Can an Iconological Analysis of a Classic Period Vase (K1485) Further our Understanding of Ancient Maya Skyscapes?

Christopher Layser

Dissertation submitted in partial fulfillment of the

M.A. In Cultural Astronomy and Astrology

University of Wales Trinity Saint David

2018

Table of Contents

List of Figures

ACKNOWLEDGEMENTS

I would like to acknowledge Thomas Guderjan and Colleen Hanratty of the Maya Research Program for providing the opportunity to engage in archaeological fieldwork in the Maya lowland regions, an experience which fueled my interest in Pre-Columbian Archaeoastronomy. I wish to express thanks to Matthew Looper for his input concerning the hieroglyph interpretations on this vase and to Justin Kerr for his kind permission to reproduce the photographs of the vases used in this study. Thanks also goes to Bernadette Brady for her supervision and guidance in the formulation and development of this dissertation. Lastly, my gratitude goes out to Jeani Wahl for the proofing of this and many other papers and her assistance in the 'counting of days', and to the loving support and patience of my wife, Misti Layser, throughout this process.

ABSTRACT

This study applies Renaissance art historian Erwin Panofsky's three phase methodology of iconographic analysis to the painting on the Classic period Maya vase (K1485), referred to here as 'The Vase of the Count of Days', to investigate and identify potential cosmological or celestial content and, using a definition of the term skyscape as defined by Fabio Silva, to evaluate whether this image represents a stylized Maya skyscape. This investigation seeks to further the understanding of ancient Maya skyscapes by analyzing the celestial motifs, symbols, and allegories revealed on this vase. As a result, this study suggests glyphs embedded within skybands may have direct cosmological relation to the actors and actions surrounding them, opening new avenues of study in Maya skyscape iconology. It is the assessment of this thesis that all the young females in the image represent phases of the Moon goddess, and as such, her movement across time and space, her path as she traverses realms and her interactions with the Sun and Venus may have initiated the count days in the form of a complex lunisolar calendar. This 'count' would have direct ties to indigenous beliefs and practices in both their maize agricultural cycles and sacred ballgame. Additionally, it is argued that the painting on 'The Vase of the Count of Days' could serve as both a Maya cosmogram and as an instrument to visualize or aid in the count of the days of the sacred *tzolk'in* calendar.

INTRODUCTION

Mary Anne Miller wrote that painted ceramic pots and vases of the Classic period (250 -900 CE) provided 'one of the most rewarding and least studied' windows into the mythology, cosmology, and religious thought of the ancient Maya.[1] The aim of this thesis is to evaluate a scene painted on one of these vases, first photographed in rollout form by Justin Kerr and subsequently designated K1485, to investigate any potential cosmological or celestial content.[2] The methodology adopted for this research was first introduced in 1939 by Erwin Panofsky, who proposed a threefold process for the study of European Renaissance religious art which defined distinct stages he identified as pre-iconographic analysis, iconographic analysis, and iconological analysis.[3] His methodology will be applied here to the study of Maya art. Following a brief history of the artifact reconstructed from epigraphic and documentary evidence, a pre-iconographic summary will analyze the scene painted on the vase in general terms, highlighting the cylindrical and rotational qualities of the piece, and define typological groupings of personages illustrated in the scene. An iconographic analysis will evaluate secondary literature, make comparisons to other primary sources in the corpus of ancient Maya art, and offer epigraphic interpretations of the hieroglyphic labels to present arguments for the identification of the spatial environment and anthropomorphic personages represented in the image. Lastly, an iconological analysis will attempt to interpret the intrinsic meaning of the image and how it would have related to the belief system of the ancient Maya. This research will attempt to add to the collective knowledge by comparing the iconography of skyband glyphs to the motifs, symbols, and allegories which surround them, by asking questions such as who is seated upon what skyband glyph, what activity is occurring around it, and whether these diagnostic glyphs pertain to their surroundings. This thesis makes use of the terms skyscape and skywatcher as opposed to the more western-centric astronomy, archaeoastronomy, or astronomer. In this respect, Fabio Silva puts forward an encompassing definition of skyscapes as

---

[1] Mary Ellen Miller, *Maya Art and Architecture*, (London and New York: Thames and Hudson, Inc., 1999), p.190

[2] Justin Kerr, *The Maya Vase Book: A Corpus of Rollout Photographs of Maya, Vol 1*, (New York: Kerr Associates, 1989), p.90, and Anne D'Alleva, *Methods & Theories of Art History*, 2nd Edition (London: Laurence King Publishing, 2012), p.20

[3] Erwin Panofsky, *Studies in Iconology: Humanistic Themes in the Art of the Renaissance*, Icon Edition, (New York, Hagerstown, San Francisco, and London: Harper and Row Publishers, 1972 [1939]), pp. 3-12

'indigenous conceptual frameworks that constitute a society's understanding of the heavens and the celestial bodies and how they relate back down to human beliefs and practices, to their notions of time and place, [and] to their structures and material remains'.[4] Using Panofsky's three-phase methodology as a framework, I will explore the potential of whether this painted vase (shown in figure 1 and enlarged in Appendix A) and its component elements may fit Silva's definition and depict a stylized Maya skyscape.

Figure 1: Rollout photograph of vase K1485, the Museum of Fine Arts Boston. Photograph © Justin Kerr, used with permission.

Academic Rational

The academic rational for investigating Classic period vases and their relevance to the study of ancient Maya cosmology and the observance of the sky is well established. By way of example, Oswaldo Chinchilla-Mazariegos examined the scene on an artifact in the collection of the Museo Popol Vuh known as the 'Vase of the Stars', which he described as 'an important addition to the corpus of images of heavenly bodies known in Maya art'. [5] His analysis broke down the image into its structural components to describe of each anthropomorphic personage (terminology I will adopt) depicted in the celestial courtly procession. Although he recognized the

[4] Fabio Silva, 'The Role and Importance of the Sky in Archaeology: An Introduction', in *Skyscapes: The Role and Importance of the Sky in Archaeology*, ed. by Fabio Silva and Nicholas Campion, (Oxford and Philadelphia: Oxbow Books, 2015), p.3

[5] Chinchilla Mazariegos, Oswaldo, 'Cosmos and Warfare on a Classic Maya Vase', *RES: Anthropology and Aesthetics*, Vol 47 Spring 2005, p.107

vase as ‘a valuable source for achaeoastronomical studies’, he made ‘no attempt to correlate celestial beings with specific asterisms’ in the Maya skyscape.[6] Chinchilla’s investigation led to the scene’s identification as a Classic period version of the myth of Zipacna, the tale of the subjugation of the Earth-crocodile by the gods prior to the creation of the world- a version of which would later be incorporated into the 16th-century *Popol Vuh* story. With no known associated cosmic myth to draw from, in this study of Vase K1485, I will adopt Chinchilla’s approach of identifying each personage in the scene, but unlike Chinchilla’s work, I will attempt to correlate the personages in the scene to specific celestial bodies within the ancient Maya skyscape using established iconographical methodologies.

[6] Chinchilla, ‘Cosmos and Warfare on a Classic Maya Vase’, p.107

METHODOLOGY

The methodology and theoretical framework applied in this study was developed by art historian Erwin Panofsky in the first half of the twentieth-century specifically for the analysis of Renaissance period religious art, though here I adapt his approach to the investigation of ancient Maya iconography. Panofsky defined iconography as 'that branch of the history of art which concerns itself with the subject matter or meaning of works of art, as opposed to their form'.[7] Anne D'Alleva adds 'at its simplest level, the practice of iconography means identifying motifs and images in works of art' and at its most subtle, it 'works to retrieve the symbolic and allegorical meanings contained in [that] work of art'.[8] In 1939 Panofsky defined three levels of iconographic and iconological analysis each with its own methods of perceiving the meaning associated with these symbols and allegories.[9] This methodology concerned the different layers of meaning which were perceived at different phases of the analysis process. Although some critics argue this methodology was best suited to the field for which it was developed- Renaissance art, D'Alleva argued that it has been successfully applied to a wide range of periods and cultures.[10] My research will apply Panofsky's methodology to the study of Maya iconography. In addition to Panofsky's three-fold methodology, this study will incorporate methods of Structuralism, defined as the theory that the nature of the image can be studied by breaking it down into its component parts.[11] The incorporation of structuralist methodology will complement each of Panofsky's three phases by allowing for the grouping of personages into manageable motifs which will arguably better present them within the context of the whole at each phase.

The first of Panofsky's levels was a descriptive 'pre-iconographic analysis' in which the viewer recognized basic visual elements or action based upon common lived experience without reference to 'outside sources'.[12] Panofsky explained that the meaning perceived at this level- simple 'factual' or 'expressional' meaning, was of

---

[7] Erwin Panofsky, *Studies in Iconology: Humanistic Themes in the Art of the Renaissance*, Icon edition, (New York, Hagerstown, San Francisco, London: Harper and Row, 1972 [1939]), p.3
[8] Anne D'Alleva, *Methods & Theories of Art History*, 2nd Edition (London: Laurence King Publishing, 2012), pp.19-21
[9] D'Alleva, *Methods & Theories of Art History*, p.20
[10] D'Alleva, *Methods & Theories of Art History*, pp.22-23
[11] D'Alleva, *Methods & Theories of Art History*, pp. 26, 126
[12] D'Alleva, *Methods & Theories of Art History*, p.20

an easily understandable nature and was gained by identifying certain visible forms recognizable from practical lived experience.[13] For instance, the factual meaning associated with an image depicting a male figure in a loin cloth nailed to a wooden cross could be interpreted as simply an execution or an expression of death if analyzed outside of the cultural context of Christian iconography. In this phase of the study I will provide a description of the environment illustrated on the painted vase, the anthropomorphic personages depicted, and their agency and perceived relationships devoid of Maya cultural context. Finally, the personages will be placed into groupings based upon typology, proximity or binary opposition (examples being day/night, up/down, or left/right).[14]

The second level of Panofsky's method is an 'iconographic analysis' wherein 'the viewer identifies the image as a known story or recognizable character.'[15] Here Panofsky defined a 'secondary' or 'conventional' meaning which differs in that 'it is intelligible instead of being sensible'[16] Artistic motifs combine to form themes and concepts which manifest in the images, stories, and allegories of a particular culture or context.[17] Identification and recognition of these elements combine to reveal the 'secondary' meaning or the subject matter.[18] This phase of the study will rely on a review of the secondary literature, epigraphic translation of the hieroglyphic inscriptions, and comparisons to other primary sources in the corpus of ancient Maya art to identify the personages represented in the image. For as Panofsky pointed out 'a correct iconographical analysis…presupposes a correct identification of the motifs'.[19]

The third level of inquiry Panofsky described as 'iconological analysis' wherein 'the viewer deciphers the meaning of the image, taking into account the time and place the image was made, the prevailing cultural style or style of the artist, wishes of the patron, etc.'[20] Although the terms iconography and iconology are often used interchangeably due, perhaps, to dependency on cultural context, they in fact refer to

[13] Panofsky, *Studies in Iconology*, p.3
[14] D'Alleva, *Methods & Theories of Art History*, p.128
[15] D'Alleva, *Methods & Theories of Art History*, p.20
[16] Panofsky, *Studies in Iconology*, p.4
[17] Panofsky, *Studies in Iconology*, pp.4-5
[18] Panofsky, *Studies in Iconology*, p.6
[19] Panofsky, *Studies in Iconology*, p.7
[20] Panofsky, *Studies in Iconology*, p.8, and D'Alleva, *Methods & Theories of Art History*, p.20

two distinct processes of analysis.[21] D 'Avella defines iconological interpretation as the investigation of 'the meanings of motifs, symbols, and allegories in their cultural context'.[22] Panofsky emphasized the 'essential' as opposed to the 'phenomenal' nature of meaning perceived at this level, dependent as it is upon the 'underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion'.[23] In this phase of analysis I will weigh the findings gathered from the pre-iconographic and iconographic analysis phases and attempt to relate those themes, identities and concepts to ancient Maya beliefs and notions of time and space.

Panofsky cautioned though familiarity with specific themes and concepts acquired through literary sources was vital for engaging in iconographical analysis, it did not guarantee the 'correctness' of the results.[24] He considered motifs, images, stories and allegories as manifestations of deeper underlying principles he referred to as symbolic values, and interpreting the intrinsic meaning of these symbolic values required 'more than a familiarity with specific themes or concepts as transmitted though literary sources' but rather the 'synthetic intuition' of a diagnostician.[25] Chinchilla acknowledges that 'faced with a dearth of textual sources that can be clearly linked to ancient artworks, students of Pre-Columbian art often attempt to glean meaning from the ancient images themselves.'[26] As such, this study will use what diagnostic clues are available to present as complete an interpretation as possible of this scene using Panofsky's proven three phase methodology of pre-iconographic, iconographic, and iconological analysis.

[21] D'Alleva, *Methods & Theories of Art History*, p.19
[22] D'Alleva, *Methods & Theories of Art History*, p.21
[23] Panofsky, *Studies in Iconology*, p.7
[24] Panofsky, *Studies in Iconology*, p.11
[25] Panofsky, *Studies in Iconology*, pp. 14-15
[26] Oswaldo Chinchilla Mazariegos, *Art and Myth of the Ancient Maya*, (New Haven and London: Yale University Press, 2017), p. 15

HISTORY OF THE VASE

A prerequisite to any successful iconological interpretation of a work of art is an understanding of the historical conditions surrounding its creation.[27] As such, this section will attempt to reconstruct the history of the vase, to the extent possible, before moving to interpretations of the scene depicted on the vase. This is presented not only to set the needed cultural and historical context, but to provide a framework to justify the study of an un-provenienced artifact. The sources for this historical reconstruction are the hieroglyphic texts on the vase itself, extrapolation from various documentary sources, and the modern history of the vase obtained from The Museum of Fine Arts (MFA) Boston's website. Lastly, this section will introduce the academic literature which concerns the vase.

Figure 2: Map of El Petén in northern Guatemala where the vessel likely originated.

The subject of this study, a 25 x 11.5 cm earthenware vase, was fashioned by hand without the aid of a potter's wheel- technology the ancient Maya did not possess, from the Late Classic Period (600–800 A.D.) in the region known today as the El Petén rainforest in northern Guatemala (figure 2).[28] Robicesk and Hales suggested it may possibly come from the poorly understood site of Colico, but they offered no

[27] Panofsky, *Studies in Iconology*, pp.15-16
[28] Museum of Fine Arts, Boston, < http://www.mfa.org/collections/object/cylinder-vase-36438>, accessed 25 June 2018

insight as to why they suspected this precise location.[29] Rather, its similarity in style, glyphic hand and color pallet suggest its origin lay in the Lake Petén-Itzá area near the accomplished artists of the kingdom of *Ik'*, known today as the site of Motul de San José.[30] The Mayan word *ik'* translates as 'wind, breath, or soul', and as will be shown below, the artist himself claims to be part of the Kingdom of *Ik'* tradition.[31]

Michael Coe first identified the formulaic hieroglyphic text usually circumscribed below the outside rim of Classic period vases as the Primary Standard Sequence, or PSS.[32] PSS texts rarely bear any relevance to the image, activities, or personages represented on the vessel, but rather always contains a dedicatory phrase, the vessel's shape and its intended contents.[33] This is can be followed by historically pertinent information such as the name of the artist, the name, titles and city of the patron, or celebrated events.[34] The PSS on this vessel begins with the introductory glyph *alay*, roughly translated as 'came into being'.[35] This is followed by the obligatory dedication phrase *haa t'abayi utz'ihb naaj-* 'was blessed its painting'.[36] Next, the shape of the ceramic artifact- a cylindrical drinking vessel, and its intended contents are described.[37] *Yuk'ib ta-y-utal kakaw* translates as 'his drinking vessel for his drink cacao (chocolate)'.[38] The patron, or recipient of the drinking vessel is next identified as *ch'ok aj laatz u'b*; he is the Great Youth or young heir to the throne, and he possibly carries the poorly understood titles of He of the Stacks and He who Listens

[29] Francis Robicsek and Donald M. Hales, *Maya Ceramic Vases from the Late Classic Period: The November Collection of Maya Ceramics,* (Charlottesville: University Museum of Virginia, 1982), p. 18
[30] Bryan R. Just, *Dancing into Dreams: Maya Vase Painting of the Ik' Kingdom*, (New Haven and London: Yale University Press, 2012), pp. 54-65, and Museum of Fine Arts, Boston, <http://www.mfa.org/collections/object/cylinder-vase-36438>, accessed 25 June 2018
[31] Just, *Dancing into Dreams*, p.62, and Museum of Fine Arts, Boston,
[32] Michael D. Coe, The Maya Scribe and His World, (New York: The Grolier Club, 1973), p.158, and Michael D. Coe and Mark Van Stone, *Reading the Maya Glyphs*, (London: Thames & Hudson, 2001), pp.98-99
[33] Coe and Van Stone, *Reading the Maya Glyphs*, p.98
[34] Coe and Van Stone, *Reading the Maya Glyphs*, p.103
[35] Coe and Van Stone, *Reading the Maya Glyphs*, p.99
[36] Coe and Van Stone, *Reading the Maya Glyphs*, p.99
[37] Coe and Van Stone, *Reading the Maya Glyphs*, p.102
[38] David Stuart, 'The Language of Chocolate: References to Cacao on Classic Maya Drinking Vessels, in *Chocolate in Mesoamerica: A Cultural History of Cacao*, ed. by Cameron L. McNeil, (Gainesville: University Press of Florida, 2006), pp. 185-187, and Dorie Reents-Budet, *Painting the Maya Universe: Royal Ceramics of the Classic Period*, (Durham and London: Duke University Press, 1994), p.77

(though this reading is uncertain).[39] The text ends with *u-tz'ib Ik' itz'at-* 'it is the painting of an artist from the Kingdom of Ik''.[40]

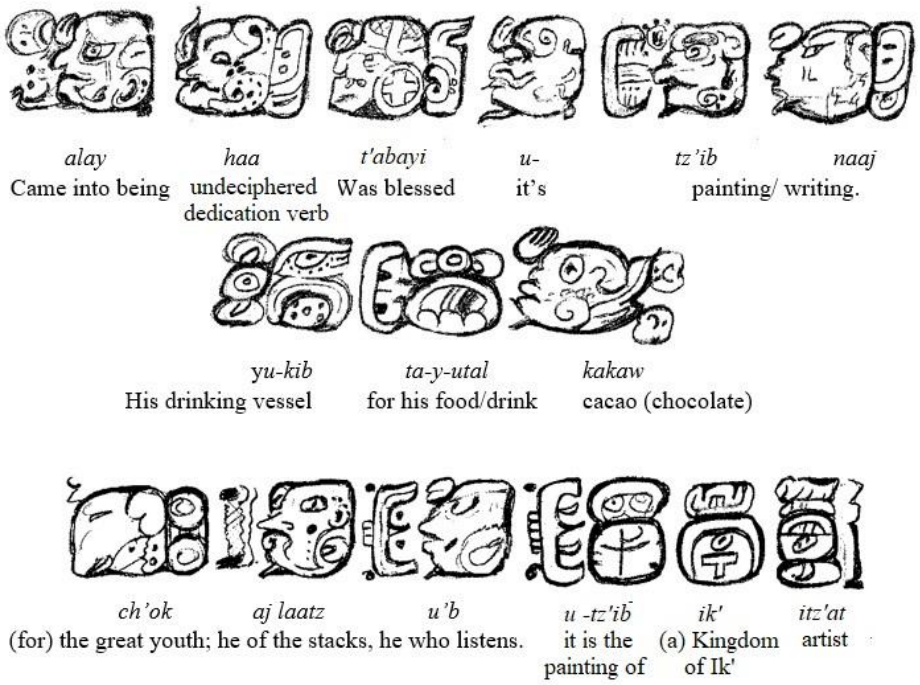

Figure 3: Transliteration and translation of the Primary Standard Sequence (PSS). Drawing by author.

A secondary text located in the lower register of the vase and shown in figure 4, repeats this phrase in glyph blocks B3 through B5; furthermore, it reveals the name of this artist in C1 and D1 as Yax Ch'a-(?) K'inich. A full transliterated of this text by Mathew Looper reads *patax kab-?? uk'aba' utz'ihb ik'a' itz'at yax ch'a-? k'inich*.[41] The first glyph compound, A1 of figure 4, reads *patax*, 'it gets made'.[42] For the glyph compound at B1, Looper translates the first glyph, *kab'*, as 'Earth' but offers no interpretation for the second.[43] However, Scott Johnson suggests that *kab'* can not only be read as 'earth' but also as the noun 'bee' or as a transitive verb 'to make it happen, supervise'.[44] Johnson does provide a translation for the second glyph

[39] Raphael Tunesi and Yuriy Polyukhovych, 'Possible Phonetic Substitutions for the "Knot-Head" Glyph'. *Glyph Dwellers Report* 39, May 2016, <http://glyphdwellers.com/pdf/R39.pdf>, accessed 20 June 2018
[40] Museum of Fine Arts, Boston, < http://www.mfa.org/collections/object/cylinder-vase-36438>, accessed 25 June 2018
[41] Matthew G. Looper, personal correspondence, 2018.
[42] Matthew G. Looper, personal correspondence, 2018.
[43] Matthew G. Looper, personal correspondence, 2018.
[44] Scott A. J. Johnson, *Translating Maya Hieroglyphs*, (Norman: University of Oklahoma Press, 2013), p.284

in the compound as *tal*, 'the count of days' (figure 5).[45] In this light, I offer that B1 in figure 4 can be read as either 'to make happen the count of days' or 'the count of days of the earth'. The next compound glyph, B2 in figure 4, reads *uk' aba'*, or 'its name is'- likely identifying the name chosen by the artist for this painting. The entire text may then read- 'It gets made, 'To make happen the count of days' is its name; it is the painting of the Kingdom of Ik' artist, Yax Ch'a-(?) K'inich'. Therefore, the original name of this vessel may have been something akin to 'The Vase to Make Happen the Count of Days', 'The Count of Days of the Earth', or in short, 'The Vase of the Count of Days'. In this study I will hence refer to it as 'The Vase of the Count of Days' as opposed to its Kerr catalog number K1485.

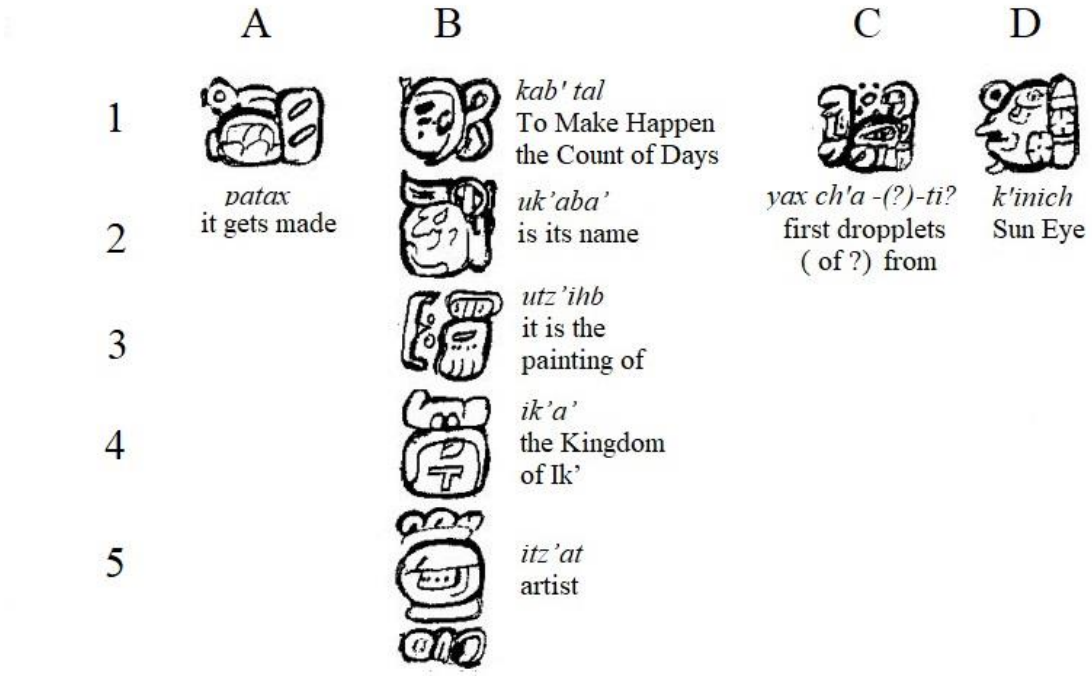

Figure 4: Secondary hieroglyphic text of the lower register of 'The Vase of the Count of Days' naming the art and the artist. Reading order is A1, B1 to B5, C1, D1. Drawing by author.

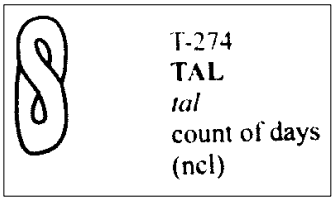

Figure 5: Logogram T274 TAL, count of days, from Johnson, Translating Maya Hieroglyphs, 2013, page 227.

[45] Johnson, *Translating Maya Hieroglyphs*, p.227

The fact that this artifact was recovered by looters, common in Central America, is evidenced by its arrival on the market un-provenienced and undocumented by any archaeological excavation. Though some scholars contest the presentation and publication of unprovenienced artifacts as destructive against the past, such academic censure unduly removes thousands of ancient Maya artifacts representing an important and substantial body of data from academic and public consideration.[46] It can be seen by close inspection that at some point in this vase's history it had been broken, carefully glued back together and restored, as is normal with many recovered archaeological artifacts. Evidence suggests this particular vase was purchased in Guatemala by John B. Fulling between 1974 and 1981 and added to what was known as the 'November Collection' after Fulling's company, the Art Collectors of November.[47] Commentary on the vase was first published in 1982 by Francis Robicsek and Donald M. Hales in *Maya Ceramic Vases from the Late Classic Period: The November Collection of Maya Ceramics*.[48] In 1987 Fulling sold the collection to Landon T. Clay, who donated it to the Museum of Fine Arts in Boston the following year.[49] That same year it was referenced by astronomer John Carlson for its celestial content in *Maya Iconography*.[50] The vase was photographed in proprietary roll-out form by Justin Kerr and subsequently published in both *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases* (first in Volume 1 and then with commentary by Dicey Taylor in Volume 3) and his Maya Vase Database (with commentary by Karen Bassie) where it received its designation K1485.[51] Despite its un-provenienced nature, the vase has been previously used in academic literature, and I argue the context gleaned from the glyphic texts serve to justify its continued use in academic discourse.

---

[46] Just, *Dancing into Dreams*, p.55

[47] Museum of Fine Arts, Boston webpage, < http://www.mfa.org/collections/object/cylinder-vase-36438>, accessed 25 June 2018

[48] Robicesk and Hales, *Maya Ceramic Vases from the Late Classic Period*, p.18

[49] Museum of Fine Arts, Boston webpage

[50] John R. Carlson, 'Skyband Representations in Classic Maya Vase Painting', in *Maya Iconography*, ed. by Elizabeth P. Benson and Gillett G. Griffin, (Princeton: Princeton University Press, 1988), pp.227-293

[51] Kerr, Justin, *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 1*, (New York: Kerr Associates, 1989), p. 90, Taylor, Dicey, 'Painted Ladies: Costumes for Women on Tepeu Ceramics', in *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 3*, (New York: Kerr Associates, 1992), pp.513-525, and Kerr, Justin, Maya Vase Database, <http://research.mayavase.com/kerrmaya_list.php?_allSearch=&hold_search=&x=32&y=4&vase_number=1485&date_added=&ms_number=&site=>, accessed 1 July 2018

PRE- ICONOGRAPHIC ANALYSIS

A Rotating Image

A pre-iconographic analysis is subjective in nature, and by extension the way in which a work of art is viewed can take various forms. Consider Charles Harrison's statement that 'linguistic texts are organized sequentially in a conventional order, distributed in time as well as in space' whereas 'a single pictorial image… is distributed in space so that its constituents can in principle be apprehended simultaneously.'[52] This is not necessarily accurate when considering a cylindrical artifact (figure 6). Before the development of the rollout photograph, an ancient Maya viewer would have needed to turn this vase in their hand to see the entire image- a process which could certainly overlay a sense of space as well as time. As the vase would be rotated clockwise (the direction of the rotation of the sky, as will be suggested below) the scene would unfold and eventually circle back upon itself. This experience can only be simulated when viewed in rollout form, panning from left to right. If the title of the painting was indeed 'To Make Happen the Count of Days', this adds to the notion of time overlaid upon the painting. A literate Maya elite may have even recognized the introductory glyph of the PSS as a good starting point for such a rotational viewing.

Figure 6: Vase K1485. Photograph from the Museum of Fine Arts, Boston.

[52] Charles Harrison, *An Introduction to Art*, (New Haven and London: Yale University Press, 2009), p. 62

Of course, in a pure pre-iconographic analysis, if rigidly following the process laid out by Panofsky, the viewer experiences a work of art unencumbered by preconceived interpretations or identification of motifs, personages, or in this case, introductory glyphs. D'Alleva acknowledges, though, that 'viewers come to art as individuals shaped by their experiences, values, and historical and cultural knowledge… which can make approaching a pre-iconographic analysis with an "innocent eye" difficult.'[53] A cursory examination of this image with an 'innocent eye' reveals a multitude of personages, represented by both aged males and young females, either seated or in movement in one of two registers- an upper and lower register. The two registers are delineated by a burnt-orange and white (cream slip) band containing glyphic symbols.

One can imagine that if the vase were held in hand and turned to view the image in its entirely, the eye would be drawn to what could arguably be called the focal point- and I argue starting point, based upon two factors. First, as a focal point, this portion of the image conveys the most amount of action as it depicts a one personage assisting another as they cross the boundaries between the upper and lower registers of the scene. As a starting point, this action takes place directly below the introductory glyph of the PSS. Here an elderly male lowers (or raises) a bare breasted woman from the upper register to the lower register (or vice versa) as highlighted in figure 7. She appears to be lowered onto (or boosted from) the back of another woman in the lower register through a crack in the separating band.

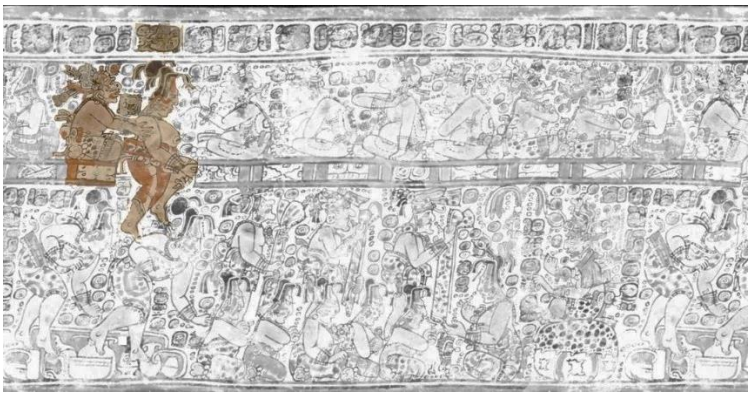

Figure 7: Vase K1485 with the proposed starting point of the image and the introductory glyph of the PSS highlighted from 'The Vase of the Count of Days'.

[53] D'Alleva, *Methods & Theories of Art History*, p.21

This hunched female below, and one adjacent, highlighted in figure 8, seem in purposeful movement towards a destination only discovered by rotating the vase further clockwise.

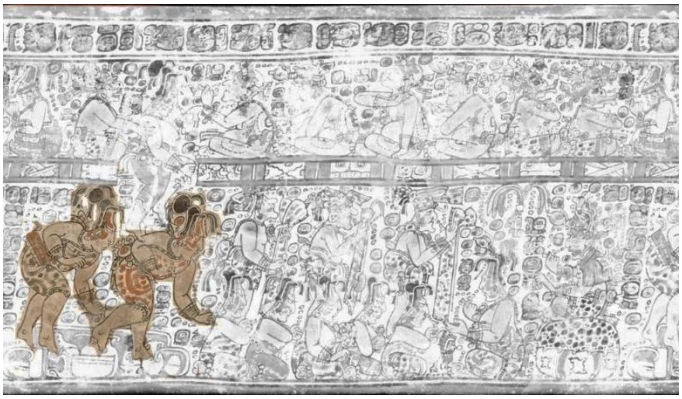

Figure 8: Two highlighted females in motion in the lower register of 'The Vase of the Count of Days'.

When turned, the next personage -or group of personages, to come into view are near identical elderly men sitting cross-legged in the upper register, highlighted in figure 9. Each wears only a loin cloth and makes unique hand gestures, perhaps pointing forwards, left, backwards and right.

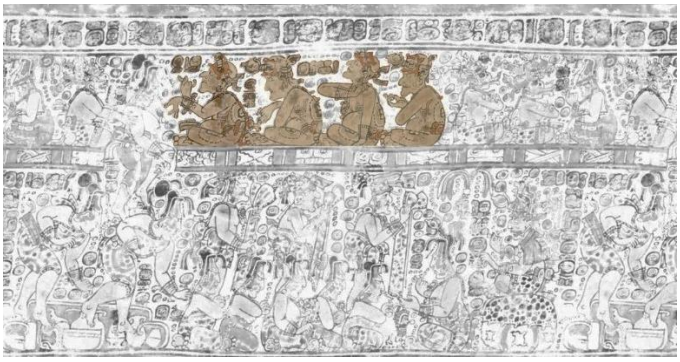

Figure 9: Four identical aged males dressed in loin-cloth highlighted from The Vase of Days'.

In the lower register, we arrive at the presumed destination of the aforementioned women in motion, where a group of seated women and elderly men, highlighted in figure 10, gather in procession before a preeminent couple.

Figure 10: Seated young women in front of several aged males at court.

The presiding couple highlighted in figure 11 appear as royalty- the woman adorned in a flower headdress as the male, dressed in an elaborate headdress and cape, sits upon a raised jaguar skinned covered cushion/throne.

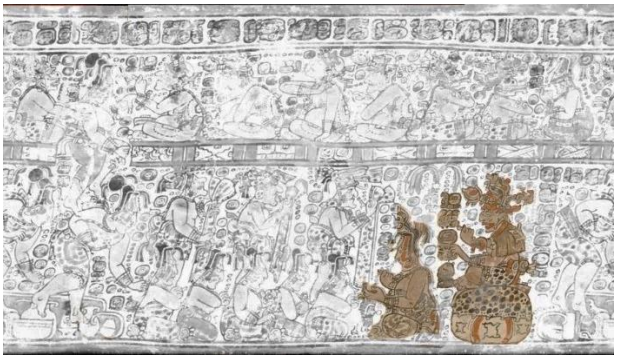

Figure 11: A seated female before an enthroned male.

As the vase is again rotated clockwise, a woman in the upper register comes into view who appears to be engaged in face-to-face communications with two long-lipped male personages, highlighted in figure 12, before the entire cylindrical image circles back around to the starting point.

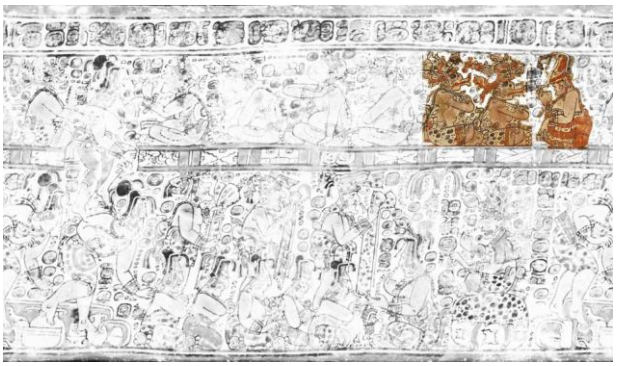

Figure 12: A woman engaged face-to-face with two long-lipped males.

Key here is that the movement of these characters and the interactions from which these movements result appears to be at the core of the expressional meaning being conveyed by the artist.

Typological Groupings

As the vase has been rotated (virtually) through the entire image, it has been noted that several of the personages have typological similarities. To compliment Panofsky's methodology and to allow for the use of additional analytical tools in addressing these similarities, I will introduce and incorporate structuralist methodology. Incorporating a structuralist approach at this pre-iconographical phase allows for the typological grouping of personages into manageable motifs, which will arguably better present them within the context of the whole at each phase of Panofsky's method. The diagram in figure 13 enumerates each personage in the image for ease of identification, and labels groups of personages based upon typology.

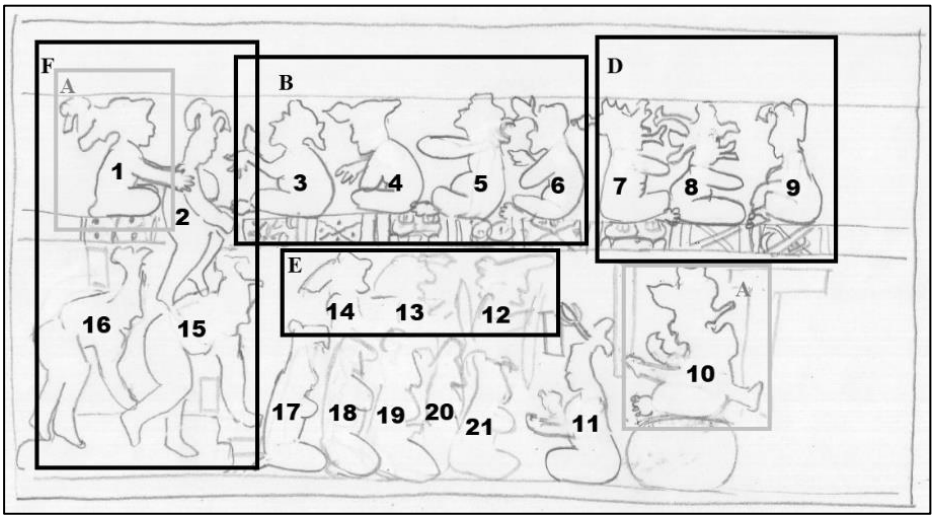

Figure 13: Nomenclature of personages and groups on vase K1485, 'The Vase of the Count of Days'. Group C not indicated. Diagram by author.

Using the nomenclature introduced in figure 13, my research will define Group A to include personages 1 and 10, based upon their physiognomy and a sense of binary opposition in their orientations, an aspect which will be addressed later. Group B will comprise of personages 3 through 6 in the upper register (highlighted in figure 9) based upon their virtually identical appearance. Group C will consist of all the

women seated or in motion- personages 2, 9 and 15 through 21 (and at times 11) identified in figure 13. Group D will consist of personages 7 and 8 (and at times 9), based upon typology- and with the inclusion of personage 9, apparent interaction (figure 12). Group E will include the three elderly personages (12 through 14 in figure 13) on the lower register holding what appear to be skins or textiles. Group F will include personages 1, 2, 15 and 16, all already accounted for and identified in this study as the focal point of the activity. Additionally, personages 1, 10, and 11 will be treated individually.

In summary, this pre-iconographic analysis has provided an objective description of the painting as it would have unfolded by viewing the cylindrical vase in a clockwise rotation from a defined starting point, until the scene circles back to that starting point. It has suggested the importance of movement, procession, proximity and preeminence, and that these movements and their resulting interactions seem to be at the core of the expressional meaning intended by the artist. Additionally, the personages in the image have been placed into typological groupings for ease of further iconographic analysis.

A SPACIAL ICONOGRAPHIC ANALYSIS

I will begin the second phase of Panofsky's method with an iconographic examination of the environment in which this scene takes place to investigate whether the imagery is of a celestial nature. Silva acknowledges while 'different cultures might have "access" to the same sky', they may '"see" completely different skyscapes'.[54] In an attempt to explore this alien worldview and its potential as a skyscape, the following elements of Maya cosmology will be examined: the skyband in Maya iconography, the skyband glyphs included in this image, the depiction of stars in Maya art and the anthropomorphic representation of the celestial bodies which inhabit the Maya skyscape.

The Skyband in Maya Art

The skyband in Maya art is, as Carlson contends, first and foremost 'a device used to indicate celestial context'.[55] Mary Miller and Karl Taube define it as 'a segmented band' containing 'signs delineating the sun, moon, stars, darkness, and other celestial phenomena'.[56] Ernst Förstemann first recognized these bands as celestial in 1895, and though many of his identifications of the glyphs contained therein have not withstood the test of time (such as suggestions for glyphs representing the superior planets), at least three of his interpretations are still widely accepted: the *k'in* (sun) glyph, the Venus glyph and the crossbands (figure 14).[57] Beth Collea later introduced the following criteria for the identification of skybands: at least one celestial glyph from a defined set is present in the band, the glyph cartouches are fused together in a band and no affixes (grammatical or otherwise) appear within the glyphs.[58]

---

[54] Silva, 'The Role and Importance of the Sky in Archaeology', p.2
[55] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p. 291
[56] Mary Miller and Karl Taube, *An Illustrated Dictionary of The Gods and Symbols of Ancient Mexico and the Maya*, (London and New York: Thames and Hudson, Inc., 1993), p.154
[57] Beth A. Collea, 'The Celestial Bands in Maya Hieroglyphic Writing', in *Archaeoastronomy in the Americas*, ed. By Ray A. Williamson, (Los Altos and College Park: Ballena Press and The Center for Archaeoastronomy, 1981), p.216
[58] Collea, 'The Celestial Bands in Maya Hieroglyphic Writing', p.215

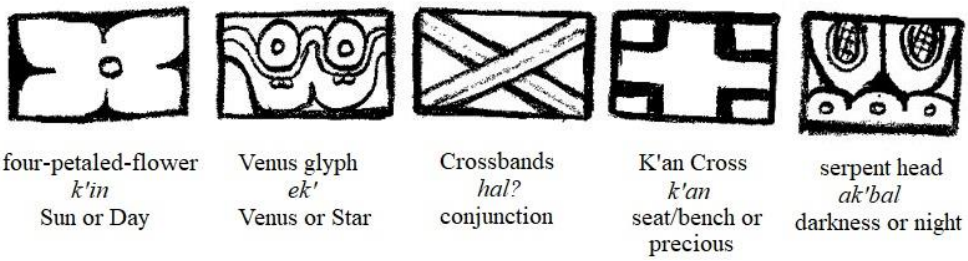

Figure 14: sample of typical skyband glyphs, including the K'in, Venus, and Crossbands. Drawing by author.

Carlson first introduced the idea that the skyband is 'an abbreviated ophidian body of the Bicephalic Sky Dragon.'[59] His joint study with Linda Landis claimed 'the skyband in all its functional representations is iconographically the body of the bicephalic dragon or a related beast'.[60] Anthony Aveni summarized that these two studies- Collea (1980) and Carlson and Landis (1985), are the 'only extant studies of the content of skybands in the Maya inscriptions' and they conclude skybands 'represent neither specific constellations nor assignable zones of the ecliptic.'[61] Susan Milbrath disagrees and contends that skybands represent, specifically, the place where the ecliptic crosses Milky Way, based in part upon her interpretation of the two bands on the Maya zodiac pages within the Paris Codex- the upper band representing where the ecliptic crosses the Milky Way and the lower zig-zag band unadorned with glyphs representing where it does not cross (figure 15).[62]

[59] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p. 291
[60] John B. Carlson and Linda C. Landis, 'Bands, Bicephalic Dragons, and Other Beasts: The Skyband in Maya Art and Iconography', in *Fourth Palenque Round Table, 1980*, ed. by Merle Greene Robertson and Elizabeth P. Benson, (San Francisco: The Pre-Columbian Art Research Institute, 1985), p.115
[61] Anthony F. Aveni, *Skywatchers: A Revised and Updated Version of Skywatchers of Ancient Mexico*, revised edition (Austin, TX: University of Texas Press, 2001), p. 355
[62] Susan Milbrath, *Star Gods of the Maya: Astronomy in Art, Folklore, and Calendars*, (Austin: University of Texas Press, 1999), p.154, 277

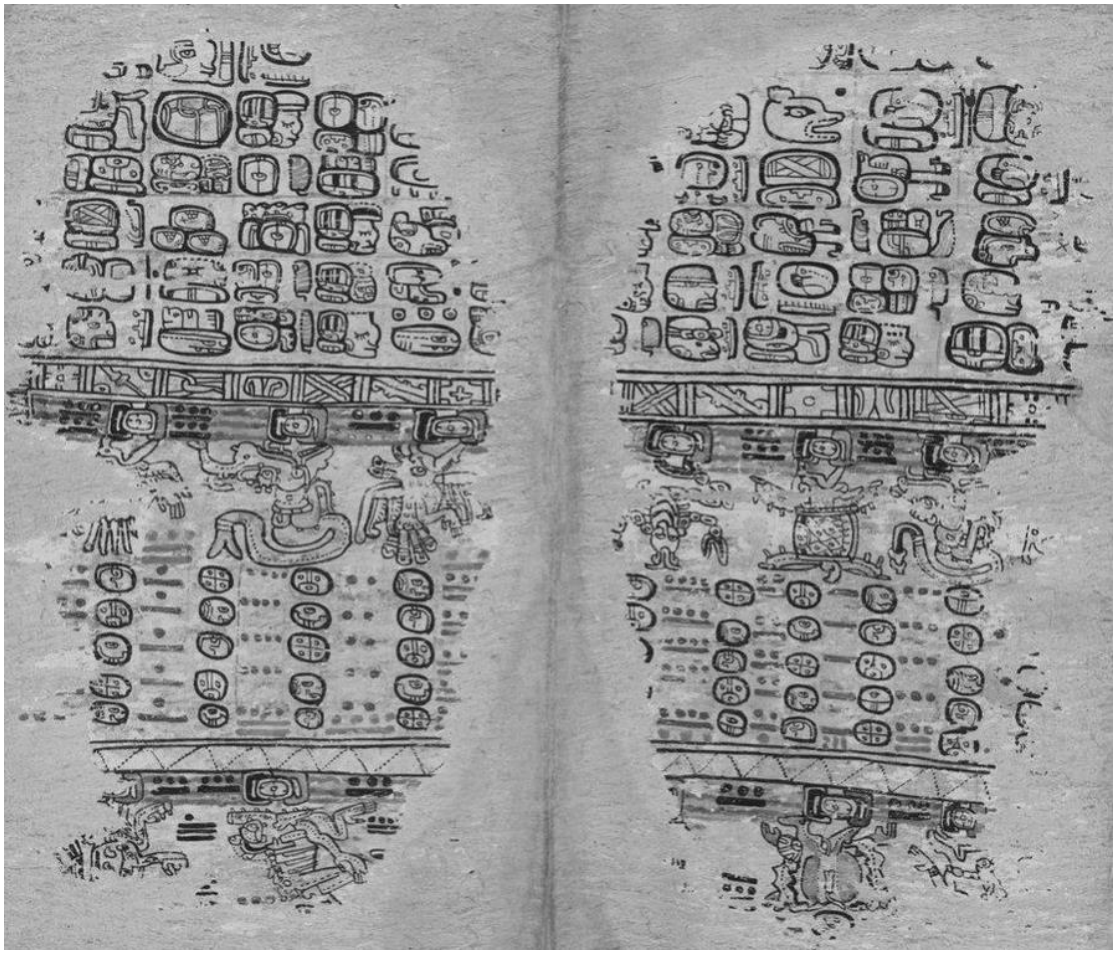

Figure 15: The 'Maya Zodiac' page from the Paris Codex. Some zoomorphic constellations hang from an ornate skyband, those in the bottom register hang from an un-adorned band. Codex Peresianus, Bibliothèque Nationale de France, Département des Manuscrits. Mexicain 386, pages 23-24.

In this research I am concerned chiefly with the skyband as an indication of celestial context, but will briefly discuss the glyphs which function as the scales or segments of Carlson and Landis' ophidian dragon to identify the symbolic attributes of this cosmological creature.[63]

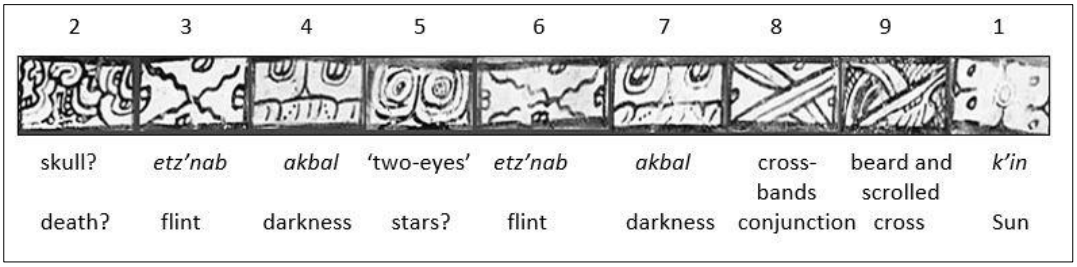

Figure 16: Compressed version of the glyphs depicted on the Skyband of the Vase of Days.

Figure 16 shows a compacted view of the glyphs contained within the sky band of 'The Vase of the Count of Days'. I have chosen to enumerate the glyphs in this figure starting at the far right, then jumping to the far left, then proceeding left to right, as this follows the clockwise order I propose they would likely be viewed from the suggested starting point. The sign in position 1 is the four-petaled-flower *k'in* glyph which glosses as 'sun' or 'day' in Yucatec Mayan, which Carlson and Landis note 'has long been recognized as one of the symbols in the sky band' and emphasize 'this identification is well established'.[64] To the left of this glyph there exists a break in the Skyband through which personage 2 (figure 13) is being lowered. It is relevant that she is being lowered through a break in the skyband – iconographically interpreted here as a break or crack in the sky. Adjacent to this break, in position 2, is an elaborate glyph unique to this image. I propose that the leftmost portion of this glyph appears to show a skull with emphasized mandible and will address its possible meaning during the iconological phase. In position 3 is the glyph for '*ezt'nab* glossed as a flint knife, which Carlson and Landis identify as representing 'death and sacrifice.'[65] The fourth sign is the very common skyband glyph *akbal*, which glosses as 'night' or 'darkness' and is the name of one of the days in the sacred Maya *tzolk'in* calendar.[66] Interestingly in light of Carlson's

[63] Carlson and Landis, 'Skyband in Maya Art and Iconography', p.115
[64] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.123
[65] Carlson and Landis, 'The Skyband in Maya nrt and Iconography', p.128
[66] Martha J. Macri, and Matthew G. Looper, *The New Catalog of Maya Hieroglyphs Volume 1: The Classic Period Inscriptions,* (Norman: The University of Oklahoma Press, 2003), p.194

ophidian proposal, this glyph is thought to represent the head of a serpent.[67] Carlson and Landis described signs akin to the one in position 5 as 'two doughnut shapes placed side by side.'[68] They referred to this sign as 'two eyes' and included it as a 'main sign' as they could not 'show with any certainty that it [was] a variant of the Venus sign or any other element.'[69] The glyphs for *etz'nab* and *akbal* are repeated in positions 6 and 7. Position 8 contains the cross-bands symbol which Carlson and Landis name the most common element within Maya skybands by far and 'a pervasive symbol of considerable antiquity.'[70] According to Collea, Förstemann's interpretation of the crossbands as 'conjunction' has since been confirmed by linguistic evidence; she repeats the opinion of Lyle Campbell that the crossbands 'may have represented marriage literally and implied celestial conjunction symbolically'.[71] Lastly the elaborate glyph in position 9 seems to combine elements of woven crossbands and what Carlson and Landis designate 'scroll over beard'-based upon what they interpret as 'beard' and 'scroll' diagnostic elements.[72] They suggest this sign may bear similarities to the Aztec '*ilhuitl*' which generally signifies 'day', 'festival', or the 'sun's orb', though this correlation remains uncertain.[73] In summation, the conventional meaning of this skyband's glyphs have been identified by this iconographic analysis and will be applied later to an iconological discussion of the skyband.

Stars in Maya Art

The representation of stars in Maya art can vary greatly depending on whether the intent of the artist was to portray them as zoomorphic constellations, ancestral souls, deities or simply as eyes in the night sky. Figure 17 shows the Classic period vase K504 from the Princeton University Museum collection which depicts an aged sky god sitting upon a skyband (which contains the glyphs *k'in*, *akbal* and *ezt'nab)*; in front of him is placed a bowl full of eyes. Likewise, the goddess on his right has eyes in her headdress and multiple eyes appear as the backdrop between her and a large

[67] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.126
[68] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.125
[69] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.125
[70] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.127
[71] Collea, 'The Celestial Bands in Maya Hieroglyphic Writing', p.216
[72] Carlson and Landis, 'The Skyband in Maya Art and Iconography', p.127
[73] Carlson and Landis, 'The Skyband in Maya Art and Iconography', pp.127-128

lunar crescent symbol. Chinchilla informs 'in ancient Mesoamerican thought, stars were often represented as eyes, a belief that is well attested in Postclassic Maya art'.[74] One such Post-Classic image from the Madrid Codex (figure 18a) depicts a skywatcher observing the stars, who according to Aveni, 'seems to be plucking them out of the sky with his extended eyes.'[75] Eyes and concentric circles are often used interchangeably, and Milbrath notes that concentric rings can also be signifiers for stars.[76] An example comes from the Dresden Codex eclipse almanac (figure 18b) which depicts a black and white eclipse symbol suspended from a skyband by a *k'in* sun glyph, and this symbol is embedded with comcentric cirlces. Both eye and concentric circle elements are prominent in the ophidian scales and head of a version of the Sky Dragon on a stela from Yaxchilan (figure 18c). In another example, the full form of the T510 (Thompson catalog number) glyph for *ek'*, glossed as 'star', contains four such concentric circles (figure 18d).[77] A comparison of these to the concentric circles on 'The Vase of the Count of Days' shown in figure 18e will illustrate that they are stylistically the same, and I contend that they are iconographically the same as well. I suggest all of these examples represent stars.

Figure 17: Vase K504 with sky god (Itzamna) seated upon the sky band directly above a k'in sun glyph, Moon goddess seated by lunar crescent, and eyeballs representing stars placed in a hat in front of sky god and behind the Moon goddess. From the Princeton University Museum Collection Photograph © Justin Kerr, used with permission.

[74] Chinchilla, 'Cosmos and Warfare on a Classic Maya Vase', p.116
[75] Aveni, *Skywatchers'*, pp.15-16
[76] Susan Milbrath, *Star Gods of the Maya*, p.253
[77] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, p.230

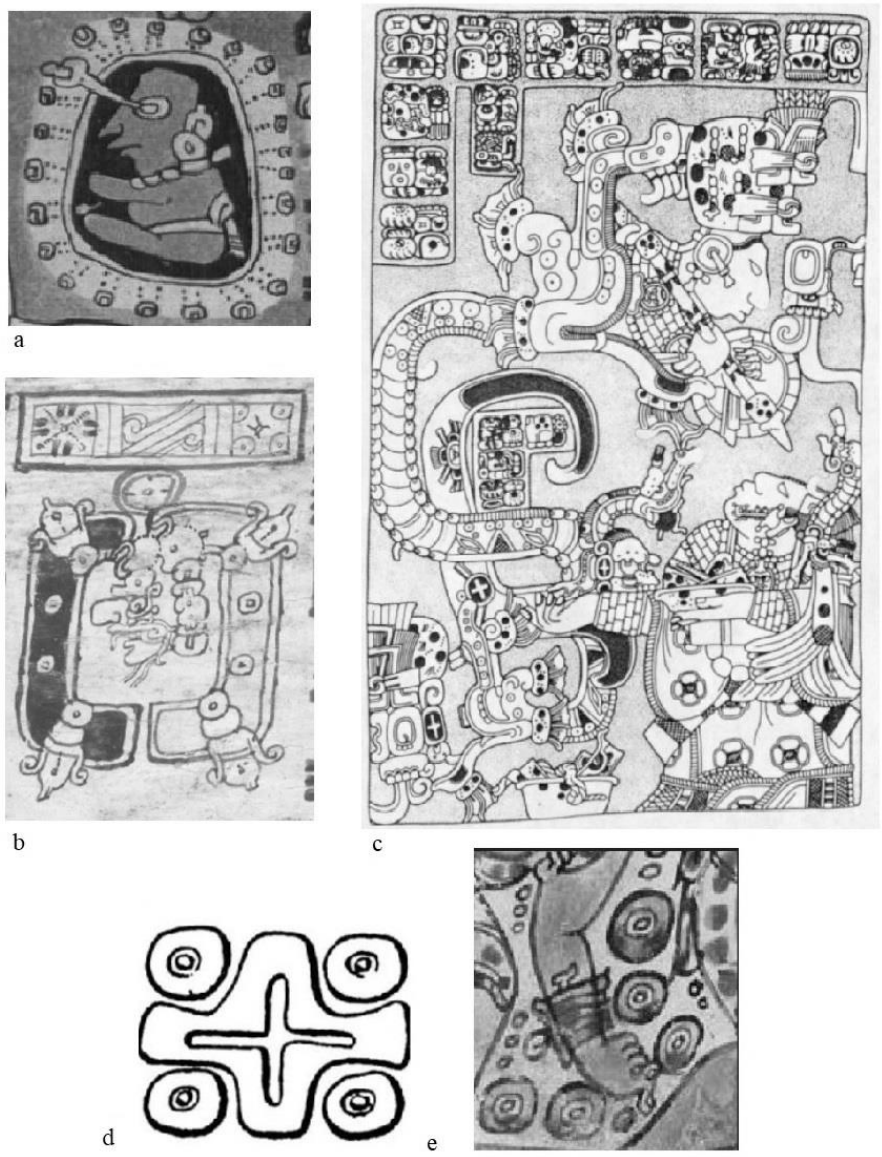

Figure 18: Representation of stars. a) A Maya skywatcher on page 23 of the Madrid Codex, b) Stars in eclipse symbol on page 56 of the Dresden Codex, c) Yaxchilan Stela 24 depicting the ophidian Cosmic monster composed of and covered in eyes, d) The T510 star glyph, Ék, e) concentric circles representing stars on 'The Vase of the Count of Days'.

The upper register of the 'The Vase of the Count of Days' depicts twenty-four of these concentric circles, while the lower register contains nearly fifty- a very large number for any iconographic element in a single image. Again, I suggest all these concentric circles and/or eyes represent stars and therefore the image on 'The Vase of the Count of Days' contains stars in both the upper and lower register. Also noteworthy is the placement of ceramic vases in a cache at the feet of personages 15

and 16 (figure 13) which may suggest this lower register represents the Maya concept of the Underworld. Elsewhere I have discussed the importance of ceramic offering caches in caves where the cave not only represents the Underworld- but exists as the Underworld in the Maya worldview.[78]. The ceramics in this image seem to be enclosed in a cave-mouth-like portal to this starry Underworld. Coe informs 'there were definite affinities in Mesoamerican thought between the luminaries of the night sky and the infernal regions of the Underworld'.[79] A possible explanation for stars in this lower register may be gleaned in a statement by Linda Schele and David Freidel, in that the Maya believed 'at sundown Xibalba rotated above the earth to become the night sky'.[80] This evidence suggests that the lower register of this image may represent the Underworld as the night sky.

The ancient Maya visualized the celestial objects in their sky as anthropomorphized gods and heroes traveling from the heavens to the underworld.[81] This form of personification- using a set of symbols or characteristics widely recognized to represent an entity or idea in narrative, represents D'Avella's very definition of allegory.[82] Yet far more than mere allegory, Simon Martin explains anthropomorphism as 'encompassing the whole process by which nonhuman agents are ascribed personalities possessing complex thoughts, emotions, and motivations and engages them in humanlike social worlds'.[83] Anthropomorphism is on display in the artwork of the ancient Maya from the early formative Pre-Classic era through the Post-Classic period in the depiction of a vast variety of sky-gods.[84] Glimpses into the nature of these gods can be found on Classic period ceramic vessels, the four surviving Post-Classic codices, colonial era documents and modern ethnographic research. Based upon the spatial iconographic analysis of this vase following

[78] Layser, Christopher, 'Can Phenomenological Fieldwork Yield a Richer Understanding of the Role of Sacred Caves in Ancient Maya Cosmology?', *Spica: Graduate Journal for Cosmology in Culture*, Sacred Geography Special Edition, Vol. IV, No. 2, (2016), pp.81-104
[79] Michael D. Coe, *The Maya Scribe and His World*, (New York: The Grolier Club, 1973), p.83
[80] Linda Schele and David Freidel, *A Forest of Kings: The Untold Story of the Ancient Maya*, (New York: HarperCollins Publishers, 1990), p.66
[81] Stanisław Iwaniszewski, 'They Were Like Them: The Stars in Mesoamerican Imagery', *in Heavenly Discourses, Studies in Cultural Astronomy and Astrology,* Vol. 7, ed. By Nicholas Campion (Ceredigion, Wales: Sophia Centre Press 2016), p.51
[82] D'Alleva, *Methods & Theories of Art History*, p.21
[83] Simon Martin, 'The Old Man of the Universe: Unified Aspects to Ancient Maya Religion' in *Maya Archaeology 3: Featuring the Grolier Codex*, ed. by Charles Golden, Stephen Houston and Joel Skidmore (San Francisco: Precolumbia Mesoweb Press, 2015), p.187
[84] Chinchilla, *Art and Myth of the Ancient Maya*, p.32

Panofsky's methodology, I have argued that this scene is a celestial one. It seems reasonable therefore to assume that at least some-if not all of these anthropomorphic personages represent celestial objects in the heavens, and the next phase of the iconographic analysis will attempt to prove this. The combination of celestial elements- the sky band, astronomical glyphs, stars in the upper and lower register and the suggestion of anthropomorphic sky-gods builds support for the argument that this painting (which the artist may have titled 'to make happen the count of days') is a stylized Maya skyscape, which in turn illustrates several Maya concepts regarding their understanding of the heavens and the celestial bodies.

ICONOGRAPHIC ANALYSIS OF THE PERSONAGES

Personage 1

The story portrayed on this painting pertaining to the count of days begins with an aged male lowering a female through a crack in the skyband (figure 7). However, firm identification of the aged male enumerated as personage 1 proves more elusive than initially anticipated. He is accompanied by a hieroglyphic label, but it is effaced and therefore its reading remains uncertain (figure 19a and b).[85] A review of the secondary literature offers no more precise an identification than the epigraphy, and thus diagnostic and iconographic clues offer the best hope of interpretation.

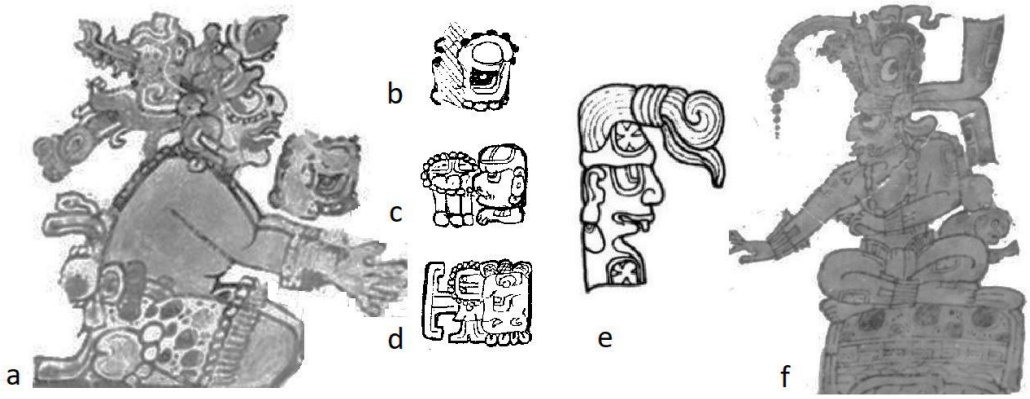

Figure 19: a) Personage 1 modified/isolated from image on 'The Vase of the Count of Days' by author, b) effaced glyphic label, drawing of the image from the Vase, made by author, c) logoram glyph compound for Itzamna, drawing by author, d) variant logoram for Itzamna, drawing by author, e) Classic Period Sun God with jagged front incisor, f) the Sun God from vase K1398, modified/isolated by author from a photograph by Justin Kerr.

[85] Matthew G. Looper, personal correspondence, February 2018

From this personage's position upon a sky band it is safe to assume that he is a sky deity. The first account of Maya deities in western literature is Friar Diego de Landa's 1566 *Relación*, wherein he recounted the names of several of sky-gods he had learned from local sources, including Bolon-tz'acab, K'inich Ahau and Itzamna.[86] A little over three centuries later, the Maya deities found in the pre-Hispanic codices were identified and labelled by German lawyer Paul Schellhas using a system of noncommittal letter designations- God A, God B, etc., which remains widely accepted today.[87] Coe first codified the prominent iconographic traits of one aged sky-deity widely found on Classic period artwork, but at the time made no attempt to identify him other than as one who 'resembles God N and may be a variant on this theme'.[88] Taube credits Nicholas Hellmuth as the first to associate this Classic period deity with Schellhas' Post-Classic God D.[89] Epigraphic evidence later solidified the identification of God D as the god Itzamna referenced by de Landa.[90] According to Eric Thompson, Itzamna was in fact the creator god, the preeminent sky-god and 'the most important of Maya deities'.[91] Coe and Mark Van Stone later refined Itzamna's identification to four diagnostic traits: 'a large "god-eye", a Roman nose typical of old gods, chop-fallen, somewhat toothless jaws, indicating his aged status [and] a device attached to the front of his headdress, consisting of a circular, obsidian mirror (the Akbal-day sign surrounded by dots) and a pendant hanging from it; this entire device… is read as the logogram ITZAMNAAJ'(figure 19c and d).[92] Personage 1 has a large god-eye, a Roman nose and a somewhat toothless jaw, except for a singular jagged front tooth (figure 19a). His headdress, however, does not conform to the typical headdress characteristic of Itzamna. Although personage 1 does not fit all the criteria, there is sufficient evidence to support an identification as God D/Itzamna.

---

[86] Friar Diego de Landa, *Yucatan: Before and After the Conquest*, trans. by William Gates, (New York: Dover Publications, 1978 [1566]), pp. 63-65
[87] Karl A. Taube, *The Major Gods of Ancient Yucatan*, Studies in Pre-Columbian Art and Archaeology, No. 32 (Washington DC: Dumbarton Oaks Research Library and Collection, 1992), pp. 5-6
[88] Coe, Michael D., *Lords of the Underworld: Masterpieces of Classic Maya Ceramics*, (Princeton: Princeton University Press, 1978), p.46
[89] Taube, *The Major Gods of Ancient Yucatan*, p.31
[90] Michael D. Coe and Mark Van Stone, *Reading the Maya Glyphs*, (London: Thames & Hudson, 2001), p.113
[91] J. Eric S. Thompson, *Maya History and Religion*, (Norman: University of Oklahoma Press, 1970), pp. 205-206
[92] Coe and Van Stone, *Reading the Maya Glyphs*, p.113

On the other hand, the iconographic traits of the Classic period Sun God also include a 'god-eye' and Roman nose, but with the additional characteristics of an extended upper incisor filed to a T-shape and the flower-shaped *k'in* diagnostic god-marking (figure 19e and f). Though this jagged protruding front tooth is present on personage 1, the k'in glyph diagnostic is not. But Thompson remarks that while the Sun God is iconographically distinguished from God D 'only by the addition of the four-petal kin sign', he does note 'even that may be omitted.'[93] The truth may in fact be more complex than whether this personage is Itzamna, the pre-eminent sky god, or K'inich Ahau, the Sun God. Susan Gillespie and Rosemary Joyce comment on such overlap of iconographic traits in explaining that

> attempts by modern scholars to classify and label deity images by their regalia have met with resistance because the same elements can be shared by what are otherwise different gods, and even a single god's regalia does not comprise a consistent complex of elements…Scholars have come to realize that the gods had multiple aspects, that they seemingly merged with one another.[94]

While the *k'in* diagnostic is not present on personage 1, note from his position on the skyband that he is sitting upon the *k'in* glyph. As part of this study, I have examined all images of Itzamna sitting upon skybands in Kerr's Maya Vase Database and have found that in all cases he sits upon the *k'in* glyph. For example, see figure 17 where the aged sky deity, which Miller and Martin have identified as Itzamna, sits upon the flower-like *k'in*.[95] I suggest that this is relevant in the association of Itzamna to the Sun God. John Henderson confirms that the Sun God, or K'inich Ahau, is 'hard to distinguish from Itzamna, whose aspect he may be.'[96] I suggest in this context, personage 1 is Itzamna manifested as the Sky God, K'inich Ahau.

---

[93] Thompson, *Maya History and Religion*, p.236
[94] Gillespie and Joyce, 'Deity Relationships in Mesoamerican Cosmologies', p.279
[95] Mary Miller and Simon Martin, *Courtly Art of the Ancient Maya*, (San Francisco: Fine Arts Museum of San Francisco, 2004), p.96
[96] John S. Henderson, *The World of the Ancient Maya*, second edition, (Ithaca and London: Cornell University Press, 1997 [1981]), p.55

Personages 10

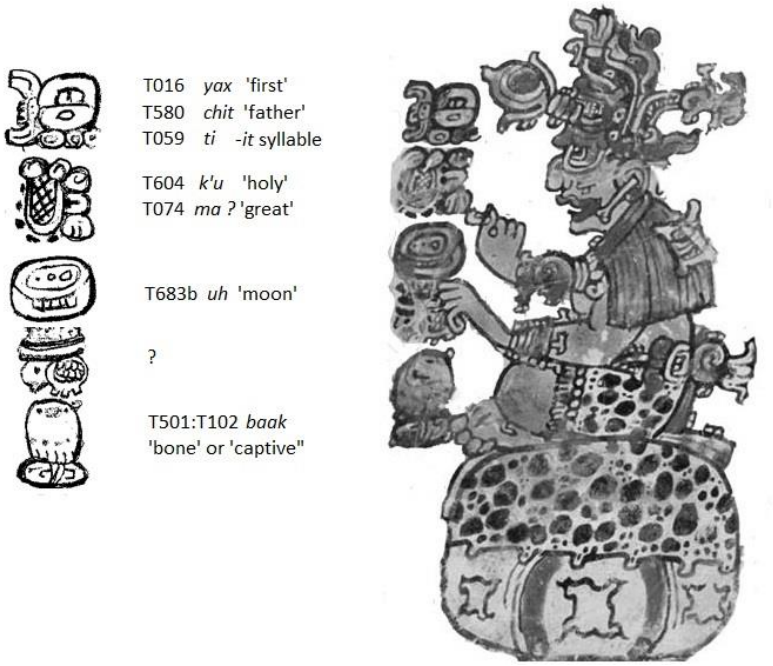

Figure 20: Personage 10, enlarged from figure 1 with lunar title which may read Yax Chit K'uum Uh, First Holy Father the Great Moon. Translation by author.

The second personage in what I have designated as Group A is personage 10 (figure 20). Milbrath identifies him as an 'enthroned God D' while elsewhere she expands his description as 'an aged Moon Lord with a lunar title, who is seated on a jaguar-skinned throne bearing what may be stylized *po* (moon) glyphs.'[97] Carlson suggests he is 'virtually identical' to the aged god in the upper register, which would further suggest an identification of personage 10 to be Itzamna as a lunar deity.[98] But unlike personage 1, personage 10 is accompanied by a lengthier text, much of which is decipherable. The first few glyph compounds of this text may be read as *Yax Chit K'uum Uh,* roughly translated as First Holy Father the Great Moon (figure 20). As to Itzamna's association as both Sun god and lunar deity, Henderson explains that 'in the sky he is the familiar sun, who may bring warmth or drought…in the underworld he becomes the night sun, with features of the jaguar.'[99] Indeed, Carlson agrees that personage 10 has 'Sun God characteristics'.[100] Looper informs there were several lunar gods in Maya iconography, including the Maize God, the Water Serpent, the

[97] Milbrath, *Star Gods of the Maya*, p.154, Plate 5
[98] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p.290
[99] Henderson, *The World of the Ancient Maya*, p.55
[100] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p.289

Jaguar God of the Underworld and the Moon goddess- 'though their precise significance is uncertain'.[101] This particular enthroned god may, in fact, represent the full moon, often represented as male in contemporary Maya accounts.[102] This aligns with ethnographic findings of Barbara Tedlock where

> On this one night, the moon takes on a male aspect and is considered the nocturnal equivalent of the sun, with its full bright disk and completed transit of the sky…this helps to explain the seeming anomaly in the Popol Vuh, where Xbalanque (one of the hero twins) is said to rise as the moon, although he is male. He may have corresponded only to the full moon, while Blood Woman (his mother) may have been the waxing moon and the elderly Xmucane (his grandmother) was perhaps the waning moon.[103]

In this respect the Full Moon was regarded as the Night Sun, or what Iwaniszewski refers to as an 'anti-moon' as it crossed the sky from east to west.[104] The ancient Maya identified the full moon with male characteristics and associated him with the jaguar.[105] Indeed, personage 10 may be the already-named Jaguar God of the Underworld, who Coe and Houston define as 'the sun in its night aspect'.[106]

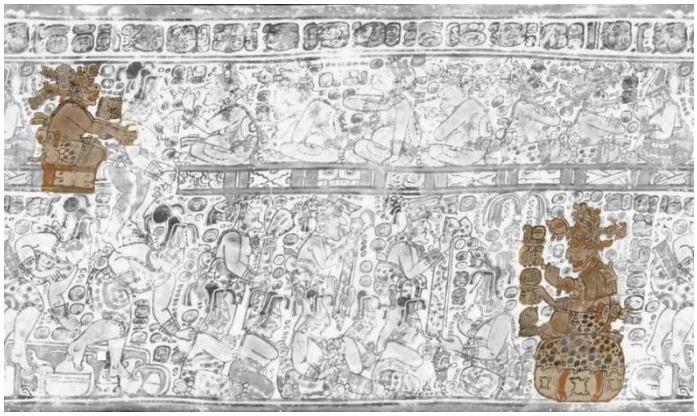

Figure 21: Binary Opposition of personages 1 and 10 on 'The Vase of the Count of Days': opposite direction and orientation, opposite registers, one sits upon a K'in sun glyph, the other upon a po moon glyph.

[101] Looper, 'Celestial Raiment: Beaded Net Garments in Classic Maya Art', p.238
[102] Milbrath, *Star Gods of the Maya*, p.154
[103] Barbara Tedlock, *Time and the Highland Maya*, revised edition (Albuquerque: University of New Mexico Press, 1992 [1982]), pp.183-184
[104] Iwaniszewski, 'The Stars in Mesoamerican Imagery', p.51
[105] Iwaniszewski, 'The Stars in Mesoamerican Imagery', p.51
[106] Coe, Michael D., and Stephen Houston, *The Maya*, ninth edition (New York: Thames & Hudson, 2015), p.152

I have placed these two personages into Group A and have discussed them together as they represent what Claude Lévi-Strauss considered a 'binary opposition'.[107] In his structuralist view, myths were important because they provided a model in which to logically overcome contradictions by organizing a worldview into pairs of opposites.[108] The Maya daytime Sun (*k'in*) and the Night Sun of the Underworld are such a pair. The binary opposition of the Sun and Full Moon/Night Sun in this image is manifest in their positions- an opposite direction and opposite register, perhaps even bookending the start and completion of the scene as the vase was turned in the patron's hand (figure 21). This binary opposition was an important cosmological concept in the Maya worldview, and 'The Vase of the Count of Days' appears to nicely illustrate this dichotomy.[109]

Group B/Personages 3 - 6

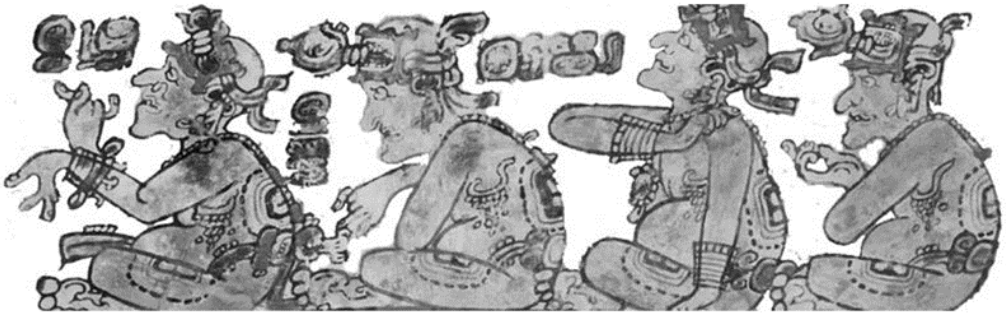

Figure 22: Group B, Personages 3, 4, 5 and 6 identified as the quadripartite deity God N/Pauahtun.

Robicesk and Hales identified personages 3 through 6 as the 'four *Bacabs* (Sky Bearers) seated in single file, whose bodies bear T528, *cauc* markings' (figure 22).[110] These four taken together are most assuredly the aged quadripartite deity Carlson had identified as Schellhas' God N, known to the Maya as Pauahtun.[111] David Stuart and Simon Martin independently corroborate this identification.[112] The

[107] D'Alleva, *Methods & Theories of Art History*, p.128
[108] D'Alleva, *Methods & Theories of Art History*, p.128
[109] Milbrath, *Star Gods of the Maya*, pp.31, 103
[110] Robicesk, and Hales, *Maya Ceramic Vases from the Late Classic Period*, p.18
[111] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p. 289
[112] David Stuart, 'The Gods of Heaven and Earth: Evidence of Ancient Maya Categories of Deities', to appear in *Homanaje a Alfredo López Austin*, 2013 ms., p.28, and Simon Martin, 'The Old Man of the Universe: Unified Aspects to Ancient Maya Religion' in *Maya Archaeology 3: Featuring the Grolier Codex*, ed. by Charles Golden, Stephen Houston and Joel Skidmore (San Francisco: Precolumbia Mesoweb Press, 2015), p.189

misidentification as *Bacabs* stems from de Landa's *Relación* wherein he mentions the four *Bacabs* who are placed at the world's 'four corners to sustain the heavens lest they fall.'[113] Coe and Kerr claim the association made by some scholars between these four *Bacabs* and the four-fold Pauahtun to be unsubstantiated, and they point out that the term *Bacab* in the Maya inscriptions is only used as a title for human elites- Landa's *Bacabs* having yet to be identified.[114] The diagnostic markings on the side of each personage in this group do appear in the *Kawak/Cauc* day sign, but in this context the correct reading is the standard logographic *tun*, which glosses as 'stone' (figure 23a).[115] Martin describes Pauahtun as 'an old man with a large nose and almond shaped-eyes, his wrinkled and chap-fallen face matched by a correspondingly wasted and sagging body.'[116] His attire is usually restricted to a loin cloth.[117] Coe and Kerr add that he is further distinguished by his 'floppy netted headdress', a symbol associated with the syllabic value *pa*.[118] These two epigraphic clues, combined with the *auh* syllable identified by Taube, helped lead to the identification of God N as *Pauahtun*. Pauahtun's head glyph can also be seen in figure 3 as the third glyph in the opening dedicatory phrase of the PSS.

Figure 23: a) T528 tun glyph, b) hieroglyphic label of personage 3 which includes k'an cross, meaning 'precious', c) personage 4's label with k'an sign, d) personage 5 label with k'an and a black and white suffix glyph that may symbolize an eclipse, d) Pauahtun head glyph from the PSS dedicatory phrase, with infixed k'an cross.

Taube notes that God N is 'closely identified with the heavens', 'frequently appears as a denizen of the sky' and 'in a number of instances, he clearly holds up the sky'.[119] His placement atop of the sky band on the 'The Vase of the Count of Days'

[113] de Landa, *Yucatan: Before and After the Conquest*, p.60
[114] Michael D. Coe and Justin Kerr, *The Art of the Maya Scribe*, (New York: Harry N Abrams, Inc, 1998), p.104
[115] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, p.216
[116] Martin, 'The Old Man of the Universe', p.188
[117] Martin, 'The Old Man of the Universe', p.188
[118] Coe and Kerr, *The Art of the Maya Scribe*, p.104
[119] Karl A. Taube, *The Major Gods of Ancient Yucatan, Studies in Pre-Columbian Art and Archaeology*, No. 32 (Washington DC: Dumbarton Oaks Research Library and Collection, 1992), p.94

(refer back to figure 9) substantiates his celestial nature. Martin explains 'he is often depicted in quadripartite form, an organization used throughout Mesoamerica to signal an alignment to the four cardinal directions.'[120] These directions likely did not conform to the cardinal points of the European compass but rather to the annual cycle of the Sun god, defined by the rising and setting of the sun (east and west respectively) and the northern and southernmost positions of the Sun along the horizon (at Summer and Winter Solstice respectively).[121] As noted in the pre-iconographic analysis, each of these personages is making a unique hand gesture which may possibly correlate to these directions, such as forwards, left, backwards, and right, though this is conjecture. Three of the four figures have accompanying hieroglyphic texts, each incorporating the *k'an* cross which glosses as 'precious' (figure 23b, c, and d).[122] Note the infix of the *k'an* cross, along with the netted headdress, in the PSS dedicatory glyph (figure 23e). To summarize, personages 3 through 6 appear to represent God N/Pauahtun, an important four-fold sky deity, depicted in his quadripartite form. He is often portrayed holding up the four corners of the sky at the cardinal directions defined by the sun's annual progression through the heavens. The iconographic identification of this group of personages lends support to the notion this image depicts a Maya skyscape.

[120] Martin, 'The Old Man of the Universe', p.188
[121] Merideth Paxton, *The Cosmos of the Yucatec Maya: Cycles from the Madrid Codex*, (Albuquerque: University of New Mexico Press, 2001), pp.16-30
[122] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, p.196

Personage 11

Figure 24: a) Personage 11 modified/isolated from image on K1485, 'The Vase of the Count of Days' by author, b) secondary glyphs labelling personage 11 as Ix (ik) Uh -?, or Lady Moon, c) the Moon goddess depicted on vase K5166 with lunar crescent, rabbit, and throne of stars, some detail digitally obscured, Photograph © Justin Kerr, used with permission.

Seated before the enthroned lunar deity is personage 11, a youthful female identified by Milbrath as 'the Moon Goddess' with 'a water-lily headdress' (figure 24b).[123] Her identification is confirmed by the accompanying glyphs designated by Thompson numbers T1002a and T683 as shown in figure 24a, with an un-deciphered suffix appended to T683.[124] Looper described the Moon goddess appellative as 'being composed of the female head (T1002a, *ix(ik)* 'lady') combined with the moon sign or a substitute' such as T181, *uh*, which probably glosses as 'moon'.[125] He states that the likely name of the Moon goddess was therefore *Ix(ik) Uh*, or 'Lady Moon'. [126] Interestingly, Thompson recorded the colonial period Yucatec Maya referred to the Moon goddess as *Ix Uh Sihnal*, or 'Lady Moon of Birth', signifying her fertility attributes.[127] [Perhaps one day the un-deciphered suffix attached to T683 may be interpreted as a logogram for *Sihnal*, but at this time there has been no such suggestion by epigraphers.]

[123] Milbrath, *Star Gods of the Maya*, p. 154
[124] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, pp.134, 237
[125] Matthew G. Looper, 'Celestial Raiment: Beaded Net Garments in Classic Maya Art', In *Dressing the Part: Power, Dress, Gender, and Representation in the Pre-Columbian Americas*, ed. by Sarah E. M. Scher and Billie J. A. Follensbee (Gainesville: University Press of Florida, 2017), pp.219, 244
[126] Looper, 'Celestial Raiment: Beaded Net Garments in Classic Maya Art', p.244
[127] Thompson, *Maya History and Religion*, p.243

Depictions of the Moon goddess are often accompanied by other iconographical motifs which are not present on 'The Vase of the Count of Days'. One such element is the presence of a lunar crescent on which the goddess usually sits [See the right-hand portion of figure 17, where this goddess previously mentioned can now be identified as the Moon goddess; as well as figure 24c]. Another such element is a rabbit companion as seen in figure 24c; instead of visualizing a 'man in the moon' many pre-Columbian cultures recognized the form of a rabbit.[128] At this point in the iconographic analysis several comparisons of primary sources can help support earlier arguments. First, a comparison the headdress of the Moon goddess in figure 24b to that in figure 17 demonstrates both contain the same Water-Lily element, strengthening the mutual identification of both goddesses. Second, note that the Moon goddess in figure 24c sits upon a throne of concentric circles which represent stars in this celestial context. This strengthens the earlier argument that the concentric circles of both the upper and lower register of 'The Vase of the Count of Days' iconographically represent stars.

Miller and Martin suggest the Moon goddess 'is often shown in the company of the aged supreme sky deity Itzamna and may be his eligible young daughter'.[129] An example of this can again be seen on K504 in figure 17, where the Moon goddess sits in what appears to be a subservient position behind the sky god, now identified as Itzamna. Chinchilla presents a vast array of related myths collected from across Mesoamerica with the common nodal theme of the 'seduction of a tightly guarded maiden' (the young Moon-goddess?) who is approached, against the will of her father (Itzamna?) by a 'magically transformed' hero, the result of which is the cosmogonic 'advent of the sun and moon'.[130] The Moon goddess is also 'closely related to the mythology of maize, since her changing phases mark the periods that are suitable to seed, plant and harvest.'[131] This relationship will be explored further in the iconological discussion. The analysis of this personage has led to her identification as the Moon goddess, and her presence on 'The Vase of the Count of Days' lends additional support to the prospect of this image depicting a skyscape.

---

[128] Miller and Martin, *Courtly Art of the Ancient Maya*, p.96
[129] Miller and Martin, *Courtly Art of the Ancient Maya*, p.96
[130] Oswaldo Chinchilla Mazariegos, , *Art and Myth of the Ancient Maya*, (New Haven and London: Yale University Press, 2017), pp.83-104
[131] Iwaniszewski, 'The Stars in Mesoamerican Imagery', p.51

Group C/Personages 2, 9, 15-21

In my pre-iconographic analysis, I have argued that the action and interaction of the woman crossing from the upper to lower register, shown again in figure 25, could be considered the focal point, or perhaps starting point, of viewing the image on the vase. Perhaps for these same reasons, the secondary literature focuses her and those typologically similar to her, which I have collectively named Group C. Robicesk and Hales describe the five seated women 'about to be joined by three additional ladies, including one being lowered through the celestial band' as appearing to be 'listening attentively to the Moon Goddess' and 'likely part of Itzam Ná's entourage'.[132] Carlson agrees that 'from the stance of the two "floating" female figures below and the direction of their gaze, it is clear that they are joining those in front of the presiding deity.'[133] This is their movement with purpose. Carlson's assumption, that the actors are all attempting to join this courtly procession, is what led him to claim 'the third female figure is being lowered through the band rather than being pulled up from below.'[134]

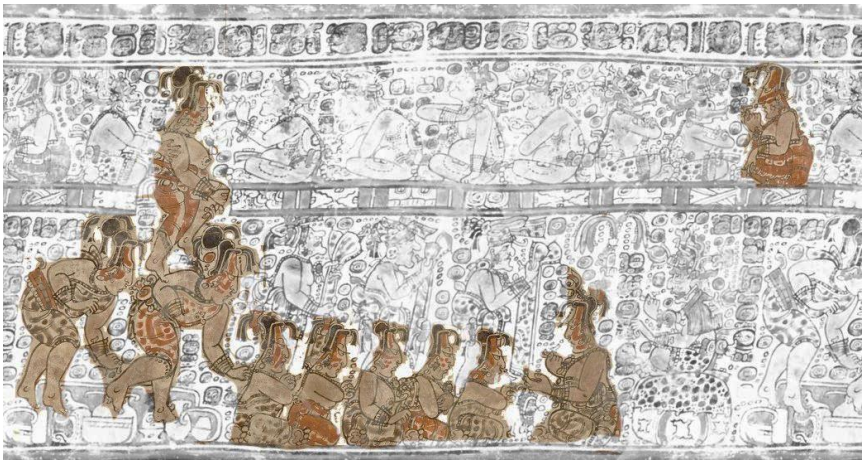

Figure 25: Group C, the female personages of 'The Vase of the Count of Days'.

Dicey Taylor was the first to attempt to address the secondary meaning of this action, and her brief iconographic interpretation offered that

> 'Multiple views of the moon goddess… appear on [this] vessel that shows the descent of the moon into the underworld at dawn. The moon goddess is

[132] Robicesk and Hales, *Maya Ceramic Vases from the Late Classic Period*, p.18
[133] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p.290
[134] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p.290

> lowered through a skyband into the Underworld, where she ends up with the aged moon lord, who sits behind her on a jaguar-skin throne.'[135]

Taylor's assessment, shown here in its entirety, gave no supporting evidence for her claim, but was nonetheless accepted by Milbrath in her comprehensive review of Maya astronomy in art and folklore.[136] There are however, noticeable physical attributes that these personages share with personage 11, who has been identified as the Moon goddess. The first of these is gender. Few named goddesses appear in the Maya pantheon and Flora Simmons Clancy suggests that 'almost any woman depicted on painted vases…seems to have the potential to be a Moon goddess who can be young or old, depending on which phase of the moon is represented.'[137] Furthermore, Ana García Barrios points out the Moon goddess was 'the only case in which a deity of the Classic period was identified with the feminine gender.'[138] In fact, it has been suggested that prominent Post-Classic female goddesses, such as Schellhas' youthful Goddess I and the elderly Goddess O from the codices, may also be manifestation of the Moon goddess.[139] The similar yet ultimately unique facial markings are another identifier, as is the fact that half of this group wear similar attire.

Perhaps the strongest argument for all the young women on 'The Vase of the Count of Days' to be representations of the Moon goddess is the similarity of their hair-styles and the shape of their heads. The Maize God is typically depicted with an 'elongated, tonsured head which seemingly imitates the appearance of an ear of maize with its surmounting cornsilk' (figure 26).[140] All of the female personages on this vase display this iconographical trait in that they share the Maize God's elongated head and their common hairstyle simulates a tuft of corn silk in the front. Miller and Martin point out that there is precedent in Maya art in which the Moon

---

[135]Dicey Taylor, 'Painted Ladies: Costumes for Women on Tepeu Ceramics', in The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 3, (New York: Kerr Associates, 1992), p.251

[136] Milbrath, *Star Gods of the Maya*, p.154

[137] Flora Simmons Clancy, 'The Ancient Maya Moon: Calendar and Character', in *Cosmology, Calendars, and Horizon-Based Astronomy in Ancient Mesoamerica*, ed. by Anne S Dowd and Susan Milbrath, (Boulder: University Press of Colorado, 2015), p.240

[138] Ana García Barrios, 'Chapter IX: Gods of Heaven, Gods of Earth, in The Maya: Voices in Stone, ed. Alejandra Martinez de Velasco Cortina and Maria Elena Vega Villalobos, second edition (Mexico City: Turner, Ambar Diseño, and Universidad Nacional Autónoma de México, 2015), p.167

[139] Milbrath, *Star Gods of the Maya*, pp.138-147

[140] Coe and Kerr, *The Art of the Maya Scribe*, p.104

goddess and the Maize god 'seem fused together, the gender variously male and female'.[141] According to Looper, the Moon goddess' association with the Maize god is likely related to ancient agricultural practices and 'beliefs based on the relationship between cycles of the moon and the rains'.[142] Several modern ethnographic studies even relate how the planting of maize is determined by the lunar calendar.[143] Based upon this evidence and the spatial context, even without common diagnostic elements such as lunar crescents or rabbits, the most likely iconographic identification that can be made is that Dicey Taylor's initial assumption was correct, in that all of the female personages on this vase represent the Moon goddess.

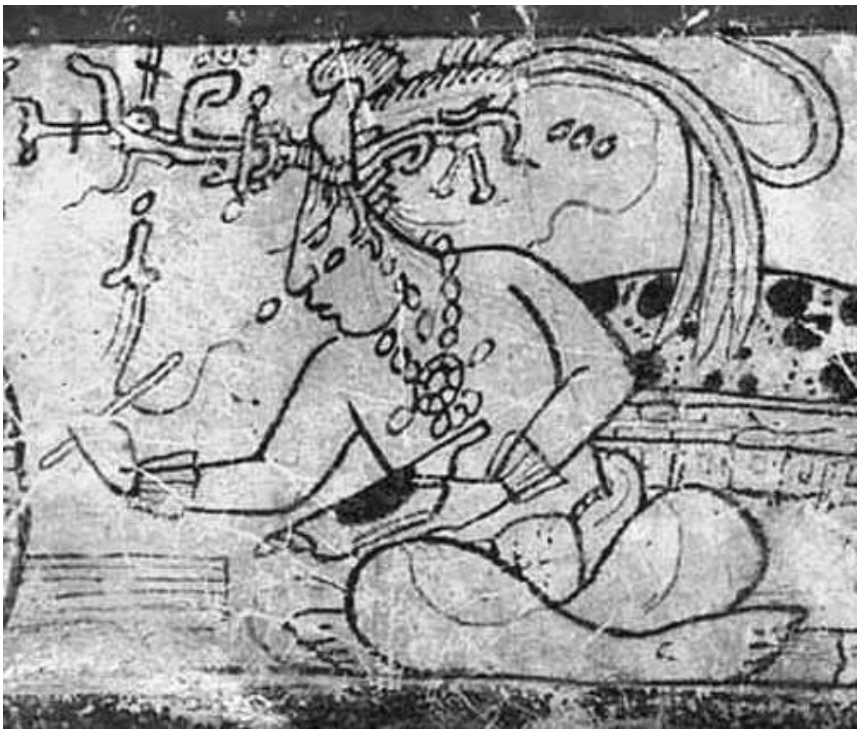

Figure 26: the Maya Maize God with elongated head, from Robicsek and Hales, The Maya Book of the Dead, The Ceramic Codex, p.58, 1981.

[141] Miller and Martin, *Courtly Art of the Ancient Maya*, p.97
[142] Looper, 'Celestial Raiment: Beaded Net Garments in Classic Maya Art', p.219
[143] Miller and Martin, *Courtly Art of the Ancient Maya*, p.96

Group D/ personages 7-8

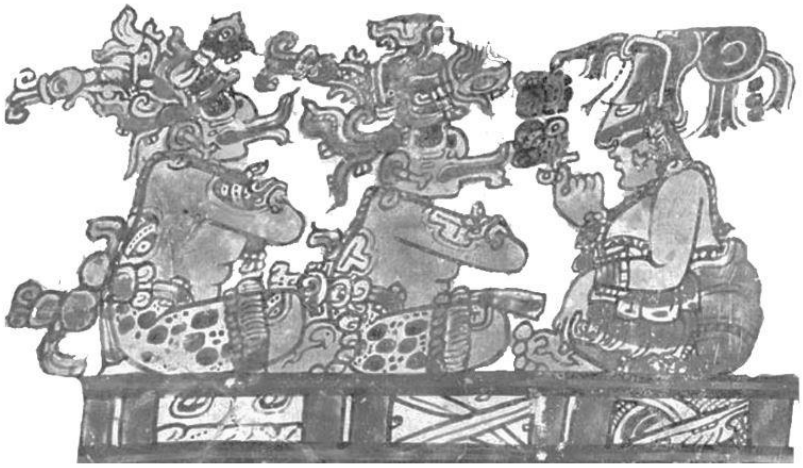

Figure 27: Group D, Personages 7, 8 and 9 modified/isolated from image on 'The Vase of the Count of Days' by author.

Robicsek and Hales describe the personages of Group D as consisting of 'an unidentified woman and two long lipped deities bearing T509, *Cimi* and T503, *Ik* markings respectively' (figure 27).[144] Carlson's similar description uses the phrase 'god-markings'.[145] This study supports Taylor's identification of the woman in this scene as the moon goddess. Directly facing the Moon goddess is the first (and likely the prominent) of two nearly identical long-lipped personages; personage 8 of figure 13, bearing the god-marking *ik*, which again glosses as 'wind'. It is likely for this reason that Karen Bassie refers to both as 'wind gods' when she comments Yucatec farmers whistled as part of the summoning of *kakal mozon ikob*, or 'fiery whirlwinds' in order to produce good fire for their 'slash and burn' agriculture, and the apparent long lips represent this whistling.[146] As insightful as this commentary may be, it does not bring to bear the context of this image which the accumulating evidence supports is a celestial scene. Furthermore, only the Personage 8 is marked with a wind symbol. The god-marking on personage 7 is Thompson number T509, c*imi,* which glosses as 'death' (although in some contexts it could mean 'dream').[147] This same diagnostic is found on the cheek of the self-decapitating Post-Classic God

[144] Robicesk and Hales, *Maya Ceramic Vases from the Late Classic Period*, p.18
[145] Carlson, 'Skyband Representations in Classic Maya Vase Painting', p.290
[146] Karen Bassie, 'Comments on K1485', Maya Vase Database, <http://www.mayavase.com/com1485.html>, accessed 10 July 2018
[147] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, p.212

A′, whose attributes were violent death, sacrifice and drunkenness- although it should be noted personage 7 bears no resemblance to God A′.[148] While these long-lipped deities do share bodily and physiognomic similarities, these god-markings indicate they are not identical as are the Pauahtuns. Another differentiator between the two is their headdresses, which appear to contain what I suggest are the stylistic heads of an owl and dog respectively. They are accompanied by hieroglyphic labels, but unfortunately these provide limited insight as to their identification within a celestial context. The glyph compound for personage 8 may include *ik* as its main glyph but this is too effaced to read. Attached to this main glyph is a second glyph which may be a variant of *ba'alam* (jaguar) or *way* (spirit companion), or perhaps something completely undeciphered at this time.[149] The compound glyph corresponding to personage 7 contains *cimi* with an *-il* suffix, together denoting 'death' *(cimil*).[150] Attached to this is an undeciphered, likely logographic, glyph.

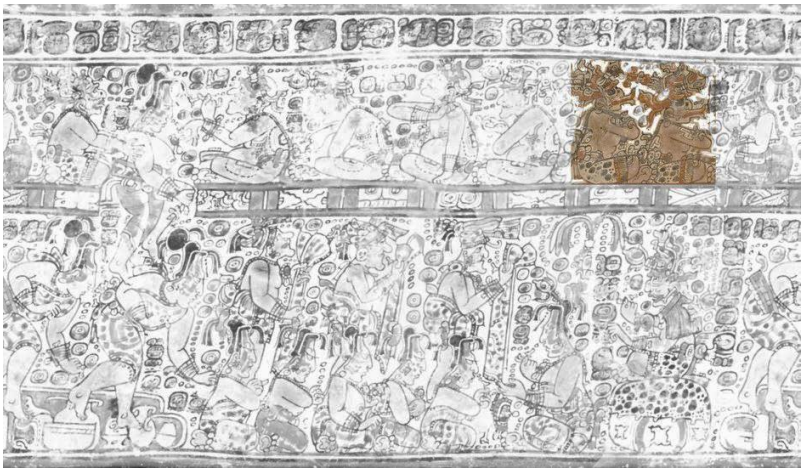

Figure 28: Group D, two long-lipped males face-to-face with a female personage.

Up to this point in the iconographic analysis all the anthropomorphic personages depicted on the vase could be identified, in large part due to previous scholarship, as manifestations of celestial bodies- specifically as the Sun and Moon, or cardinal directions as defined by the Sun's annual positions on the horizon. It is reasonable to suggest therefore, that the remaining personages occupying the same space may also represent celestial beings, especially the two shown in figure 28 seated as they are upon the skyband. There is some circumstantial evidence to support this claim as

[148] Coe and Van Stone, *Reading the Maya Glyphs*, p.120
[149] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, pp.80, 138
[150] Macri and Looper, *The New Catalog of Maya Hieroglyphs Volume 1*, pp.212, 275

well. Personage 8 and the Moon goddess sit upon the skyband directly above the crossbands glyph, which has been argued to imply conjunction. Note figure 29 shows the same whistling or 'duck-billed' god(s) in deferential reverence before Itzamna in both his anthropomorphic and Principal Bird Deity manifestations- the latter of which whose astronomical identity Milbrath claims remains uncertain.[151] Note also the crossbands glyph on his headband indicating conjunction. This evidence would suggest this personage, and by extension of their similarities both personages 7 and 8, may represent celestial bodies with the potential to come into conjunction with the Moon and Itzamna (as the Sun?).

Though the evidence is circumstantial, I argue the clues exist for celestial and iconographic identification, but decipherment requires what Panofsky called the synthetic intuition of a diagnostician. The assumptions are as follows: these two near-identical personages represent adjacent celestial bodies, these two celestial bodies can come into conjunction with the Moon, their iconographic attributes pertain to 'wind' and 'death', and finally their differentiating headdresses may contain stylized owl and dog heads indicating symbology understood by the ancient Maya. A first clue is found in a statement by Stanisław Iwaniszewski who notes 'by the end of the Classic period (8th to 9th centuries) another celestial body, Venus, started to be represented as an anthropomorphic entity acting upon the world.'[152] As Venus is the most important celestial object in the Maya worldview following the Sun and Moon, it is not unreasonable to conjecture that it be represented in this cosmological scene. Furthermore, it is stands to reason that if Venus is indeed one of these personages, then the other inferior planet, Mercury, may be the other. Milbrath suggests that 'because its movements are similar to those of Venus, the most important planet in Maya cosmology', the ancient Maya must have been at least aware of the planet Mercury.[153] Venus and Mercury can be viewed as adjacent celestial bodies which can come into conjunction with the moon.

[151] Milbrath, *Star Gods of the Maya*, p.244
[152] Iwaniszewski, 'The Stars in Mesoamerican Imagery', p.55
[153] Milbrath, *Star Gods of the Maya*, p.214

Figure 29: Twin deities before Izmana in his anthropomorphic and avian forms, from K7821 from Kerr, The Maya Vase Book Vol 6. Page 1010, Photograph © Justin Kerr, used with permission.

Investigation into a Classic Period Maya notion of a wind god yields scant evidence at first. The terrestrial god Chaac was a rain god, and K'awiil a lightning god, but neither were represented as a god of wind. One clue comes from the association of the Classic period patron deity of the day *Mac* (who serves as the head-glyph variant for the number 3 and is often infixed with the *ik* wind sign) to the Post-Classic Schellhas' God H- who according to Taube is one of the 'poorest known codical gods'.[154] And though personage 8 does not physically resemble God H, they both appear to be wind gods.[155] Taube asserts that an association between God H and Kukulcan- the Yucatec version of the Mexican god of wind Ehecatl-Quetzalcoatl, is 'surely correct'.[156] When Venus started to make anthropomorphic appearances in the Late Classic Period it was often associated with well-known figures such as Quetzalcoatl and Kukulcan.[157] One such depiction is shown in figure 30, a rubbing of a stela from Seibal, erected in the Terminal Classic period (900-1000 AD).[158] Milbrath explains this 'wind god aspect of Venus' is associated with round temples,

[154] Taube, *The Major Gods of Ancient Yucatan*, p.63
[155] Taube, *The Major Gods of Ancient Yucatan*, p.63
[156] Taube, *The Major Gods of Ancient Yucatan*, p.60
[157] Iwaniszewski, 'The Stars in Mesoamerican Imagery', p.56
[158] Arthur Schlak, 'Venus, Mercury, and the Sun: GI, GII, and GIII of the Palenque Triad', *RES: Anthropology and Aesthetics*, No. 29/30, (1996), p.177

like one at Seibal which faces to the west.[159] She relays Ivan Sprajc's observation that these round west-facing temples 'suggest a link to the Evening Star'.[160]

Figure 30: Terminal Classic Stela from Seibal depicting a ruler impersonating Venus as Quetzalcoatl. Rubbing by Merle Greene Robertson, reprinted by Arthur Schlak, 1996.

Venus has a multitude of aspects; some are benign, such as its rainy season and agricultural fertility aspects and wind.[161] Most, on the other hand, are dangerous and malevolent.[162] This malevolent nature of Venus is on display in the Dresden Codex Venus almanac, and in the suggestion the ancient Maya waged war based upon the rise and position of Venus.[163] Mercury perhaps shares this trait, as the colonial period Mayan manuscript *the Chilam Balam of Maní* describes its attributes as being associated to illness, robbery, debt, drunkenness, control of the lungs (note: *ik'* also glosses as 'breath') and, most importantly, death.[164] This conforms to the reading of the god-marking on personage 7 as 'death'. The overlap of this trait with Venus is noteworthy, and Milbrath speculates that perhaps some ethnographic references 'to the Morning Star or the Evening Star may actually refer to Mercury'.[165]

---

[159] Susan Milbrath, 'Astronomical Deities in Ancient Mesoamerica', in *Handbook of Archaeoastronomy and Ethnoastronomy*, ed. Clive L.N. Ruggles, (New York Heidelberg Dordrecht London: Springer, 2015), p.685
[160] Milbrath, *Star Gods of the Maya*, p.178
[161] Milbrath, *Star Gods of the Maya*, p.155
[162] Henderson, *The World of the Ancient Maya*, p.55
[163] Milbrath, *Star Gods of the Maya*, pp.193-196
[164] Milbrath, *Star Gods of the Maya*, p.214
[165] Milbrath, *Star Gods of the Maya*, p.214

Mercury is admittedly under-represented in the iconography of all periods, and based on what little information exists, it is difficult to identify in Maya art. The only exception to this is the 'possible link with owl imagery'.[166] I suggest the protruding head in personage 7's headdress could be that of an owl, and this supports the possibility of a reference to Mercury. Milbrath presents Dennis Tedlock's position that the messenger owls of Xibalba in the Popol Vuh and the messenger owl in God L's hat both represent Mercury (figure 31a).[167] Additionally, the Mexican Codex Borbonicus portrays Xolotl (the canine Aztec god of the Evening Star) as descending into the Underworld along with the Sun- and he may have a counterpart in a Maya canine entity named Tzul Ahau mentioned in relation to Venus in the Dresden Codex eclipse table.[168] Figure 31b shows a howling dog upon a sky band that may represent Tzul Ahau as the evening star. I suggest the protruding head in personage 8's headdress could be that of a dog, which could symbolically represent Venus as the Evening Star.

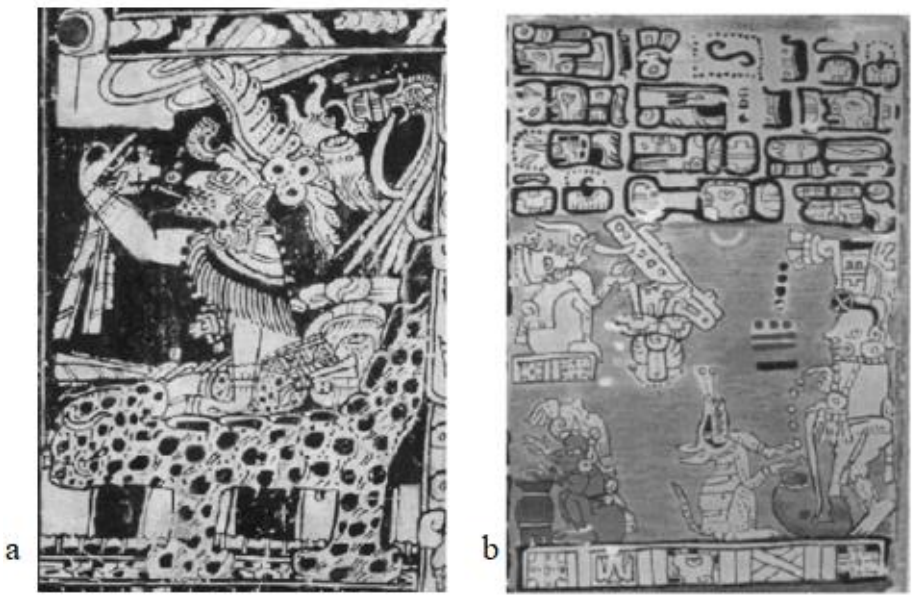

Figure 31: a) on the left, God L and the owl that lives in his headdress which may represent Mercury, from 'The Vase of the Seven Gods' and b) on the right a howling dog (Tzul Ahau?) upon a skyband that may represent Venus as the Evening Star from the Madrid Codex p. 37.

[166] Milbrath, *Star Gods of the Maya*, p.155
[167] Milbrath, *Star Gods of the Maya*, pp.214-215
[168] Milbrath, *Star Gods of the Maya*, p.162

Although there is yet no direct evidence for the iconographical identification of these personages, there is circumstantial evidence to build a case these two either represent Venus and Mercury or (perhaps more in line with a Maya worldview) Venus as the Evening Star and as the Morning Star.

Group E/Personages 12-14

Robicesk and Hales claim the 'three standing old lords carrying bolts of cloth' in the bottom register can be identified 'by their net-bag (*pauah*) headdresses [as] "Pauahtuns", deities whose task it was to support the earth' (figure 32).[169] I have argued in this study that the personages of Group B in fact represent the quadripartite Pauahtun, and it seems unlikely these three represent the same fourfold deity. Though many times Maya deities appear as triads in the inscriptions, the quadripartite God N/Pauahtun appears as either a single entity or as four identical figures representing the four cardinal directions (or as the head variant for the numeral five). Although these three do share some physical characteristics of Pauahtun such as their aged appearance, almond shaped eyes and netted headscarf, there are also important iconographical differentiators such as the lack of *tun* markings and the individuality of their dress. While each of their headdresses contain elements similar to the netted headscarf, the remainder of their headdresses are unique to each and elaborate when compared to the simple, identical netted and knotted scarf typically adorned by Pauahtun. Perhaps most telling, they wear jaguar skins as opposed to loin cloths.

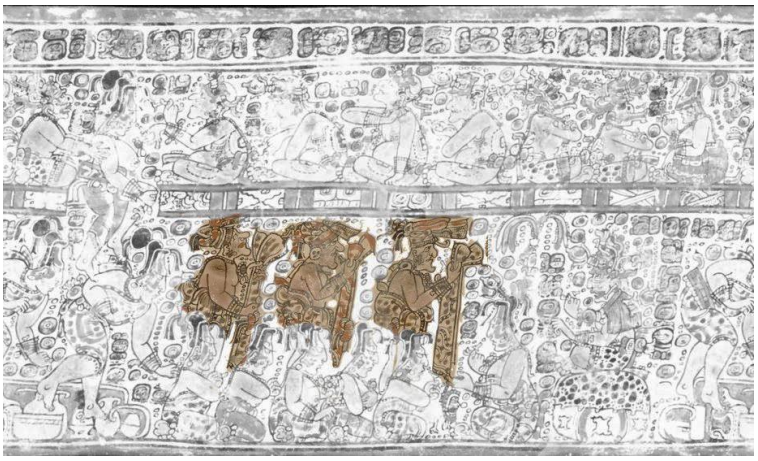

Figure 32: 'Vase of Days' highlight of three males in lower register.

[169] Robicesk and Hales, *Maya Ceramic Vases from the Late Classic Period*, p.18

I have presented the argument that all the other anthropomorphic personages in this image represent celestial bodies, and it would be easy to suggest that these remainder gods therefore represent the only three celestial bodies visible to the naked eye yet unrepresented: the superior planets Mars, Jupiter and Saturn. The difficulty in taking this position is that in the existing literature few, if any, examples exist for the representation of the superior planets as anthropomorphic beings. The 'Mars Beast', a creature identified by its characteristic upturned caiman-like snout and hoofed feet from codical Mars almanacs, God K, known as K'awiil, with his distinguishing upturned snout thought to correlate to Jupiter, and Saturn, the colonial Yucatec 'female crocodile star' all exhibit zoomorphic attributes, notably an upturned crocodile or caiman-like snout.[170] From a purely contextual frame of reference, the idea that these personages may be some hitherto unrevealed anthropomorphic representation of the superior planets- perhaps as a form of traveling merchant, may make sense; but from physical appearance alone I cannot completely dismiss the possibility that this may be some poorly understood manifestation of Pauahtun. With no secondary glyphs to accompany theses personages, and no comparable primary sources, there is little to draw upon iconographically to securely identify them.

In summary, this second phase of Panofsky's method offered an iconographic analysis of both the spatial environment illustrated on the vase as well as the anthropomorphic beings in the image. The findings of this analysis suggest all the symbolic elements- the skyband, the concentric circles representing stars, and the identification of the anthropomorphic beings as celestial bodies, taken together indicate a conventional meaning indicative of a celestial context. In this sense, 'The Vase of the Count of Days' can be considered to illustrate an idealized skyscape.

[170] Milbrath, *Star Gods of the Maya*, pp.218-232

ICONOLOGICAL CONSIDERATIONS AND DISCUSSION

I will begin this third phase of Panofsky's method with an iconological investigation into the meanings of motifs, symbols, and allegories perceived from the pre-iconographic and iconographic analysis phases- placed within in their cultural context. In doing so, I will suggest 'The Vase of the Count of Days' reflects ancient Maya concepts pertaining to their understanding of the heavens and the celestial bodies, and how they related back down to ancient Maya notions of time and place, as well as to their beliefs and practices. I will also suggest it was the intent of the artist that the vase itself may have served as an instrument for the counting of days.

Understanding the Heavens: Iconology of Skybands, Stars, and Celestial Bodies

Notions of Maya skyscapes are illuminated in the archaeological record by the alignment of architectural complexes to the rising and setting of celestial objects.[171] They are revealed in the material and textual record in the form of highly mathematical Venus and eclipse tables.[172] With respect to their art, Beth Collea feels skybands 'provide an unusual vantage point from which to view Maya culture', and she predicts they 'may bring new information to bear on astronomical studies (by clarifying the meaning of specific glyphs) and on art historical concerns such as iconography.'[173] This current study, by way of example, has presented the original finding that on Maya Classic vases which depict Itzamna seated upon a skyband, the aged god is always placed above a flower-shaped *k'in* glyph. Iconologically, this may point to some implicit correlation between the pre-eminent sky god and the sun as understood by the ancient Maya. If this is a meaningful discovery, then perhaps the relation of skyband glyphs to their surrounding should be closer examined. For instance, this study has identified two anthropomorphic celestial bodies, engaging each other face-to-face (figure 27), sitting above the crossbands glyph. This lends support to the interpretation that the crossbands diagnostic indicates a conjunction of two celestial bodies, in this case the Moon and Venus. Dennis and Barbara Tedlock remind that 'Thompson suggested long ago that almanacs in which the [moon] goddess engages in a series of face-to-face encounters with other characters might be

[171] Aveni, *Skywatchers'*, pp.245-261
[172] Aveni, *Skywatchers'*, pp.173-195
[173] Collea, 'The Celestial Bands in Maya Hieroglyphic Writing', p.231

tracking conjunctions'.[174] If the moon were observed in conjunction with Venus, this observation would occur pre-dawn or early evening. While the moon Goddess converses in conjunction with Venus, she sits upon the so-called 'Scroll-over-Beard' glyph. Carlson and Landis suggest this 'scroll over beard' sign may signify daytime, and the pre-dawn or early evening edges of daytime would be the only timeframe such a conjunction would be visible.[175] I suggest it may represent 'sunrise', placed as it is between the conjunction and the daytime sun. Continuing this line of reasoning, it may be that the sequence of glyphs *etz'nab, akbal,* two-eyes, *etz'nab, akbal* upon which the four-fold directional Pauahtuns are seated somehow relates to the cardinal directions –five, if including the center as a fifth direction as did the Maya.[176] It must be considered, though, this investigation of skyband glyphs and their relation to the surrounding scene has been limited solely to the skyband on 'The Vase of the Count of Days', and application of this hypothesis to other examples across the corpus of Maya art most certainly demands closer scrutiny before such a hypothesis could be verified.

Figure 33: Skyband Glyph unique to 'The Vase of the Count of Days', possibly depicting a Skull with mandible.

The last skyband glyph to consider is unique to this vase and has yet to be identified in the academic literature (figure 33). I offer that the leftmost portion of this glyph resembles a human skull and mandible. This proposed death imagery is located on the edge of a cracked and broken skyband. If personage 1 seated upon the *k'in* glyph represents Itzamna as the Sun in this image, as I have argued, and the female personage 2 is a manifestation of the moon, as Dicey claims, it is not unreasonable to conjecture that their close proximity, touching in fact, may depict unique eclipse

[174] Dennis Tedlock and Barbara Tedlock, 'Moon Woman Meets the Stars: A New Reading of the Lunar Almanacs in the Dresden Codex' in *Skywatching in the Ancient World: New Perspectives in Cultural Astronomy*, ed. by Clive Ruggles and Gary Urton, (Boulder: University Press of Colorado, 2007), p.122, and J. Eric S. Thompson, *Commentary on the Dresden Codex, a Maya Hieroglyphic Book*, Memoirs, Vol. 93 (Philadelphia: American Philosophical Society, 1972), pp48-49
[175] Carlson and Landis, 'The Skyband in Maya Art and Iconography', pp.127-128
[176] Merideth Paxton, *The Cosmos of the Yucatec Maya: Cycles from the Madrid Codex*, (Albuquerque: University of New Mexico Press, 2001), p.32

imagery at this broken sky. Maya eclipse symbolism is fraught with such death and darkness, though one Tojolabal Maya account explains that the Sun and Moon 'come together in sexual union' during an eclipse.[177] If the turning of this cylindrical vessel can overlay spatial and temporal movement on to the image, which equates to the movement of the goddess along the path of the moon, could not the portion represented by Group F trace the path of a partial eclipse (figure 34)? And though this point is pure speculation, what is certain is this portion of the image does not illustrate the movement of the Moon goddess between realms in isolation, but the relationship of this movement with respect to an adjacent and assisting celestial companion.

Figure 34: Group F, consisting of Personages 1,2,15, and 16. Itzamna as Sun God assists a manifestation of the Moon Goddess from one realm to another. Two can be seen wearing ballgame hip protection. Image modified/isolated from 'The Vase of the Count of Days' by the author.

[177] Milbrath, *Star Gods of the Maya*, p.26

Adjacent to the Moon goddesses of Group F are several hieroglyphic labels providing further detail to the skyscape. In the center of the triangle formed by these three women two glyph compounds read *yu chan ix*, 'she is the Lady of the Sky'.[178] Located below this, in the space between personage 15's thigh and elbow, is the glyph compound *pa chan*, 'to form the sky'. This is followed by what may be the *way* glyph, glossed as 'portal' with *wak*, which could mean the cardinal number six or 'something lifted' or 'something stood up', both above and below.[179] Lastly, below the wrist of personage 15, is the sign *kab'*, which here likely reads as 'earth', followed by the same *wak-way-wak* sequence. This portion of the text by Group F may possibly read 'To form the sky the portal is stood up- the earth, its portal is stood up.' This seemingly odd concept may relate to Schele and Friedel's claim the ancient Maya believed 'at sundown Xibalba rotated above the earth to become the night sky'.[180] This rotation of the skyscape bringing the Underworld visible overhead may perhaps, then, be referenced by these glyphs on 'The Vase of the Count of Days'.

It has been suggested in this analysis that not only all the female celestial bodies on this vase, but perhaps all sky-goddesses in the corpus of Classic period Maya art are manifestations of the Moon goddess. This is in line with Thompson's assertion the Post-Classic youthful Goddess I and the aged Goddess O of the codices equate to the waning and waxing phases of the Moon goddess respectively.[181] This study has also suggested that God D/Itzamna and God G/ the Sun God, K'inich Ahau, may also be one and the same deity. Strong physiognometric similarities between personages 1 and 10 (figure 13) found on 'The Vase of the Count of Days' lends support for this theory. Interestingly, de Landa's account of colonial era Yucatan described the making of 'Kinich-ahau Itzamná' idols, suggesting the Maya conflated these deities.[182] I suggest that Yax Chit Kuum Uh, as recorded on 'The Vase of the Count of Days', may be another name or title to address the supreme Itzamna. While in many Maya myths and traditions the Sun god and Moon goddess represent the

[178] Marc Zender, 'On the Reading of Three Classic Maya Portrait Glyphs', The PARI Journal, Volume XV, No.2, (Fall 2014), p.2
[179] John Montgomery, *Dictionary of Maya Hieroglyphs,* (New York: Hippocrene Books, Inc., 2002), pp.262,266
[180] Schele and Freidel, *A Forest of Kings,* p.66
[181] Taube, *The Major Gods of Ancient Yucatan*, p.64
[182] De Landa, *Yucatan: Before and After the Conquest*, p.66

creator couple, Thompson specifically named Ix Chebel Yax (Schellhas' Goddess O, also known as Ix Chel) as the consort of Itzamna and his partner in the creation of the cosmos.[183] In this light the majority of personages on 'The Vase of the Count of Days' may be manifestations of the same two sky deities.

Furthermore, recent research by Simon Martin presents a solid argument based upon epigraphic and iconographic evidence that the four-fold God N/Pauahtun and God D/Itzamna are in fact manifestations of the same deity he calls the 'Old Man of the Universe'- and that the Underworld God L is same Old Man as well.[184] Here Martin coins the term theosynthesis as 'the pictorial convergence of a deity with some other deity, creature, object, or material' within a specific culture, differentiating it from 'syncretism' which can include 'assimilation of religious ideas from different cultures'.[185] He argues that though Itzamna is considered paramount in Maya religion, he is but only one aspect of this Old Man of the Universe.[186] The iconological analysis of this study has already noted the physiognomic similarities between the Pauahtuns of Group B and the three old men of Group E (figure 13) and acknowledged the possibility that this latter group may also represent manifestations of Pauahtun- identified by Martin as an aspect of the Old Man of the Universe. Personages 7 and 8 of Group D, identified in this study as the inferior planets, differ iconographically from Itzamna (also identified as an aspect of the Old Man) only by their long-lips, epigraphic 'god-markings', and headdresses. In this discussion, these deities are treated as different entities because that is how they were presented by the artist. But if these lines of speculation were followed to their natural conclusion, the deeper theological implication is that all these male sky deities in the Maya skyscape may be manifestations of the Old Man of the Universe, and all female sky deities may be manifestations of his consort the Moon Goddess.

If all the anthropomorphic sky gods in this painting represent celestial bodies and if the field of concentric circles represents a starry backdrop as proposed in the iconographic analysis, how then can this help further our understanding of Maya skyscapes as framed by Sylva? First, with meaning gathered from a pre-

[183] Thompson, *Maya History and Religion*, p.206
[184] Martin, 'The Old Man of the Universe', pp.187-226
[185] Martin, 'The Old Man of the Universe', p.210
[186] Martin, 'The Old Man of the Universe', p.226

iconographic analysis, the importance of movement, procession, conjunction and preeminence can be inferred. Celestial bodies iconographically identified as the sun, moon and planets and imbued with the power of the creator couple, traverse a starry sky which is the Underworld rotated overhead. The Maya skywatcher observed this purposeful movement across the heavens, and the Maya artist portrayed goddesses aligning spatially and temporally before the throne of the Old Man of the Universe, ensuring the proper count of days.

Beliefs and Practices: Maize Agriculture and the Sacred Ballgame

The count of days permeated most every aspect of the ancient Maya life, including politics, warfare, subsistence agriculture and religion.[187] An important aspect of Maya religion referenced on 'The Vase of the Count of Days' was their sacred ballgame. This ballgame played throughout Mesoamerica combined sport with sacred ritual as it re-enacted the creation of the cosmos as recorded in the *Popol Vuh*.[188] The ballgame has been interpreted as a rite that reproduced these cosmogonic myths while at the same time symbolizing warfare, the movement of the Sun, Moon and planets, and the struggle of day verses night.[189] Erik Velásquez Garcia describes it as a game 'where play followed the seasons (the rainy and dry seasons, summer and winter), propitiating agricultural fertility by means of sympathetic magic'.[190] Players of the sacred game wore a heavy padding of decorative leather, wood, and woven materials to protect the bones of their hips, elbows and knees when striking the solid rubber ball.[191] So important were these ballgame belts that ancient Maya carved life-size stone replicas of them, one of which can be seen in figure 35.

[187] Paxton, *The Cosmos of the Yucatec Maya*, pp.15-29
[188] Susan D. Gillespie, 'Ballgames and Boundaries', in The Mesoamerican Ballgame, ed. by Vernon L. Scarborough and David R. Wilcox, (Tucson, University of Arizona Press, 1991), p.318
[189] Erik Velásquez Garcia, 'XVI The Ballgame', in in *The Maya: Voices in Stone*, ed. Alejandra Martinez de Velasco Cortina and Maria Elena Vega Villalobos, second edition (Mexico City: Turner, Ambar Diseño, and Universidad Nacional Autónoma de México, 2015), pp. 267, 278
[190] Velásquez Garcia, 'XVI The Ballgame', p.276
[191] Marvin Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game in Mesoamerica', *American Indian Quarterly*, Vol. 2, No. 2 (Summer, 1975), p.99

Figure 35: Ancient Maya stone replica of ballplayer hip gear with 'akbal' serpent imagery, from the collection of the Reading Public Museum. Photograph by author, 2018.

Two of the Moon goddesses in figure 34 can be seen wearing similar ballplayer belts. Of this iconographic element, Milbrath comments that

> the ballgame belt [the Moon goddess] wears as she descends through the sky band… makes her a female lunar ballplayer, apparently a counterpart for the female aspect of Xbalanque known in one version of the Popol Vuh. Subsequently, she is transformed into a lunar queen over-seeing her court…The sequence may represent the transformation of the moon from a ballplayer to a water-lily goddess, perhaps an image of seasonal change or phase changes.[192]

The ballgame elements inserted into the painting on 'The Vase of the Count of Days' carry connotations which evoke celestial, agricultural, cosmogenic and violent imagery, and were tied to the change of seasons. Marvin Cohodas explained this connection to the movement of the sun and moon and how it related to the planting of maize.[193] The mythological cycle begins with the vernal equinox, a time when the fields are burned in swidden agriculture and the aged Sun descends into the underworld to become a fertility god.[194] At summer solstice- the idealized beginning of the rainy season and the point when the aged Sun reaches the nadir of the Underworld, he mates with the young moon goddess who is forced to descend with him into the Underworld.[195] At this point in the cycle the old Sun god dies to be reborn later as a youthful Maize god, and the young Moon goddess ages, becoming

[192] Milbrath, *Star Gods of the Maya*, p.154
[193] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', pp.103-110
[194] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', p.103
[195] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', pp.103-104

the old Moon goddess endowed with watery aspects reflecting the rainy season.[196] At the autumn equinox, the young Maize-Sun god is born 'from the womb of the earth-moon goddess', marking the ripening of the first ears of corn, and he 'ascends into the sky to take up his celestial duties.'[197] The Moon goddess dies in labor but is reborn on the winter solstice when she re-joins the Sun god in the sky.[198]

Cohodas suggested these complementary cycles- that of agricultural ritual, solstice/equinox events, and the life, death and rebirth cycles of the sun and moon, combined into a single model that elaborated 'on the well-known equivalence of time and space in Mesoamerican thought'.[199] He added that the sacred game appeared 'to have taken on the connotations of the motion of the sun at the meeting points of the Upperworld and Underworld', and it was played, in part, to influence the ascent and descent of the sun and moon at these important solstice/equinox transition events.[200] Cohodas stressed Knauth's views of the relationship between the ballgame ritual and the Moon goddess- specifically his suggestion that the decapitation associated with the game represented the need to sacrifice the Moon goddess so that the Sun could rise from the Underworld.[201] These cycles and their relation to the Moon goddess may shed light on why several of her manifestations are wearing ballplayer gear on 'The Vase of the Count of Days'.

The annual movement of the Sun and Moon were ritually reenacted as sport in the ancient Maya ballgame. As the seasonal effects of this movement were inherently crucial to the cultivation of maize, this agricultural aspect was incorporated into the game as a form of sympathetic magic- a petition to the supernatural for a desired outcome (a bountiful maize harvest) by ritually reenacting a resemblance of the forces or processes involved (the motions of the sun and moon). The artist may have intended to demonstrate how the movements of these celestial bodies interlocked with the cycle of maize agriculture as the planting season was heavily dependent upon the count of days.

---

[196] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', p.104
[197] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', p.104
[198] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', p.104
[199] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', p.104
[200] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', pp.108-110
[201] Cohodas, 'The Symbolism and Ritual Function of the Middle Classic Ball Game', pp.109-110

Notions of Time and Place: The Count of Days and Cardinal Directions

This study has suggested all the women in this painting represent the moon. That suggestion was first put forth in the academic literature by Dicey Taylor, then again by Susan Milbrath who offered that the painting showed 'a narrative sequence that represents different aspects of the moon' and its 'transformation over the course of seasons or [a] lunar month'.[202] Her position is supported by this study's iconographic comparison of the goddess' hairstyle and the shape of their heads to that of the Maize god, and how these similarities corroborate ethnographic sources which reveal a correlation between maize and the moon. This adds one more piece of evidence to the identification of these women as manifestations, or phases, of the Moon goddess. Additionally, this study has identified that the name of this painting concerned the 'Count of Days'. If one connects the artist's 'Count of Days' motif to Milbrath's allegory of the transformative phases of the moon to the symbolic identification of a Day and Night Sun, then it could be argued this painting illustrates aspects of a lunisolar calendar- a calendar system which integrates both the moon phase and the solar year. It is important, therefore, to review how and to what extremes the ancient Maya actually counted days.

First, it is understood that the cardinal numbers seven, nine, thirteen, and twenty were important to the Maya, and this is revealed in their vigesimal numbering system (base 20) and various interlocking calendar cycles.[203] Prudence Rice references the work of Martha Macri when she suggests the 'counts of the passage of time likely began with the days of the moon's cycle, beginning with the first appearance of the new moon and leading to a register of thirteen waxing days and seven waning days (for a total of twenty, equal to the number of fingers and toes), followed by another nine or so days of relative darkness with the moon in the Underworld.'[204] These lunar observations may have led to important cosmological conceptual frameworks such as: the thirteen levels of the sky, the nine Lords of the Underworld, the seven Lords of the Earth, the gods of the numbers one through thirteen (the *trecena)*, the

[202] Milbrath, *Star Gods of the Maya*, p.154, Plate 5
[203] Aveni, *Skywatchers*, pp.130-136
[204] Prudence M. Rice, *Maya Calendar Origins: Monuments, Mythistory, and the Materialization of Time,* (Austin: University of Texas Press, 2007), p.189

named gods of the twenty day-signs of the sacred 260-day calendar and the 819-day calendar (819 being the lowest common multiple of seven, nine, and thirteen).[205]

The sacred calendar was counted by assigning an increasing coefficient between one and thirteen, which were gods, to each of the 20 named days of the *tzolk'in*, which were also gods. It is for this reason the *tzolk'in* calendar was considered sacred and time essentially an attribute of the gods.[206] The count through this entire cycle (the 13-day cycle multiplied by the 20 *trecenas*) is 260 days. The *haab* was the Maya solar year, or 'vague year' of 365 days counted by cycling through eighteen 20-day months (sometimes called the 360-day *tuun*) plus one 'unlucky' five-day month named *Uayeb*.[207] The 'Maya Calendar Round' was formed by the interlocking of these two separate calendar systems- the *haab* presided over by the Sun god and the *tzolk'in*- which Meredith Paxton argues is presided over by the Moon goddess.[208] A Calendar Round date, for example 4 Ahaw 8 Kumk'u, would not repeat within a 52-year cycle (260 x 365 days). Additionally, a system using 'year bearers' could count a five-year cycle.[209] The longest cycle, the Maya Long Count of 1,872,000 days, reckoned time from the date of the current creation, 11 August 3114 BC, to the last day of the cycle, 21 December 2012 AD. Interestingly, Geraldine Patrick Encina makes an argument that this creation event at the beginning of the count of days was marked by a conjunction of the Moon and Venus- a conjunction depicted on this vase at the end of one rotation or the beginning of the next.[210]

In addition to all these calendrical cycles, Maya Long Count dates were often accompanied in the monumental inscriptions by a series of glyphs representing smaller cycles, collectively known as the Supplementary Series, or Lunar Series. The glyphs of the Supplementary Series were first investigated by Sylvanus Morley in the early twentieth century, who labeled them Glyph G through Glyph A, in descending order of appearance, and a variable Glyph X.[211] Glyphs G and F

---

[205] Rice, *Maya Calendar Origins,* p.189, and Stuart, 'The Gods of Heaven and Earth', pp.1-22
[206] Miguel Leon-Portilla, *Time and Reality in the Thought of the Maya,* second edition, (Norman: University of Oklahoma Press, 1998), pp.35-36
[207] Aveni, *Skywatchers*, p.145
[208] Paxton, *The Cosmos of the Yucatec Maya,* p.32
[209] Aveni, *Skywatchers*, p.350
[210] Geraldine Patrick Encina, 'Long Count in Function of the Haab' and its Venus-Moon Relation: Application in Chichén Itzá'', ms., pp.1-13 <https://www.academia.edu/22291913/>, accessed 17 September 2018
[211] Aveni, *Skywatchers*, pp.155-156

represent a cycle of nine days commonly referred to as 'The Lords of the Night' which is independent of the Lunar Series.[212] Also independent of the Lunar Series are two glyphs, labeled Z and Y, which were added later and thought to represent a seven-day cycle pertaining to the seven lords of the earth.[213] The lunar portion of the Supplementary Series begins with Glyphs D and E which are used to record the age of the moon counted in days since the previous new moon, in other words since the beginning of the current lunar month.[214] The next cycle is represented by Glyphs C and X, which counts the current lunation in a series of six lunations, or 'lunar semester' of 177 days- information that was important in the prediction of eclipses.[215] According to Aveni, Glyph B may have named 'the house or constellation in the sky in which the moon resided'.[216] Lastly, Glyph A denoted how many days were in the current lunar month, and as the Maya did not use fractions the coefficient of this glyph was always either 29 or 30. All of these calendars, including the Long Count and the Maya notion of time itself, were cyclical- the end of one period cycling back to the beginning of the next, just as the rotated image painted upon this cylindrical vase circles back upon itself. The fact that all these calendars interconnected serves as evidence to the level of importance the ancient Maya placed on the count of days. Of all these cycles, the sacred 260-day *tzolk'in* calendar was preeminent.

The Maya notion of time was intimately related to their concept of the cardinal directions.[217] Perhaps nowhere is this interrelationship of direction and the supervision of the count of days better illustrated then the cosmogram on pages 75-76 of the Madrid Codex (figure 36). As a cosmogram, this diagram serves as a reflection the Maya cosmos, and as such it incorporates the five world directions comprised of the four corners of the earth (defined by the solsticial risings and settings) and the center (marked by the Sun's zenith and nadir). At this center sit the presiding Sun god and Moon goddess, surrounded by a band containing the twenty day signs of the *tzolk'in*. Other gods sit upon the outer edge of this band adjacent to

[212] Aveni, *Skywatchers*, p.156
[213] Yasugi,Yoshiho, and Kenji Saito, 'Glyph Y of the Maya Supplementary Series', *Research Reports on Ancient Maya Writing*, Vol. 34, (Washington DC: Center for Maya Research, 1991), pp.1-11
[214] Aveni, *Skywatchers*, p.157
[215] Aveni, *Skywatchers*, p.157
[216] Aveni, Skywatchers, p.157
[217] Paxton, *The Cosmos of the Yucatec Maya*, p.31

glyphs for East, West, North and South. The twenty rows of thirteen black dots which mark the edge and corners of the cosmogram, giving the image resemblance to a 'Maltese cross', represent twenty *trecenas* of thirteen days each.[218] These 260 dots are, in fact, the days of the *tzolk'in* calendar in visual form, and thus could be used by Maya Daykeepers, or shaman, as an instrument for the counting of days.

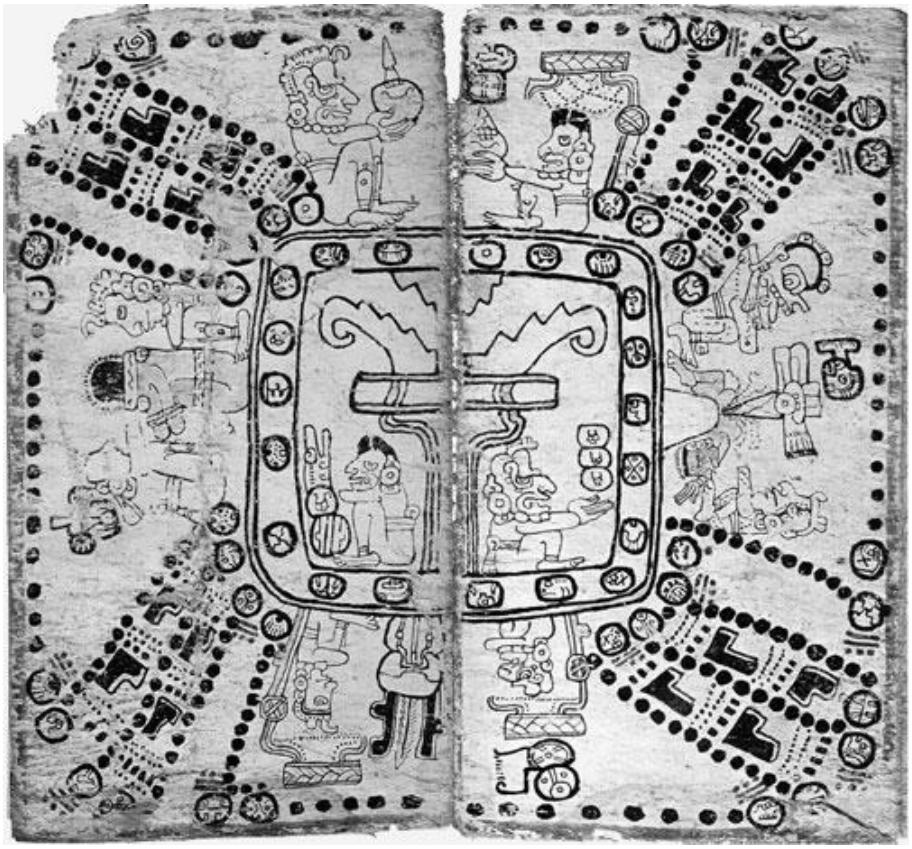

Figure 36: Maya 'cosmogram' of cardinal directions and 260-day sacred calendar from the Madrid Codex. CodexTro-Cortesiano. Colección Tabula Americae 12. Madrid: Testimonio Compañía Ed. 1991), pages 75-76.

Perhaps the most important discovery to come from this study is the identification of a long sequence of small circles which weaves throughout the image on 'the Vase of the Count of Days' and surrounds the personages in a manner very similar to the 260 dots on the cosmogram on pages 75-76 of the Madrid Codex. In this study, the count of these circles added to 260 (with a margin of error of ±10 obtained by averaging the results of several counts by multiple counters). To provide as accurate a count as possible when dealing with such a complex image on a cylindrical surface, the image was divided into eight sections and the circles of each were marked and counted.

[218] Paxton, *The Cosmos of the Yucatec Maya*, p.31

Appendix B demonstrates this methodology and shows the count of each individual section. I suggest that it was the intent of the artist that this painted drinking vessel could be used as an instrument to aid in the counting of days in much the same manner as the cosmogram in the Madrid Codex. The Madrid Codex cosmogram displays the Sun god and Moon goddess presiding over the cardinal directions as traced by the annual path of the sun. This imagery is circumscribed by 260 dots which represent the count of days of the sacred *tzolk'in* calendar. Similarly, on 'The Vase of the Count of Days' the presiding Sun god and Moon goddess are accompanied by the cardinal directions in the personification of the four-fold Pauahtun. Figure 37 shows an excerpt of the painting where the small circles, which I argue represent the days of the *tzolk'in* calendar, are highlighted in red as their path winds around the four Pauahtuns. If the patron of the vase were so inclined, the young lord could count off the days of *tzolk'in* using the day-markers in this painting. 'The Vase of the Count of Days' can thus be identified as a stylized Maya skyscape within the constraints of Silva's definition in that the celestial scene which it depicts had direct bearing to the beliefs and notions of time held by the ancient Maya.

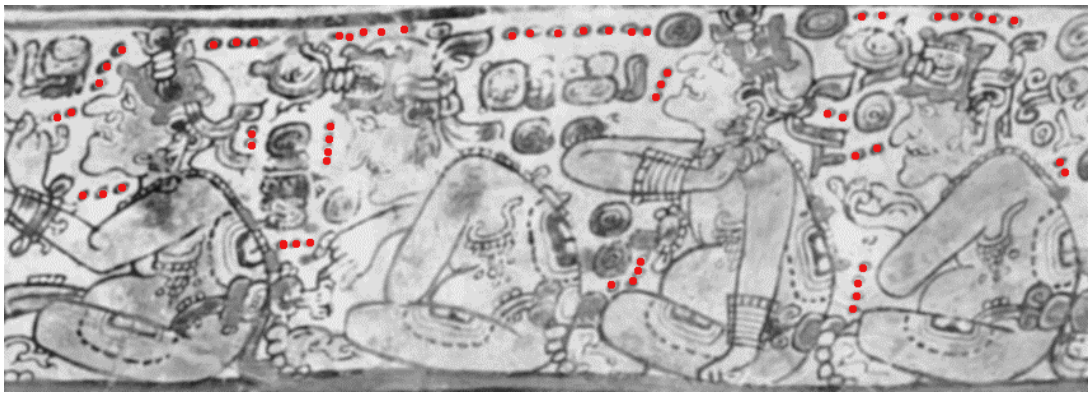

Figure 37: Example of proposed 'Count of Days' circles which surround the Pauahtuns, highlighted in Red.

In summary, this iconological discussion has presented evidence the stylized image painted on 'The Vase of the Count of Days' meets the criteria of Silva's definition of skyscape. It has provided new insight to the Maya conceptual frameworks concerning their understanding of the heavens as portrayed in their art, particularly in the conveyance of encoded information within skybands, and the representation of stars and celestial bodies. Correlates to the Maya notions of time and space are on

display as the movement of the Moon goddess and the Old Man of the Universe 'makes happen' the count of days while the cardinal directions laid out by the Sun's movement are represented by the four-fold Pauahtun. These cycles and the beliefs built around them were manifested in the Maya approach to maize agriculture and observance of the sacred ballgame, the movements of which may reflect the moon's path across the sky and between realms. Furthermore, this study suggests the intent of the artist was to produce a painting which could be used as an instrument to count the days of the *tzolk'in* calendar in a manner later portrayed on a cosmogram from the Madrid Codex. In this way the painting on this vase serves as not just a primary source historical document as to notions of the Maya sky, but may also be considered a form of cosmogram in that it illustrates the conceptual frameworks of time and the cardinal direction within the Maya cosmos.

CONCLUSION

This study has applied Erwin Panofsky's three phase methodology of iconographic analysis to the painted Classic period Maya vase (K1485) to investigate and identify potential cosmological or celestial content and, using a definition of the term skyscape as defined by Fabio Silva, evaluate whether this image represents a stylized Maya skyscape. A translation of the hieroglyphic texts on the image itself suggests the ancient artist may have titled the painting 'to make happen the count of days' and this study hence refers to the artifact as 'The Vase of the Count of Days'. At the first of Panofsky's phases of analysis, a pre-iconographic examination provided an objective description of the painting as it would have unfolded by viewing the cylindrical vase rotated in a clockwise direction as the sky moves. It suggested the movement of the characters across the scene, and the interactions from which these movements result, appeared to be at the core of the expressional meaning being conveyed by the artist. At the second phase, an iconographic analysis of both the spatial environment illustrated on the vase, as well as the anthropomorphic beings which move through that space, suggested that symbolic elements such as the skyband, the multitude of concentric circles as the representations of stars, and the identification of the anthropomorphic beings as celestial bodies indicated an overall conventional meaning indicative of a celestial context or skyscape. At the third of

Panofsky's phases, an iconological discussion related the findings of the earlier phases to Silva's definition, to assess a further understanding of the Maya conceptual framework of skyscapes. This investigation suggested that glyphs embedded within skybands may have direct cosmological relation to the actors and actions surrounding them, which may lead to a greater understanding of this artistic motif and the skyscape of which it is a part. The analysis also supported previous scholarship in the assessment that the young females in the image represented phases of the Moon goddess, and offered new insight that perhaps her movement across time and space served to initiate the count days in the form of a complex lunisolar calendar. Furthermore, this study has suggested the male sky-gods in this skyscape, identified as Itzamna, Pauahtun, and others, may all be manifested aspects of a supreme deity Simon Martin calls the Old Man of the Universe, as likewise all female sky deities may be manifestations of his consort, the Moon Goddess. This study has suggested that the celestial bodies which traverse the Maya sky, imbued with the power of this creator couple, had direct ties to beliefs and practices as demonstrated by the sympathetic magic invoked in the sacred ballgame ritual in hopes of a good maize yield. Lastly, this study has found that the image on 'The Vase of the Count of Days' contains a sequence of 260 (±10) small circles which I submit are 'day-keeping elements' which weave in and around the characters in the painting. I offer that it may have been the intent of the artist to produce a painting on which the 260 days of the *tzolk'in* calendar were all represented and could be counted off in a similar manner to a later Post-Classic cosmogram presented in the Madrid Codex. This truly unique vase has much to offer students of Maya cosmology, and perhaps through the lens of these observations a clearer picture of the Maya skyscape can be perceived.

BIBLIOGRAPHY

Aveni, Anthony F., *Skywatchers: A Revised and Updated Version of Skywatchers of Ancient Mexico*, revised edition (Austin, TX: University of Texas Press, 2001).

Barrios, Ana García, 'Chapter IX: Gods of Heaven, Gods of Earth, in *The Maya: Voices in Stone*, ed. Alejandra Martinez de Velasco Cortina and Maria Elena Vega Villalobos, second edition (Mexico City: Turner, Ambar Diseño, and Universidad Nacional Autónoma de México, 2015).

Bassie, Karen, 'Comments on K1485', Maya Vase Database, <http://www.mayavase.com/com1485.html>, accessed 10 July 2018.

Carlson, John R., 'Skyband Representations in Classic Maya Vase Painting', in *Maya Iconography*, ed. by Elizabeth P. Benson and Gillett G. Griffin, (Princeton: Princeton University Press, 1988).

Carlson, John B., and Linda C. Landis, 'Bands, Bicephalic Dragons, and Other Beasts: The Skyband in Maya Art and Iconography', in *Fourth Palenque Round Table, 1980*, ed. by Merle Greene Robertson and Elizabeth P. Benson, (San Francisco: The Pre-Columbian Art Research Institute, 1985).

Chinchilla Mazariegos, Oswaldo, 'Cosmos and Warfare on a Classic Maya Vase', *RES: Anthropology and Aesthetics,* Vol 47 Spring 2005.

Chinchilla Mazariegos, Oswaldo, *Art and Myth of the Ancient Maya*, (New Haven and London: Yale University Press, 2017).

Clancy, Flora Simmons, 'The Ancient Maya Moon: Calendar and Character', in *Cosmology, Calendars, and Horizon-Based Astronomy in Ancient Mesoamerica*, ed. by Anne S Dowd and Susan Milbrath, (Boulder: University Press of Colorado, 2015).

Coe, Michael D., *The Maya Scribe and His World,* (New York: The Grolier Club, 1973).

Coe, Michael D., and Stephen Houston, *The Maya*, ninth edition (New York: Thames & Hudson, 2015 [1966]).

Coe, Michael D., and Justin Kerr, *Lords of the Underworld: Masterpieces of Classic Maya Ceramics*, (Princeton: Princeton University Press, 1978).

Coe, Michael D., and Justin Kerr, *The Art of the Maya Scribe*, (New York: Harry N Abrams, Inc, 1998).

Coe, Michael D., and Mark Van Stone, *Reading the Maya Glyphs*, (London: Thames & Hudson, 2001).

Codex Dresdensis, Sächische Landesbibliothek Dresden, facsimile –Ernst W. Förstemann, 1892.

Codex Peresianus, Bibliothèque Nationale de France, Département des Manuscrits. Mexicain 386. Paris, France, 2011.

Codex Tro-Cortesiano, Gaibrois; estudio crítico de Miguel Rivera Dorado. Colección Tabula Americae 12. Madrid: Testimonio Compañía Ed. 1991.

Cohodas, Marvin, 'The Symbolism and Ritual Function of the Middle Classic Ball Game in Mesoamerica', *American Indian Quarterly*, Vol. 2, No. 2 (Summer, 1975).

Collea, Beth A., 'The Celestial Bands in Maya Hieroglyphic Writing', in *Archaeoastronomy in the Americas*, ed. By Ray A. Williamson, (Los Altos and College Park: Ballena Press and The Center for Archaeoastronomy, 1981).

D'Alleva, Anne, *Methods & Theories of Art History*, 2nd Edition (London: Laurence King Publishing, 2012).

Gillespie, Susan D., 'Ballgames and Boundaries', in *The Mesoamerican Ballgame*, ed. by Vernon L. Scarborough and David R. Wilcox, (Tucson, University of Arizona Press, 1991).

Gillespie, Susan D., and Rosemary A. Joyce, 'Deity Relationships in Mesoamerican Cosmologies: the case of Maya God L', *Ancient Mesoamerica*, Vol. 9, (1998).

Harrison, Charles, *An Introduction to Art*, (New Haven and London: Yale University Press, 2009).

Henderson, John S., *The World of the Ancient Maya*, second edition, (Ithaca and London: Cornell University Press, 1997 [1981]).

Iwaniszewski, Stanisław, 'They Were Like Them: The Stars in Mesoamerican Imagery', in *Heavenly Discourses*, Studies in Cultural Astronomy and Astrology, Vol. 7, ed. By Nicholas Campion (Ceredigion, Wales: Sophia Centre Press 2016).

Johnson, Scott A. J., *Translating Maya Hieroglyphs*, (Norman: University of Oklahoma Press, 2013).

Just, Bryan R, *Dancing into Dreams: Maya Vase Painting of the Ik' Kingdom*, (New Haven and London: Yale University Press, 2012).

Kerr, Justin, *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 1*, (New York: Kerr Associates, 1989).

Kerr, Justin, *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 3*, (New York: Kerr Associates, 1992).

Kerr, Justin, *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 6*, (New York: Kerr Associates, 2000).

Kerr, Justin, Maya Vase Database, <http://research.mayavase.com/kerrmaya_list.php?_allSearch=&hold_search=&x=32&y=4&vase_number=1485&date_added=&ms_number=&site=>, accessed 1 July 2018.

Landa, Friar Diego de, *Yucatan: Before and After the Conquest*, trans. by William Gates, (New York: Dover Publications, 1978 [1566]).

Layser, Christopher, 'Can Phenomenological Fieldwork Yield a Richer Understanding of the Role of Sacred Caves in Ancient Maya Cosmology?', *Spica: Graduate Journal for Cosmology in Culture*, Sacred Geography Special Edition, Vol. IV, No. 2, (2016).

Leon-Portilla, Miguel, *Time and Reality in the Thought of the Maya*, second edition, (Norman: University of Oklahoma Press, 1998).

Looper, Matthew G., 'Celestial Raiment: Beaded Net Garments in Classic Maya Art', In *Dressing the Part: Power, Dress, Gender, and Representation in the Pre-Columbian Americas*, ed. by Sarahh E. M. Scher and Billie J. A. Follensbee (Gainesville: University Press of Florida, 2017).

Looper, Matthew G., personal correspondence, 2018.

Macri, Martha J., and Matthew G. Looper, *The New Catalog of Maya Hieroglyphs Volume 1: The Classic Period Inscriptions*, (Norman: The University of Oklahoma Press, 2003).

Martin, Simon, 'The Old Man of the Universe: Unified Aspects to Ancient Maya Religion' in *Maya Archaeology 3: Featuring the Grolier Codex*, ed. by Charles Golden, Stephen Houston and Joel Skidmore (San Francisco: Precolumbia Mesoweb Press, 2015).

Milbrath, Susan, *Star Gods of the Maya: Astronomy in Art, Folklore, and Calendars*, (Austin: University of Texas Press, 1999).

Milbrath, Susan, 'Astronomical Deities in Ancient Mesoamerica', in *Handbook of Archaeoastronomy and Ethnoastronomy*, ed. Clive L.N. Ruggles, (New York Heidelberg Dordrecht London: Springer, 2015).

Miller, Mary Ellen, *Maya Art and Architecture*, (London and New York: Thames and Hudson, Inc., 1999).

Miller, Mary, and Simon Martin, *Courtly Art of the Ancient Maya*, (San Francisco: Fine Arts Museum of San Francisco, 2004).

Miller, Mary, and Karl Taube, *An Illustrated Dictionary of The Gods and Symbols of Ancient Mexico and the Maya*, (London and New York: Thames and Hudson, Inc., 1993).

Montgomery, John, *Dictionary of Maya Hieroglyphs*, (New York: Hippocrene Books, Inc., 2002).

Museum of Fine Arts, Boston webpage, <http://www.mfa.org/collections/object/cylinder-vase-36438>, accessed 25 June 2018.

Panofsky, Erwin, *Studies in Iconology: Humanistic Themes in the Art of the Renaissance*, Icon edition, (New York, Hagerstown, San Francisco, London: Harper and Row, 1972 [1939]).

Patrick Encina, Geraldine, 'Long Count in Function of the Haab' and its Venus-Moon Relation: Application in Chichén Itzá'', ms., <https://www.academia.edu/22291913/>, accessed 17 September 2018.

Paxton, Merideth, *The Cosmos of the Yucatec Maya: Cycles from the Madrid Codex*, (Albuquerque: University of New Mexico Press, 2001).

Reents-Budet, Dorie, *Painting the Maya Universe: Royal Ceramics of the Classic Period*, (Durham and London: Duke University Press, 1994).

Rice, Prudence M., *Maya Calendar Origins: Monuments, Mythistory, and the Materialization of Time*, (Austin: University of Texas Press, 2007).

Robicsek, Francis, and Donald M. Hales, *The Maya Book of the Dead, The Ceramic Codex: The Corpus of Codex Style Ceramic of the Late Classic Period*, (Charlottesville: University of Virginia, 1981).

Robicsek, Francis, and Donald M. Hales, *Maya Ceramic Vases from the Late Classic Period: The November Collection of Maya Ceramics*, (Charlottesville: University Museum of Virginia, 1982).

Schele, Linda and David Freidel, *A Forest of Kings: The Untold Story of the Ancient Maya*, (New York: HarperCollins Publishers, 1990).

Schlak, Arthur, 'Venus, Mercury, and the Sun: GI, GII, and GIII of the Palenque Triad', *RES: Anthropology and Aesthetics*, No. 29/30, (1996).

Silva, Fabio, 'The Role and Importance of the Sky in Archaeology: An Introduction', in *Skyscapes: The Role and Importance of the Sky in Archaeology*, ed. by Fabio Silva and Nicholas Campion, (Oxford and Philadelphia: Oxbow Books, 2015).

Stuart, David, 'The Language of Chocolate: References to Cacao on Classic Maya Drinking Vessels, in *Chocolate in Mesoamerica: A Cultural History of Cacao*, ed. by Cameron L. McNeil, (Gainesville: University Press of Florida, 2006).

Stuart, David, 'The Gods of Heaven and Earth: Evidence of Ancient Maya Categories of Deities', to appear in Homanaje a Alfredo López Austin, 2013 ms.

Taube, Karl A., *The Major Gods of Ancient Yucatan*, Studies in Pre-Columbian Art and Archaeology, No. 32 (Washington DC: Dumbarton Oaks Research Library and Collection, 1992).

Taylor, Dicey, 'Painted Ladies: Costumes for Women on Tepeu Ceramics', in *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases (Maya Vase Book) Vol 3*, (New York: Kerr Associates, 1992).

Tedlock, Barbara, *Time and the Highland Maya*, revised edition (Albuquerque: University of New Mexico Press, 1992 [1982]).

Tedlock, Dennis, and Barbara Tedlock, 'Moon Woman Meets the Stars: A New Reading of the Lunar Almanacs in the Dresden Codex' in *Skywatching in the Ancient World: New Perspectives in Cultural Astronomy*, ed. by Clive Ruggles and Gary Urton, (Boulder: University Press of Colorado, 2007).

Thompson, J. Eric S., *Maya History and Religion*, (Norman: University of Oklahoma Press, 1970).

Thompson, J. Eric S., *Commentary on the Dresden Codex, a Maya Hieroglyphic Book, Memoirs, Vol. 93* (Philadelphia: American Philosophical Society, 1972).

Tunesi, Raphael, and Yuriy Polyukhovych, 'Possible Phonetic Substitutions for the "Knot-Head" Glyph'. Glyph Dwellers Report 39, May 2016, <http://glyphdwellers.com/pdf/R39.pdf>, accessed 20 June 2018.

Velásquez Garcia, Erik, 'XVI: The Ballgame', in in *The Maya: Voices in Stone*, ed. Alejandra Martinez de Velasco Cortina and Maria Elena Vega Villalobos, second edition (Mexico City: Turner, Ambar Diseño, and Universidad Nacional Autónoma de México, 2015).

Yoshiho Yasugi and Kenji Saito, 'Glyph Y of the Maya Supplementary Series', *Research Reports on Ancient Maya Writing*, Vol. 34, (Washington DC: Center for Maya Research, 1991).

Zender, Marc, 'On the Reading of Three Classic Maya Portrait Glyphs', *The PARI Journal*, Volume XV, No.2, (Fall 2014).

Appendix A: Plate 1 K1485, the Vase of the Count of Days

Figure 38: Plate 1. Enlarged K1485, the Vase of the Count of Days

Appendix B: Counting the Count of Days

The purpose of this appendix is to demonstrate the process used to count the small circles on this vase. As to not duplicate the count of any small circle, the painting was cut into smaller, manageable pieces labeled here as sections 1 through 8. The count of each section was then documented and totaled. Several counts were made by Jeani Wahl and the author.

Figure 39: Appendix B, Section 1: Top left. Count of days = 14

Figure 40: Appendix B, Section 2. Top Mid Left. Count of days = 39

Figure 41: Appendix B, Section 3. Top Mid Right. Count of days = 21

Figure 42: Appendix B, Section 4. Top Rightmost. Count of days = 22

Counted 'day elements' were highlighted in green to aid in the counting process for accuracy. A margin of error was introduced to additionally account for 'day elements' that may have been missed (overlooked) or included when they should not have been.

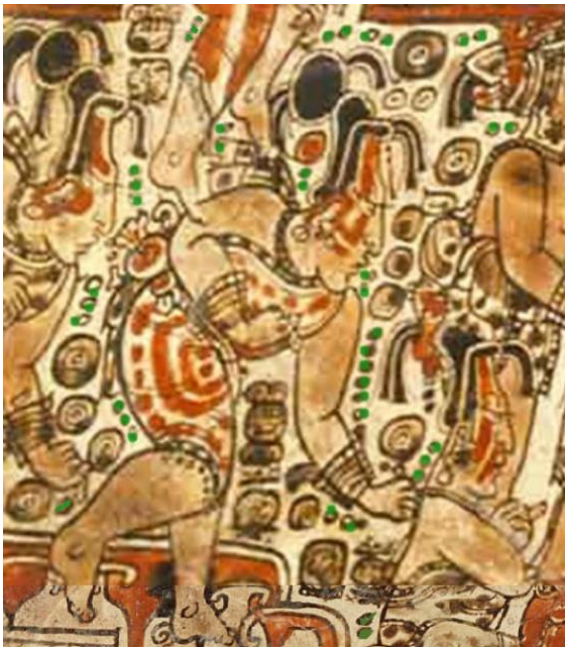

Figure 43: Appendix B, Section 5: Bottom Leftmost. Count of days = 36

Figure 44: Appendix B, Section 6: Bottom Left Middle. Count of days = 33

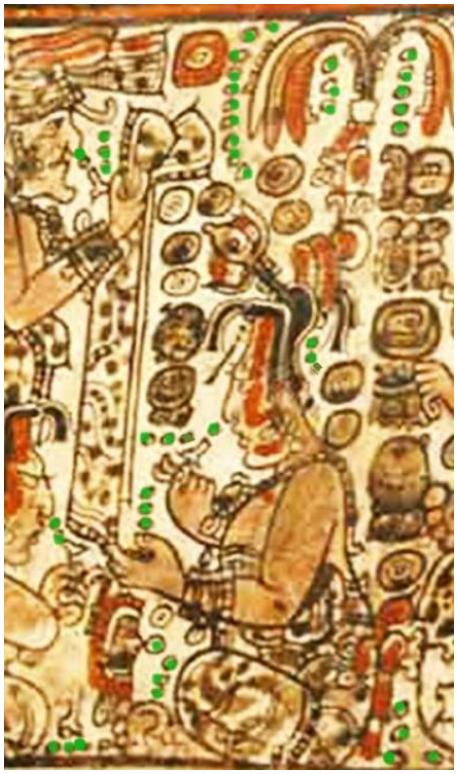

Figure 45: Appendix B, Section 7. Bottom Middle Right. Count of days = 45

Figure 46: Appendix B, Section 8. Bottom Rightmost. Count of Days = 53

Total count by section:

14 + 36 + 21 + 22 + 41 + 33 + 45 + 53 = 265 ±10 = approximately 260 days (circles) within the acceptable margin of error to suggest the 'day elements' represent the days of the *tzolk'in* calendar.