

Layser AHAN7024 Assignment 1 Comparison of the Paris Codex Zodiac and the Murals of Bonampak

by CHRISTOPHER A Layser

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Module tutor: **Bernadette Brady, Darrelyn Gunzburg, Nicholas Campion,**

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The Turtle, The Peccary, and the Two-Headed Serpent: Comparison of the Paris Codex Zodiac and the Murals of Bonampak

The aim of this paper is to present a brief comparative analysis of two important depictions of the sky from the corpus of Maya art and iconography: the so-called 'Maya Zodiac' found within the pages of the Paris Codex and the painted murals of Room 2 at Bonampak in Chiapas, Mexico. This comparison will focus on three iconographical elements relating to the Maya sky: the skyband, the turtle, and the peccary - the latter of which is now effaced in the Paris Codex. It will be argued that these represent three important sky markers pertaining to the Maya creation myth.

Although the exact age and **provenience** of the Paris Codex, a Maya screen-fold hieroglyphic manuscript, is unknown, Bruce Love suggests 'the best working hypothesis' is that it was produced in the Post-Classic Yucatec polity 'Mayapan near the end of that city's existence as a power center, around A.D. 1450'.¹ Gregory Severin presents it as an astronomical ephemeris, demonstrating that pages 23-24 represent a thirteen-constellation zodiac the Maya used 'to calculate the sidereal year'.² These pages are frequently referred to as the 'Maya Zodiac', although Love suggests a 'dominant constellation' model may be more accurate, arguing that though 'stars and groupings of stars were extremely potent forces, and yearly movements of the constellations held great meaning... these stars did not have to lie within the [18° wide] zodiacal band'.³ This analysis will refer to the constellations as zodiacal and will compare two of them to animal figures within cartouches painted onto the corbelled ceiling of Bonampak Room 2.

The murals were painted in the three rooms of Structure 1 and 'work as a unit formally and iconographically' to tell a story set near the end of the Classic period.⁴ The Room 2 mural depicts a battle on one wall and a victory celebration on the other- set beneath, it will be shown, a starry sky. Harvey and Victoria Bricker describe this 'one small portion of the murals' as 'relevant to any investigation of a pre-Columbian Maya zodiac'.⁵ Unfortunately, Michael Coe explains, scholarship is now 'dependent upon copyists for the analysis of the Bonampak murals',

¹ Bruce Love, *The Paris Codex: Handbook for a Maya Priest*, (Austin: University of Texas Press, 1994), p.13

² Gregory M. Severin, 'The Paris Codex: Decoding an Astronomical Ephemeris', *Transactions of the American Philosophical Society*, Vol. 71, No. 5 (1981), p. 37

³ Love, *The Paris Codex*, p.89

⁴ Mary Ellen Miller, *The Murals of Bonampak*, (Princeton: Princeton University Press, 1986)

⁵ Harvey M. Bricker and Victoria R. Bricker, 'Zodiacal References in the Maya Codices', in *The Sky in Mayan Literature*, ed. by Anthony Aveni, (New York and Oxford: Oxford University Press, 1992), p.176

for though the paintings were ‘relatively intact upon their discovery in 1946, [they] are now only shadows of their former selves.’⁶

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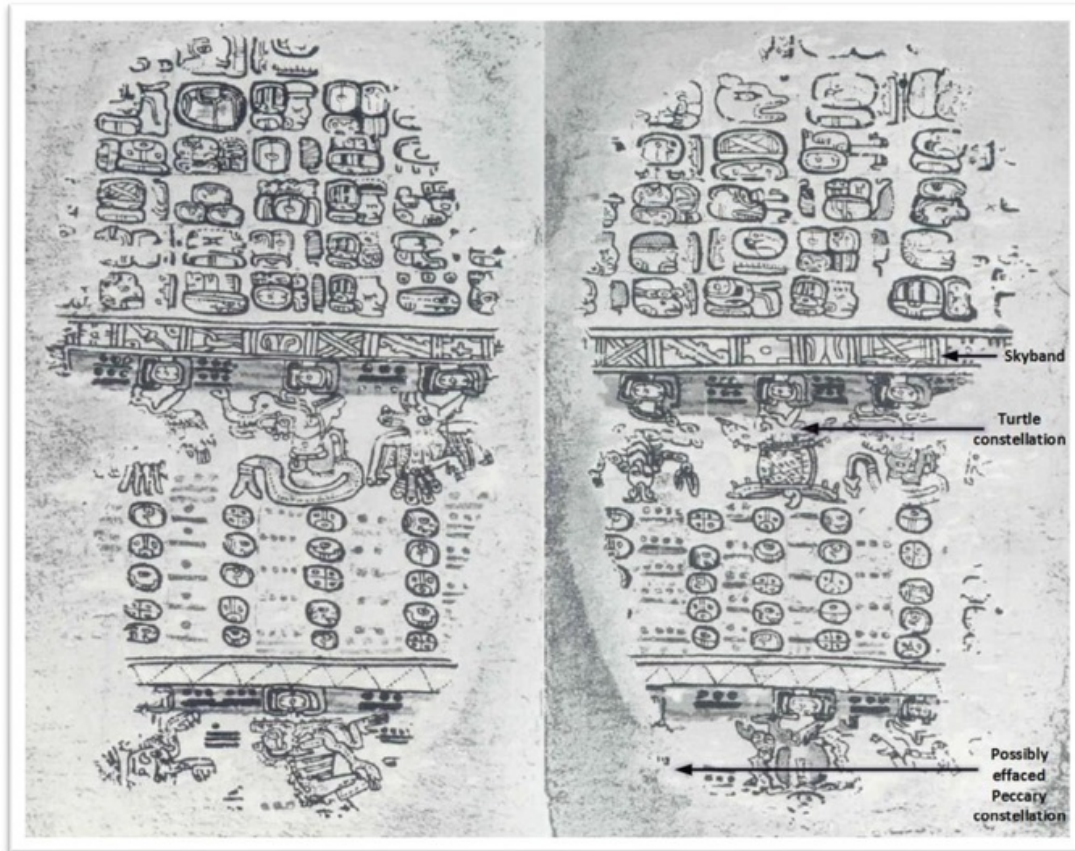


Figure 1: The Maya Zodiac from pages 23-24 of the Paris Codex with Skyband, Turtle and possible Peccary Constellations identified.

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The Skybands

An important and ever-present aspect of Maya celestial iconography is the skyband, identified in figure 1. Animal images hang from the dominant skyband of the “Maya Zodiac” which bisects the two pages, while a less ornate skyband crosses the bottom of the pages. Beth Collea’s early 1980s study set the following three criteria for their identification: at least one of a set of specific glyphs is represented, the glyphs are shown ‘fused together rather than in separate cartouches’, and no affixes appear within the glyphs in the band.⁷ The skyband glyphs on the upper-register of the ‘Maya Zodiac’ reads from right to left and contains a variety of glyphs pertaining to the

⁶ Michael Coe, ‘Art and Illusion among the Classic Maya’, *Record of the Art Museum, Princeton University*, Vol. 64 (2005), p. 55

⁷ 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.215

sky, heavenly bodies, or signs of the night.⁸ The band on the lower register has no diagnostics, only a zig-zag dotted line which may represent a serpent's pattern, and out of context would likely not pass Collea's identification criteria as a skyband at all.

Herbert Spinden first pointed out that though the skyband 'turned downward at the left' and 'cut off short at the right end' it must represent 'the elongated body of a Two-headed Dragon.'⁹ John Carlson and Linda Landis believe the skyband 'in *all* its functional representations is the body of the bicephalic dragon' which becomes the 'cosmic border framing the Maya world'.¹⁰ Linda Schele realized the 'Double-Headed Serpent' which was draped around and through the branches of the "World Tree" of the Milkyway in so much Maya iconography specifically represented the ecliptic- the 'line of constellations in which the sun rises and sets throughout the year'.¹¹ It is now well understood that skybands point to celestial activity, and these bands bear import roles in the astronomical interpretation of both the Paris Zodiac and the murals of Bonampak.



Figure 2: lower portion is the reproduction of the entire Bonampak Room 2 by Antonio Teudaf, 1948, Published as inserts in Martha Ilia Nájera Coronado, *Bonampak, (Nápoles, Mexico: Gobierno del Estado de Chiapas, 1991)*, upper portion is the enlarged section of top of North wall (right)

Subtle and subdued in comparison, the blue-green skyband of Room 2 at Bonampak separates the 'battle scene' of the south-west wall and the 'victory scene' of the north-east wall from the celestial happenings on the corbelled ceilings above (figure 2). Mary Ellen Miller thought that

⁸ Carlson and Landis, 'The Skyband in Maya Art', pp. 135-138

⁹ Herbert J. Spinden, 'The Question of the Zodiac in America', *American Anthropologist*, New Series, Vol. 18, No. 1 (1916), pp. 74-75

¹⁰ 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)

¹¹ David Freidel, Linda Schele and Joy Parker, *Maya Cosmos: Three Thousand Years on the Shaman's Path*, (New York, London, Toronto and Sydney: William Morrow Paperbacks, 1993), pp. 78-79

the front head of this bicephalic monster was identifiable atop the east wall of Room 1.¹² Although the crossbands glyph- which Schele suggests represents the intersection of the ecliptic and the Milkyway- can be determined, no other glyphs are discernible.¹³ The Brickers suggest that

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the painting was never completed... the sky band in its present form appears to have ten rectangular fields or segments. Both the leftmost and the rightmost two segments contain cross-bands signs similar to those [at] Las Monjas at Chichén Itzá... [while] the central six segments...are empty.¹⁴

Taking account of the attention to detail in the rest of the mural, the Brickers' opinion seems unlikely, and the lack of detail may be a stylistic choice of the artist. The real purpose of the skyband, Miller contends, is 'dividing human space and heavenly space'.¹⁵ Here the cartouches set atop of the skyband - as opposed the Paris Codex where figures hang below. This identifies them as heavenly images, and informs, as do all representations of the two-headed serpent, of observation along the ecliptic.

The Turtle

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Of the recognizable figures hanging from the skybands of the Paris zodiac, only the turtle is found on the Bonampak murals; and from the frequency of the turtle's depiction throughout Maya art, its importance becomes apparent (figure 3). Severin notes the sixteenth-century Spanish/Maya dictionary *Calepino de Mortul* 'lists but two Maya constellations with their known counterparts in the Greco-Babylonian zodiac: tzab, the "tail of the rattlesnake" known to us as the Pleiades... and *ac ek*, the "turtle stars"', which corresponded in part to the stars in the constellation Gemini or Orion.¹⁶ The Maya creation story as recorded on stele from Quiriguá explains how three 'hearthstones' were placed in the sky at the beginning of the current age.¹⁷ Dennis Tedlock found 'the stars Alnitak, Saiph, and Rigel in Orion... are said by the Quichés to be the three hearthstones of the typical Maya kitchen fireplace arranged to form a triangle' and that these stars 'enclose the Orion Nebula ... said to be a smoky fire'.¹⁸ The turtle which sits upon the skyband at Bonampak has three star symbols upon its back, and the preponderance of evidence suggests this represents the Belt of Orion.

The Peccary

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A second cartouche on the Bonampak ceiling contains copulating peccaries, yet the peccary is not found in the Paris zodiac. Floyd Lounsbury compared these pages to 'a band of astral or zodiacal signs inscribed on the Casa de las Monjas at Chichen Itza' which 'gives evidence for a "peccary" ... with both the turtle and the peccary depicted over "star" signs within their

¹² Miller, *The Murals of Bonampak*, p.93

¹³ Freidel, Schele and Parker, *Maya Cosmos*, pp. 75-87

¹⁴ Bricker and Bricker, 'Zodiacal References in the Maya Codices', p. 177

¹⁵ Mary Ellen Miller and Claudia Brittenham, *The Spectacle of the Late Maya Court: Reflections on the Murals of Bonampak*, (Austin: University of Texas Press, 2013), p.105

¹⁶ Severin, 'The Paris Codex: Decoding an Astronomical Ephemeris', p. 8

¹⁷ Dennis Tedlock, *2000 Years of Mayan Literature*, (Berkley, Los Angeles, and London: University of California Press, 2010), pp. 43-58

¹⁸ Dennis Tedlock, *Popol Vuh: The Definitive Edition of The Mayan Book of The Dawn of Life and The Glories of Gods and Kings*, (New York: Touchstone, 1996), p.236

respective cartouches'.¹⁹ The question could be asked whether these various sources contain the same collection of celestial images. Bernadette Brady has demonstrated that in the 'Western' tradition the 'images that humanity has placed in the sky' display a 'persistence through time' changing little over the span of millennia.²⁰ It is reasonable, therefore, to suggest that the Maya constellations had remained static over the course of mere centuries, and that the peccary constellation would have its place within the Paris Codex zodiac pages. The Brickers pointed to the empty space at the bottom-left corner of page 24 and 'suggested that the peccary... might fit into the sequence at this position... however this suggestion was based solely on [their] interpretation of murals on the north wall of Room 2 at the Classic site of Bonampak.'²¹ Analysis of the embedded arithmetic by Richard Johnson and Michel Quenon suggests this spot would be home to the stars that comprised the constellation of Gemini.²²



Figure 3: (left) the sky turtle and the three hearthstones of creation hang from the skyband in the Madrid Codex M.71a, (left center) The Maize God re-born at the moment of creation from a crack in a the turtle's back, Photo by Justin Kerr, K1892 (Right center) The Maize God re-born at the moment of creation from a crack in a the Peccary's back, from page 159 of *The Maya Scribe and His World*, by Michael Coe (New York: The Grolier Club, 1973), and (right) the Peccary constellation within the skyband at Casa de las Monjas at Chichen Itza, Drawing by Herbert Spinden, 1916.

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Lounsbury interpreted date of the battle depicted on the mural from the heavily effaced glyphs to be 13 Chichan 13 Yax (9.18.1.15.5).²³ Linda Schele later used this date, correlating to August 6, 792 A.D., to show that 'in the hours before dawn the constellations of Gemini and Orion had hovered above the eastern horizon' and made the connection that 'Gemini had to be the copulating peccaries'.²⁴ She noted this date was only four days before the creation date of August 13th, and suggested these two constellations at the intersection of the "World Tree" and the "Double-Headed Dragon" marked the location in the sky where the act of creation took place

¹⁹ Floyd G. Lounsbury, 'Astronomical Knowledge and its Use at Bonampak, Mexico', in *Foundations of New World Cultural Astronomy*, ed. by Anthony Aveni (Boulder: University of Colorado, 2008).

²⁰ Bernadette Brady, 'Images in the Heavens: A Cultural Landscape', in *The Imagined Sky*, ed. by Darrelyn Gunzburg, (Sheffield and Bristol: Equinox Publishing, 2016), p.235

²¹ Harvey M. Bricker and Victoria R. Bricker, *Astronomy in the Maya Codices*, (Philadelphia: American Philosophical Society, 2011), p.706

²² Khistaan D. Villela and Linda Schele, 'Astronomy and the Iconography of Creation Among the Classic and Colonial Period Maya' In Eighth Palenque Round Table, 1993, ed. by Merle Greene Robertson, Martha J. Macri and Jan McHargue. (Austin: University of Texas Press, 1996), p.4

Electronic version. San Francisco: Pre-Columbian Art Research Institute 1996

²³ Lounsbury, 'Astronomical Knowledge and its Use at Bonampak', p. 582-583

²⁴ Freidel, Schele and Parker, *Maya Cosmos*, p. 80

(Figure 4). Further evidence in support of this conclusion is presented in Figure 3 which includes images of the Maize God re-born at the moment of creation, emerging from a crack in the back of both a turtle and a peccary.

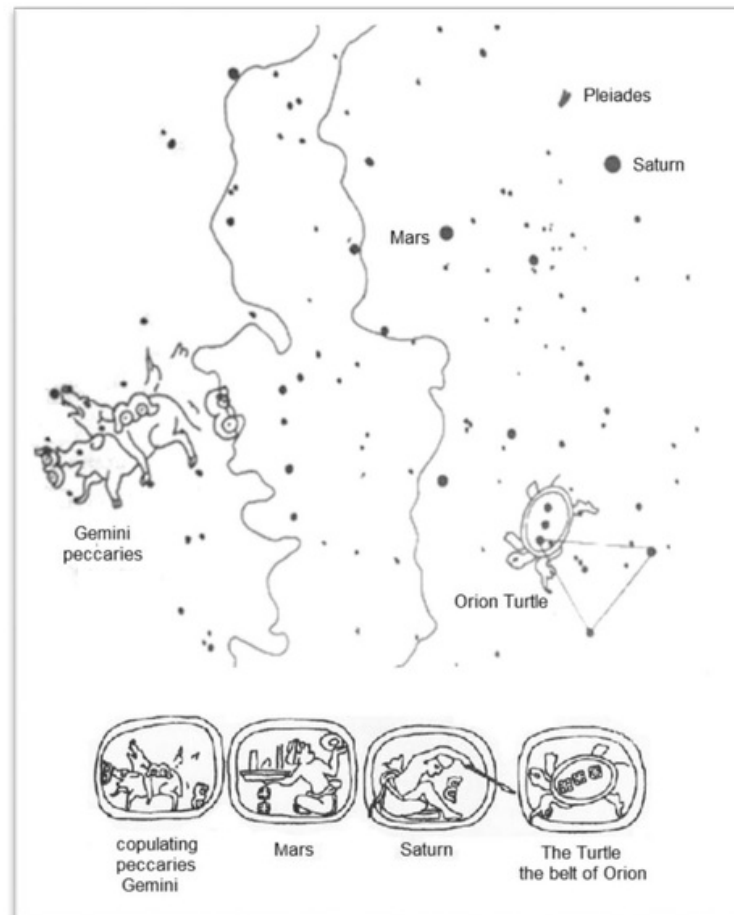


Figure 4: The sky over the Bonampak battle scene depicted on the wall of Room 2, Bonampak as interpreted and drawn by Linda Schele. Modified from page 81 of *Maya Cosmos: Three Thousand Years on the Shaman's Path*, by Freidel, David, Linda Schele and Joy Parker, (New York, London, Toronto and Sydney: William Morrow Paperbacks, 1993)

In conclusion, this paper presented a comparative analysis of pages 23-24 of the Paris Codex- which demonstrates the Maya recognized thirteen constellations along or near the ecliptic- and murals painted upon the walls of Room 2, Structure 1 at Bonampak. Both display a skyband representing the “Two-headed Dragon” of the ecliptic, though the skyband of the Paris Codex offers complex glyphic diagnostics whereas the skyband of the murals is in its most simplistic form. Two constellations were considered: the turtle and peccary. The turtle is present in both the codex and the murals, and has been identified as the stars of Orion by ethno-astronomical investigations. It has been argued that the Peccary, which is present on the mural, once existed

on the codex as well and represents the stars comprising the constellation Gemini. Furthermore, it has been suggested that these two constellations were important sky markers pertaining to the Maya story of creation.

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Appendix A: New Interpretations of the Bonampak Cartouches

The aim of this appendix is to present a new interpretation to the astronomical cartouches which sit atop of the skybands in Room 2 of the murals of Bonampak. Linda Schele had contended that these four cartouches represented prominent aspects of the pre-dawn sky on the morning of the battle depicted on the murals. She had identified the peccaries and the turtle as the constellations Gemini and Orion as discussed earlier. Likewise, she believed

The two anthropomorphic figures between the peccaries and the turtle had to be the personifications of Saturn and Mars. And we already knew many examples of other planets, such as Venus and Jupiter, that were represented by anthropomorphic figures. We seemed to have two more here.²⁵

Although some monumental references to God K at Palenque seem to refer to retrograde motion of Jupiter and possibly Saturn, and the 819-Day count devised there makes an attempt to incorporate the orbits of Jupiter and Saturn into the sacred calendar, the planet Saturn is otherwise unrepresented in Maya iconography apart from Schele's interpretation of this cartouche. Susan Milbrath points out that with the contemporary Maya, names for Saturn 'seem to be lacking' except for an intriguing Yucatec reference to the 'female crocodile star' identified as Saturn by Weldon Lamb.²⁶ If this planet, with its apparent magnitude of only -0.49 at maximum brightness, has enjoyed such little notice in the corpus of Maya astronomy and iconography, it seems peculiar that it would be identified so prominently on the Bonampak murals.

It appears now, that this interpretation may no longer be accurate. In a recent 2013 publication, Mary Ellen Miller explained that the date of the Battle Scene on Room 2 at Bonampak

was originally reconstructed as 13 Chichan 13 Yax (9.18.1.15.5, or August 6, 792) ...the date of an inferior conjunction with Venus. However, new data revealed by the cleaning of the murals and infrared photography make clear that this date is impossible: the day is either Men or Ok, and the month must be Ch'en. With this new information, the most likely interpretation of the date in Room 2 [is] 9.17.15.12.15 13 Men 13 Ch'en, or July 19 786.²⁷

Linda Schele used the date of August 6th 729 to identify the Turtle as Orion, the Peccaries as Gemini, and the anthropomorphic figures in the cartouches between them as Mars and Saturn which appeared in the same area of the sky on that night (see figure 4). But if an incorrect date was used to identify these astronomical cartouches, the whole identification must come under scrutiny. Using Starry Night CPA software set for the Chiapas Region of Mexico in the early hours of July 19 786 just before dawn, a new image of that sky was generated (figure 5).

²⁵ Freidel, Schele and Parker, *Maya Cosmos*, p. 80

²⁶ Susan Milbrath, *Star Gods of the Maya: Astronomy in Art, Folklore, and Calendars* (Austin: University of Texas Press, 2000), pp. 36, 219

²⁷ Miller and Brittenham, *The Spectacle of the Late Maya Court*, p. 65



Figure 5: the pre-dawn sky as seen from Bonampak, July 19 786 AD

The most interesting objects in the sky that night from the Maya perspective may have been the three hearthstones of the Turtle constellation and the bright stars of Gemini set on either side of the Milkyway- the spot where the 'World Tree' and the 'Double-headed Dragon' of the ecliptic intersect. Although the "World Tree" is not fully erect, or perpendicular to the horizon as in Schele's interpretation of the creation account, the elements are all there to lend support and acceptance of Schele's interpretation of the turtle and peccaries as Orion and Gemini respectively.

The most prominent heavenly body in the pre-dawn sky, though, was the planet Venus shining brightly as the Morning Star. There is a long-standing tradition in the scholarship that the Maya timed their warfare to heliacal risings of Venus, and this may have indeed been the case here. It is interesting to note that the Dresden Codex Venus Table presents five images of deities wielding spears or atlatl darts, and spearing various opponents in the images directly below them. Anthony explains in the images, one such deity

has just hurled a spear that represents the dazzling rays of Venus when the planet becomes visible upon heliacal rise. In the picture below him lies a sacrificial

victim, the spear driven through his bowels. Between the pictures hieroglyphs detailing the omens attending the events are written.²⁸

The image in figure 6 taken from the Venus Table of the Dresden Codex shows an example of such a 'spearing'. The glyphs above the figure with the spear read

Kalab lakin / Chac Xiwiteli chac ek' / Ac-xiib u-hul

u-muc Ahau K'in / u-muc K'awiil / u-muc wak-yax-il-uinic

[The atlatl dart is] knocked to the East. Xiutecuhtli [Mexican god of fire] wields the Great Star [Venus]. Turtle-Rising is the speared one.

Lord Sun is hidden; K'awiil [Jupiter?] is hidden. The six stars of the turtle constellation [Orion] are hidden.



Figure 61: excerpt from the Dresden Codex Venus Almanac

²⁸ Anthony F. Aveni, 'Venus and the Maya: Interdisciplinary studies of Maya myth, building orientations, and written records indicate that astronomers of the pre-Columbian world developed a sophisticated, if distinctive, cosmology', *American Scientist*, Vol. 67, No. 3 (1979), p.277

This is presented to demonstrate that it is well understood that anthropomorphic figures represent certain sections of the sky in which the planet Venus was observed, and they have been portrayed in the iconography as wielding the power of Venus to spear nearby astronomical figures, such as constellations. Couple this with the single Venus glyph within the cartouche and it appears clear that it is the planet Venus being portrayed in the Bonampak mural, and that once again the Turtle of Orion is being speared.

Apart from the Moon and Planets, the next most important heavenly body to the Ancient Maya would be the Pleiades. This star cluster has been identified variously as the tail of the rattlesnake, the 400 Boys of the Popol Vuh story, and possibly part of the constellation 13 Sky Owl (Taurus) or the realm of Itzamna, the True Magician. The Pleiades seems a likely candidate for the second cartouche above the skyband in the Bonampak Room 2 mural as this star cluster would have been among the dominant features of this portion of the sky. Also, as the imagery within the cartouche appears to feature at least two Lamat star signs, it therefore seems unlikely this would represent a single planet.

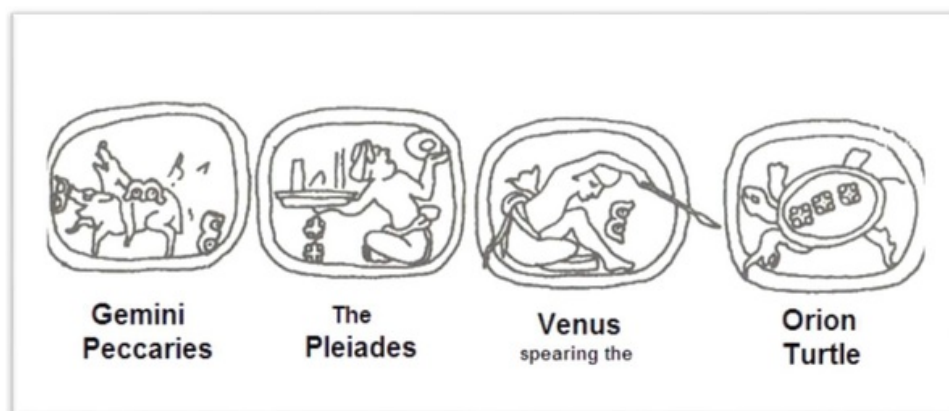


Figure 6: Proposed identification of the four cartouches above the north wall Room 2 Bonampak

In conclusion, I propose that Schele's identification of The Peccary and the Turtle remains valid based upon their position in the sky on the proposed date of July 19 786, but her identification of the anthropomorphic figures as Mars and Saturn is incorrect. The evidence presented here makes the case that the third cartouche in the series represents the planet Venus, while the Pleiades is a strong candidate for the second cartouche.

Additional Appendix References

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Layser AHAN7024 Assignment 1 Comparison of the Paris Codex Zodiac and the Murals of Bonampak

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This is a well-structured, well-argued, insightful essay. You have a coherent argument, logically structured, with claims backed up by solid evidence. Your essay shows a breadth of reading and cross-referencing, excellent comprehension of the implications of the question and a critical understanding of the theoretical and methodological issues. You utilised a good array of authors to support your claims. Your essay also engaged critically with the material and demonstrated intellectual initiative and independent thought. You argued your case with excellent insights. It is not usual to include an Appendix with a second essay, as it were. Keep that for another essay.

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