Geller, *Zeitschrift für Assyriologie und vorderasiatische Archäologie*, **87(1)** (1997) 57.
- [29] W. Horowitz, *Mesopotamian Cosmic Geography*, Eisenbrauns, Winona Lake, 2011, 224.
- [30] J. Bottéro, *Les Noms de Marduk, L'Écriture et la 'Logique' en Mésopotamie Ancienne*, in *Memoirs of the Connecticut Academy of Arts & Sciences; Essays on the Ancient Near East in Memory of Joel Jacob Finkelstein*, vol. XIX, M. de Jong Ellis (ed.), Archon Books, Hamden, 1977, 5-28.
- [31] S. Dalley (ed.), *Myths from Mesopotamia*, Oxford University Press, Oxford, 1989, 276-277.
- [32] J. McHugh, *Archaeoastronomy and Ancient Technologies*, **5(1)** (2017) 13-39, online at <https://aaatec.org/documents/article/jmh2.pdf>.
- [33] J. McHugh, *Archaeoastronomy and Ancient Technologies*, **6(1)** (2018) 80-110, online at <https://aaatec.org/documents/article/jmh3.pdf>.
- [34] J. McHugh, *Eur. J. Sci. Theol.*, **14(6)** (2018) 17-40.
- [35] Vitruvius, *On Architecture*, Vol. I-II, F. Granger (ed.), Harvard University Press, Cambridge (MA), 1970, 246-247.
- [36] S.M. Burstein, *The Babyloniaca of Berossus*, Undena, Malibu, 1970, 5.
- [37] G.P. Verbrugge and J.M. Wickersham, *Berossos and Manetho, Introduced and Translated*, The University of Michigan Press, Ann Arbor, 1996, 35-36.
- [38] J. Stökl, *'A Youth Without Blemish, Handsome, Proficient in all Wisdom, Knowledgeable and Intelligent': Ezekiel's Access to Babylonian Culture*, in *Exile and Return; the Babylonian Context*, C. Waerzeggers & J. Stökl (eds.), Walter de Gruyter GmbH, Berlin, 2015, 223-252.

- [39] Pliny, *Natural History*, H. Rackham (ed.), vol. IX, Harvard University Press, William Heinemann LTD, Cambridge (MA), 1968, 406-409.
- [40] E. Sollberger, *Iraq*, **24(1)** (1962) 63-72.
- [41] J. Oates, *Babylon*, Thames & Hudson, New York, 1979, 189.
- [42] B.L. van der Waerden, *J. Near Eastern Stud.*, **8(1)** (1949) 26.
- [43] J.A. Halloran, *Sumerian Lexicon; A Dictionary Guide to the Ancient Sumerian Language*, Logogram Publishing, Los Angeles, 2006, 20.
- [44] D.O. Edzard, *Sumerian Grammar*, Society of Biblical Literature, Atlanta, 2003, 31, 33.