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How Cuneiform Puns Inspired Some of the Bizarre Greek Constellations and Asterisms

John McHugh

Brigham Young University, Provo, Utah, USA; e-mail: jjmchugh72164@comcast.net

Abstract

Many of the Greek constellations catalogued in Claudius Ptolemy's mid-second century *Almagest* originated in Mesopotamia. Yet numerous other Greek constellations and asterisms do not correspond to Mesopotamian prototypes, and simultaneously display bizarre or incongruous features. This is especially apparent in Pegasus, a winged Horse severed at the navel; Crater, the "Wine-Bowl" stationed upon the back of Hydra, the "Water-Snake"; Cancer, a "Crab" that carries a "Manger" and "Donkeys" upon its shell; and Argo, the "Swift" Ship that sails backwards through the night sky without a prow. Because the aforementioned star-figures cannot be traced to Mesopotamian originals most historians of astronomy have assumed they are either indigenous Greek inventions or the creations of seafaring civilization that had direct contact with Greece. This article presents seminal research that offers a more elegant possibility, namely, that the origin of the aforementioned constellations and asterisms was indeed Mesopotamia, and can be traced to arcane precepts that informed the astronomers of that land. Cuneiform texts confirm that Mesopotamian astronomers were literally "writers" who envisioned the starry sky as "heavenly writing" that divulged inviolable truth through the medium of wordplay. In Mesopotamia the Pegasus Square was known as the "Field," and puns encrypted in its cuneiform spellings divulged that the Field be "changed into" a "flying horse severed at the navel"; wordplay in Hydra's cuneiform title disclosed that a "wine-bowl" be "placed upon the back of the "water-snake"; double entendre in Cancer's cuneiform appellative imparted that a "manger" and "two donkeys" be "placed between the shoulders of the crab"; and punning in the Mesopotamian prototype for Argo divulged that these stars were a "divine ship named ‘Swift'" which had its "prow cut off" and sailed "backward" through the southern sky. Circumstantial evidence implies that the Mesopotamian perception of the stars as a divine "text" that divulged enlightenment via puns had been transmitted directly to the Hellenic world at the inception of Greek alphabetic writing in the mid-eighth century BC. And it was this Mesopotamian celestial wisdom that inspired Greek astronomer-poets to reconfigure the preceding star-figures into the irrational images described by the puns.

Keywords: celestial, mythology, wordplay, constellation, origin, cuneiform, heavenly writing, lumashi writing

Introduction

Anyone familiar with the forty-eight constellations codified in Claudius Ptolemy's circa mid-second century *Almagest* can attest that several display nonsensical appearances. Pegasus is depicted as a winged Horse severed from its hindquarters at the navel. The giant Hydra carries a

"Wine-Bowl," Crater, upon its back. Cancer has a Manger and two Donkeys stationed upon its shell. And Argo sails backwards through the heavens without a prow.

Because the forty-eight constellations listed in the *Almagest* have been retained in modern star atlases, these phantasmagoric star-figures endure in our own night sky (Allen, 1963, pp. 10-31). Yet their origins remain elusive. The current article argues that the inclusion of the aforementioned constellations and asterism was intentional – the byproduct of two arcane Mesopotamian precepts that guided the reasoning of the astronomers from that land. Cuneiform texts studied by Babylonian and Assyrian astronomers confirm that the starry sky and its constellations were conceived as divine "writing." Entailed to this concept was the belief that inviolable wisdom was imparted through the medium of wordplay. Circumstantial evidence implies that Mesopotamian astronomers' penchant to view the constellations as sacred "heavenly writing" that imparted enlightenment via puns had passed into Hellenic thought at the outset of Greek alphabetic writing in the mid-eighth century BC. And it was wordplay in the older, cuneiform names for the aforementioned constellations and asterisms that compelled Greek astronomer-poets to reconfigure Pegasus into a flying "Horse" severed at the belly button, to set a "Wine-Bowl" on the Hydra's back, to place a "Manger" and "Donkeys" between the shoulders of the Crab, and to delineate Argo into a deified, prow-less Ship named "Swift," which sails backwards through the sky.

Mesopotamia as the Source for Many Greek Constellations

Historians of astronomy concur that many of the Hellenic constellations originated in Mesopotamia. The phenomenon is summarized by E. C. Krupp:

> Mesopotamia is generally recognized as the source for most of the constellations now officially sanctioned by modern astronomy…
> The data in these [cuneiform astronomical texts] permit the mapping of much of the Mesopotamian sky and provide Mesopotamian counterparts for perhaps a little less than half the figures of the Greek heavens. Even though detailed star-by-star delineations of the Greek and Mesopotamian constellations differ … Most specialists are convinced that many Greek constellations were imported from Mesopotamia, although the routes by which they arrived are neither clear nor embraced by consensus (Krupp, 2000, pp. 44, 47-48).

Krupp's conclusion is shared by most researchers: "However the constellations were delivered to Eudoxus, Aratus, and the rest of the Mediterranean world, they are an anthology of cultural diffusion. Episodic accumulation, historic invention, and patchwork adaption define the night gallery aesthetic" (Krupp, 2000, p. 60). In an earlier paper John Rogers offered a similar sentiment, "… the Babylonian records … show that while the classical constellations of the zodiac and some others developed progressively from the fourth to the first millennium BC, many of our constellations were in fact unknown in Mesopotamia… We are forced to the conclusion that the classical sky-map was synthesized from several unrelated sources …" (Rogers, 1998, pp. 79-80).

Thus, most researchers see Mesopotamia as the source for many of the Hellenic constellations we use today, but the notion of direct contact – presumably due to geographical distance – is precluded. The implication being that any Hellenic constellation devoid of a Mesopotamian

prototype was either an autochthonous Greek invention or the creation of seafaring peoples such as the Minoans or Phoenicians – civilization that were in direct contact with Greece and from whom Greek astronomer-poets could acquire several of the non-Mesopotamian constellations. Such investigations emphasize the functional role of the constellations as calendrical markers and maritime navigational tools, theories that resonate with the sound reasoning and logic sought by modern academics.

Here, however, it may be wise to heed the advice of the great Assyriologist J.J. Finkelstein, who writes:

> In our approach towards any aspect of non-Western civilization we commonly expose ourselves to the hazard of applying Western categories to phenomena completely alien to us …" (Finkelstein, 1963, p. 461).

And while the constellations' calendrical and navigational properties were surely significant to Mesopotamian astronomers, it is in the latter's arcane conceptions of the celestial sky that provide the most elegant explanation for the irrational appearance of the truncated flying Horse, the Wine-Bowl upon the Water-Snake, the Crab's Manger and Donkeys, and the prow-less, backward-turned Argo.

Reading the "Heavenly Writing" of the Stars

Mesopotamian astronomers engaged in many activities that we today would clearly recognize as astronomical, such as the mapping of the starry sphere into three levels of nascent declination and cataloguing the helical rising and setting times of stars to synchronize the calendar with the solar year (e.g., *BPO 2*, pp. 17-18, 42-43; Hunger, Pingree, 1989, pp. 40-47, 139-154). Yet some of their other roles lie well beyond anything a modern thinker would categorize under the genre of "astronomy." In the Fertile Crescent the astronomer was one class of "scholar, expert" called an *ummânu*, who was proficient in one or more of the occult arts that involved interlocution with the divinities and included the astrologer, the diviner, exorcist, physician, and lamentation-chanter (Brown, 2000, p. 33; *CAD* 20, p. 108). The pre-1960 designation of *ummânu*, "magician, astrologer, sorcerer" underscores the title's esoteric nature (Brown, 2000; Thompson, 1900, 2, pp. xiii-xxix). Therefore, the Mesopotamian "astronomer" was in function an "astrologer," as the two terms were not effectively discriminated until the sixth century CE (Barton, 1994, p. 5). The title of the Mesopotamian "astronomer-astrologer" was *ṭupšarru*, a term that literally meant, "writer, scribe," and referred to an expert in the celestial divination series, *Enūma Anu Enlil* (Brown, 2000, pp. 33-36; Rochberg, 2004, pp. 41, 45, 71, 219; *CAD* 19, pp. 152-153). Such scholars were adroit at reading and writing in the highly complicated cuneiform writing system, a task that included mastery of their own spoken tongue, Akkadian, as well as acquiring at least some proficiency in the reading and writing of Sumerian, which was the "dead" language of the southern Mesopotamian people from whom the Akkadian-speaking Babylonians and Assyrians adopted the cuneiform writing system. Evidence for the latter is seen with the fact that many constellation and planet names retain their Sumerian rather than Akkadian spelling (Hartner, 1965, p. 2).

The astronomer's reference manuals were not confined to just astronomical and astrological subjects, as they also included *The Tale of Atra-Ḫasis* (i.e., the creation story that included the oldest Flood story), *The Gilgamesh Epic*, and the Babylonian-Assyrian creation epic *Enuma*

Elish, a point verified from the list of texts edited by astrologers serving Assyrian King Esarhaddon (Lambert, 1976, pp. 313-318; Rochberg, 2004, p. 211). Astronomers were also expected to become well versed in the circa 1800-1600 BC bilingual Sumerian-Akkadian "dictionaries" which listed the Sumerian pronunciation of a Sumerian logogram beside its Akkadian meaning; a Sumerian logogram consisting of a cuneiform sign or sign grouping that came to represent an Akkadian word with the equivalent meaning (Lambert ibid.). Here we should note that modern scholars typically transcribe Sumerian logograms into capital letters.

Intriguingly, the Sumerian-Akkadian dictionaries indicate that the Sumerian logogram for "star," MUL, stood for the Akkadian word *kakkabu*, "star," as well as the terms *šiṭirtum*, "inscription," and *šiṭru*, "writing" (*CAD* 8, pp. 45-46, *kakkabu*, lexical section; ibid. 17/pt.3, p. 144, *šiṭirtum*, lexical section, ibid., p. 144-145, *šiṭru*, lexical section). This point is highlighted by a listing which reads: USAN *šiṭir kakkabū*, "Evening [means] the writing of the stars" (*AHw*, III, p. 1253, *šiṭru*, lexical section). Moreover, MUL was the common determinative (i.e., noun classifier) used before the names of planets, stars, and constellations (Borger, 2004, p. 302, no. 247). Therefore, when a Babylonian or Assyrian astronomer-astrologer gazed into the starry sky, he understood that each constellation, star, and planet was a piece of divine "writing" or "inscription." And because stars, constellations, and planets embodied deities this writing was numinous – literally the "writing" of the star-gods. From this conception developed the conviction that the starry sky consisted of *šiṭirti šamāmi*, *šiṭir šamê*, or *šiṭir burūmê*, "heavenly writing" (*CAD* 17/pt.3, p. 144, 2; Rochberg, 2004, pp. 64, 163, 294, 299).

It was from this mindset that astrological prognostication developed. The Babylonian-Assyrian *ṭupšarru*/"writer-astrologer" would read the "heavenly writing" of the stars for signs of impending earthly events that could be exploited or averted, then report these findings to the king. Francesca Rochberg comments:

> The metaphor may be interpreted to express the idea that a written message was encoded in the sky, and that the message was a form of communication from the gods (Rochberg-Halton, 1988, p. 15, n. 54).

Hence the Babylonian-Assyrian "astronomer"/*ṭupšarru* was a highly literate "writer" who envisioned the starry sky as a divine cuneiform "text."

The Prevalence of Puns in Cuneiform Writing

During their studies, neophyte Mesopotamian astronomers learned that their syllabic script lends itself to polysemy (i.e., multiple meanings in a word or phrase), a point illustrated in Fig. 1. We have noted that the cuneiform sign MUL was a Sumerian logogram that represented the Akkadian word *kakkabu*, "star," – yet also functioned as the logogram for the Akkadian *šiṭirtum*/"inscription" and *šiṭru*/"writing." In addition, MUL represented the Akkadian verb *nabāṭu*, "to shine brightly" (*CAD* 11/pt.1, p. 22, *nabāṭu*, lexical section). Thus, when a Mesopotamian astronomer inscribed or read the cuneiform sign MUL it could potentially interject the meanings "star, inscription, writing" and "brightly shining."

Moreover, the potential for polysemy increased due to the vast number of homophones (i.e., words that have the same pronunciation but different spellings and meanings, e.g., *to*, *too*, *two*) found among the Sumerian logograms; so many that modern linguists have had to devise a transliteration system which allows researchers to distinguish which cuneiform sign appears on a

tablet (Huehnergard, 1997, p. 70; Halloran, 2006, p. 1). This scholarly convention is exemplified in Fig. 1, which shows five different cuneiform signs that could be read "MUL." The sign most frequently read "MUL" does not have a subscript number. The second most frequent reading "MUL" sign is transliterated MUL_2. The third most frequent reading for "MUL" is transcribed MUL_3, and so forth. Crucial to the current article is for the reader to remember that the subscript numbers are a *modern* convention; an ancient astronomer would have pronounced all five of these signs as "MUL."

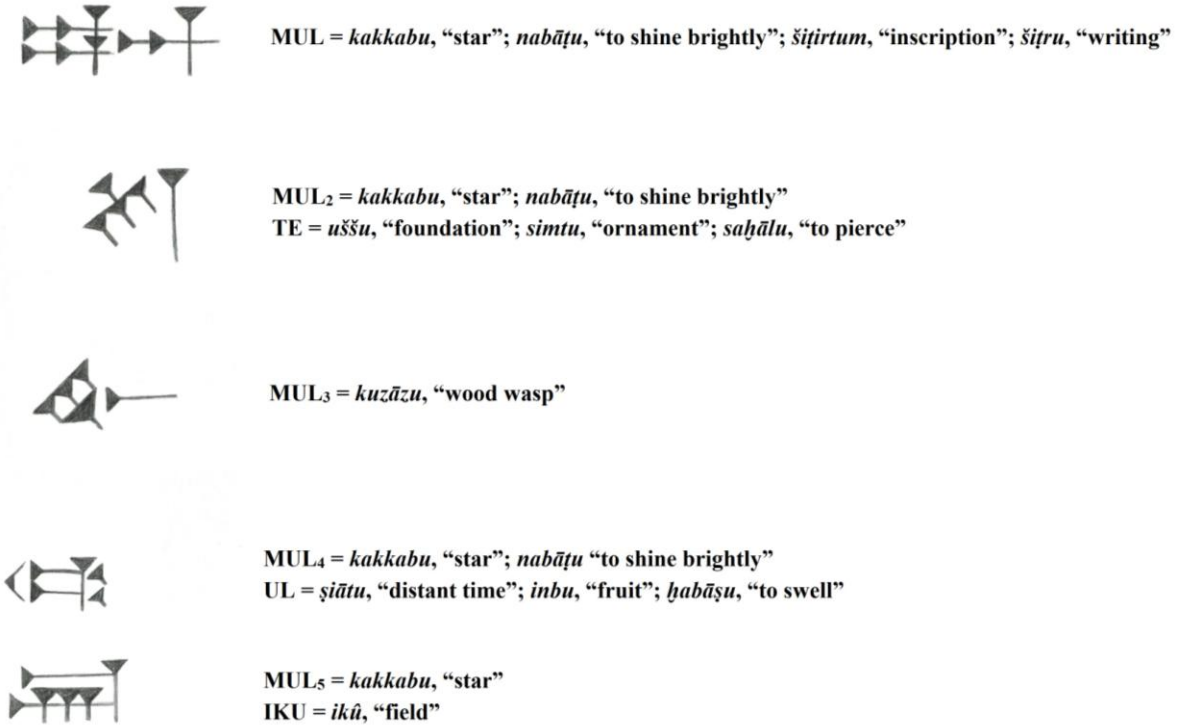

Figure 1. Five Sumerian logograms that were read "MUL." (sketch by Ashely McCurdy)

Furthermore, the five "MUL" signs served as logograms for other Akkadian words, a point already documented with MUL. MUL_2 also represented *kakkabu*/"star" and *nabāṭu*/"shine brightly," but it could also be read TE and represented many additional words including: *uššu*, "foundation," *simtu*, "ornament," and *saḫālu*, "to pierce" (*ePSD*: mul_2). MUL_3 stood for *kuzāzu*, "wood wasp" (*ePSD*: mul_3). MUL_4 represented *kakkabu*/"star" and *nabāṭu*/"shine brightly" – but was also read UL and stood for the Akkadian words: *ṣâtu*, "distant time," *inbu*, "fruit," and *ḫabāṣu*, "to swell" (*CAD* 11/pt.1, p. 22, *nabāṭu*, lexical section; ibid. vol. 16, p. 116, *ṣâtu*; ibid. vol. 7, p. 144, *inbu*, lexical section; *ePSD*: ul). And MUL_5 was a rare logogram for *kakkabu*/"star," but was commonly read IKU, which represented the Akkadian *ikû*, "field" (*CAD* 8, p. 46, *kakkabu*, lexical section; Borger, 2004, p. 290, no. 174). Hence, when a Mesopotamian magician read or inscribed the cuneiform sign MUL on a tablet it could interject the words "star, shine brightly, inscription, writing, foundation, ornament, pierce, wood wasp, distant time, fruit, swell" and "field" through homophonous punning. Amazingly, Fig. 1 presents merely a smidgeon of the variable readings and meanings for the five cuneiform signs read "MUL."

The vast number of Sumerian logograms, their homophonous nature, their potential to be read in multiple ways, combined with Babylonian-Assyrian scholars' penchant to attribute multiple Akkadian words to a single logogram resulted in an enormous opportunity for wordplay to emerge in cuneiform writing. Victor Hurowitz summarizes the phenomenon, "The highly complex cuneiform writing system, in which every word could be written in a variety of ways

and each sign had a potential of bearing numerous different phonetic or logographic readings, afforded Mesopotamian scribes unique levels of playing on written forms of words unavailable to scribes writing languages that employed alphabetic scripts" (Hurowitz, 2000, p. 66, n. 9).

One form of punning definitely involved the "heavenly writing" of the constellations. A monumental inscription made by the Assyrian king Esarhaddon (680-669 BC) finds him writing his name in *lumāši*, or "constellation"-writing. It reads: *lumāšī tamšīl šiṭir šumiya ēsiq ṣēruššun*, "I carved on them constellations, the image [i.e., equivalent] of the writing of my name" (Roaf, Zgoll, 2001, p. 266; Finkel, Reade, 1996, pp. 244-265; Reade, 1979, pp. 35-46; *CAD* 9, p. 245, *lumāšu*). Although Esarhaddon never reveals why he chose to write his name in the cuneiform signs, words, and images that were used to spell and depict the constellations, Scott Noegel cites similar texts that refer to "hidden words," *amāt niṣirti*, as the "secrets of the gods, *pirištu ša ilī* (Noegel, 2007, pp. 37-38, n. 128). The implication being that Esarhaddon was communing with the gods in their own cryptic form of divine communication: secret messages delivered by puns encrypted in the constellations' images and the titles. Michael Roaf and Annette Zgoll have coined the term ‘astroglyph' to describe *lumāši*-writing, and emphasize some of the script's characteristics:

> …some signs are fairly obvious symbolic representations (direct or indirect pictograms), while others are derived from scribal knowledge of the forms of cuneiform signs, from equivalences between Sumerian logograms and Akkadian words … Such linguistic and visual puns … are commonly found in the Mesopotamian world (Roaf, Zgoll, 2001, pp. 291-292).

Esarhaddon's use of *lumāši*-writing – i.e., enigmatic wordplays encrypted pictorially and linguistically in the constellation images and titles – implies an established scholarly tradition for encoding and deciphering such puns. And although Esarhaddon is the only author to specifically refer to *lumāši*-writing, scholars have suspected that the use of similar symbols in temples constructed by his grandfather, Sargon II (721-705 BC), were also inscribed in constellation-writing (ibid., p. 267). A. R. George remarks that, "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" (George, 2003, I, pp. 86-87).

This author contends that King Esarhaddon's use of the term *lumāši*/"constellation"-writing intentionally or inadvertently disclosed a trade secret that was revered by Mesopotamian astronomer-magicians, i.e., that starry sky was a divine cuneiform "writing" that imparted sacrosanct wisdom through the medium of wordplay.

Wordplay as Revelation

While today wordplay is typically regarded as a form of humor or witticism, cuneiform literature indicates that punning was frequently construed as a form of numinous inspiration. Noegel comments:

> 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…

> 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 (Joseph, 2002).

In numerous instances Babylonian and Assyrian scholars – which included astronomers – embraced polysemy and puns with reverence, as if they had divulged a divine message illuminating a previously unknown aspect of the cosmos. Such pun-based edification was often construed as a form of revelation that had been imparted directly from the gods to humanity and was typically accompanied with the admonition to keep this divine wisdom secret (Livingstone, 1986, pp. 1-4, 17, 49, passim; Rochberg, 2004, pp. 209-236; Noegel, 2007, pp. 37-38, 70-76).

Of particular importance is the manner by which names were analyzed for concealed puns that might disclose some aspect of the name's possessor. George writes:

> 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* (George, 2003, I, pp. 86-87, italics added).

An example of pun-based enlightenment is seen with the Babylonian commentary asserting that the sky was made of water. It reads: *šamê ša mê*, "skies [mean] ‘of water'" (Livingstone, 1986, p. 33; Horowitz, 2011, p. 224). Here, the possessive case Akkadian word for "skies, heavens" (*šamê*) simultaneously spelled "of water" (*ša* = "of"; *mê* = "water") – a double meaning that reflected the ancient scholarly belief that the "skies, heavens" were comprised of and fashioned from water. The solemnity of the discovery is seen three lines later, where the *ummânu*/"magician" adds, "… a secret of the scholar. The uninitiated shall not see" (Livingstone, ibid.; Noegel, 2007, pp. 70-76).

Jean Bottéro has utilized the ancient scholars' commentaries on *Enuma Elish* to show that practically the entire seventh tablet was compiled through punning. There Mesopotamian scholars decoded wordplay from the fifty epithets for Marduk and then arranged these into coherent statements that exposed facets of his identity and powers (Bottéro, 1977, pp. 5-28). Because the commentaries on puns given in *Enuma Elish* VII were an essential reference manual to Mesopotamian astronomers, and the techniques for discerning and utilizing wordplay as revelation are exemplified in that text, we will analyze one line to illustrate how this practice was employed. Line 126 of *Enuma Elish* VII reads:

> The god Crossing [is] his star which in the heavens they caused to appear (von Soden, 1942, pp. 16-17; Horowitz, 2011, pp. 114-115).

The supreme deity of the Babylonian pantheon, Marduk, was embodied in the planet Jupiter. Astronomical texts often refer to Marduk by the Akkadian epithet, DINGIR *Nēbiru*, "the god Crossing," a title applied to this planet-god when he stood on the meridian and was therefore

"Crossing" the midpoint of the sky (Gössmann, 1950, pp. 118-119, no. 311). Babylonian magicians went on to envision this Akkadian name artificially – as if it were a Sumerian logogram: DINGIR NE_2-BI-RU (Bottéro, 1977, p. 20). They then discerned puns from the latter name to ascertain aspects of this planet-god's powers. From their expansive grammatical studies astrologers understood that the determinative DINGIR was also read AN, "skies, heavens," and was initially depicted by the symbol of a star (Kramer, 1963, p. 303, Fig. 6); therefore it conveyed the meaning *kakkabu*, "star," and *šamê*, "the skies," in Akkadian (Bottéro, 1977, p. 12). Sumerian-Akkadian dictionaries imparted that BI represented the Akkadian word *sû*, "his" (Bottéro, ibid.; Borger, 2004, p. 320, no. 358). Bottéro points out that by the first millennium BC the vowel in consonant-vowel signs such as RU had become multivalent, thus the RU sign in NE_2-BI-RU was also read RA, a nuance mentioned in the secret commentaries for this line (Bottéro ibid. 1977, pp. 17-18); and RA represented *ša*, "which," and *ina*, "in," in Akkadian (ibid., p. 12; *CAD* 17/pt.1, p. 1, *ša*, lexical section; ibid. 7, pp. 141-142, *ina*, lexical section). An additional commentary indicates that an earlier epithet for Marduk given in line 9, TU-TU, could be read DU_2-DU_2, thereby forging a homophone with the composite logogram DU_6-DU, which meant *šūpû*, "to cause to appear, shine" in Akkadian; the latter verb was then conjugated into the third-person plural *ušāpû*, "they caused to appear," to suit the grammatical needs of the pun (Bottéro, 1977, pp. 12, 16-17; *CAD* 1/pt. 2, p. 202, *apû*, 5).

Therefore, polysemous readings embedded in the cuneiform signs used to write DINGIR *Nēbiru* yielded the puns: *kakkabu*/"star," *šu*/"his," *ša*/"which," *ina*/"in," and *šamê*/"the skies"; while a previous epithet for Marduk given in line 9, TU-TU, interjected the logogram that could render *ušāpû*, "they caused to appear/shine" (Fig. 2). These puns were then arranged into a coherent statement that imparted an aspect of Marduk-Jupiter's powers, wisdom that was then reported as fact in verse 126 of *Enuma Elish* tablet seven:

DINGIR NE_2-BI-RU *kakkab-šu ša ina šamê ušâpû*
"The God Crossing [is] his star which in the skies they caused to appear."

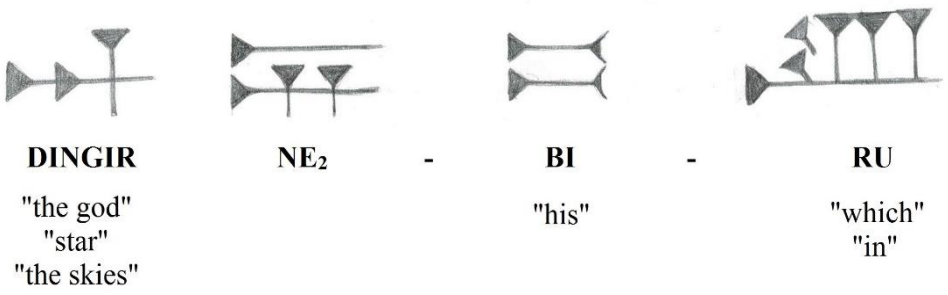

Figure 2. Each word from line 126 *Enuma Elish* VII came from a pun enciphered in the name of the planet-god *Nēbiru*. The verb *ušāpû*, "they caused to appear," came from wordplay on an epithet given in line 9. (sketch by Ashely McCurdy)

Thus, the Babylonian-Assyrian astronomer/*ṭupšarru* was literally a "writer" who envisioned the astral sky as a sacrosanct cuneiform "writing" that imparted divine enlightenment via polysemous readings for cuneiform signs. And one of his most prized reference manuals consisted of the secret, scholarly commentaries on *Enuma Elish* VII.

Hesiod Influenced by *Enuma Elish*; Homer, a Mesopotamian Astronomer Taken "Hostage"

When we turn to Hellenic astronomy and mythology we find that one of the fathers of Greek epic poetry and the first author to mention Pegasus, Hesiod, was heavily influenced by *Enuma Elish*. The *Oxford Classical Dictionary* states that Hesiod's *Theogony* "has striking parallels in Akkadian and Hittite texts, and seems originally to have come from the near east" (*OCD*, p. 700). In his analysis of Near Eastern influences on Hesiod's *Theogony*, Peter Walcot comments, "… its closest companions in Greek literature are the Homeric Hymns, but even closer is the picture of Zeus in the *Theogony* and that of Marduk in *Enuma Elish*, and it is to Babylonian tradition and the eighth century BC that we should resort if we wish to assess Hesiod's debt to the Near East" (Walcot, 1966, p. 129).

Hence, Hesiod directly or indirectly relied upon *Enuma Elish* to compose *Theogony*, the first extant Hellenic myth to recognize Pegasus. Dependence on *Enuma Elish* implies that Hesiod, or someone collaborating with him, was familiar with the methods used to discover the wordplays upon which tablet seven of that text was based. This idea is bolstered by Hesiod's use of a pun on the name Pegasus (Greek: *Pēgasos*) to elaborate on the circumstances surrounding its birth: "… the horse *Pēgasos* who is so called because he was born near the springs [*pēgas*] of Ocean" (Hesiod, 1970, pp. 100-101; Liddell, Scott, 1997, pp. 637). Hesiod's use of the accusative, plural term for "springs"/*pēgas* as the root for *Pēgasos* indicates that he had employed the same methodology that Babylonian-Assyrian scholars had utilized to reveal aspects of Marduk's identity in *Enuma Elish* VII.

How Hesiod might have become acquainted with the Akkadian *Enuma Elish* is seen in an archaic custom attested throughout ancient Near Eastern and Greco-Roman literature. Vanquishing monarchs conscripted foreign scholars of the occult – including astronomer-astrologers – into their own entourage, where they served as hostages in the court of the new regime (Brown, 2000, pp. 33-34). A prime example of this is seen in the Hebrew Bible's Book of Daniel. Verses 1:1-6 recollect how this young Jewish prophet and three of his countrymen were conscripted into the entourage of the conquering Babylonian king, Nebuchadnezzar II (604-562 BC), and that Daniel was to be "trained for three years, and after that … to enter the king's service." His curriculum included learning "the language and literature of the Chaldaeans [i.e., the Babylonians]," which was Akkadian and Sumerian, and, as we saw above, comprised numerous opportunities for punning. Verse 5:11 confirms that Daniel had risen through the ranks to become the supervisor of all forms of prognostication, including astrology, "… King Nebuchadnezzar your father – your father the king, I say – appointed him [Daniel] chief of the magicians, enchanters, astrologers, and diviners" (Daniel 5:11, author's translation, brackets inserted).

In his *Natural History* Pliny the Elder (23-79 CE) declares that a similar conscription resulted in astronomy's importation into Rome, "… slaves on sale that had been imported from over-seas; instances of these being Publilius of Antioch the founder of our mimic stage and his cousin Manilius Antiochus the originator of our astronomy …" (Pliny, IX, pp. 406-409).

Instructive to this concept is Bradley Parker's discussion of a Greek (Ionian) sea-born raid on an Assyrian-controlled Phoenician port dating to the reign of Assyrian king Tiglath-pileser III (744-727 BC), an incursion that ended the moment the Assyrian military appeared and the Greek raiders "got into their boats and [disappeared] into the middle of the sea" (Parker, 2000, 14.3, p. 72). Here we have Greek pirates invading an Assyrian-ruled Phoenician port in a timeframe

contemporaneous with Homer and Hesiod, with the specific purpose of attacking and looting Phoenician coastal towns for plunder.

The purpose of the Greek pirates' intermittent raids on Assyrian-controlled Phoenician cities was to acquire booty, which could come in the form of slaves. Similar accounts appear in Greek epic poetry. Homer twice describes sea-going Phoenician slave traders interacting with Greeks in his *Iliad* (Homer, 1999, pp. 56-59, 108-113); while the *Homeric Hymns* recount how the god Dionysus, while walking the beach in human form, was taken by pirates as booty, to be sold for a handsome ransom (Hesiod, 1970, pp. 428-433).

This may shed all new light on Homer's identity. The Greek word *Homēr* means "Hostage" (Beekes, 2010, 2, p. 1067). And Zenodotus of Mallos (second or first century BC) maintained that he was a Chaldean, that is, a Babylonian (Haubold, 2013, pp. 24-25, 178). In summarizing the scholarly consensus on Homer, M. L. West posits "that ‘Homer' was not the name of a historical poet but the fictitious or constructed name … there was no original Homer, the *Homeridai* were not named after a person, but, not knowing any better, they invented a Homer as their ancestor or founder …" (West, 2011, 1, pp. 408, 422).

In *A True History*, the second century Syrian satirist Lucian recounts a fictional interview he held with *Homēr*:

> Lucian: "Above all," said I, "where do you [i.e., *Homēr*] come from?"
>
> *Homēr*: "… As a matter of fact, I am a Babylonian, and among my fellow-countrymen my name was not *Homēr* but *Tigranes*. Later on, when I was a hostage (*homēr*) among the Greeks, I changed my name" (Lucian, I, pp. 322-323).

If this imagined dialogue retains a kernel of historicity, then it attests to the memory of a Babylonian scholar who had been taken "hostage" (*homēr*), the act serving as the eponym for the father of Greek epic poetry. A Babylonian *ummânu*/"scholar-magician" such as this would have been indoctrinated with Mesopotamian astral tenets including the belief that the constellations depicted hallowed "writing" that imparted revelations via the conduit of wordplay.

Cultural Contact between Mesopotamia and Greece

The archaeological record supports the possibility that a Mesopotamian *ummânu*/"scholar-magician" and been taken hostage by the Greeks, where he presumably sat in colloquies with indigenous Hellenic intellectuals. The material culture indicates that by the second half of the eighth century BC – contemporaneous with Homer and Hesiod – Greeks had established amicable trading communities on the costal Syrian sites of Al-Mina, Al-Basit, and Tell Sukas (Walcot, 1966, pp. 104-130; Burkert, 2004, pp. 16-20; Burkert, 1992, pp. 1-40; Markoe, 2000, pp. 36-47; Boardman, 1980, pp. 45, 1-84 passim; Dunbabin, 1979, pp. 1-43).

Of particular interest is Al-Mina, where Greeks from the Aegean isle of Euboea had established a thriving two-way trade in what was unequivocally a mixed population consisting of Near Easterners and Greeks (Ridgway, 1992, pp. 15, 24-25, 30, 64-66, 108-113, 147; Burkert, 1992, pp. 21-22; Boardman, 1980, pp. 37-46). Mercantile exchange between Al-Mina and Euboea is intriguing because it indicates friendly relations between coastal Syria, a territory under the political control of Assyria (Boardman, 1980, p. 44), and a place that afforded Hesiod one of the most memorable experiences of his life. It was in Euboea that Hesiod won a handled

tripod as a prize for a song he performed at the "games of wise [king] Amphidamas" (Hesiod, 1970, pp. 50-51, brackets inserted). Walcot notes that Euboean Greeks "… seem to have been extremely active here [i.e., Al-Mina] during the eight century BC, for part of which time the Assyrians were in control of the region. Al-Mina is an obvious place for the Greeks to have acquired a knowledge of *Enuma Elish* or any other work of Babylonian literature …" (Walcot, 1966, p. 121, brackets inserted). And acquiring knowledge of this text implies the presence of scholars fluent in the Akkadian and Greek languages as well as the religious ideologies of both cultures.

There is evidence that Euboean Greeks joined Assyrian forces as mercenaries at Al-Mina (Burkert, 2004, p. 9; Kearsley, 1999, pp. 109-134; Boardman, 1980, p. 42). Moreover, around 743 BC Assyrian king Tiglath-pileser III forcibly gained control of Syria and Cyprus, and it was his officer that later reported the maritime raid by Greeks off the Phoenician coast, an encounter discussed by Parker, above (Boardman, 1980, p. 44). In circa 711 BC Assyrian king Sargon II – who is thought to have had *lumāši*-writing inscribed in his palace – squashed the rebellion of an Ionian rebel at the Phoenician city of Ashdod (Burkert, 2004, p. 9; Burkert, 1992, p. 13; Boardman, 1980, p. 45). And by roughly 695 BC his successor, Sennacherib, had Greek sailors working for him in the Assyrian city of Nineveh on the Tigris River (Boardman, ibid., p. 46).

The archaeological and literary record indicates that in Homer and Hesiod's time Greeks and Assyrians had established intermittent commercial-based alliances and also confronted each other in military skirmishes. Walter Burkert writes, "On the whole the numerous violent incidents and catastrophes did not destroy East-West connections, but rather intensified them, perhaps because now streams of refugees were mingling with the traders" (Burkert, 1992, p. 13).

Any one of the aforementioned military conflicts, pirate raids, or trading expeditions between Mesopotamians, Phoenicians, and Greeks could have resulted in a Babylonian or Assyrian "writer-astronomer" being captured and sold to a Hellenic overlord, a vestige of the transaction found in the name *Homēr*: "Hostage." At which time the Mesopotamian concept of the starry sky as hallowed "writing" that imparted divine messages through the medium of wordplay would have passed into Hellenic thought.

Burkert argues for direct contact, "Akkadian cuneiform side by side with Aramaic, Phoenician, and Greek alphabetic script produces a continuum of written culture in the eighth century [BC] which stretches from the Euphrates to Italy. Cuneiform tablets are found not only as far as Syria but also on Cyprus and Tarsos, where the Greeks were definitely present… which proves that Greek literary practice is ultimately dependent upon Mesopotamia" (Burkert ibid., pp. 31-32).

Martin West also argues unequivocally for colloquies between Greek and Mesopotamian scholars:

> But how was this influence transmitted from one poetic tradition to another across the language barrier? … I see no alternative to the assumption of a certain number of bilingual poets, probably easterners who had settled in Greece and learned to compose epic in the Greek manner … In other instances we seem to detect close relationships between Homeric or Hesiodic passages and other 'classic' Babylonian texts such as *Atraḫasis* and *Enūma Eliš*. To account for them we must surely postulate poets educated in the Levant who subsequently became Hellenized and practiced in Greece (West, 2011, 1, p. 71).

This author contends that the aforementioned archaeological and literary data allows one to assume – as a working hypothesis – that Homer was a Babylonian or Assyrian *ummânu*/"scholar-magician" that had been taken "hostage" (*Homēr*). At which point his perception of the astral sky as a divine "text" that imparted revelation through wordplay in the manner exemplified in *Enuma Elish* VII, was disseminated to Greek colleagues. And when this precept is utilized as our cipher, we find puns encrypted in the Mesopotamian names for Pegasus, Hydra-Crater, Cancer, and Argo which elucidate how they came to assume their absurd appearances in Greek astronomy.

Test Case: The "Hired-Worker Becomes the Ram"

Since the early days of cuneiform studies scholars have known that a pun served as the inspiration behind Aries, the zodiacal Ram. In Mesopotamia, Aries' title was LU_2 ḪUN-GA_2, literally, "Man, Hired-Worker," which was written *Agru* in the Akkadian language of the Babylonians and Assyrians (Gössmann 1950, pp. 91-92, no. 244). The "Hired-Worker" stood next to his tool, APIN, the "Plow," (Triangulum), and IKU, the "Field" (Pegasus Square) he was destined to till (ibid., nos. 39, 193) (Fig. 3).

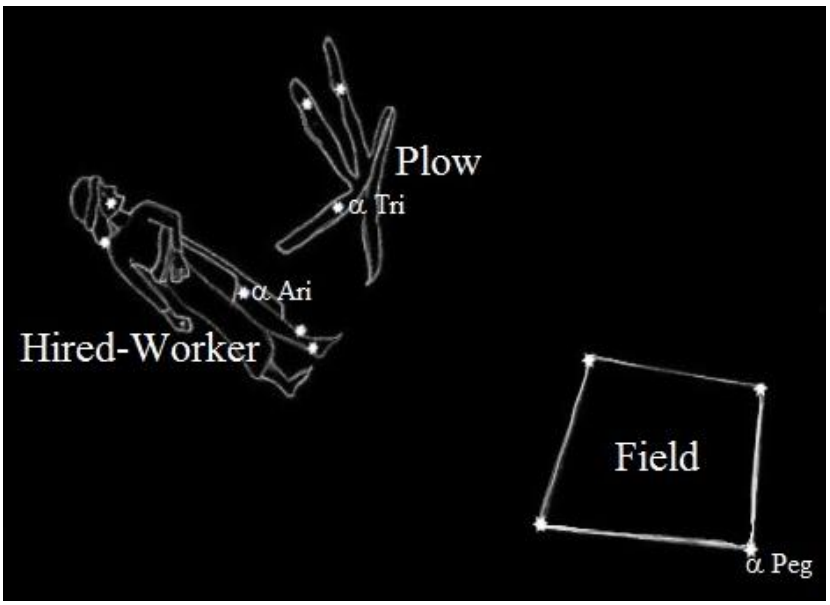

Figure 3. The "Hired-Worker" stood next to his tool, APIN, the "Plow," (Triangulum), and IKU, the "Field" (Pegasus Square) (sketch by Ashley McCurdy).

During the first millennium BC, Babylonian-Assyrian astronomers were apt to abbreviate cuneiform titles; case in point with Aries (ibid., nos. 244, 237). When Mesopotamian astrologers attempted to abbreviate LU_2 ḪUN-GA_2, their goal was to shorten it to the first cuneiform sign in this title: LU_2/"Man." However, the Sumerian logogram LU_2 had no phonetic value in the Akkadian language of the Babylonians and Assyrians, and was used only as a determinative (i.e., noun classifier) for male professions – which is why it was affixed to the front of the title ḪUN-GA_2, the "hired-worker," which was a specific type of profession – in this case a "hired laborer" who cultivated the agricultural fields of that land (Huehnergard, 1997, p. 108). Because LU_2 was a "silent" cuneiform sign it could not function as the abbreviation for LU_2 ḪUN-GA_2. For this reason Mesopotamian astronomers substituted the homophonous logogram LU as the abbreviation for LU_2 ḪUN-GA_2. And here lies the double entendre that led to Aries. The

logogram LU could also be read UDU, which represented the Akkadian word *immeru*, "ram" (Borger, 2004, p. 428, no. 812). Scholars concur that this pun was the inspiration behind the reconfiguration of the Babylonian-Assyrian "Hired-Worker" into the zodiacal "Ram" (Gössmann, 1950, pp. 91-92, no. 244) (Fig. 4).

Figure 4. LU, the cuneiform abbreviation for the "Hired-Worker" constellation, also spelled "Ram." (sketch by Ashely McCurdy)

What must be emphasized here is that substitution of LU/"Ram" for LU_2/"Man" displays an extensive knowledge of the nuances in Akkadian cuneiform grammar, which was something all Mesopotamian astronomers possessed. A fact evinced by their title: *ṭupšarru*/"writer."

Yet, further punning intimates the impetus behind the Hired-Worker's transformation into a LU/"Ram." All Mesopotamian astronomers were familiar with the Sumerian-Akkadian dictionary that lists *Agri* as the Akkadian cuneiform spelling for "hired-worker" (*CAD* 1/pt.1, p. 151, *agru*, lexical section). In light of the fact that cuneiform *g* was typically rendered *k* in Greek (Geller, 1997, p. 75), a "hostaged" Mesopotamian astronomer fluent in Sumerian, Akkadian, and Greek would have surely noticed that when *agri* is translated into Greek it yields *akri*, a term that – when uttered – sounds like *ho Kri* (ὁ Κριός) the Greek root spelling for "the Ram" (note that the *-os*/-ός suffix is the nominative case ending unconnected to the root) (Liddell, Scott 1997, p. 451). Thus, not only did the substituted logogram for the "Hired-Worker," LU, spell "Ram" in cuneiform, but a variant Akkadian spelling for the "Hired-Worker" (*Agri*) phonetically simulated *ho Kri*, "the Ram," in Greek. And since a Mesopotamian astronomer was a "writer"/*ṭupšarru* he was surely cognizant of all of the various readings for LU, one being SI_6, a homophone with SI, the Sumerian equivalent to the Akkadian verb *ewû*, "to turn into, become" (*CAD* 4, p. 413, *ewû*, lexical section; *AHw* I, pp. 266-267, *ewû*, lexical section).

Hence, in Mesopotamia the stars of Aries depicted a "Hired-Worker" whose abbreviated title, LU, also meant "Ram." One of the approved Akkadian spellings for this constellation, *Agri*, rendered *Akri* in Greek, a homophone with *ho Kri*, "the Ram." And an alternate reading for the logogram LU/"Ram" was SI_6, which phonetically imparting the Sumerian logogram (SI) that meant *ewû* in Akkadian, "to become, change into." All told, *lumāši*-writing puns yield the words: "the Hired-Worker, Turns Into, the Ram" (Fig. 4). And a "Ram" is precisely what the Mesopotamian Hired-Worker transfigures into in Hellenic astronomy.

Pegasus

Pegasus' debut in Greek mythology and astronomy is found in the circa 700 BC *Theogony* of Hesiod, where it is described as a winged *hippos*, "horse," named *Pēgasos*, which "flew away and left the earth … and came to the deathless gods …" (Hesiod, 1970, pp. 98-101). The passage surely refers to the flying Horse's *katasterism*, or "placing among the stars," which implied deification and, by implication, explains how Pegasus came to attain immortality as a constellation in heaven; a point substantiated by the story's third century BC insertion into the *Katasterismoi* of Eratosthenes (Condos, 1997, pp. 151-155, 249-250). The implication being that Hesiod had envisioned Pegasus as a heavenly constellation at the same time he was writing about its mythological origin.

Yet Pegasus' first appearance in an extant star atlas is not seen until the circa 280 BC *Phaenomena* of Aratus, who based most of that text on the astronomical writings of Eudoxus, an astronomer whose work dates roughly eighty-five years earlier (Aratus, 1997, pp. 88-89, 258-263). Knowledge of the Flying Horse was eventually passed down to later Greek and Roman astronomical writers until codified as the twenty stars registered in Ptolemy's *Almagest* (Toomer, 1998, pp. 358-359). All Hellenic astronomers agree that Pegasus was depicted as a Horse whose outline terminates at the navel; and most, starting with Hesiod, declare that it possessed the ability to fly, with wings being incorporated into this constellation by Ptolemy (ibid.; Condos, 1997, pp. 153-155; Aratus, 1997, pp. 258-259; Allen, 1963, pp. 321-329) (Fig. 5).

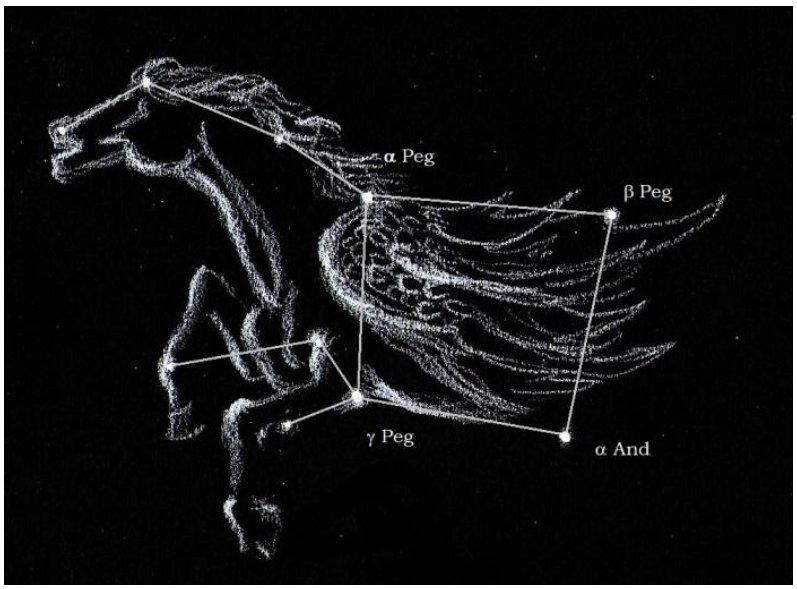

Figure 5. The Pegasus Square was called the "Field"/*Ikû* in the Mesopotamian astronomical texts. (Photo courtesy of the Griffith Observer**)**

In Mesopotamia the four brightest stars or "Square" of Pegasus were called *Ikû*, the "Field," because they resembled the quintessential Mesopotamian "field"/*ikû* – a square plot of agricultural land with 60-meter sides (Gössmann, 1950, pp. 76-79, no. 193) (Fig. 5). At first glance there appears to be no relationship between the inanimate Mesopotamian Field/*Ikû* constellation and the dynamic flying Horse of the Greeks, even though Hellenic astronomers had become aware of the former's existence by the first century BC, a point evinced by its portrayal in lieu of Pegasus on the Greco-Roman star calendars of Denderah, Egypt (Fig. 6).

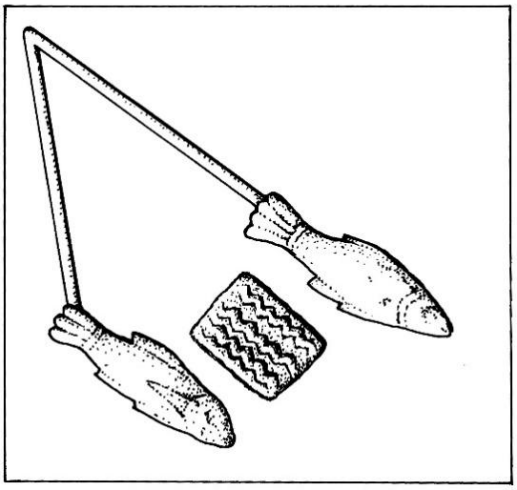

Figure 6. The Mesopotamian Field constellation, *Ikû*, stands in place of Pegasus on the circular star calendar at Denderah, Egypt. (sketch by Michael Lyon)

Wilhelm Roscher identifies the presence of decorative Mesopotamian flying horse iconography predating Pegasus' inception into Greek mythology, and argues that the motif was transmitted through cultural contact with the Phoenicians of coastal Syria, who were known to have had long-standing trading relations with Mesopotamia and Greece (Roscher, 1965, III/pt.2, pp. 1727-1730). According to Roscher, Phoenicia was the place where the flying horse imagery was refined and disseminated into the Hellenic world, a hypothesis accepted by many subsequent scholars (Condos, 1997, p. 154; Astour, 1967, pp. 265-266; Allen, 1963, pp. 323-324). He speculates that Greek poets eventually attached myths to this icon of power, which began with the etiological story of the flying Horse's birth from the severed head of Medusa in *Theogony*.

Hesiod reports that after the knife-wielding Perseus decapitated Medusa, Pegasus sprang forth from her severed neck. He writes:

> And when Perseus cut off her [Medusa's] head, there sprang forth great Chrysaor and the horse Pegasus who is so called because he was born near the streams of Ocean (Hesiod, 1970, pp. 98-101).

It was noted earlier that the flying Horse's name was derived from wordplay – *Pēgas* being the accusative case plural term for "springs" – which Hesiod posits as the basis for the flying Horse's name. Thus Hesiod was using wordplay embedded in the Pegasus' name to explain its origin, which was the precise technique Mesopotamian astronomers utilized to discern enlightenment about their deities. This point was underscored above in tablet seven of *Enuma Elish*, where wordplay embedded in the fifty epithets for Marduk-Jupiter were construed as aspects of this planet-god's powers.

Earlier we learned that *Enuma Elish* was an important reference manual for Babylonian-Assyrian astronomers, and that Hesiod directly or indirectly relied upon *Enuma Elish* to compose *Theogony*, the first extant Hellenic myth to recognize Pegasus. Dependence on *Enuma Elish* implies that Hesiod, or someone collaborating with him, was familiar with the methods used to discover the wordplays upon which tablet seven of that text was based. And it is in wordplay enciphered in the cuneiform terms for the Pegasus Square that divulge this constellation's appearance and name in Greek astronomy.

Douglas Kidd, the translator of the circa 280 BC *Phaenomena* of Aratus, notes that the logographic term for the Mesopotamian "Field" – IKU – spelled "Horse" (*Iqo*) in Mycenaean, the oldest known form of spoken Greek (Aratus, p. 258; c.f. Palmer, 1980, p. 227). The direct correlation manifesting when we recall that cuneiform *u* was often rendered *o* in Greek (Geller, 1997, pp. 66, 68).

Because the Mesopotamian "Field"/*Ikû* constellation was a form of surface area similar to the English term "acre," its title often appears in astronomical texts as the logogram: AŠ IKU, "One Field" (*CAD* 7, p. 68, *ikû*, lexical section). We just saw that IKU formed a homophone with the archaic Greek term for "horse"/*iqo*. While AŠ was the logogram that meant *ina*, "at" (ibid. pp. 141-142, *ina*, lexical section), and was also read DAL_3, phonetically imparting DAL, "to fly" (Borger, 2004, p. 245, no. 1; *CAD* 11/pt.1, p. 314, *naprušu*, lexical section). Moreover, Sumerian-Akkadian dictionaries referenced by Mesopotamian astronomers affirm that the logogram IKU was pronounced "I-KU" (ibid. 7, p. 68, *ikû*, lexical section). Since Mesopotamian astronomers broke apart cuneiform words into their constituent signs in search of concealed puns, they presumably dissected IKU into its phonemic components, I-KU. And in the KU sign we find a homophone with KU_5, "to cut off," as well as KU's alternate reading, DUR_2, which phonetically imparts the logogram DUR, "navel" (Halloran, 2006, p. 23; Borger, 2004, p. 425, no. 808; *CAD* 1/pt.1, p. 89, *abunnatu*, lexical section).

Hence, polysemous readings encrypted in the Sumerian spelling for Field constellation injected the puns: "flying, horse, cut-off, at, the navel" (Fig. 7). And Pegasus assumes the image of a flying "Horse" severed at the belly-button in Hellenic astronomy.

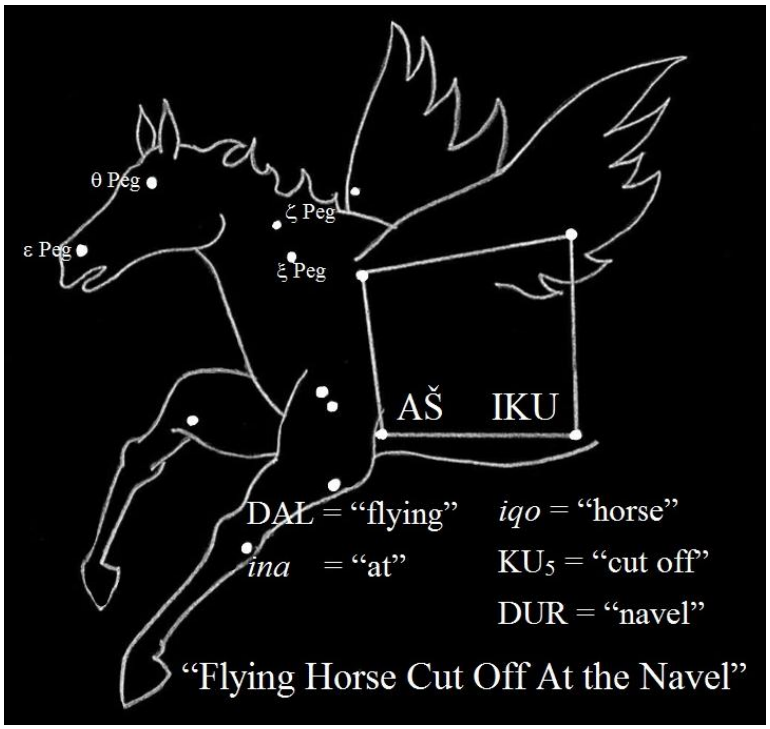

Figure 7. Flying, horse, cut-off, at, the navel (sketch by Ashley McCurdy).

The compulsion to reconfigure the Mesopotamian "Field" constellation into a "flying horse severed at the navel" may be associated with Mesopotamian astronomers' penchant to conceptualize the starry sky as a divine cuneiform "text" in which the constellations were envisioned as embodiments of the cuneiform signs they resembled (Reade, 1979, p. 45; Finkel,

Reade, 1996, p. 248). And, because the Mesopotamian "Field"/IKU constellation traced out a distinct square in the heavens, it resembled the cuneiform sign LAGAB (Fig. 8).

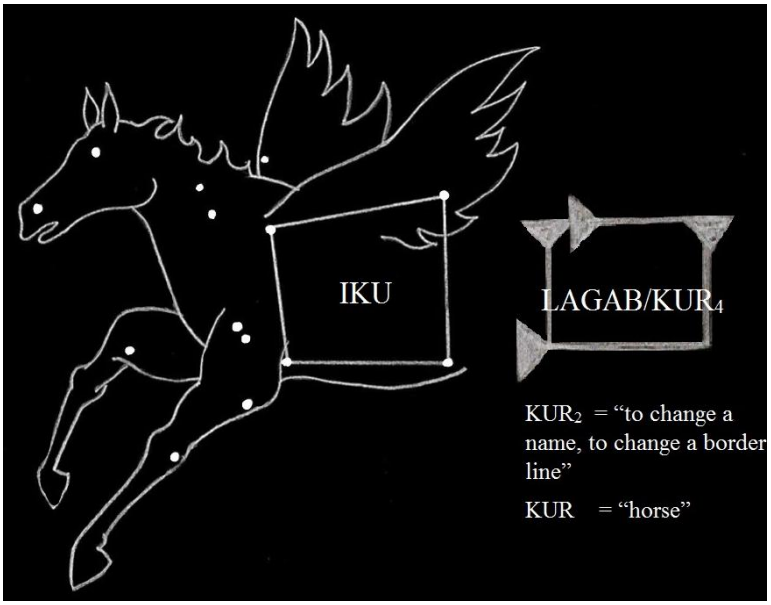

Figure 8. Mesopotamian "Field"/IKU constellation traced out a distinct square in the heavens, it resembled the cuneiform sign LAGAB (sketch by Ashley McCurdy)

LAGAB had numerous readings, one being KUR_4 (Borger, 2004, p. 420, no. 755; McHugh, 2016). The latter forged a homophone with KUR_2, the logogram that stood for the Akkadian verb *nukkuru*, "to change, become different; to change a name, to change a border line," and KUR, the Assyrian logogram for the Akkadian *sīsû*, "horse" (*CAD* 11/pt.1, p. 159, *nakāru*, meanings 7, 10, 11, lexical section; *CAD* vol. 15, p. 328, *sīsû*; McHugh, 2016), as shown in Fig. 8.

Given that Mesopotamian astronomers believed that wordplay conveyed divinely imparted wisdom, and Hesiod was directly inspired by at least one of the texts that Mesopotamian astronomers studied to learn how to utilize puns for enlightenment, it seems plausible that the aforementioned puns had inspired Hesiod to change the outline, name, and appearance of the Field constellation into the image of a flying Horse severed at the navel (Fig. 8).

Further *lumāši*-writing puns correspond to Pegasus' name – *Pēgasos* being the nominalized form of the accusative plural term for "Springs"/*Pēgas*. To see it we must recall that the *Ikû* constellation depicted in the Pegasus Square was an abstract concept, i.e., a measure of surface area similar to the English term *acre*. The tangible object depicted in this constellation was a "plot of land" spelled *iku* or *igu* in Akkadian (*CAD* 7, pp. 66-68, *iku*). The latter spelling forged a homophone with IGU, the logogram that was more commonly read IGI and represented the Akkadian *īnu*, "spring" (Borger, 2004, p. 187, no. 724; *CAD* 7, p. 153, *īnu*, lexical section). Because a Mesopotamian astronomer was literally a "scribe," he would have known that the plural form of "spring" (*īnū*) was spelled exactly like the singular. Furthermore, the IGU sign was read PAD_4 and $ŠE_{20}$, phonetically imparting the Sumerian verbs PAD_3 and $ŠE_{21}$, both meaning, "to call by a name" (*CAD* 11/pt.1, p. 32, *nabû* A, lexical section; *ePSD*: $še_{21}$). Thus the words "Name, the Field, Springs" were also encrypted as *lumāši*-writing in the cuneiform terms for the Pegasus Square. These accord with Hesiod's claim that Pegasus was "so called" (*epōnymon*) because he was born near the "Springs" (*Pēgas*) of the god Ocean (Fig. 9).

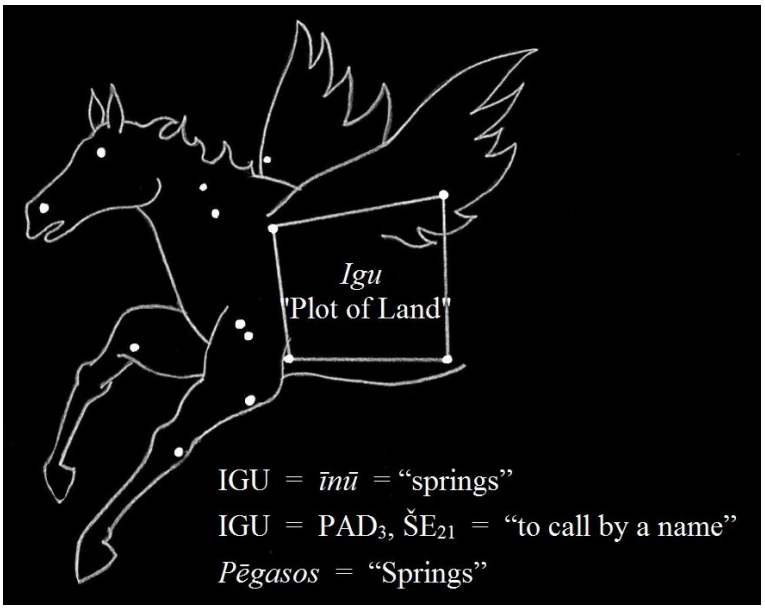

Figure 9. Words "Name, the Field, Springs" were also encrypted as lumāši-writing in the cuneiform terms for the Pegasus (square.Sketch by Ashley McCurdy)

Celestial Punning as the Origin of Crater and Hydra

One of the most perplexing composite stellar images involves *Hydra*, the "Water-Serpent," which is depicted with a "Wine-bowl" (Crater) and a Raven (Corvus) on its back (Fig. 10).

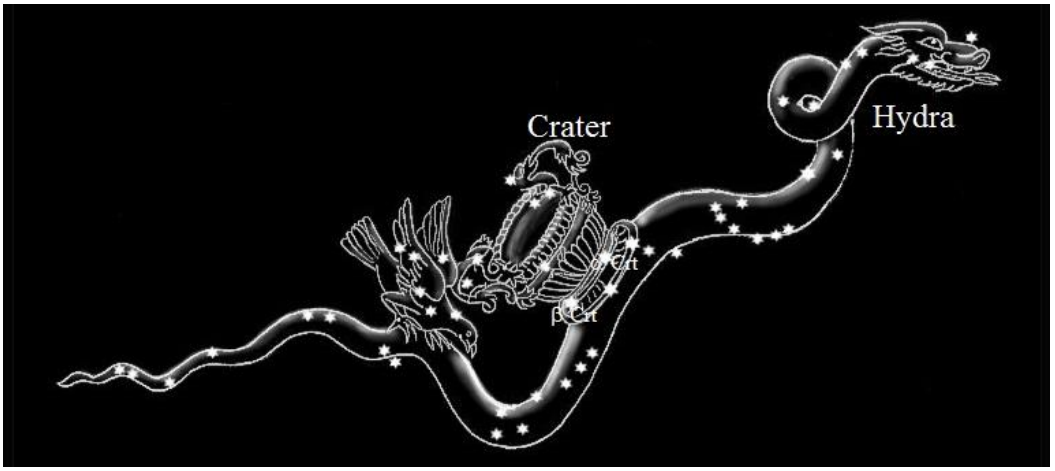

Figure 10. The "Wine-bowl," Crater, rests on the back of the Water-snake, "Hydra." (sketch from circa 1825 *Urania's Mirror* by Ashley McCurdy)

There can be no doubt that the Greek, *Hydra*, "Water-Snake" (Liddell, Scott, 1997, pp. 827-828), originated in Mesopotamia. Cuneiform sources dating to the early second millennium BC label its stars with the Sumerian MUŠ, "Snake," or the Akkadian names *Mušḫuššu*, "Serpent-Dragon," and *Bašmu*, "Horned-Serpent" (Gössmann, 1950, p. 15, nos. 51, 284; Aratus, 1997, pp. 339-340). Cuneiform texts confirm that the image of the Raven (Corvus) standing upon *Hydra*'s back was also a Mesopotamian invention (Gössmann, 1950, pp. 47-49, nos. 132; 49-50, 133; Aratus, 1997, pp. 341). Although the rationale behind the Raven's placement on the Snake is unknown, it is worth noting that a frequent Sumerian logogram for "Raven" was ŠIR-BUR (*CAD* 1/pt.2, p. 265, *āribu*, lexical section). ŠIR$_{10}$ was a variant reading for MUŠ, "Snake" (*ePSD*: muš), and BUR represented the Akkadian verb *nasāḫu*, "to tear out parts of the body, of the

exta" (*CAD* 11/pt.2, p. 1, lexical section). And because the Raven was the embodiment of the god Adad (Hunger, Pingree, 1989, p. 32) it was imbued with the determinative DINGIR/"god," a cuneiform sign that also meant *ša*, "of" (CAD 17/pt.1, lexical section). Thus, puns enshrouded in the Raven's cuneiform title yield the terms: "tearing out the internal organs, of, the Snake." Interestingly, this is precisely what Corvus appears to be doing on the Farnese star atlas (Fig. 11). Its image accords with the words of Aratus in *Phaenomena*, "On its [Hydra's] middle coil lies the Bowl, and on the last one [of Hydra's coils] the figure of a Raven that looks like one pecking the coil (Aratus, 1997, pp. 104-105).

Figure 11. Corvus appears to be pecking into the flesh of Hydra on the Farnese star atlas. This accords with the *lumāši*-writing puns encrypted in the Raven's cuneiform title, "Tearing Out the Internal Organs, Of, the Snake." (photo: Wikipedia Public Domain)

Returning to Crater, Kidd writes, "The Bowl [Crater] appears not to have been known the Babylonians, since two of its stars (α, β) were included in their MUŠ. It was probably invented by the Greeks, presumably before Eudoxus …" (Aratus , pp. 341, brackets inserted; c.f. Condos, 1997, pp. 122-123). Because Mesopotamian astronomical-astrological tablets never mention a stellar "Wine-Bowl," most scholars have assumed it to be an indigenous Greek invention. Yet, wordplay enciphered in the cuneiform terms for *Hydra* divulge a proclamation which elucidates how a *Kratēr*, or "large bowl in which wine was mixed with water," came to rest upon *Hydra*'s back (Liddell, Scott, p. 448, κρᾱτήρ).

Above we noted that one of the Akkadian terms for the stars of *Hydra* was *Bašmu*/"Horned-Serpent." Two bilingual Sumerian-Akkadian lexical texts list MUŠ-A-AB-BA as the Sumerian equivalent to *Bašmu* (*CAD* 2, p.141, *bašmu*, lexical section). The MUŠ portion of this title is the Sumerian equivalent to the Akkadian word *ṣēru*, "snake, serpent," while the A-AB-BA segment is listed as the Sumerian equivalent to the Akkadian *tâmtu*, a noun that typically meant "ocean" but could also refer to a "lake or other large body of water and the surrounding region" (Borger, 2004, p. 377, no. 585; *CAD* 18, p. 150, *tâmtu*, 2). Thus the words "water" and "snake" are embedded in one of the Sumerian titles for the stars of *Hydra*, which correlates with the latter's Greek meaning: *Hydra*, "Water-Snake."

Further wordplay seems to indicate how a *Kratēr* came to appear on the back of *Hydra*. We have seen that Greek *Kratēr* refers to a "Wine-Bowl." This concept was embodied in MUŠ and *Ṣēru*, the Sumerian and Akkadian names for *Hydra*. Both MUŠ and *ṣēru* also referred to a type of ceramic "jug for 'second' wine" (*CAD* 16, pp. 148, 150 *ṣēru* B, 2). Noteworthy is that this term is preceded by the determinative for "vessels," DUG, which can include any variation of liquid-holding vessels including cups and bowls (ibid.; Borger 2004, p. 354, no. 499). Thus, a scholar skilled in cuneiform writing would have known that the Sumerian logogram and Akkadian term for *Hydra*, MUŠ/*Ṣēru*, could also be construed as a type of "Wine-Bowl."

Kratēr's astronomical position – on the back of *Hydra* – can also be traced to MUŠ. The latter logogram stood for the word *ṣēru*, "snake," which forms a homonym with the preposition *ṣēru*, "on top of, upon" and the noun "back," the latter referring to the part of an animal's anatomy (*CAD* 16, p.138, *ṣēru*, A). Astronomical texts indicate that Mesopotamian MUŠ was a deity, evinced by the determinative (i.e., noun classifier) DINGIR/"god" affixed to its name, a logogram that can also mean *ša*, "of" (ibid. 17/pt.1, p. 1, *ša*, lexical section). Finally, one of the common determinatives affixed to the names of constellations, MUL_2, was also read TE, which represented the verb *emēdu*, "to place (something upon something else)" (ibid. vol. 4, p.138 *emēdu*, lexical section).

Thus, polysemy encoded on the cuneiform names for the constellation *Hydra* imparted the words: "Place, the Wine-Bowl, Upon, the Back, Of, the Water-Snake." And Greek astronomers depicted *Hydra*, the "Water-Snake," with a Wine-Bowl upon its back (Figs. 10, 11).

Cancer

Cancer's representation in Greek astronomy is absurdly incongruous. The zodiacal Crab has a *Phatnē*, "Manger" (M44), and *Onoi*, "Donkeys" (γ, δ Cancri), stationed between its shoulders as seen in Fig. 12 (Toomer, 1998, p. 366; Allen, 1963, pp. 111-114).

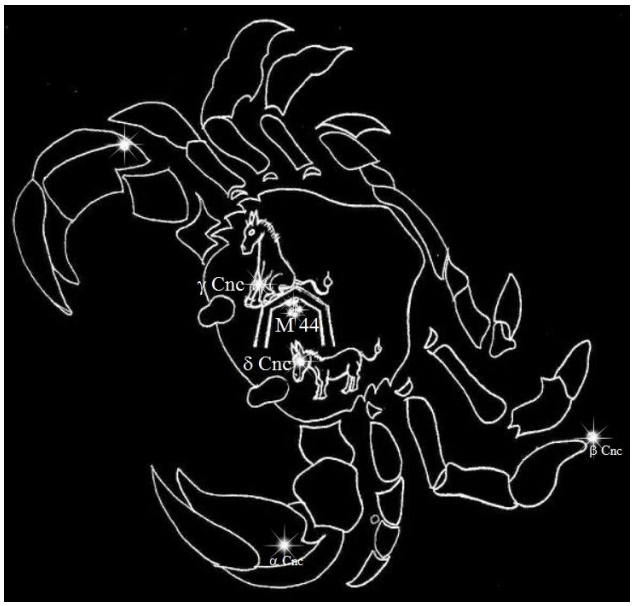

Figure 12. Cancer has a "Manger" (M44) and two Donkeys (γ, δ Cancri) standing upon the back of its shell. (sketch by Ashely McCurdy)

Like so many constellations, the Crab originated in the Fertile Crescent where it was described by the Sumerian logogram AL-LUL and the Akkadian *Alluttu*, both meaning "the Crab" (*CAD* 1/pt.1, p. 360, *alluttu*, 2, lexical section). Over time the Crab's title was transferred onto the Sumerian $KUŠU_2$, which one of the Sumerian-Akkadian dictionaries lists as a sea creature between turtles and crabs (*MSL* VIII/pt. 2, pp. 25-26, ll. 216-226, pp. 90-94; *CAD* 8, p. 602; *AHw* I, p. 517, *kušû*, lexical section; *ePSD*: $kušu_2$). The ambiguity probably arose from Mesopotamian scholars' proclivity to categorize species according to their morphological rather than anatomical characteristics, thus a shelled sea creature of the marshes could refer to "crab" or "turtle." The pertinent point here is that the distinction between "turtle" and "crab" is indeterminate in the ancient word lists, the evidence suggesting that $KUŠU_2$ could refer to either

a "crab" or a "turtle." And the Sumerian-Akkadian dictionaries' ambiguous use of the logogram $KUŠU_2$/"crab, turtle" allows us to discern how the Manger and Asses asterisms came to appear between the shoulders of Cancer.

The Sumerian term MURGU-BA refers to the "shell of a marine creature" (Halloran, 2006, p. 122; *ePSD*: murguba). John Halloran suggests that it refers to a "turtle's carapace": MURGU = "back," BA = "turtle" (Halloran, 2006, p. 122). In light of the ambiguity that existed between turtles and crabs among Babylonian and Assyrian scholars, it seems plausible that some Mesopotamian-trained astronomer envisioned MURGU-BA as a "crab's shell." All this becomes germane to astronomy when we add that Mesopotamians utilized MURGU-BA ("turtle or crab shell") as a "trough" (Halloran ibid.). Moreover, the Sumerian term MURGU forged a homophone with $MUR\text{-}GU_4$, which stood for the Akkadian *imrû*, "fodder," and is precisely what goes into a "Trough" asterism like the one stationed between the Donkeys on Cancer's shell (*ePSD*: murgu; *CAD* 7, p. 138, *imrû* A, lexical section; Halloran, 2006, p. 122). Thus the cuneiform MURGU-BA equates precisely with the Greek *Phatnē*, the "Manger, Trough" asterism in Cancer (Fig. 12).

Additional celestial puns correlate with the Manger's position in relation to the Crab. The MURGU segment of MURGU-BA represented the Akkadian *būdu*, "region between the shoulders including the neck" (*CAD* 2, pp. 303-304, *būdu*, lexical section), which is exactly where the Manger asterism is located in Cancer – between the shoulders (Fig. 12).

Greek star atlases confirm that the "Asses" (*Onoi*) were depicted in the stars γ, δ Cancri (Toomer, 1998, p. 366; Allen, 1963, pp. 107, 111-112). These words were evident in the later logogram for Cancer, $KUŠU_2$, which formed a homophone with KUŠU. The latter logogram embodies the cuneiform signs MAN, "two," and GIR_3, "donkey," embedded within it as seen in Fig. 13 (Borger, 2004, p. 185, no. 710; *CAD* 17/pt.3, p. 32, *šina*, lexical section; ibid. 7, p. 110, *imēru*, lexical section).

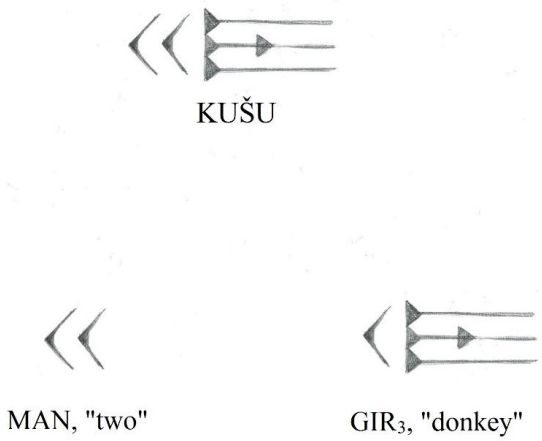

Figure 13. One of Cancer's cuneiform titles was $KUŠU_2$. The latter formed a homophone with KUŠU, a cuneiform sign that embodied the logograms for "two" (MAN), and "donkey" (GIR_3). (sketch by Ashley McCurdy).

The impetus to place these dual Donkeys upon the Crab bears a correlate in the celestial determinative MUL_2, which often preceded Cancer's written title. We have seen that MUL_2 was also read TE and represented the verb *emēdu*, "to place something upon something else." Moreover, the 686 BC cuneiform star atlas MUL-APIN unequivocally registered Cancer as a DINGIR, "god," an epithet that could also be read AN, a logogram representing the Akkadian word *ša*, "of" (Hunger, Pingree, 1989, pp. 67-69; *CAD* 17/pt.1, p. 1, *ša*, lexical section).

Hence, a Mesopotamian-trained astronomer envisioned the constellations as "heavenly writing" that imparted revelation via punning. And polysemy encrypted in the cuneiform terms for Cancer imparted the words "Place, the Manger, Two, Donkey, Between-the-Shoulders, Of, the Crab." These words accord almost perfectly with the image of Cancer in Greek astronomy: a Crab with a Manger and dual Donkeys resting upon its back (Fig. 12).

Argo

The mythical Argo is a composite constellation comprised of Puppis, "the Poop Deck," Vela, "the Sails," and Carina, "the Keel." Noticeably missing from this list is the "Prow," an omission that effectuates Argo's absurd appearance in Greek astronomy: this Ship sails backwards through the heavens and, remarkably, is missing its prow (Fig. 14). Despite its misshapen form, Argo was deified via a *katasterism*, "placing among the stars," which was reported by Eratosthenes (Condos, 1997, pp. 39-40; c.f., Manilius, pp. 36-37). The Argo's prow-less appearance and backward motion was reported in Aratus' *Phaenomena*, "Close to the Dog's [Canis Major's] tail is Argo towed stern first. . . its movement is backward-turned . . . So this *Argo* of Jason is towed stern first. Dark and starless from the prow as far as the actual mast she goes, but the rest is all bright" (Aratus, 1997, pp. 98-99).

By describing the prow as "starless" Aratus had intimated that the Argo was without one. In his translation of *Phaenomena*, Kidd notes, "The forward part of the ship is not represented by any stars, and is usually omitted in diagrams, e.g. on the Farnese globe" (ibid. p. 313). Ptolemy recognized Argo's dual Steering-Oars (Carina), a Stern (Puppis), and Sails (Vela) – yet also left the prow off entirely. Twice Ptolemy alludes to the Argo's prow-less nature, denoting the star ψ Velori as "the star on the cut-off of the deck" and κ Velori as "The more advanced of the two stars . . . near the cut-off. . ." (Toomer, 1998, pp. 390-391). The "cut off" referring to the portion of the Ship situated immediately before the central mast, from which the prow appears to have been severed.

Figure 14. Sketch of Argo as it appears on the second century Farnese star globe (by Ashley McCurdy). Note that west is left.

Argo's truncated appearance and backward movement elicit an obvious question: How did clear-thinking Greek astronomer-poets come to portray the Argo as a deified, stellar Ship that sails backwards through the southern sky without a prow? Some ancient classical commentaries asserted that the prow was torn off during the Argo's trip through the *Symplēgades*, or "Clashing-Rocks" (Condos, 1997, pp. 41, 222). Yet that explanation contradicts the details in that mythical

vignette, as the mythographers Apollonius Rhodius and Apollodorus report that the "stern ornament" (*aphlaston*) was damaged by the Clashing-Rocks (Apollodorus, 1970, pp. 106-109; Apollonius, 2008, pp. 156-161). Another hypotheses is that it was delineated to resemble a Phoenician warship, a vessel whose prow ends in a vertical line (Condos, 1997, pp. 41-42). The problem with this assessment is that the Argo is not delineated as a Ship whose prow is subtle or inconspicuous – such as that of a Phoenician warship. The Argo's prow is unequivocally missing.

Interestingly, cuneiform astronomy and mythology confirm the existence of a deified Ship constellation in the southern sky that has its prow chopped off in a Sumerian myth. The circa 1000 BC cuneiform star atlas "MUL-APIN" recognizes a Ship constellation called a *Makurru* (MA_2-GUR_8 in Sumerian) in the "path of *Ea*," which is the southern segment of the night sky (Hunger, Pingree, 1989, p. 39). In cuneiform literature the *Makurru* often has the DINGIR/"god" determinative affixed to its title, verifying its status as a deity (Salonen, 1939, pp. 12-19; Gössmann, 1950, pp. 94-95, no. 254). And in line 98 of the Sumerian epic known as *Gilgamesh and Agga*, the "prow" (SI) of a *makurru* is cut off (Kramer, 1949, pp. 9, 12; *ANET*, pp. 44-47). Although the Sumerian SI and Akkadian *qarnu* literally meant "horn," the term was applied as a synonym for the towering "prow" and "stern" of the *makurru*, which resembled the curved horns of a bull (*CAD* 13, p. 139, *qarnu*, 5) (Fig. 15).

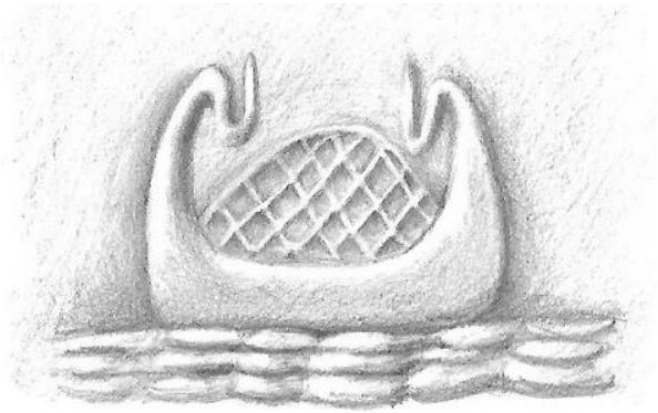

Figure 15. Cuneiform astronomical texts list a MA_2-GUR_8 (Akkadian: *Makurru*) in the southern sky. (sketch from a Neo-Sumerian, circa 2112-2004 BC, steatite, cylinder seal in The Brooklyn Museum, Brooklyn, New York, USA, by Ashley McCurdy)

Thus, Mesopotamian astronomy registers a deified Ship called a *Makurru* in the southern segment of the sky which gets its "prow"/SI cut off in a popular Sumerian religious myth; and Greek astronomy and mythology describes the Argo as a deified Ship situated in the southern region of the sky that too is devoid of a prow.

Such a direct correspondence between the *Makurru* and Argo has presumably gone undocumented because modern researchers have assumed that the location of the *Makurrru* is known. The 686 BC star atlas "MUL-APIN" and other late cuneiform astronomical tablets suggest that the *Makurru*-boat was possibly depicted by ε Sagittarii (Hunger, Pingree, 1989, p. 138; Pingree, Walker, 1988, p. 321; Gössmann 1950, pp. 94-95, no. 254); a star Greek astronomers later catalogued in the southern part of the Centaur-Archer's bow (Toomer, 1998, p. 373; Allen, 1963, p. 358). Eratosthenes, in his circa 200 BC *Katasterismoi*, reports that the "Ship," *Ploion*, in the foot of Sagittarius later became the Southern Crown constellation (Salonen, 1939, pp. 17-18). Thus, some scholars argue that the imprecise memory of a Mesopotamian "Boat" star in the western portion of Sagittarius reappears in the first century BC

star calendar of Denderah, Egypt, where a tiny Boat is depicted under the front hooves of the Centaur-Archer (White, 2008, pp. 72-73, Fig. 31; c.f., Berio, 2014, Fig. 5a).

Yet the direct correlations between Mesopotamian *Makurru* and Greek Argo are compelling: both are gods, both are positioned in the southern sky, and both lose their prow – suggesting that the *Makurru* was the prototype for Argo. How the conception of the *Makurru* constellation may have come to be inaccurately represented in the nondescript star ε Sagittarii begins with David Brown, who offers a litany of corruptions in "MUL-APIN," including the fact that "Many of the stars appear to be out of order in this list" (Brown, 2000, pp. 115-122). A prime example of this is seen in Jupiter's location among the stars in the "path of Enlil" – which is the northern band of the heavens beyond the ecliptic and not a place where this planet could ever be found in the sky (Hunger, Pingree, 1989, pp. 28-29). Brown contends that the constellations listed in "MUL-APIN" are much older than that text's original composition date of circa 1000 BC. If so, then the Mesopotamian *Makurru* may have been a stellar Ship that corresponded to Argo, a constellation whose setting coincides with the rising of ε Sagittarii. Over time precession, copyist errors, and ε Sagittarii's position in the increasingly important zodiacal band caused some Mesopotamian astronomers to associate the *Makurru* with ε Sgr, a star in the "Scorpion-Archer," PA-BIL-SAG; the constellation whose stars later became the Centaur-Archer, Sagittarius, in Hellenic astronomy. This might explain how the incongruous designation of a "Ship" in the foot of the Egyptian Sagittarius arose – a mistake akin to the claim that Jupiter was visible in the swath of sky north of the ecliptic. Put simply, if Mesopotamian astronomers were able to mistakenly locate the planet-god Jupiter in a region of the heavens where it is not visible, then it seems plausible that the prow-less, deified, southern *Makurru* constellation had been mistakenly transferred from Argo onto ε Sagittarii.

The latter claim is bolstered by another correlation between *Makurru* and Argo: their immense size. The Argo is a very large constellation, and cuneiform literature describes the *Makurru* as a big cargo vessel that sailed the rivers and seas of Mesopotamia (Salonen, 1939, pp. 12-19). Indeed, the *Makurru* is the "Ark" in the earliest versions of the Mesopotamian Flood story (Lambert, Millard, 1999, p. 100-101; *CAD* 10/pt.1, p. 141), a boat large enough to temporarily hold the flood-hero's extended family, craftsman, and the seed of all animal life. Thus it was this immense cargo Ship that was projected onto the sky, a vessel that in size resembles the expansive Argo rather than the diminutive ε Sagittarii.

A third correlate between the *Makurru* and Argo is their integral roles in mythology. Argo attained an immortal place in heaven due to its service to Jason and his Argonauts. While the *Makurru* served in the "Ark" in the oldest versions of the ever-popular Flood myth. Moreover, we earlier saw that in *Gilgamesh and Agga* the MA_2-GUR_8 had its prow "cut down." And in another myth NIN-GIŠ-ZID-A (the Snake god embodied in Hydra) boards a MA_2-GUR_8 with the "Child-god," DA-MU (Delphinus), who then sail into Underworld (Jacobsen, Alster, 2000, pp. 315-344). Noteworthy is that NIN-GIŠ-ZID-A, DA-MU, and the MA_2-GUR_8 do not have the celestial determinative affixed to their titles even though each correlates to a constellation in Mesopotamian astronomy. The recurrent appearance of deities in Sumerian literature that were also the embodiment of celestial bodies has compelled Bendt Alster to write:

> … these texts speak in favor of the assumption that the astral aspect of the Sumerian gods is as old as Sumerian literature itself…
> as the evidence stands out, the earliest aspects of Mesopotamian literature seem to be exactly these: celestial functions and wisdom literature… It would be a mistake to

> assume that astronomic observations could only be expressed through lists of explicitly stated numbers. Numerous Sumerian hymns [and myths] take place solely on the starry sphere … (Alster, 1976, pp. 21, 23-24, brackets inserted).

The author contends that the odd references to the MA_2-GUR_8's prow being "chopped down" in *Gilgamesh and Agga* testifies to a celestial theme. When we add to this that the MA_2-GUR_8 was also a divine constellation of the southern sky we hit on a precise correlations to Argo, the deified, prow-less Greek Ship positioned in the southern sky. The correlation allows one to assume, as a working hypothesis, that the Mesopotamian MA_2-GUR_8/*Makurru* was the prototype for the Argo.

And when we explore various puns encrypted in the spelling MA_2-GUR_8, we find cuneiform correlates which elucidate the Argo's prow-less appearance, backward motion, and even a plausible explanation for how it got the name *Argō*, or "Swift," in Greek (Liddell, Scott, 1997, p. 115).

The Sumerian spelling for *Makurru* was MA_2-GUR_8. The MA_2 sign meant "boat," and the GUR_8 sign could be read $ḪU_2$, which is homophonous with HU_x, an alternate reading for SI, the logogram for "prow" (*ePSD*: tu, si; Borger, 2004, p. 263, nos. 86, 88). GUR_8 was also read KU_4, which forms a homophone with KU_5, the logogram that meant "to cut off" (Borger, 2004, p. 263, nos. 87, 88; ibid. p. 248, no. 9). Thus, a Mesopotamian-trained astronomer would have been actively seeking puns in the "heavenly writing" of the stars, and enciphered in the Sumerian term for the Mesopotamian Ship constellation stood the words: "boat, prow, cut off," – words that correspond with Argo's astronomical appearance as a prow-less Ship in Fig. 16.

Aratus emphasized that the Argo was "backward-turned" (*opithen pheretai tetrammenē*), which Kidd describes as a common technique mariners used upon beaching or docking: "The manoeuvre is that of turning the ship under oars until the stern is pointing towards the place where the ship is to be beached" (Aratus, 1997, p. 312).

The cuneiform correlate to the "backwards-turned" Argo is found in MUL_2, which was a common celestial determinative affixed to MA_2-GUR_8. We have seen that MUL_2 was read TE, which represented the Akkadian verb *emēdu* "to place something upon something else." Yet *emēdu* also meant, "to land a boat" (*CAD* 4, p. 138, *emēdu*, 1, lexical section) (Fig. 16).

The name *Argō* (Ἀργώ), "Swift," also corresponds to puns encrypted in the cuneiform MA_2-GUR_8. The MA_2 sign formed a homophone with MA, which secret commentaries on *Enuma Elish* VII equated with *nabû*, "to give a name" (*CAD* 11/pt.1, pp. 32-33, *nabû* A, 1, lexical section). Moreover, because they were expert grammarians Mesopotamian astronomers knew the various readings for the approximately six-hundred cuneiform signs used to write their language. Thus they understood that the GUR_8 sign was also read TUM_{12}, and that the latter made a homophone with TUM_{13}, which is the logogram more commonly read EGIR and represented the Akkadian adjective *arkû*, "back, rear" (*CAD* 1/pt. 2, p. 286, *arkû*, lexical section). *Arkû*/"rear" accords with Argo's appearance as the "rear of a boat" and, recalling that Semitic *k* is often rendered as a Greek *g*/γ (Muss-Arnolt, 1893, pp. 48-49; Geller, 1997, e.g., p. 72, l. 124), and Semitic *û* is translated into Greek as *ō*/ω (Geller ibid., p. 66, e.g., p. 75, l. 285), the cuneiform *arkû*/"rear" can plausibly yield *Argō* (Ἀργώ), "Swift," – the Greek name for this astral Boat.

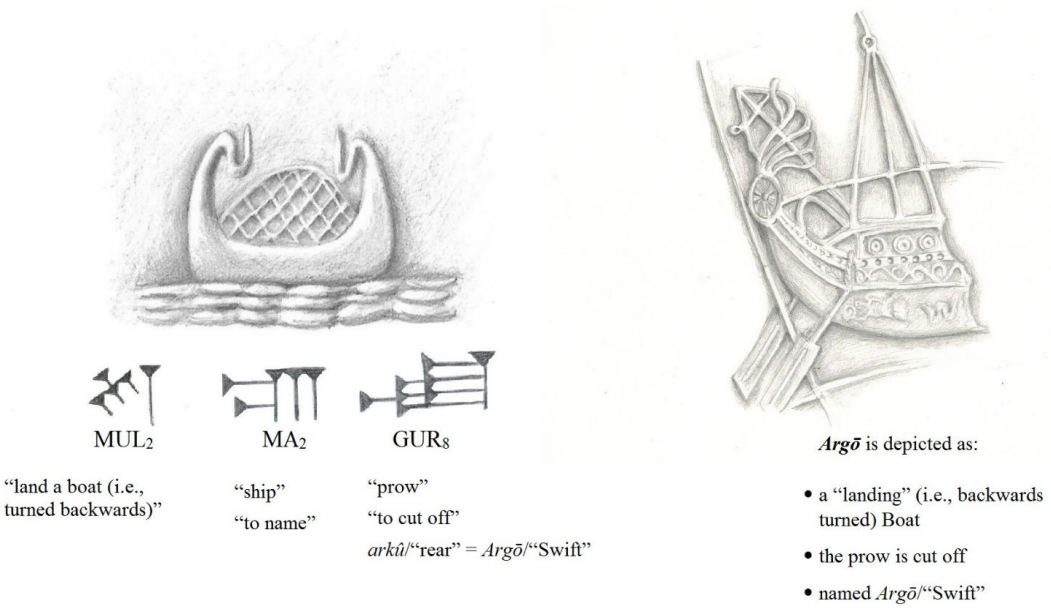

Figure 16. Constellation-writing puns embedded in the Mesopotamian MA_2-GUR_8 correspond with the Argo's prow-less appearance, backwards motion, and name: "Swift." (sketches by Ashley McCurdy)

Thus, puns encrypted in Argo's Mesopotamian prototype, the MA_2-GUR_8, held the words: "god, ship, prow, cut off," and "landing a boat," which in Hellenic thought implied that it was turned "backwards." And in Greek astronomy the Argo assumes the appearance of a deified, prow-less Ship that moves backwards across the sky, as if about to beach. Additional puns embodied the words "name, the boat, rear (*arkû*)" – the latter term yielding the phonetic equivalent to *Argō*/"Swift" when translated into Greek.

Altogether, the puns encrypted in the cuneiform terms for MA_2-GUR_8 yield: "landing (i.e., backwards turned), boat, prow, cut off, named, *argō*/swift." And *Argō* is a prow-less, backwards-turned Ship named "Swift."

Discussion of Results

No ancient writer ever confirms that the aforementioned *lumāši*/"constellation"-writing puns served as the inspiration for Pegasus, Hydra-Crater, the Manger and Donkeys in Cancer, and Argo. All of the aforementioned correlations have been derived from the author's inferences. Skeptical analysts could rightly argue that the sheer volume of potential puns encrypted in each cuneiform constellation title's variant readings leaves the author's assertions unprovable; and that he has "cherry picked" the puns that validate his correlations without ever explaining why other puns were omitted by the ancient astronomers. The author's only defense to such criticism are the large number of correlations (six constellations and three asterisms), and their absurdities. What "logical" archaic thinker would place wings on half a horse, situate a wine-bowl on a water-snake, position a feeding trough and two donkeys between the shoulders of a crab's shell, and portray a ship that moves backwards through the heavens (as if docking) without its prow?

Such irrationalities shift into the realm of plausibility when we accept what is known: 1. Mesopotamian astronomers envisioned the starry sphere as a hallowed cuneiform text written by the star-god. 2. Puns discerned from this sacred stellar writing were construed as revelations imparted directly from the deities themselves. 3. Three doyens of Semitic-Hellenic cultural transmission (Walter Burkert, Martin West, Peter Walcot) have argued that the archaeological

and literary data presumes direct contact between Mesopotamian "scholar-magicians" (which included astronomer-astrologers) and their Hellenic counterparts at the mid-eight century BC inception of Greek writing.

The numerous Greek and cuneiform references to pirate raids in which hostages were taken with the intent of being sold for profit indicates that the custom was a frequent occurrence. This suggests that, over time, many Mesopotamian astronomer-writers had been taken "hostage" by Greek overlords, became fluent in Greek, and disseminated their skills in colloquies with Greek neophytes. The implication being that a cadre of bilingual (cuneiform-Greek) scholars came into existence. Such bilingual astronomer-poets would have the ability to decipher the cuneiform puns encrypted in the stars of Pegasus, Hydra-Crater, Cancer, and Argo. And, because such puns were deemed to be divine communiqués imparted directly from the star-gods themselves, they would have presumably obeyed the messages divulged in the puns no matter how irrational – resulting in the absurd appearances found in Pegasus, Hydra-Crater, Cancer, and Argo.

Conclusions

Previous scholarly assessments of constellation origins have argued that the adoption of the Mesopotamian constellations into the Hellenic world took place by way of diffusion, with Phoenicia typically being proffered as the intermediary culture that encountered Mesopotamian astronomical knowledge directly; Phoenician mariners discussing navigational tools and techniques with their Babylonian and Assyrian counterparts came to learn the identities of the Mesopotamian star-figures and in turn transmitted many of these to the Greeks, where they became codified in the star atlases of that land. Greek constellations lacking a Mesopotamian prototype were thought to be either autochthonous Hellenic inventions or the creations of seafaring peoples such as the Phoenicians or Minoans – civilizations known to be in direct trading relations with Greece; foreign constellations that were eventually appropriated into the Hellenic celestial sphere.

While these scenarios appeal to the logic of a modern researcher, they ignore the most revered precepts embraced by the Mesopotamian astronomers themselves; percepts which in turn guided their understanding of the constellation-gods and the powers they possessed.

The Mesopotamian astronomer was literally a "writer"/*ṭupšarru* who envisioned the starry sky as a divine text inscribed by the star-gods. Entailed to this idea was the belief that wordplay deciphered from a constellation title illuminated some hidden aspect of the star-deity's attributes, powers, and appearance.

The archaeological and literary record implies that, during the mid-eight century BC inception of the Greek alphabetic writing there was direct cultural interaction between Mesopotamian and Greek scholars in Phoenicia, which involved Greek pirate raids on Assyrian controlled coastal towns with the goal of taking hostages as booty. Circumstantial evidence indicates that these raids placed "hostaged" Babylonian or Assyrian astronomer-writers in colloquy with their Greek counterparts. A vestige of this practice possibly discernible in the name for the father of Greek epic poetry, *Homēr*/"Hostage," a scholar whom at least two ancient writers categorized as a Babylonian that had been taken "hostage" by the Greeks.

The author argues that "hostaged" Mesopotamian astronomer-magicians disseminated the conception of the starry sky as sacred, cuneiform "writing" that divulged revelations through the medium of wordplay into the Hellenic cultural sphere. During colloquies with Greek counterparts these "hostaged" Mesopotamian astronomers taught Hellenic neophytes the

Mesopotamian constellation names and the techniques used to extract revelatory puns from the stellar divinities as exemplified in *Enuma Elish* VII. Over time a cadre of bilingual (cuneiform-Greek) astronomer-writers emerged. And it was this newly acquired Mesopotamian astronomical arcana that equipped Greek astronomer-poets with the ability to discover previously unknown attributes and qualities embodied in the ancient constellation-gods. Sacred celestial wordplay in the Mesopotamian Field constellation imparted that it be "named ‘Springs'" and that it "change into a flying Horse severed at the navel." Polysemy in the Mesopotamian Snake-god constellation declared that a "Wine-Bowl" be "placed on the back of the ‘Water-Snake'." Puns enciphered in the cuneiform terms of Cancer dictated that a "Manger" and "two Donkeys be placed between the shoulders of the Crab." And double entendre in the Mesopotamian Ship constellation divulged that it be "named ‘Swift' (*Argō*)" and display the appearance of a "beaching (i.e., backwards-turned) Boat" whose "prow is cut off." It was these secret *lumāši*/"constellation"-writing puns that were eventually codified in Ptolemy's *Almagest*.

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