Ancient Testimony for a Comet-like Venus

Ev Cochrane PO Box 1092, Ames, IA 50012 Email: <u>ev.cochrane@gmail.com</u>

The paper summarizes literary and iconographic evidence for a comet-like Venus in ancient sources. In the earliest writings from Mesopotamia the planet Venus is denoted by a pictograph which shows a spiraling "comet-like" image. A very similar form is attested in the earliest religious texts from ancient Egypt—the so-called Pyramid Texts—wherein it is employed to denote a comet-like celestial phenomenon, one associated with Venus. The question arises as to how to explain such testimony? Is it possible that the planet Venus formerly presented a comet-like form?

1. Introduction

Modern space probes have been monitoring Venus since 1961. The various Venera missions, together with the Mariner, Pioneer, and Magellan missions, have revealed a wealth of information about Venus's atmosphere, surface appearance, and volatile chemistry, much of it hitherto unsuspected and at striking odds with the expectations of astronomers.

In the late 1970's it was discovered that a strange "tail" extended many miles from Venus. This finding, coupled with the discovery in 1979 that "flux ropes" exist in Venus's ionosphere, confirmed the reality of plasma-based energetic phenomena associated with Venus. Shortly thereafter Hans Alven offered the following observation on this curious state of affairs: "In the ionosphere of Venus, 'flux ropes' are observed with a structure which shows beyond any doubt that they are produced by filamentary currents. Their diameters are typically 20 km." [1]

This so-called "induced magnetotail" has been likened to a comet-like tail extending from Venus [2]. Subsequently it was found that the Venus "tail" extended some 45 million km downstream from Venus.

The recent discovery of a tail extending from Venus, coupled with the ancient testimony describing a comet-like Venus, prompts the following question: Is it possible that Venus's current magnetotail was formerly more substantive in nature and thereby presented a much more dramatic appearance?

2. Background

In the controversial Worlds in Collision Immanuel Velikovsky marshaled evidence suggesting that the planet Venus once presented a comet-like appearance. Citing ancient literary accounts which described Venus as a smoking star and as a torch spanning the sky, Velikovsky claimed that Venus assumed a comet-like orbit in 1500 BCE and moved in close proximity to the Earth, thereby causing worldwide destruction.

In 1982 David Talbott and I returned to this far-reaching hypothesis, finding a wealth of evidence in favor of Venus's cometlike appearance. The evidence in question is especially abundant in very early literary texts from Egypt and Mesopotamia. Insofar as such texts predate 1500 BCE by a millennium or more, Velikovsky's particular historical reconstruction cannot be correct. Rather, the evidence suggests that Venus's comet-like phase traces to the prehistoric period.

3. Analysis

Ancient Mesopotamia is renowned as the birthplace of scientific astronomy and thus it experienced a long history of skywatching marked by careful observation of the respective celestial bodies. This being the case it is disconcerting to discover that Sumerian descriptions of the planet Venus often fail to accord with planetary science as currently understood. Conceptualized as the goddess Inanna, the planet Venus was described as a raging warrior whose incendiary rampages threatened the world with destruction. In text after text Inanna/Venus was described as an enormous celestial form whose terrifying "radiance" filled all of heaven and rivaled "daylight."

In the most archaic texts from Uruk—conventionally attributed to roughly 3300 BCE—Inanna's name was written with a sign known as MUÍ3, commonly interpreted as a gate-post with streamer (see Fig. 1) [3]. Although most examples of this sign have been found at the archaic E-anna precinct at Uruk, it also occurs elsewhere in Mesopotamia during the same period [4].



Fig. 1. Caption.

An obvious question presents itself: If the MUÍ3-sign is to be regarded as a pictograph denoting Inanna, to what natural object might it refer?

In a review of the evidence pertaining to Inanna's early symbol, Piotr Steinkeller noted that its original significance continues to elude scholars, leading many to doubt whether the MUÍ3-sign ever had a concrete reference in the natural world:

"But, beyond Andrae's suggestion, no one has ever attempted to assign to the volute-like structure any specific meaning. The prevailing opinion is that the symbol is devoid of any representational content. Thus, scholars have been content to refer to it purely descriptively, by using such designations as 'Schilfringbündel,' 'a shaft with a banner,' 'la hampe à banderole,' 'ring-headed post, usually with streamers,' or 'roller-blind reed pylon.'" [5]

Rather than a reed-bundle, Steinkeller proposed that the object represented in the MUÍ3-sign was a head-band or scarf. Steinkeller concluded his article as follows:

"To summarize our conclusions, in the ED passage in question the emblem (urin) of Inanna (=Inanna's volute-like symbol) is described as a lapis lazuli scarf (bar-si). That scarf was not unlike the 'diadem' (suh), which is one of the meanings of MUÍ/MUÍ (a drawing of Inanna's volute-like symbol). It would seem, therefore, that the archaic symbol of Inanna depicts a scarf or head-band." [6]

It is our opinion that Steinkeller's hypothesis represents an important contribution to the debate. That said, it is not clear why a head-band or crown would be chosen to denote the planet-goddess Inanna.

Hitherto it has always been assumed that there is no inherent connection between the MUÍ3-sign and the Venus-star. Indeed, the prevailing view appears to be that Inanna was originally associated with fertility—and thus, by association, with the sacred storehouse and reed-ring bundle—and only later became identified with the planet Venus. We would challenge this view based upon the fact that Inanna is already identified with the planet Venus in the prehistoric period [7].

In seeking to offer a unifying theory of Inanna's origins we would start from first principles-the goddess's identification with the planet Venus-and proceed from the known to the unknown. In the earliest period for which we have written evidence (Uruk IV), the MUÍ3-sign typically appears without the divine determinative, although exceptions do occur. In the subsequent Uruk III period, the sign is usually accompanied by a divine determinative [8]. Inasmuch as the cuneiform determinative for "god" features an eight-pointed star, it stands to reason that Inanna was identified with a celestial body during this period. Indeed, the world's foremost expert on the archaic Uruk script - Krystyna Szarzynska - suggests that in the earliest period the divine determinative seems to have been reserved for astral deities: "In the most archaic period the determinative dingir was associated with astral deities only."9 According to Szarzynska, the cult of astral deities reaches back to the proto-Sumerian period, perhaps earlier [10].

If the identification of Inanna and Venus was prehistoric in nature—and the evidence certainly supports Szarzynska on this point [11]—it stands to reason that the MUÍ3-sign might also have had some reference to the planet. Certainly this possibility cannot be ruled out based upon the extant evidence. How, then, are we to understand this particular pictograph by reference to Venus?

It must be admitted that it is difficult to reconcile the spiraling volute-form of the MUÍ3-sign with the familiar appearance of Venus. Indeed, the MUÍ3-sign would seem more representative of a comet than a planet. With respect to the twelve principal variants of this symbol depicted in Adam Falkenstein's *Archaische Texte aus Uruk*, Lynn Rose noted that "every one of them looks like a comet." [12] Peter Huber—a noted authority on ancient Near Eastern astronomical traditions—acknowledged the resemblance: "The Inanna symbol sometimes looks like a comet."

[13] Is it possible, then, that a comet-like object served as the natural prototype for the archaic pictograph of Inanna?

If the MUÍ3-sign originally had reference to a comet-like object—one somehow connected to the planet Venus—it stands to reason that cometary symbolism should be evident in early literary descriptions of the Sumerian goddess. And this is certainly the case, as we have documented elsewhere [14]. Again and again in the Sumerian texts Inanna is described as raining fire and destruction from the sky. In *The Exaltation of Inanna*, for example, the planet-goddess is described as "Raining the fanned fire down upon the nation." [15] The same idea is apparent in a bilingual hymn to Inanna:

"I was the blazing, the brilliant (?), fire, I was the blazing fire which became alight in the mountainland; I was the fire whose flame and sparks (?) rained down upon the Rebel land." [16]

Essential to a proper understanding of Inanna's numinous nature is the cataclysmic context of her incendiary theophany, explicit in the passages cited above and emphasized repeatedly in the Sumerian literature describing the planet-goddess. Far from being unique to Mesopotamia, the image of a fire-spewing Venus-goddess flying about the skies and threatening the world with destruction is attested around the globe [17]. Analogous imagery is evident in literary accounts of the Semitic goddess Ishtar, explicitly identified with the planet Venus:

"I rain battle down like flames in the fighting, I make heaven and earth shake (?) with my cries... I constantly traverse heaven, then (?) I trample the earth. I destroy what remains of the inhabited world." [18]

The following hymn to Ishtar/Venus is of similar import:

"Planet for the warcry... Gushea [an epithet of Ishtar], whose mail is combat, clothed in chilling fear... At the thought of your name, heaven and the netherworld quake... Shining torch of heaven... Fiery glow that blazes against the enemy, who wreaks destruction on the fierce, Dancing One, Ishtar..." [19]

Here, as in the Sumerian hymns describing Inanna, it is the planet Venus that is raining fire and destruction from the sky. The celestial context of the imagery is at once unequivocal and explicitly stated.

It will be noted, moreover, that Inanna's manifestation as a raging fire (Sumerian *izi*) is fundamentally indistinguishable from her appearance as a stellar "torch" (Sumerian *izi-gar*). Thus, if one hymn invokes Inanna as a terrifying fire—"When in heaven, Inana, you diffuse awesomeness [ni₂] like fire [i-zi-gim]" [20]—another invokes her as a terrifying torch-star: "May your torch, which spreads terror abroad, flare up in the middle of heaven." [21] Yet "torch-star" was a common name for "comet" around the globe [22].

Inasmuch as comets have been compared to "fire-breathing" dragons since time immemorial, it is telling that the planet-goddess was elsewhere likened to a terrifying dragon moving across the sky. It was in that form, according to *The Exaltation of Inanna*, that the war-mongering planet-goddess rained fire from heaven:

"Like a dragon you have deposited venom on the land, When you roar at the earth like Thunder, no vegetation can stand up to you. A flood descending from its mountain, Oh foremost one, you are the Inanna of heaven and earth! Raining the fanned fire down upon the nation...When mankind comes before you In fear and trembling at your tempestuous radiance." [23]

Far from being atypical or exceptional, such cataclysmic imagery abounds in the earliest hymns invoking Inanna.

The disaster-bringing Inanna-dragon represents a Gordion knot—one that must be confronted and unraveled if we are to ever understand the awe-inspiring celestial power that is Inanna/Venus. Hitherto Sumerologists have always taken it for granted that Inanna's serpentine form has nothing whatsoever to do with the planet Venus, preferring instead to explain the cataclysmic imagery in question as a product of figurative language and metaphor. Yet this set of assumptions is at odds with the evidence at hand. An early temple-hymn translated by Sjöberg and Bergmann confirms that Inanna—as the planet Venus—was indeed conceptualized as a dragon:

"Your queen (is) Inanna...the great dragon...Through her the firmament is made beautiful in the evening." [24]

The same idea is evident in another Neo-Sumerian temple hymn wherein Inanna/Venus is described as the "dragon of the nigingar." [25] There, too, the goddess is explicitly identified with the planet Venus:

"Your queen (is) Inanna,...the great dragon of the nigingar, The great queen of heaven and earth, Inanna." [26]

As the Queen of Heaven, the planet Venus was venerated throughout the ancient Near East [27].

In order to assess the possible cometary origin of Inanna's pictograph and mythology, it is instructive to compare the Sumerian evidence with that from other cultures. The sacred traditions from ancient Egypt are especially relevant here, being roughly contemporaneous in date. What we are looking for, ideally, is a stellar goddess who makes a habit of assuming the form of a fire-spewing serpent. Should such a goddess be found—and we won't have far to look—it will be important to determine if she bears any relationship to spiraling forms similar to that represented in the Sumerian MUÍ₃-graph.

4. The Uraeus-Goddess

In ancient Egypt we are confronted with the only advanced civilization that has a written tradition comparable in antiquity to that of Mesopotamia. Unified under a common king as early as 3000 BCE, Egyptian culture was characterized by its conservative nature and remained essentially unchanged for the better part of three thousand years until the arrival of Alexander the Great. [28]. This antiquity, coupled with an extensive corpus of religious texts dating to as early as 2350 BCE, makes Egypt a perfect testing ground to determine whether the disaster-bringing stellar serpent-goddess was unique to Mesopotamia.

Known by numerous different names and epithets—Hathor, Isis, Sakhmet, Wadjet, Wepset, among others—the Egyptian mother goddess is everywhere represented as a fire-spewing uraeus-serpent. It is Hathor, perhaps, who offers the most strik-

ing parallel to the Sumerian Inanna. Again and again Hathor is described as a raging warrior whose terrifying rampages threaten to destroy the world. A text known as the *Destruction of Mankind* finds Hathor being dispatched by Re to rain fire and destruction upon mankind:

"Let go forth thine Eye, let it destroy for thee those who blaspheme with wickedness, not an eye can precede it in resistance... when it goeth forth in the form of Hathor. Went forth then this goddess, she slew mankind on the mountain."
[29]

Although this text is relatively late in date [30], the same basic theme recurs throughout the three thousand years of Egyptian history. The raging mother-goddess is alluded to in numerous spells from the Pyramid and Coffin Texts, for example. Spell 316 from the Coffin Texts invokes the raging goddess as the "Eye of Horus": "I am the fiery Eye of Horus, which went forth terrible, Lady of slaughter, greatly awesome... I am indeed she who shoots." [31] In another spell fire and devastation are said to accompany the Eye's rampage: "The fire will go up, the flame will go up...the fiery one will be against them as the Eye of Rêœ." [32] Elsewhere it is said of the warring Eye-goddess: "Its flame is to the sky." [33] Other passages speak of the hair raised from the raging Eye: "I raised up the hair from the Sacred Eye at the time of its wrath." [34] In a text from Unis's pyramid, the flame from the Eye is likened to a raging storm: "I will put flame in my eye, and it will encompass you and set storm among the doers of (evil) deeds." [35]

In the so-called hymns to the royal crown from the Middle Kingdom (ca. 1600 BCE) the uraeus-goddess features prominently. The goddess's epithets emphasize her incendiary nature:

"Exalted is your power, O Burning One, O Sated One, O Mighty One, Powerful, Skilful of Flames, Lady of the Sky, Mistress of the Two Lands O Eye of Horus, and his guide...Lady of Eternity, Fiery One, O Red One, whose Flame burns, Serpent Uraeus, who guides the people, O Lady of Fire, O Searing One, O Devourer, O Scorching One..." [36]

Even from this cursory survey of the rich Egyptian traditions it is evident that the Eye-Goddess and Inanna/Venus share numerous mythological attributes in common. In both cultures, the stellar goddess is conceptualized as a raging serpentine monster, raining fire and destruction from the sky.

In light of such striking parallels the question arises as to whether the Egyptian Eye-goddess has any relationship to the planet Venus? According to Rolf Krauss, author of the most comprehensive and informed study of Egyptian star-religion to date, the Eye of Horus is to be identified with the planet Venus [37]. If Krauss's identification can be confirmed—and Talbott and I offered the same identification a decade before him [38] — this would support the hypothesis that the mythological imagery surrounding Inanna and Hathor/Eye likely traces to ancient conceptions involving Venus.

5. The Uraeus-crown

It is a curious fact that the uraeus-serpent associated with the raging goddess is intimately related to the royal crown. Indeed, for Jan Assmann, the uraeus-crown was "the most distinctive symbol of kingship." [39] Why this should be the case is not addressed nor, for that matter, is it evident why a fire-spewing serpent should come to serve as the pharaoh's royal head-band. Yet Assmann's claim can hardly be denied. T. Rundle Clark, among others, has emphasized the archetypal significance of the uraeus-serpent in this regard:

"The cobra was the protector of the crown and is shown attached to the front, just above the king's forehead. Hence we get the fundamental symbol equation of Egyptian religion: Eye=Flame=Destructive Goddess=Cobra=Crown. This holds true from the Pyramid Texts to the end of the civilization." [40]

Clark's conclusion warrants close scrutiny. Unquestionably correct, it begs the question: Why would a dragon-like goddess be identified with the crown of kingship?

If we are to judge by the Egyptian testimony on the matter, the symbolism attached to the uraeus-serpent as the Eye and/or crown of kingship would appear to find its divine prototype—and probable historical origin—in the singular events associated with the crowning of Horus, the proverbial King of the Gods. As delineated in the Pyramid Texts, the uraeus-serpent came to adorn the forehead of Horus as the crown of kingship during the decidedly catastrophic events attending Creation. A Pyramid Text devoted to the Red Crown (*Nt*-crown), wherein the uraeus-serpent is addressed as Ikhet, is instructive here:

"He has come to you, O Nt-crown; he has come to you, O Fiery Serpent; he has come to you, O Great One; he has come to you, O Great of Magic, being pure for you and fearing you... He has come to you, O Great of Magic, for he is Horus encircled with the protection of his Eye, O Great of Magic... Ho, Crown great of magic! Ho Fiery Serpent! Grant that the dread of me be like the dread of you; Grant that the fear of me be like the fear of you... If Ikhet the Great has borne you, Ikhet the Serpent has adorned you; If Ikhet the Serpent has borne you, Ikhet the Great has adorned you, Because you are Horus encircled with the protection of his Eye." [41]

Evident here is a central tenet of archaic Egyptian religion: The dread-inspiring mother goddess, alternately identified as "Fiery Serpent" and "Eye," once encircled Horus and thereby provided him with the crown of kingship. Thus it is that the word *i/akhet*—in addition to identifying the serpent-goddess—could also signify a crown or diadem [42].

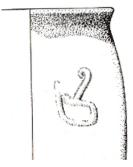


Fig. 2. Caption.

Yet the Red Crown was otherwise renowned for its peculiar shape. Attested in artworks from the fourth millennium BCE

(see figure five), the Red Crown is distinguished by the curious "coil" spiraling upwards from the crown:

"It is the oldest hieroglyph known, appearing on a pot dating from the middle of the fourth millennium; but it is hard to say whether it already had a value as a code or whether it was simply a drawing of the object." [43]

Egyptologists readily concede their inability to explain either the origins or symbolic significance of the Red Crown. Witness the observation of Toby Wilkinson:

"There is, as yet, no satisfactory explanation for the origin of the two principal crowns, the red and white...A sherd from a large black-topped red-ware vessel of late Naqada I date, from the site of Naqada itself, bears a representation of the red crown in relief...The shape of the crown is quite distinctive, but again its symbolic meaning is unknown...There is an obscure passage in the Pyramid Texts of Unas which may refer to the curly part of the red crown, but it remains poorly understood." [44]

A decisive clue to the symbolism in question is offered by the fact that, on a label of King Serpent (Djer) found at Sakkara, the uraeus-serpent substitutes for the Red Crown. As Alan Gardiner observed, this substitution of hieroglyphs hints at a fundamental affinity or synonymy between the two hieroglyphs [45]. Indeed, it is our view that the spiraling curl adorning the Red Crown is simply the uraeus-serpent in its angry or "rearing" phase.

Comparing the Egyptian symbolism with that from Mesopotamia, it is evident that the spiraling volute presented by the Red Crown bears a marked resemblance to the spiraling volute depicted in the MUÍ3-sign associated with Inanna/Venus. It is our opinion, in fact, that the two symbols represent analogous structural forms and commemorate a common celestial prototype—specifically, a comet-like Venus.

In light of the intimate relationship between the coiling uraeus-serpent and the crown of kingship in ancient Egypt, the question arises as to whether the MUÍ₃-graph was associated with the royal crown in ancient Mesopotamia? As Steinkeller noted, the Sumerian word MUÍ₃=su Δ_{10} denotes a luminous crown or headdress of some sort [46]. According to "Ninurta's Journey to Eridug," the MUÍ₃-crown served as a proverbial sign of sovereignty: "[Ninurta] put on a crown as a sign of kingship, tied on a lapis suh as a sign of enship." [47]

A connection between the MUÍ3-crown and sovereignty is also evident in "Enki and the World Order": "To bring about the birth of a king, to tie (onto him) the legitimate [MUÍ3-crown], to bring about the birth of an en-priest(ess) to set a crown (upon his/her head), it is in her (Nintu's) power." [48] As is obvious from Nintu's function here, there was thought to be an intimate connection between the mother goddess and the crown of kingship in ancient Mesopotamia. Thus it is that Nintu, as the "Lady of the diadem," placed the crown on the king in Old Babylonian investiture rituals [49].

That the MUÍ₃-crown in question had a celestial prototype is certain. Thus, in an early temple hymn the sun-god Utu is said to tie "the mùß-crown (around his head)." [50] Utu is also described as adorned with a lapis-lazuli diadem (MUÍ₃= $su\Delta_{10}$) in the early hymn "Gilgamesh and Huwawa." [51]

The MUÍ₃-crown in question is elsewhere mentioned in conjunction with Inanna as the planet Venus. Witness the following temple hymn, portions of which were quoted earlier:

"Your queen (is) Inanna, ...(She carries) the... mùß-crown (lustrous as) lapis lazuli, the great dragon of the nigingar, The great queen of heaven and earth, Inanna." [52]

To summarize: The natural object referenced by the MUÍ3sign denoting the Sumerian goddess Inanna has long eluded scholars. Steinkeller's suggestion that the MUI3-sign has some reference to a "crown-like" object represents a positive step forward. Yet this interpretation will never explain the terrifying numen that was Inanna who, from the very outset of her appearance in Sumerian literature, was described as an awe-inspiring celestial power, raining fire and destruction from above. The fact that Inanna was early on identified with the planet Venus and explicitly likened to a fire-spewing dragon or muß-serpent is prerequisite to a proper interpretation of the MUÍ3-sign. Indeed, the evidence presented here is consistent with the hypothesis that the Inanna-symbol traces to a celestial prototype-most likely some sort of comet-like apparition associated with the planet Venus, however that apparition is to be explained from an astronomical standpoint.

References

- [1] H. Alven, Cosmic Plasma, p. 16 (Boston, 1981).
- [2] I. de Pater & J. Lissauer, Planetary Sciences, p. 314 (Cambridge, 2010). According to J. Luhmann and C. Russell, "Venus: Magnetic Field and Magnetosphere," in J. Shirley & R. Fairbridge eds., Encyclopedia of Planetary Sciences, p. 907 (London, 1997). "In this sense Venus can be likened to a comet, which has an induced magnetotail of similar origin."
- [3] C. Wilcke, "Inanna/Ishtar," Reallexikon der Assyriologie 5: 74-75 (Berlin, 1976-1980). For the various examples of this sign in archaic texts, see M. Green & H. Nissen, Zeichenliste der archaischen Texte aus Uruk, p. 248 (Berlin, 1987).
- [4] K. Szarzynska, "Some of the Oldest Cult Symbols in Archaic Uruk," *Jaarbericht ex Oriente Lux* **30**: 10 (1987-88).
- [5] P. Steinkeller, "Inanna's Archaic Symbol," in J. Braun et al, Eds., Written on Clay and Stone, p. 90 (Warsaw, 1998).
- [6] Ibid., p. 95.
- [7] G. Selz, "Five Divine Ladies," NIN 1: 29-30 (2000), writes: "It should be regarded as certain that from proto-historical times Inana(k) was conceived of as a female Venus deity. This is put beyond any reasonable doubt by the interpretation of her name as 'Lady of Heaven or 'Queen of Heaven.'...In her research on the textual materials from the Uruk IV-III periods, K. Szarzynska has argued convincingly that the goddess Inana(k) was identified with the planet Venus as early as Uruk IV/III."
- [8] K. Szarzynska, "Cult of the Goddess Inana in Archaic Uruk," in **Sumerica**, p. 142 (Warsaw, 1997).
- [9] K. Szarzynska, "Some of the Oldest Cult Symbols in Archaic Uruk," *Jaarbericht ex Oriente Lux* **30**: 11 (1987-88).
- [10] Personal communication, March 22, 1997, with reference to the article "Cult of the Goddess Inana in Archaic Uruk."

- [11] P. Beaulieu, The Pantheon of Uruk During Neo-Babylonian Period, p. 104 (Leiden, 2003) writes: "This [the evidence collected by Szarzynska] clearly indicates that the astral identity of Inanna was not the result of late, learned speculations, but indeed a very old and fundamental aspect of the goddess, with roots going back to prehistoric times."
- [12] L. Rose, "A Critique of Peter Huber," in L. Greenberg & W. Sizemore, Eds., Velikovsky and Establishment Science, p. 108 (Glassboro, 1977).
- [13] Quoted in Ibid., p. 109.
- [14] E. Cochrane, The Many Faces of Venus, pp. 99-127 (Ames, 2001).
- [15] W. Hallo & J. van Dijk, **The Exaltation of Inanna**, p. 17 (New Haven, 1968).
- [16] ASKT, 129, lines 11-16 as quoted in J. Wilson, The Rebel Lands, p. 18 (Cambridge, 1979).
- [17] E. Cochrane, The Many Faces of Venus, pp. 113-165 (Ames, 2001).
- [18] B. Foster, **Before the Muses**, p. 74 (Bethesda, 1993).
- [19] Ibid., pp. 510-512.
- [20] Line 120 from "A Hymn to Inana as Ninegala (Inana D)," ETCSL.
- [21] B. Hrußka, "Das spätbabylonische Lehrgedict 'Inannas Erhöhung'," Archiv Orientalni 37 (1969), p. 492. The original translation is as follows: "Deine Fackel, die Schrecken verbreitet, möge immitten des Himmels entzündet werden!" See also W. Römer, "Beitrage zum Lexikon des Sumerischen," Bibliotheca Orientalis XXXII: 5/6 (1975), p. 297, who offers a virtually identical translation.
- [22] U. Dall'Olmo, "Latin Terminology Relating to Aurorae, Comets, Meteors, and Novae," *Journal for the History of Astronomy* 11: 16-20 (1980).
- [23] W. Hallo & J. van Dijk, The Exaltation of Inanna, pp. 15-17 (New Haven, 1968).
- [24] Å. Sjöberg & E. Bergmann, **The Collection of the Sumerian Temple Hymns**, p. 36 (Locust Valley, 1969).
- [25] See line 206 in "The temple hymns," ETCSL. There Black points out that nigingar denotes a shrine dedicated to Inanna.
- [26] Å. Sjöberg & E. Bergmann, op. cit., p. 29.
- [27] C. Houtman, "Queen of Heaven," in K. van der Toorn et al, Eds., Dictionary of Deities and Demons in the Bible, cols. 1278-1283 (Leiden, 1995); T. Jacobsen, The Harps that Once..., p. 16 (New Haven, 1987).
- [28] J. Assmann, **The Mind of Egypt**, p. 19 (Cambridge, 2002), writes: "The unchanging fundamentals of its symbolic meaning-world extend across a a period of three and a half thousand years, from 3200 B.C.E. to 300 C.E. This unbroken unity and sense of unchanging collective identity is surely without parallel."
- [29] E. Budge, The Gods of the Egyptians, Vol. I, p. 392 (New York, 1969).
- [30] It dates to the time of King Tut. See S. Quirke, **Ancient Egyptian Religion**, p. 164 (London, 1992).
- [31] CT IV: 98. All quotations are from R. Faulkner, The Ancient Egyptian Coffin Texts (Warminster, 1973-1978).
- [32] CT V: 264.
- [33] CT III:343.
- [34] CT IV: 232. In the Papyrus of Ani, similarly, it is written: "I raise up the hair at the time of storms in the sky...It is the right Eye of Ra in its raging against him after he hath made it to depart." See E. Budge, The Egyptian Book of the Dead (London, 1901), pp. 36-37.

- [35] PT 298-299.
- [36] A. Erman, **Hymnen an das Diadem der Pharaohen**, p. 28 (Berlin, 1911); Translation: A. Roberts, **Hathor Rising**, p. 8 (Devon, 1995).
- [37] R. Krauss, "The Eye of Horus and the Planet Venus: Astronomical and Mythological References," in J. Steele & A. Imhausen, Eds., Under One Sky, pp. 193-208 (Münster, 2002).
- [38] D. Talbott & E. Cochrane, "The Origin of Velikovsky's Comet," Kronos 10 (1): 32-34 (1984).
- [39] J. Assmann, **The Mind of Egypt**, p. 323 (Cambridge, 1996).
- [40] R. T. Clark, Myth and Symbol in Ancient Egypt, p. 220 (London, 1959).
- [41] PT 194-198.
- [42] S. Mercer, The Pyramid Texts in Translation and Commentary, Vol. II, p. 184 (New York, 1952).
- [43] M. Betrò, **Hieroglyphics**, p. 194 (New York, 1996).
- [44] T. Wilkinson, Early Dynastic Egypt, pp. 192-193 (London, 2001).
- [45] A. Gardiner, "The Personal Name of King Serpent," *Journal of Egyptian Archaeology* **44**: 38 (1958).
- [46] J. Halloran, Sumerian Lexicon, p. 239 (Los Angeles, 2006).
- [47] P. Steinkeller, "Inanna's Archaic Symbol," in J. Braun et al, Eds., Written on Clay and Stone, p. 94 (Warsaw, 1998). See lines 10-12 (Segment B) of "Ninurta's journey to Eridug," ETCSL.
- [48] Lines 197-198 as quoted in P. Steinkeller, op. cit., p. 94.
- [49] T. Jacobsen, The Treasures of Darkness, p. 109 (New Haven, 1976).
- [50] Å. Sjöberg & E. Bergmann, **The Collection of the Sumerian Temple Hymns**, p. 46 (Locust Valley, 1969). See line 490 in "The temple hymns," ETCSL.
- [51] Line 29 in "Gilgamesh and Huwawa (Version B)," ETCSL.
- [52] Å. Sjöberg & E. Bergmann, The Collection of the Sumerian Temple Hymns, p. 29 (Locust Valley, 1969).