The *Maya Exploration Center* Facebook Discussion on the Astronomy of 2012 and Tortuguero Monument 6

With introductory and ancillary material compiled by John Major Jenkins

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Introduction

This document is a compilation of the discussion and exchanges that were posted to the Facebook page set up by the *Maya Exploration Center* (MEC) to discuss the presentation I gave at the 75th *Society for American Archaeology* (SAA) conference, in St. Louis on April 15, 2010. It ended up being 173 posts running to 92,000 words. For the sake of clarity and completeness, several introductory sections have been added, as well as the entire SAA paper itself, entitled "Astronomy in the Tortuguero Inscriptions."

As mentioned in my Closing Remarks (p. 202), there are several upcoming academic conferences that will be addressing the 2012 topic. As I write this, the Oxford Archaeoastronomy IX conference in Lima, Peru is underway. Later this month, I'll be presenting the Tortuguero astronomy research at the *Institute of Maya Studies* (IMS) in Miami. In March, the annual Maya meetings at the University of Texas in Austin will include a session on 2012. For ongoing developments, with a special focus on the continuing discussion of Tortuguero Monument 6 and the ancient Maya's knowledge of the precession of the equinoxes, I've set up this resource page: http://www.Alignment2012.com/SAA-MEC-2010.html. One of the first things that will be offered on this webpage will be a report on the Oxford Archaeoastronomy conference.

John Major Jenkins
January 6, 2011

I. The Approach to the Astronomy in Tortuguero Monument 6
Announcement & background, posted at: http://johnmajorjenkins.com, Nov. 21, 2010

A useful approach to identifying astronomy in the dates on Tortuguero Monument 6 is to begin with looking at the sidereal position of the sun on each date. I have a file of notes from January 2000 on my tracking of astronomy in some of the Copan dates from Schele and Mathews' book *Code of Kings*. The two notes below led to the writing of the piece for the *Institute of Maya Studies* newsletter, which was later incorporated into a section in my book *Galactic Alignment* (released in July 2002). The basic insight, or approach, of looking for like-in-kind solar alignments in the inscriptions, was sidelined as other concerns and avenues of investigation were pursued. For any investigator who tracks date patterns via the sidereal positions of the sun and planets, and compares them with deep-time dates in the inscriptions, compelling parallels will stand out. These kinds of parallels and patterns suggest the possibility that the Maya were tracking tropical year intervals as well as precession, and Maya scholar Michael Grofe explored such parallels in the Dresden Codex in his 2007 PhD dissertation.

Immediately after meeting Michael at the Tulane "2012" conference in February 2009 (we had already been in email communication for almost a year), we discussed investigating the 13 dates in Tortuguero Monument 6, looking for solar like-in-kind parallels to the 2012 date. Michael immediately found several important items (Michael's letter of February 22). The implications of these findings were immediately obvious, and very exciting. I was working hard on my book *The 2012 Story*. In late March I gave a presentation in Dallas, and shared some of these findings on Tortuguero. By May my book was done and I had incorporated, with Michael's permission, his key findings and other items of relevance to understanding how 2012 was thought about at Tortuguero (see Chapter 7 of *The 2012 Story*).

Through 2009 I worked sparsely and sporadically on Tortuguero, being wrapped up in book writing, editing, travel, and the West Coast promotional tour. I was going to be able to submit an article to an anthology to be published in 2011, called *2012: Decoding the Counterculture Apocalypse* and continued work in earnest on that article in December 2009. By the end of the month I had identified the 819-day interval in the inscription and an embedded patterning in the date sequence. My article for the anthology was completed and submitted by year's end.

In early 2010 I presented the new findings on the embedded astronomy in the Tortuguero inscriptions at conferences in Mexico, Dubai, and Cairo. Mid-year, also in New Jersey, Kansas City, and Boulder. Later in Seattle, Vancouver, and Brazil. On April 15, 2010 I presented the new findings at the *Society for American Archaeology* conference in St Louis. This was a concise 2,800-word read presentation, and it stands as the first presentation of the material in an academic conference setting. I was then invited to expand my paper for publication in an anthology with the University of Florida Press. The first draft of this new essay was completed in November 2010.

My SAA presentation of April has itself recently been converted with the images to a PDF file (see the more recent post, above). Although there are by now new discoveries to add, I wanted to make the presentation available in its original form. In re-reading it, I wish I would have emphasized that the Milky Way-ecliptic Crossroads (at the southern terminus of the Dark Rift in the Milky Way) was probably, for the

Tortuguero astronomers, an equally important target for marking the sidereal position of the sun. The Crossroads and the Dark Rift work together, and I've acknowledged a conceptual integration of these celestial referents since my earliest articles and books on the subject (back to 1994 and 1995, as well as in *Maya Cosmogenesis 2012*). Here are the two notes from my files:

1. Notes, January 17, 2000
Copan
The series of monuments in the Great Plaza at Copan confirms the presence of astronomical ideas that were worked out and featured at Izapa. The orientations are straightforward, sunrise/sunset. At least one monument indicates an interest in a 13-baktun period. Founding dates going back to 159 AD with references to Kaminaljuyu associate the founding template of Copan with possible Izapan influence. The iconography involves the Sun, Venus, the ecliptic, the Milky Way, and the dark-rift in the Milky Way.

The dates feature — incredibly and as a repetitive theme — astronomy on which the sun was in conjunction with the dark-rift in the Milky Way. In the era of these monuments' construction (650 to 730 AD) this date was around December 3rd. **The related monuments indicate, perhaps, an interest in Creation ideology involving the sun's approach to the December solstice within the dark-cleft.**

2. Notes, January 20, 2000
I was reading about Copan in *Code of Kings*. The famous Stela C, dated 9.14.0.0.0 (December 3, 711) — the first katun ending after 18-Rabbit's succession — is elucidated brilliantly by Schele and Mathews. Two things: The image is of the solar king emerging from the maw of a crocodile form, holding a double-headed serpent bar that is the ecliptic. This replicates the basic form of Stela 11 Izapa. The sky on December 3, 711 has Venus on the Milky Way (as evening star right after sundown). It is close to the Milky Way. Also, **precessing the sky backwards we find that December 5 was very close to the date in era-711 AD that the sun was conjuncting the MW/dark-rift.** Solar king in the dark-rift.

I just confirmed that 9.14.0.0.0 occurred on Dec 3 in the 584283 and thus is 19 days before the solstice. 19 x 71.2 = a precessional shift to within 50 years — thus Stela C is much like Izapa Stela 11! If, as Schele demonstrates, Stela C encodes the sky on that date, then **we must acknowledge the fact the on that date the sun was right in the Crossroads and dark-rift — the portal to the Otherworld. This image echoes the 2012 end-date alignment itself.** — John Major Jenkins

Postscript. Additional research on the sidereal positions on the sun in relation to the Crossroads, in the inscriptions of Quirigua and Copan, will be posted soon on *The Center for 2012 Studies* website. http://thecenterfor2012studies.com.

II. Excerpt from my IMS article of 2000, on the astronomy of Copan Stela C

I wrote about the Stela C sun-in-dark-rift alignment on 9.14.0.0.0 in my 2002 book *Galactic Alignment*, also in an IMS newsletter article from 2000. An excerpt:

> Copan Stela C is the famous 18 Rabbit statue that we can see advertised in every issue of *Archaeology* magazine. In Schele and Mathews' book *Code of Kings*, it is noted that Stela C is dated 9.14.0.0.0 (December 5, 711 according to the 584285 correlation). This would have been the first katun ending after 18 Rabbit's succession to rulership. But, as Schele points out, this political anniversary was also attended by astronomical events, occurring in the eastern sky toward which Stela C faces. The iconography on the statue helps us understand what it may portray astronomically.
>
> Diagram 1. Copan Stela C: 18 Rabbit in caiman-mouth Regalia
>
> The image is of the solar king standing in the maw of a crocodile form, holding a double-headed serpent bar that represents the ecliptic. He is wearing a draped breech-clout (like pants) that are ornamented with the jaws and teeth of a crocodile, and the meaning is this: he is in the crocodile's mouth. What is the significance of this? As David Kelley points out, the upturned frog-mouth glyph means "to be born" and the upturned crocodile's mouth probably has a similar meaning. For a king, accession to rulership was a kind of rebirth into a new identity, thus the motif of "being born" is appropriate for Stela C. We see this imagery on many Maya monuments. For example, even the early Maya monument, Stela 11 from Izapa, replicates this basic idea.
>
> As mentioned, Copan Stela C is dated December 5, 711 A.D. (Gregorian calendar). As Schele notes in *Code of Kings*, on December 5, 711, Venus was on the Milky Way (as evening star right after sundown), and this confirms the Venus iconography on the statue that she identifies. However, another important conjunction occurred on that date: the sun was aligning with the dark-rift in the Milky Way. The Milky Way's dark-rift feature appears like a great cleft near Sagittarius, and is called the *Xibalba be* (the Road to the Underworld) by the modern Quiché Maya. As a portal or doorway, this astronomical feature was symbolized by a door, a road, a cave, or a mouth (as in a crocodile's or snake's mouth). Clearly, the crocodile mouth in which 18 Rabbit stands could very well be the dark-rift in the Milky Way.
>
> As an aside, it is worth mentioning that the west-facing side of Stela C depicts an aged 18 Rabbit (see diagram above). The turtle altar that is in front of him symbolizes Orion, whose belt stars outline the Ak turtle's back. In early December, when the monument was dedicated, an east-west hierophany occurred: the sun, aligned with the dark-rift, rose in the east while Orion set in the west. This is the Galactic Center-Galactic Anticenter axis, and the janus-faced Stela C seems intended to encode this information.

But what, essentially, can we conclude the east side of Stela C depicts? We have a solar king (sun) holding a serpent bar (the ecliptic), "inside" a crocodile mouth (the dark-rift). Stela C depicts the sun inside of the dark-rift. This interpretation might seem facile if it were not confirmed by the astronomy toward which Stela C faces—on December 5, 711 AD the sun was indeed aligning with the dark-rift in the Milky Way. Is this simply a coincidence? In Maya ceremony and symbolism, the meaning of this image involves the rebirth of the sun and the authority of kingship. If the ancient Maya of Copan consciously intended Stela C to encode this alignment, then we need to look seriously at the concept of "sun in dark-rift" and how it may have been included in other facets of Maya cosmology—most notably, the 13-baktun period-ending astronomy. ---end

III. Inviting Discussion on the Astronomy in the Tortuguero Inscriptions
Second announcement, posted at: http://johnmajorjenkins.com, November 27, 2010.

On November 24, 2010, The Maya Exploration made available a PDF of my *Society for American Archaeology* presentation, titled "Astronomy in the Tortuguero Inscriptions," which I read in St. Louis on April 15, 2010. The SAA conferences are by-invitation-only academic venues, inviting review and discussion from the scholarly community. This is the first time that the astronomy of the 13 dates on this important monument were presented and discussed in such a venue. (Some of these findings were, however, mentioned in Chapter 7 of my book *The 2012 Story*, released in October 2009.) The results are compelling, because it helps us understand how the 2012 period ending date, the last date on the monument, was thought about. Based on the evidence laid out in my paper, which includes the findings of Maya scholar Michael J. Grofe (see Chapter I, above, for a chronology of the discoveries), it's quite apparent that astronomy and political rhetoric were major considerations in the construction of the narrative and in the use of the 2012 date by Bahlam Ajaw (Lord Jaguar), the 7th-century king of Tortuguero who is the protagonist of the Monument 6 text.

The *Maya Exploration Center* has created a link to my PDF paper and has invited discussion on their Facebook page. Please post comments and items of discussion there. [Note: The online MEC Facebook Discussion has been deleted; this PDF contains the exchanges. My SAA presentation is in Chapter VII below and also remains linked on the MEC website: http://mayaexploration.org/pdf/Jenkins-SAA-April2010.pdf].

IV. Announcement sent to the Aztlan e-list, December 2, 2010

Greetings,
The Maya Exploration Center has posted in the "Research" section of their website a PDF of the paper I presented at the *Society for American Archaeology* this past April. I was invited to give this talk in the "Archaeoastronomy in the Americas" section hosted by Dr. Robert Benfer. The paper is titled "Astronomy in the Tortuguero Inscriptions" and analyzes the astronomy associated with all the dates on this important monument, with an

eye toward reconstructing what Bahlam Ajaw's strategy was in referencing the period-ending date in 2012. The PDF is a faithful reproduction of what I read at the SAA, incorporating the 12 illustrations I used in my Power Point presentation.

To invite feedback and discussion, the community of scholars at the Maya Exploration Center have also decided to set up a discussion on their Facebook page, where a link to the PDF can be found:
http://www.facebook.com/topic.php?topic=366&post=1429&uid=112933088738563#post1429

Previous and more recent treatments of Tortuguero Monument 6 have focused on epigraphic decipherment. The SAA event was the first time that the astronomical references in the Tortuguero inscription were presented to the academic community. A larger archaeological context is also addressed, bringing in activities of kings at Palenque and Quirigua. Best wishes,

John Major Jenkins

V. Invitation sent to a selected list of Maya scholars, December 7, 2010

Sent to: Sven Gronemeyer, Barb MacLeod, Peter Biro, Mark Van Stone, Carl Callaway, Erik Boot, Christian Prager, J. Kinsman, Robert Wald, Gerardo Aldana, Carol Karasik, Christopher Powell, Marc Zender, Alonso Mendez, Michael Grofe, Robert Sitler, Matthew Looper, David Stuart, Stephen Houston, Marcos Villasenor, Stanley Guenter, Peter Mathews, Garth Norman, Anthony Aveni, Susan Milbrath, David Freidel, Dennis Tedlock, Barbara Tedlock, Vincent Stanzione, John B Carlson, John Hoopes, John Q. Jacobs, Andreas Fuls, Karen Bassie.

Subject: Invitation to read and comment on my SAA paper on Tortuguero Monument 6
Date: Dec 7, 2010 11:02 AM

Greetings,

For this invitation I've selected a short list of scholars who have been studying the fascinating implications of Tortuguero Monument 6, and with whom I have had exchanges about astronomy and 2012 over the years. The paper I presented at the *Society for American Archaeology* conference on April 15 of this year (in the "Archaeoastronomy in the Americas" section chaired by Dr. Robert Benfer) has now been posted on the *Maya Exploration Center* website. A discussion page has also been set up on the MEC Facebook page, and I invite you to read my paper and offer your comments and critique on the Facebook discussion page (link below). An informative discussion is already underway. My essay examines the astronomy associated with the 13 dates on Monument 6 and presents evidence and arguments for how the ancient Maya at Tortuguero thought about and utilized the 13th-Bak'tun period-ending date, December 21, 2012. The link to the PDF paper and the *Maya Exploration Center* discussion page, with an introduction by Dr. Ed Barnhart, is here:

http://www.facebook.com/topic.php?uid=112933088738563&topic=366#topic_top

I look forward to engaging discussions. Happy holidays and best wishes,

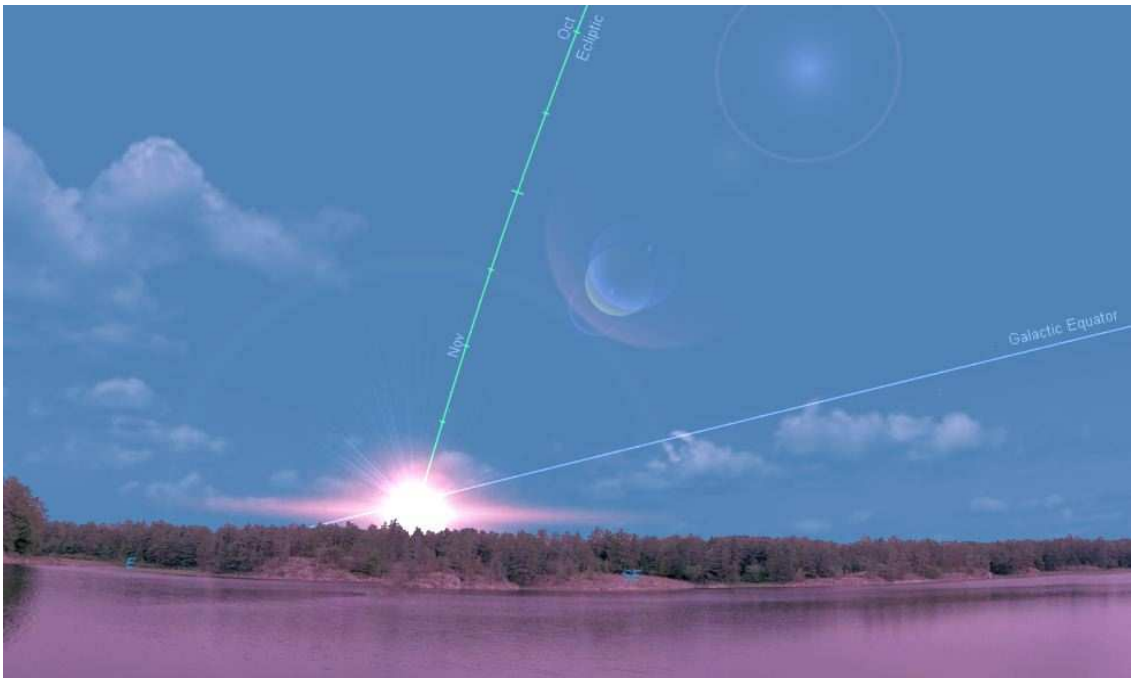
John Major Jenkins

VI. Jenkins' SAA Presentation, St Louis. April 15, 2010

Astronomy in the Tortuguero Inscriptions

John Major Jenkins

Presented at the 75th annual meeting of the *Society for American Archaeology* in St Louis. April 15, 2010. "Archaeoastronomy in the Americas" Symposium. Organizer: Dr. Robert Benfer. Chair: Rubén Mendoza.



December 1, 612 AD. The sun aligned with the cross formed by the Milky Way and the ecliptic

Abstract

First, my "2012 alignment" hypothesis will be clearly defined. I will present evidence in the Classic Period inscriptions of Tikal, Copán, and Quirigua, with a special focus on Monument 6 from Tortuguero, for the use of the dark rift in the Milky Way as a reference point for planetary, lunar, and solar alignments. Using a new method of schematically diagramming a complex hieroglyphic inscription, an analysis of a repeating astronomical theme in the thirteen dates recorded on Monument 6 strongly suggests an awareness of the sun's future alignment with the dark rift in the Milky Way on the solstice of 2012 AD, the 13-Baktun period ending recorded in the right flange of that monument. The methodology acknowledges and incorporates textual references that are not exclusively phonetic, namely astronomy and astronumerology, enabling a fuller reading of the intended meaning.

Note. Dates in this paper are given according to the 584283 correlation and in the Julian calendar (with the exception of the 13-Baktun period-ending date (December 21, 2012), which is given in the Gregorian calendar).

Astronomy in the Tortuguero Inscriptions

John Major Jenkins

Part I. Maya Conceptualization of the Dark Rift in the Milky Way

In this brief presentation I will cite evidence for a simple idea that has far reaching implications. It is this: An astronomical feature called the dark rift in the Milky Way, or the Great Cleft, was recognized and utilized in Classic Period inscriptions. My previous research argues that the dark rift was utilized in pre-Classic iconography.

The dark rift in the Milky Way is visible to the naked eye. It is caused by the thick accumulation of interstellar dust along the galaxy's mid-plane. It begins at the ecliptic between the constellations of Sagittarius and Scorpio and extends northward along the Milky Way.

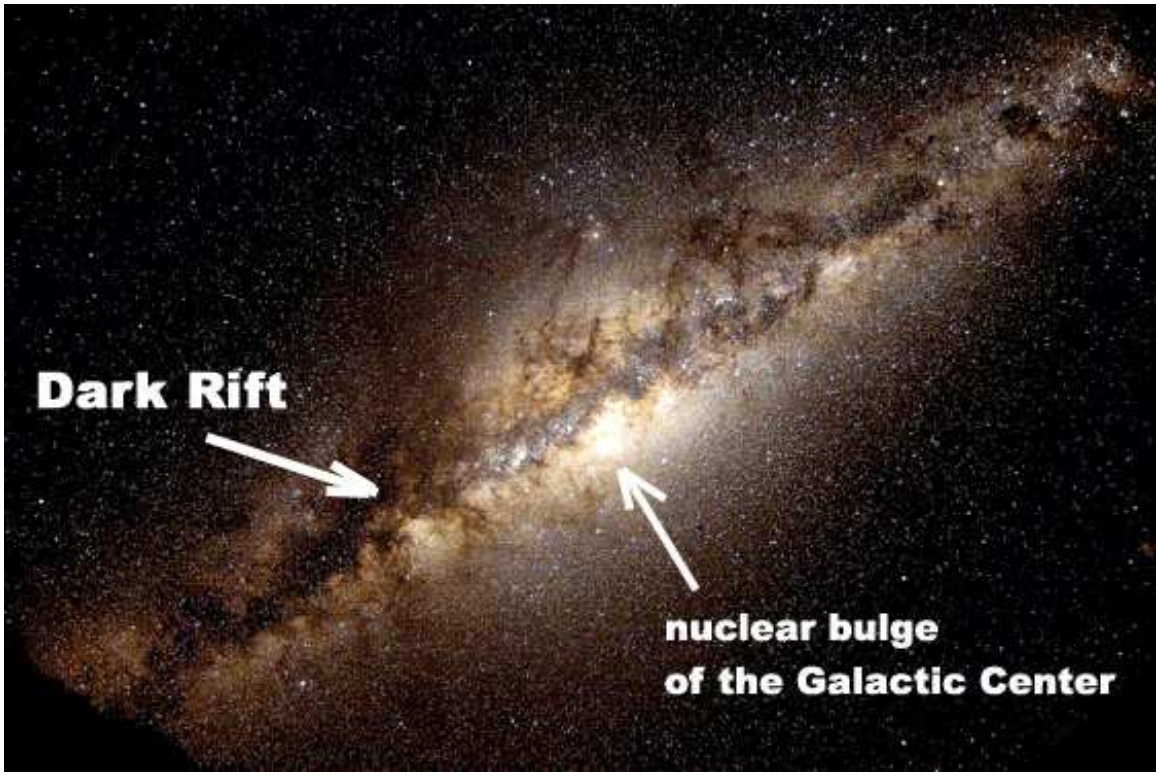


Diagram 1. The dark rift and the nuclear bulge of the Galactic Center at the Crossroads of the Milky Way and the ecliptic: perceivable to the naked eye.

According to Maya scholar Barbara Tedlock, the contemporary Maya in highland Guatemala refer to it as *xibal be* or *xibalba be*, the "road to the underworld" (1982:181). Dennis Tedlock has also identified, in his recent book *2000 Years of Mayan Literature*, the various roles of the dark rift in the Dresden Codex, the Madrid Codex, the Paris Codex, and in the Creation Myth inscriptions of Palenque and Quirigua. For example, a

deity utilized in the almanacs of the Dresden Codex is named "Tz'up'e," meaning "Split Down the Middle," and Tedlock argues that he is placed at the dark rift, which splits the Milky Way down the middle.

<= *Diagram 2. God Q, Tz'up'e, "Split Down the Middle." Found in the Dresden Codex and the Madrid Codex. Located at the southern terminus of the dark rift. Why? Because the ecliptic abuts the southern terminus and the inscriptions describe planetary and lunar alignments with Tz'up'e. From D. Tedlock,* 2000 Years of Mayan Literature *(2010).*

The dark rift is also found in the astronomical topography that serves as a backdrop for the Maya Creation Myth—the *Popol Vuh*.[1] In these manifestations, the dark rift has various identities including a cave through which a river passes, a crook between two branches of a tree, a speaking mouth, a Black Road, and the passageway to the underworld.

My "2012 alignment" theory, first published in 1994, utilizes the dark rift in the Milky Way and *argues that the creators of the Long Count intended the end of the current 13-Baktun period (in 2012) to target the rare precession-caused alignment of the December solstice sun with the dark rift in the Milky Way*.[2] I do not assert that this alignment necessarily has empirical effects, nor do I associate it with doomsday ideation.[3] The theory does not rest on an assertion of absolute precision regarding the ability of the ancient Maya to have made a forward calculation in precession. At this stage it is good to emphasize that the Crossroads (of the Milky Way and the ecliptic) is an equally compelling marker for these alignments. Thus, to be clear we can also use the phrase "dark rift/Crossroads" to reference the alignments discussed in this paper.

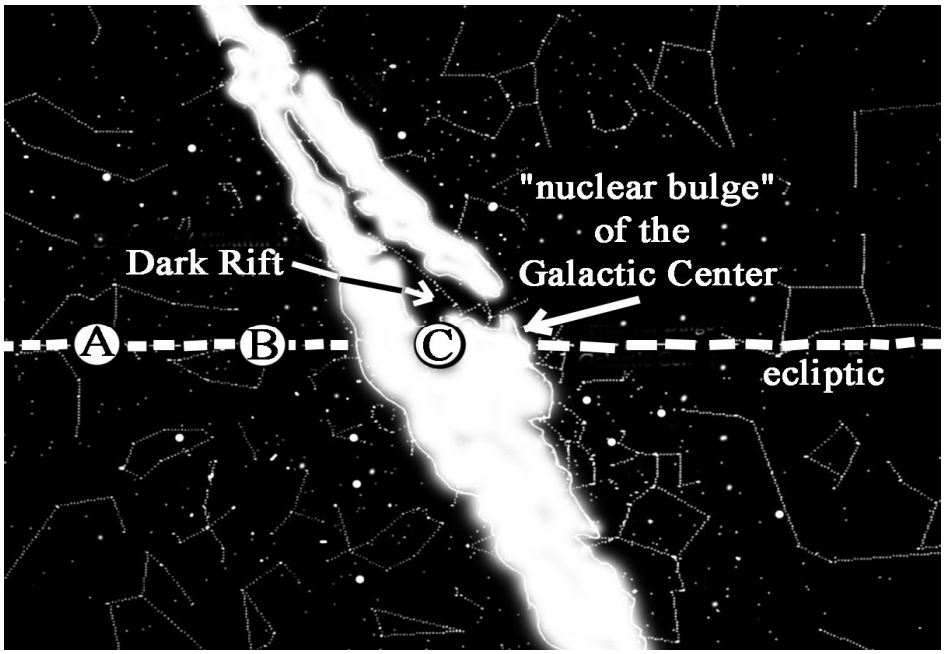


Diagram 3. The precession of the sidereal position of December solstice sun (A = 4000 BC; B = 1000 BC) into alignment with the dark rift/Crossroads in era-2012 AD (at position C).

In my early approach to the 2012 question I was led to examine the pre-Classic site of Izapa for the origins of the Long Count system. The Brigham Young University studies of Izapa by Gareth Lowe and Garth Norman[4] provided maps and azimuth data, such that I was able to extrapolate that the ballcourt at Izapa aligns with sunrise on the December solstice. I traveled to Izapa and observed the solstice sunrise and took measurements to confirm the alignment.[5]

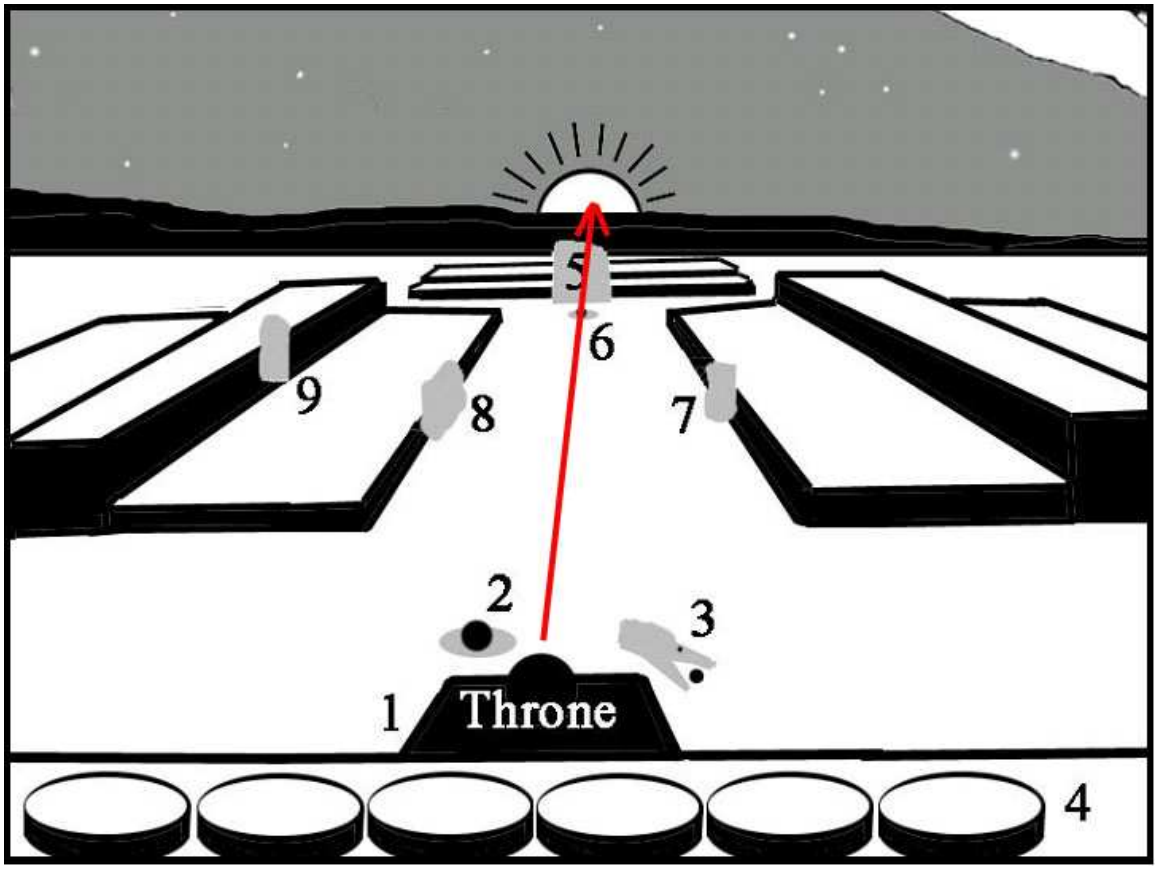


Diagram 4. The ballcourt at Izapa is aligned to sunrise on the December solstice. (The throne on the west end and the six seating stones behind it orient the viewpoint)

When I was doing my research in the 1990s I was unaware of Tortuguero Monument 6, which contains a specific date reference to the end of the current 13-Baktun period in 2012.[6] Since I believed there were no Classic Period inscriptions that referred directly to the 2012 period ending, I based my investigation on the iconography and archaeoastronomy at Izapa. Now there is an opportunity and a need to analyze the inscription on Tortuguero Monument 6, and see what it may tell us about how the 2012 date was being utilized in a 7th-century hieroglyphic text.

Part II. Tortuguero Monument 6

Tortuguero Monument 6 is a T-shaped stone carving originally consisting of some 176 glyph-blocks. The right flange contains two dates, one of which is 4 Ahau 3 Kankin, also indicated with a 13-pik designation (meaning the end of the 13th Baktun period). The

tzolkin-haab combination of 4 Ahau 3 Kankin places this date at December 21, 2012 according to the 584283 correlation.

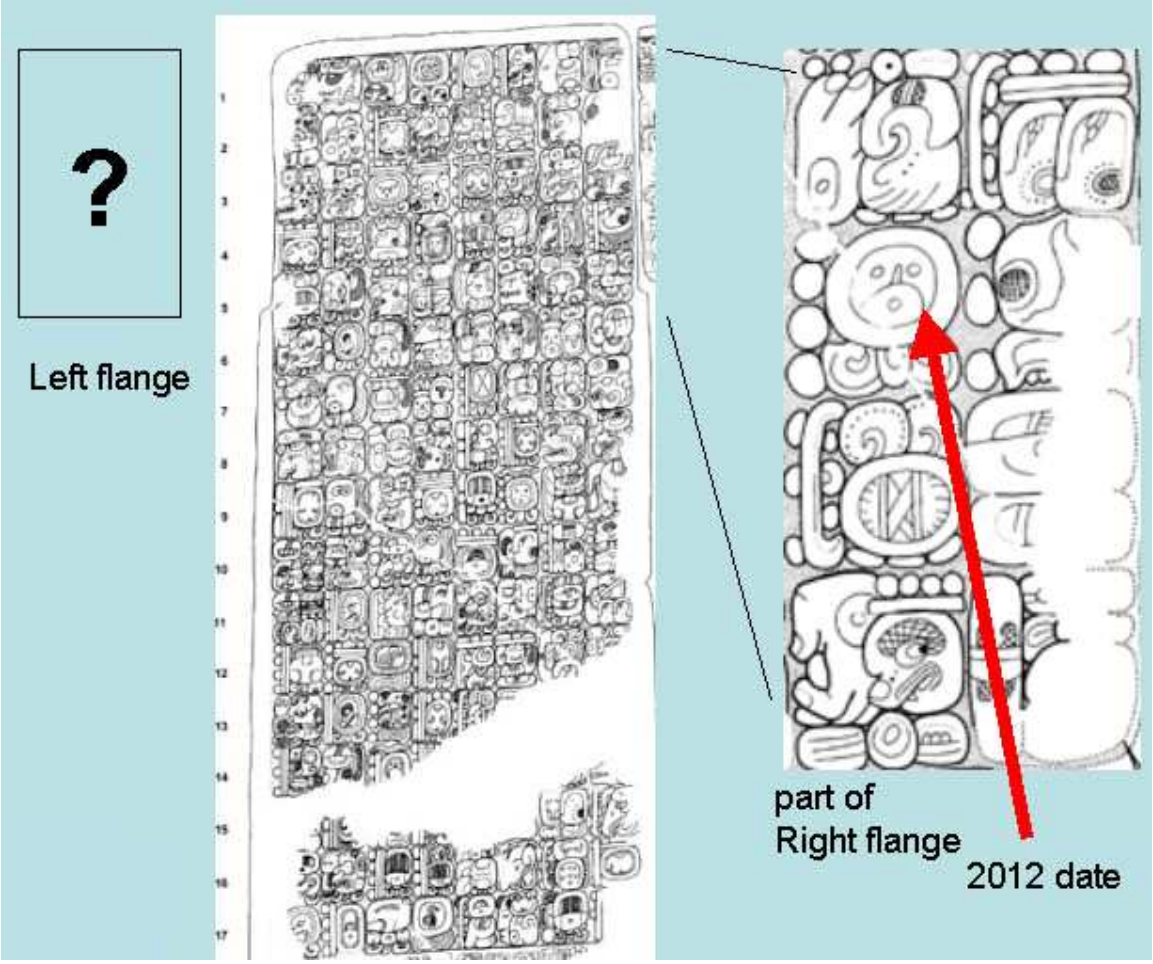


Diagram 5. Left and right flanges and central inscription of Tortuguero Monument 6, making 176 total glyph blocks. Line drawing adapted from Gronemeyer (2004).

The other date in the right flange is December 5, 510 AD (Julian). On this date a sweat bath ritual was performed by a person named Ahkal K'uk. The left flange is missing and was never documented. The main body of the text in the large central panel begins with a statement about Bahlam Ajaw as the Lord of Tortuguero and a Distance Number resulting in the accession date of Bahlam Ajaw. He was a seventh-century king of Tortuguero and a contemporary of Janaab' Pakal at nearby Palenque.[7]

Bahlam Ajaw's accession is stated as occurring on February 4, 644 AD (J). Sven Gronemeyer first suggested that the Distance Number preceding this date can be subtracted from the date to reach an earlier date that would have been recorded in the missing left flange of the monument—his birth date.[8] Michael Grofe noted that an ambiguity in the day position of the Distance Number allows a 10-day range of possible dates for his birth, November 23 to December 3 of 612 AD.[9]

The T-shape of the monument is a structural statement in and of itself, meaning wind, or perhaps breath or life-spirit. Tortuguero Monument 6 is clearly about the life and royal career of Bahlam Ajaw, chronicling his war achievements in expanding and transforming his kingdom while relating him to distant calendrical events in both historical and mythological time. The inscription brings his life up to 669 AD, when the monument was carved and the temple it was placed in was dedicated.

With Bahlam Ajaw's birth date reconstructed, Tortuguero Monument 6 contains a total of 13 dates. In order to understand the astronomical patterns of these dates, we can recognize the structural frame provided by the left and right flange.

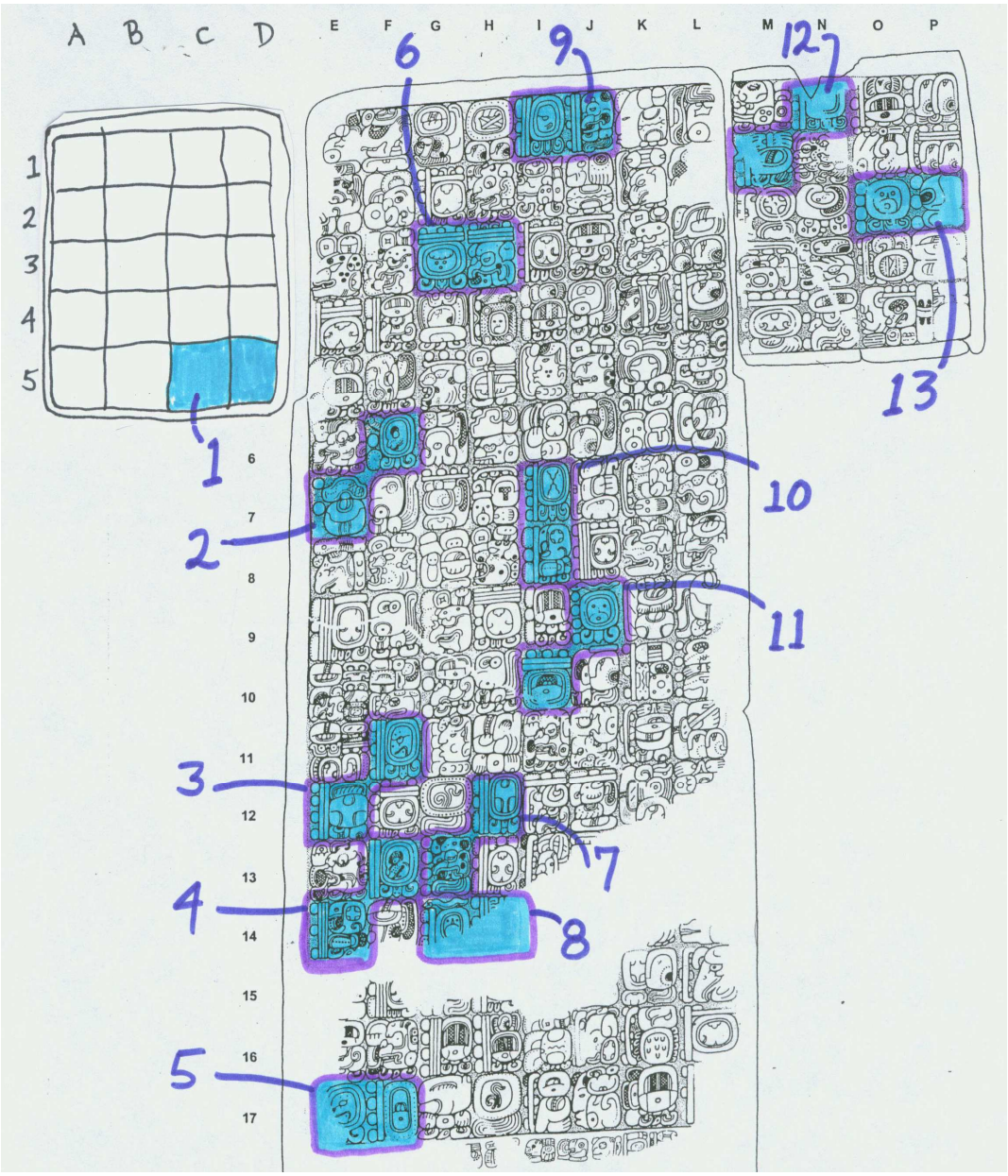


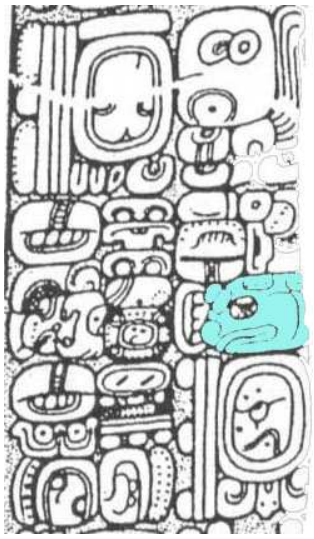
Diagram 6. The tzolkin-haab locations of the 13 dates on Tortuguero Monument 6.

These two sections literally bracket the main text. The first date, putatively located at the end of the left flange, is Bahlam Ajaw's birthday. The last date, in the analogous position on the right flange, is the 13-Baktun period ending in 2012. In an email communication of early 2009, and in his paper investigating the astronomy of Tortuguero Monument 6, Michael Grofe noted that, astronomically, there is a parallel between these two dates.[10] On both dates the sun was in alignment with the southern terminus of the dark rift in the Milky Way, between Sagittarius and Scorpio. Bahlam's birthday, as mentioned, contains a 10-day ambiguity, but even within this range the sun was still reasonably within the visual parameters abutting the southern terminus of the dark rift. Furthermore, I noted that on both dates Jupiter was at station near the Pleiades, about to move direct. Jupiter, it turns out, plays an important role in the astronomical patterns evident on Monument 6.

Curiously, the other date on the right flange (December 5, 510 AD) is also a date on which the sun was aligned with the dark rift.[11] The event recorded in the inscription for this date was a sweat bath rite. Sweat baths were seen to be underworld places. Upon emerging from the sweat bath a person was considered to be emerging from the underworld, much like a rebirth experience. The doorway of the sweat bath was thus a portal into the watery underworld. The inscriptional content is thus reinforced by the astronomy. In other words, the astronomy associated with dated inscriptions can help elucidate an often missing dimension in the purely phonetic decipherment of texts.

The performer of the sweat bath rite was a person, probably an ancestor or lord, named Ahkal K'uk in the text. A king named Ahkal Mo' Naab ruled Palenque from 501 to his death in 524.[12] Gronemeyer (2004) wrote that it is probable that Tortuguero was founded by an early Palenque king (the two sites share a place name), and thus these two may be the same person. The sweat bath rite at Tortuguero occurred during Ahkal Mo' Naab's reign, in 510 AD. It may have been the foundational rite that began the dynasty at Tortuguero, separate but related to Palenque.

Curiously, when Ahkal Mo' Naab acceded to the throne in 501 AD, Jupiter was aligned with the dark rift. He died in 524 AD almost exactly 88 years before Bahlam Ajaw's birth. As with the Tortuguero king's birth, Ahkal Mo' Naab died when the sun was aligned with the dark rift. These astronomical parallels may underlie the reason why Bahlam Ajaw referenced him on his biographical monument.[13] It was of great interest to Maya kings to draw parallels between the lives of ancestor-kings and their own.



The first event after Bahlam Ajaw's accession is his first war campaign and victory. It occurred on May 30, 644 (J). As epigrapher Michael Grofe pointed out, just three days prior to this victory, there was a lunar eclipse with the eclipsed moon's position falling between Sagittarius and Scorpio, in alignment with the dark rift. (The sun was therefore opposite the dark rift on this date.) Grofe translates the associated inscription as "in the caiman."[14]

Diagram 7. Three days after eclipse, "in the caiman." May 30, 644

In the iconography of Izapa, I have argued that the celestial caiman is the Milky Way and the dark rift is its mouth. This observation is supported by David Stuart's statement that Izapa Stela 25 was an early version of the Starry Deer Crocodile—the Milky Way (Stuart 2005:72-73).

The next war event occurred exactly 360 days (1 Tun) after Bahlam Ajaw's accession, indicating a conscious use of numerological and calendrical intervals. Other dates throughout the late 640s include another date of the sun's alignment with the dark rift (December 6, 647), this time along with Venus, and Bahlam Ajaw's final victory on the December solstice of 649 AD. There are at least six dates on the monument that target astronomical alignments with the dark rift.

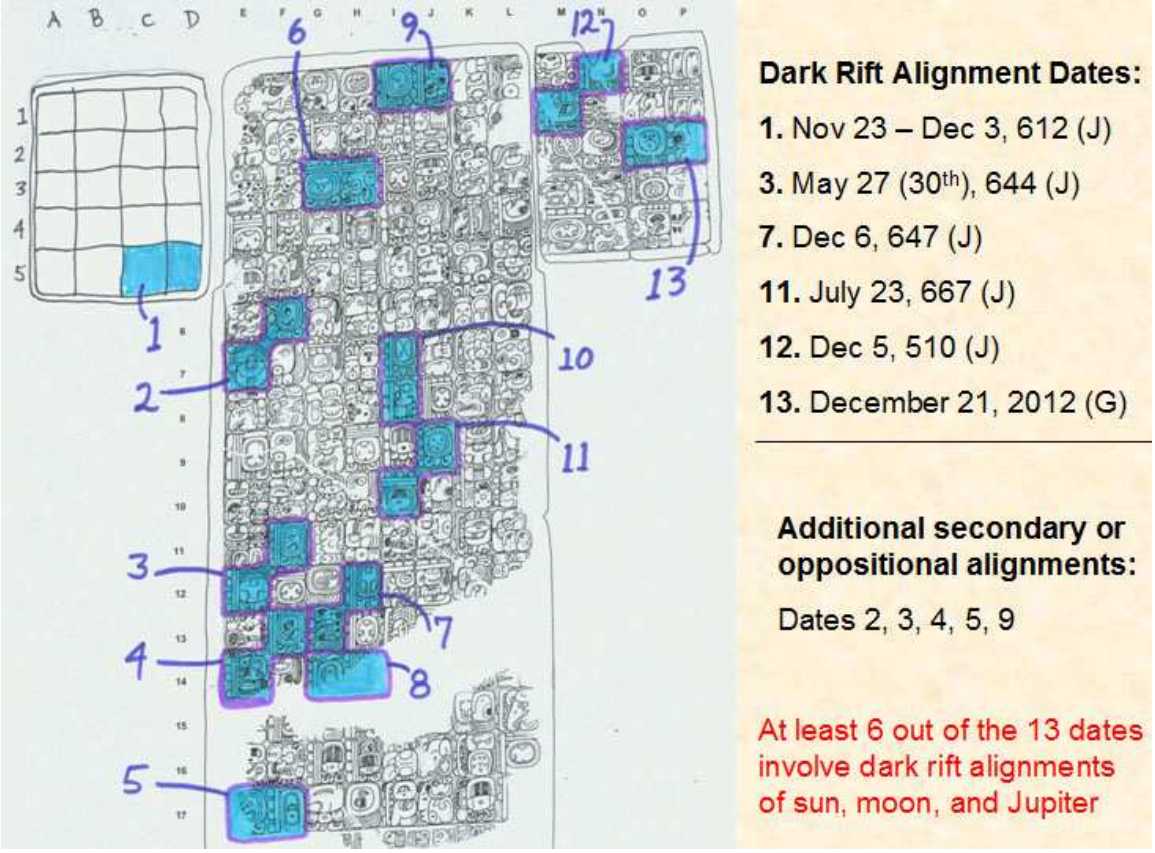
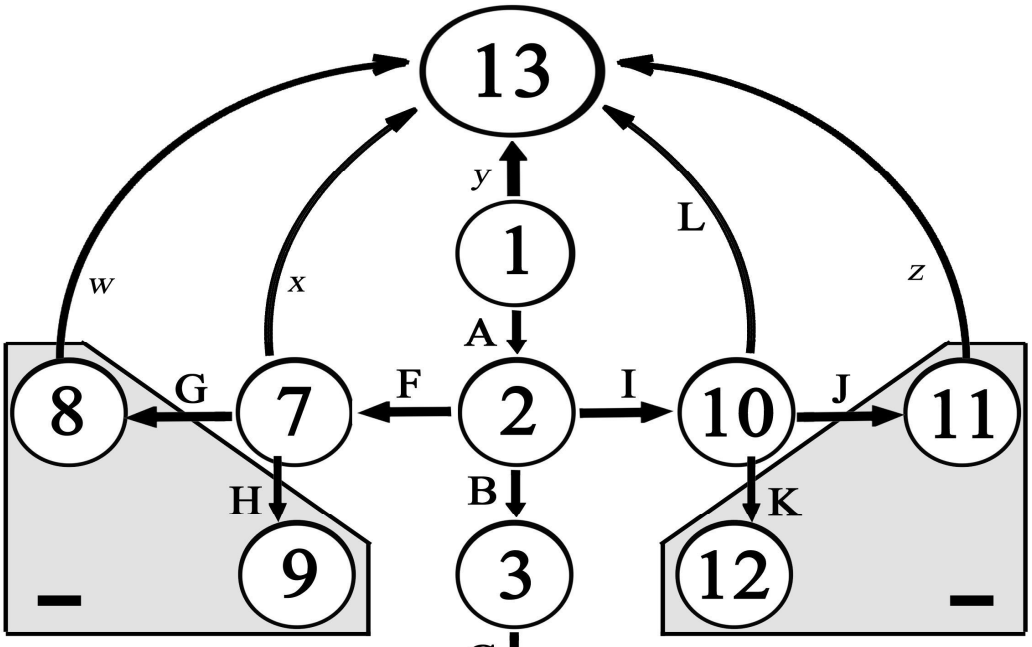


Diagram 8. Dates of alignments of sun, eclipse, and Jupiter with the dark rift / Crossroads area

The 2012 date—the last of the 13 dates—is, as mentioned, a date of the sun's alignment with the dark rift, but unlike the other dates on which this kind of *solar-dark rift* alignment occurs, it occurs *on the solstice*. This is what defines the 2012 period ending as occurring in a unique era of precessional alignment. It is linked with a Distance Number to the building dedication event of January 11, 669, which in turn is linked with Distance Numbers to three other dates: Bahlam Ajaw's accession, a nearby hotun ending on July 23, 667, and the sweat bath ceremony of 510 AD previously mentioned. The hotun ending of July 23, 667 is interesting, because although not directly connected to the 2012 date with a Distance Number, the interval between it and the 2012 date nevertheless

embodies several key divisors. The interval between the two dates is 491,400 days. This interval is divisible by key numbers in the recognized astronumerological canon utilized by the Maya: 260, 360, 364, 378, and 819. The use here of the 819-day count is very early and previously unrecognized, preceding its use by the son of Pakal at Palenque by over 20 years. Exactly 600 of these 819-day cycles separate the 667 date from the 2012 period-ending date.[15] The 667 hotun ending date is also characterized by Jupiter being at station close to alignment with the dark rift. As mentioned, Jupiter at station is also a characteristic of both Bahlam Ajaw's birthday and the 2012 period-ending date. I devised an efficient way to represent the otherwise confusing sequence of Distance Numbers and dates in the text, and a surprising symmetry emerges.



THE DATES:
All dates are given in the Julian calendar (except #13), in the 584283 correlation

1) Nov. 28 - Dec. 2, 612
2) February 4, 644
3) May 30, 644
4) January 29, 645
5) July 23, 649
6) December 18, 649
7) December 6, 647
8) November 5, 647
9) February 26, 353
10) January 11, 669
11) July 23, 667
12) December 5, 510
13) December 21, 2012

THE DISTANCE NUMBERS:

A) 1.11.11.6 - 10
B) 5.16
C) 12.4
D) 4.9.16
E) 7.8
F) 3.16.1
G) -1.11
H) -14.19.1.6
I) 1.5.5.8
J) -1.8.18
K) -8.0.7.7
L) 3.8.3.9.2

Diagram 9. Embedded symmetry in the occurrence of dates generated with negative Distance Numbers. The 2012 date (Date 13) is connected to eight other dates via astronomy, a DN, and astronumerology.

The hotun ending date of July 23, 667 occurs exactly 18 tropical years after another date recorded on Monument 6, the third event in Bahlam Ahaw's war campaigns (July 23, 649 AD). This and another tropical year relation between two dates on Tortuguero Monument 6 was noticed by Michael Grofe. The span between the two latter pair of dates (December 5, 510 AD and December 6, 647 AD) is *one day more* than 137 tropical years. Both are dates on which the sun was aligned with the dark rift. The latter date is one day forward, suggesting the kind of forward adjustment for precession, through the centuries, which would be necessary in order to project the sun's alignment with the dark rift on *the solstice* of 2012. Another property of the interval, noted by Michael Grofe, is that 137 tropical years of 365.242 days each equal 139 Tun of 360 days each. These kinds of observed relations between precise calculations of the tropical year and Tun periods provide the precedent for calculating the precession of the equinoxes. As explicated in his 2007 PhD dissertation and other essays, Grofe finds accurate precession intervals in the Serpent Series of the Dresden Codex, the inscriptions of Palenque, and elsewhere.[16]

Let's recall that Monument 6 is a chronicle and testimony of the life of Bahlam Ajaw. I have briefly sketched a framework of patterns involving solar, lunar, and planetary alignments to the dark rift and Jupiter stations. Bahlam Ajaw died on May 19, 679 AD, as recorded on the Tortuguero Wooden Box.[17] On this day Jupiter was aligned with the dark rift (see Diagram 10). This final circumstance suggests an intentional timing of his death date, or a manipulation of the actual death date to fit into the astronomical pattern evidently intentionally embedded into the 13 dates on Tortuguero Monument 6.

Part III. Additional Evidence

Additional evidence for the dark rift's conceptual role during the Classic Period is found in the inscriptions and iconography of Tikal (Altar 16), Copán (Stela C), and Quirigua, especially in the use of the Long Count date 9.14.0.0.0.[18] This date is November 29, 711 AD (Julian) according to the 584283 correlation. Like many of the dates on Tortuguero Monument 6, including Bahlam Ajaw's birthdate, the date of the sweat bath rite, and the 2012 period-ending date itself, 9.14.0.0.0 is characterized by the sun being positioned at the southern terminus of the dark rift (at the Crossroads). The associated iconography on Copán Stela C affirms this astronomical alignment as a recognized characteristic of the date, and supports my interpretation that the dark rift was at times portrayed as the mouth of a caiman. This Long Count date also appears on Tortuguero Monument 2.

Part IV. Summary

This has been a very brief treatment of a topic that deserves a more detailed presentation. Of the 13 dates on the Toruguero monument, six involve alignments of the sun, Jupiter, and a lunar eclipse with the dark rift/Crossroads, with possibly five additional dates of significance to the dark rift. Based upon the pattern of astronomical references on the 2012 monument from Tortuguero, it's likely that the people of Tortuguero intentionally used an awareness of the sun's future alignment, on a solstice, with the dark rift in the political rhetoric of a 7th-century king. Furthermore, the pre-existing calendrical structure of the Long Count, having been developed centuries prior to Tortuguero, requires that the

knowledge of the 2012 alignment of the solstice sun and the dark rift/Crossroads was embedded into the Long Count at its very inception, over 2,000 years ago.

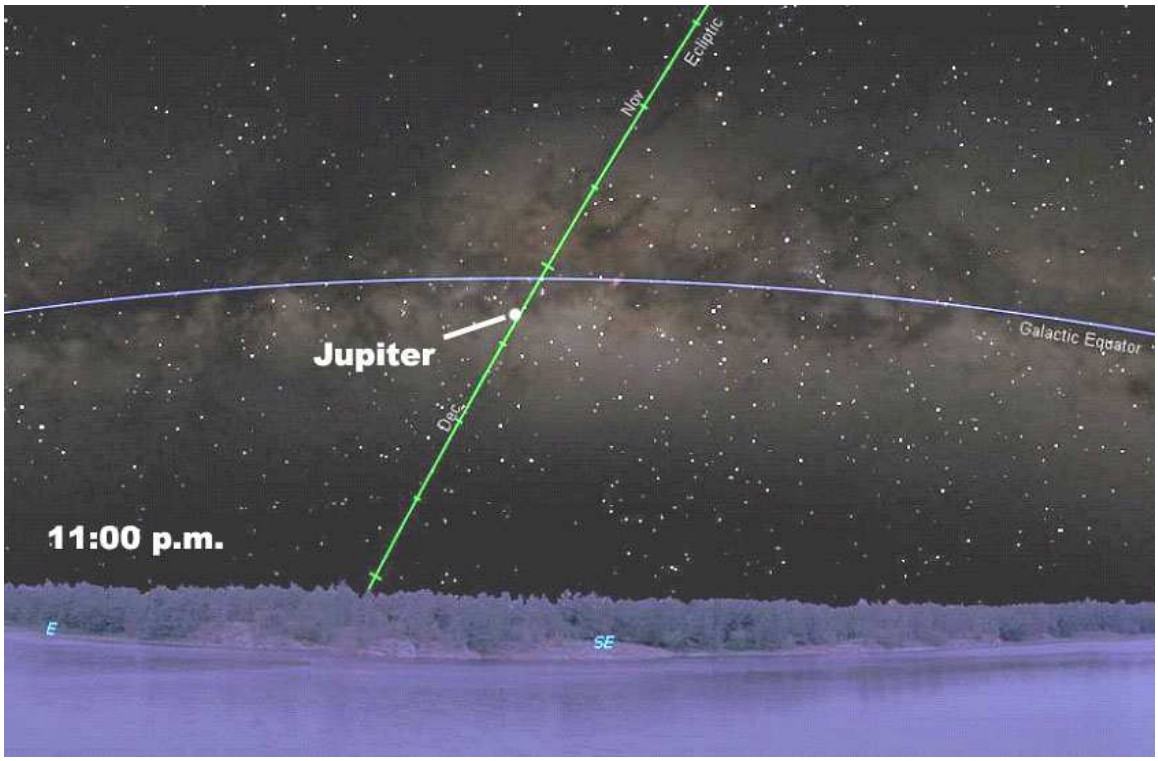


Diagram 10. May 19, 679 AD (J) death date for Bahlam Ajaw. Jupiter rises at the Crossroads in alignment with the dark rift, just after sundown. Death date is from the Tortuguero Wooden Box

The evidence presented here argues that the dark rift/Crossroads was utilized as a reference point by the Classic Period Maya in a veritable symphony of alignments involving the sun, the moon, planets, eclipses, and the solstice position of the sun. Overall, it appears to be involved in rituals and ideation relating to sacrifice, rebirth, transformation, period endings, building dedications, and king making. This Classic Period evidence invites a more serious and factually accurate assessment of my earlier archaeoastronomical reconstruction work on precession and dark-rift astronomy at Izapa.[19]

End Notes:

1. Examples of various symbolic roles of the dark rift: The dark rift is the Black Road, it is a mouth because it speaks to the Hero Twins, and it also serves as the crook in the calabash tree where One Hunahpu's head was hung. These various uses suggest the dark rift was the astronomical reference point for a rather pliant symbolic complex that has many meanings. It is represented in Classic Maya iconography as a skeletal maw and is very likely to be the astronomical reference point, at least in some instances, of the "Black Hole" glyph. See B. Tedlock (1982:181), D. Tedlock (1985), and Jenkins (2009).

2. My previous research also argues that the dark rift was utilized in an astronomical alignment caused by the precession of the equinoxes that occurs in the era of the 13-Baktun period ending in 2012 AD (Jenkins 1995, 1998, 2009).

3. I have defined and discussed in my books, presentations, and articles, published and online, the various parameters of the alignment, ranging from a reasonable minimum of thirty-six years upward to five hundred years, depending on which astronomical features are utilized in ones definition. See, e.g., Jenkins, "The True Alignment Zone" http://alignment2012.com/truezone.htm. My argument for intention rather than coincidence, however, is based on the presence of the solar-dark-rift alignment concept in Maya traditions (the ballgame and the Creation Myth), iconography, and inscriptions.

4. See Gareth Lowe et. al (1982) and Garth Norman (1973, 1976).

5. An examination of the iconography of the Izapan monuments, combined with their preserved orientations to important astronomical horizons, provided evidence for my thesis, which is best known from my 1998 book *Maya Cosmogenesis 2012*. This book documented details on the fact that the ball court at Izapa aligns with the dawning December solstice sunrise, which was first recognized and published in Jenkins (1995).

6. Linda Schele's 1982 catalog of Maya verbs contained a reference to 13.0.0.0.0 on the Tortuguero monument. Assuming that someone knew about this, it was never brought up in the many debates about 2012 that occurred as long ago as 1996 on the Aztlan forum (Foundation for the Advancement of Mesoamerican Studies) and later on in the University of Texas "Mesoamerica forum" online. Nor was it mentioned by Schele herself in her 1996 dismissal of the relevance of the 2012 date to the ancient Maya. See http://alignment2012.com/app5.htm.

7. Bahlam Ajaw lived from 612 AD to 679 AD while Janaab' Pakal from Palenque lived from 603 AD to 683 AD. They were both rulers whose lives touched five Katuns, a rare occurrence which gave such Maya kings a special legacy and status.

8. Also, Erik Boot suggested that the entire left flange, containing twenty glyphs in parallel construction with the right flange, contained the correct amount of glyph blocks to express a complete Initial and Supplementary Series for Bahlam Ajaw's birthday.

9. Michael Grofe, p.c. February 2009. See his article "Astronomical References in Tortuguero Monument 6," n.d. [Bahlam Ajaw's birthday range was corrected during the Facebook Discussion to Nov. 28 – Dec. 2]. Some of this material was summarized in Jenkins 2009 (Chapter 7). The date that corresponds to the sidereal position of the sun on 13.0.0.0.0 is November 30, 612 AD (J), which is the tzolkin day 1 Ik. I've suggested that the T-shape of Monument 6 might be a clue that Bahlam Ajaw's birthday falls on this Ik day, because Ik is a T-shaped glyph. Interestingly, 1 Ik may have been the Calendar Round seating of 0 Pop at Tortuguero.

10. Grofe, "Astronomical References in Tortuguero Monument 6," n.d..

11. Ibid. See also my forthcoming essays at *The Center for 2012 Studies* (http://thecenterfor2012studies.com).

12. See Martin and Grube (2000) on Ahkal Mo' Naab at Palenque and his possible role at Tortuguero.

13. The haab positions of Ahkal Mo' Naab's accession and death day are the same, suggesting that his death date was intentionally selected or the record of it was manipulated for political and rhetorical purposes.

14. Grofe noticed this eclipse date as well as the sun's position on Bahlam's birthday (personal communication February 22, 2009).

15. This 819-day observation is my own. It is unlikely that this is a coincidence and therefore it was most likely an intended connection with 2012, much in the way that the 3114 BC date was intentionally connected to other dates in both historical and mythological time. See Jenkins 2011.

16. Grofe 2007, and his "Astronomical References in Tortuguero Monument 6," n.d.

17. Looper 1991.

18. As mentioned, these types of dark-rift alignments were recognized and used beyond Tortuguero, as argued in the recent book of Dennis Tedlock and elsewhere. I have noted additional examples of dark-rift alignments in Maya inscriptions in various articles and in my recent book *The 2012 Story*. For example: the Long Count date 9.14.0.0.0, occurring at Tikal, Tortuguero, Copán, Calakmul, and elsewhere, is November 29, 711 AD—a date when the sun was aligned with the dark rift/Crossroads (Jenkins 2009:267-268). The caiman mouth iconography on Stela C at Copán reinforces this astronomy. This is underscored as an astronomically meaningful precedent when you consider that the Copán king 18 Rabbit's decapitation, on April 27, 738 AD (J), was a date on which Jupiter was aligned with the dark rift (Jenkins 2009:271-273)—*exactly as it had been 59 years earlier when Bahlam Ajaw died*. The inscription from Quirigua Stela F states that the decapitation "happened at the Black Hole," (Looper 2003:77) which very probably alludes to the dark rift. These are just a few examples.

19. Jenkins 1995, 1998, and my Web page: http://www.Update2012.com.

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Illustrations in the SAA 2010 Power Point presentation:

Opening slide: The sun's alignment with the dark rift on Bahlam Ajaw's birthday.
1. Layout of galaxy with dark rift feature indicated
2. The Dresden Codex deity named *Tz'up'e*
3. The precession-caused galactic alignment process over thousands of years
4. Izapa's ballcourt alignment to the December solstice sunrise
5. Tortuguero Monument 6 w/ close-up of 2012 date (Gronemeyer 2004; revised 2009)
6. Line drawing of Tortuguero Monument 6 w/ 13 dates highlighted
7. Close up of the caiman and eclipse glyphs, w/ tzolkin/haab date
8. Dark rift alignment dates on Tortuguero Monument 6 indicated (6 out of 13 dates)
9. Depiction of symmetrical relations of the 13 dates on Tortuguero Monument 6
10. Jupiter-dark rift alignment on Bahlam Ajaw's death date, May 19, 679 AD (J)
11. Chart 1, simplified, alignment dates highlighted

Chart 1. Dates, DNs, and Astronomy on Tortuguero Monument 6 (see next page).

Postscript. November 2010. Most of the present paper was worked out in December 2009. Many of the ideas and discoveries presented in this paper grew out of conversations with Michael Grofe immediately after the Tulane "2012" conference in early February, 2009. It is at that time that the astronomical importance of Tortuguero Monument 6 was first realized. The events of the Tulane conference are described in Chapter 6 of my book *The 2012 Story*, released in October 2009. In Chapter 7 of that book, some of the astronomical reconstructions of the date sequences in Tortuguero Monument 6 were presented, for the first time in print. Researcher Geoff Stray summarized the key items of this work in an article which was posted online. Maya scholars revisited the Monument 6 inscription in two subsequent treatments, one being a self-published book by Mark Van Stone released in April 2010 and another being a study by Sven Gronemeyer and Barbara MacLeod, posted as #34 on the *Wayeb* website in August 2010. These studies did not mention or treat the astronomical content of Tortuguero Monument 6. Columbian researcher Carlos Barrera Atuesta released an essay in September 2010 which was an "Open Letter to Mayanists" exploring calendrical relationships between dates in the Tortuguero Monument 6 inscription and the Venus Tables in the Dresden Codex. This suggests Tortuguero was an important location for the practice of Maya astronumerology and Venus tracking.

The present paper was read at the 75th *Society for American Archaeology* conference in St Louis on April 15, 2010. It is a concise treatment of the astronomical strategies that underlie Bahlam Ajaw's rhetorical statements in his inscriptions. An expanded version of this material has been prepared for publication with the University of Florida Press.

Chart 1. Dates, DNs, and Astronomy on Tortuguero Monument 6

All dates are given in the Julian calendar (J) in the GMT2 correlation (JD# 584283).
DN = Distance number; L.C. = Long Count. (G) = Gregorian. DR = dark rift. MW = Milky Way.

Date and event	Derived from	Astronomy
1. L.C. Between 9.8.19.10.0 and 9.8.19.10.4 (Nov. 28 – Dec. 2, 612 AD (J)). 12 Ajaw 8 Kankin – 3 Kan 12 Kankin Bahlam Ajaw's birthday = 1 Ik? T-shape.	DN 1.11.11.__ at E4-E5 subtracted from Date 2.	Sun in DR. Jupiter just reached STATION after retrograde period, below and slightly west of the Pleiades.
2. L.C. = 9.10.11.3.10 (Feb. 4, 644 AD). 1 Ok 3 Kumku. Bahlam Ajaw's accession.	Established with tzolkin-haab date at F6-E7.	Uranus in DR. Jupiter & Venus conjunct, east of DR on edge of the MW.
3. L.C. = 9.10.11.9.6 (May 30, 644). 13 Kimi 14 Zec. First war event.	DN 5.16 at E9 added to Date 2.	Sun opposite DR. Lunar eclipse 3 days earlier, in DR (conjunct Uranus). Jupiter goes retrograde a few days earlier.
4. L.C. = 9.10.12.3.10 (Jan. 29, 645). 10 Ok 18 Kayab. Second war event.	DN 12.4 at F12 added to Date 3.	
5. L.C. = 9.10.16.13.6 (July 23, 649). 8 Kimi 9 Mol. Third war event, Yohm Pi "was chopped."	DN 4.9.16 at F15-E16 added to Date 4.	
6. L.C. = 9.10.17.2.14 (Dec. 18, 649). 13 Ix 17 Muan. Big victory over Comalcalco. Skull piles.	DN 7.8 at G2 added to Date 5.	Winter Solstice. Moon and Mars close to Pleiades on the 19th. Sun and Uranus conjunct 5 days later.
7. L.C. = 9.10.15.1.11 (Dec. 6, 647). 11 Chuen 4 Muan. Unknown event.	DN 3.16.1 at H9-G10 added to Date 2	Sun and Venus conjunct in DR. Jupiter at STATION, about to go direct.
8. L.C. = 9.10.15.0.0 (Nov. 5, 647). 6 Ajaw 13 Mac. Hotun ending.	DN 1.11 at H13 sub-tracted from Date 7.	Jupiter STATION. Sun & Mercury conjunct, Venus nearby, west edge of MW.
9. L.C. = 8.15.16.0.5 (Feb. 26, 353). 11 Chicchan 13 Muan. Event in the "Plaza of Baakil" (Palenque?).	DN 14.19.1.6 at H15-H16 subtracted from Date 7.	Jupiter just turned direct after STATION. Jupiter and Uranus (very close) and waxing moon conjunct, opposite the DR. Evening sky.
10. L.C. = 9.11.16.8.18 (Jan. 11, 669). 9 Etznab 6 Kayab. Building dedication event.	DN 1.5.5*.8 at I3-I4 added to Date 2.	Theoretical eclipse on Jan. 8, not visible. Sun will conjunct Jupiter in 5 days.
11. L.C. = 9.11.15.0.0 (July 23, 667). 4 Ajaw 13 Mol. Hotun ending. Six houses and images "laid down."	DN 1.8.18 at J8-I9 subtracted from Date 10.	Jupiter at STATION in the DR (west side), about to go direct. Seen in mid-heaven at sundown.
12. L.C. = 9.3.16.1.11 (Dec. 5, 510). 8 Chuen 9 Mac. Ahku'ul K'uk does sweat bath ritual.	DN 8.0.7.7 at L16-L17 subtracted from Date 10	Sun in DR (east side). Mercury at evening station.
13. L.C. = 13.0.0.0.0 (Dec. 8, 2012 (J), Dec. 21, 2012 (G)). 4 Ajaw 3 Kankin. 13-Baktun period ending, Bolon Yokte event.	DN 3.8.3.9.2 at M5-P1 added to Date 10.	Sun in DR (on the solstice). Jupiter almost at STATION, after retrograde period, below and just east of the Pleiades (compare w/ Date 1).

*This appears as "6" in the text, but is a scribal error; it must be 5 to reach the stated tzolkin-haab position.

Note: "DR" is shorthand for "dark rift." A measure of specificity can be added to the actual location of a given celestial body's alignment with the dark rift. For example, it is more precise to say that the alignments occur with the southern terminus of the dark rift. Several are some distance east or west of the galactic equator. The point is to highlight the astronomical region involved, which could be said to embrace the Crossroads and, conceptually, the larger nuclear bulge of the Milky Way's center.

VIII. The MEC Facebook Discussion, November 24 – December 19, 2010

John Major Jenkins
Note: These posts are unedited except for minor spelling corrections. The MEC moderator deleted some posts because they were not relevant to the topic or, in one case, indulged in ad hominem attacks. Overall, contributors were very civil. Somehow, many Facebook member icons were lost in the conversion.

Attn: The name of the person making a post appears above their post.

Topic: **Jenkins' Paper on Astronomy in the Tortuguero Inscriptions**.

Maya Exploration Center. November 24, 2010.
Please join us in a discussion of the paper John Major Jenkins presented at the 2010 *Society for American Archaeology*, entitled "Astronomy in the Tortuguero Inscriptions". We at MEC have reviewed it and find his observations on the ancient astronomy very solid. His interpretation of the associated texts has drawn more debate within our ranks. What do you think? It's posted on our website at:
http://mayaexploration.org/pdf/Jenkins-SAA-April2010.pdf

From John Major Jenkins. November 24, 2010.
Thank you to *The Maya Exploration Center* for hosting the PDF of the paper I presented at the SAA in April. This year two treatments of Tortuguero Monument 6 published by Maya scholars. They focused on the interesting ongoing epigraphic decipherment of the inscription but did not treat the astronomy associated with the 13 dates recorded on the monument. As many know, Tortuguero Monument 6 is of great interest because it contains the famed 13th baktun period ending in 2012 (December 21, 2012 according to the 584283 correlation). Certain astronomical themes are evident in the dates. One theme in particular is compelling and suggests that the astronomy associated with the 2012 date was intentionally incorporated into the rhetorical strategy of the inscription. Please read the PDF for an overview of this information. I was invited to speak at the SAA by Dr. Robert Benfer. The PDF is a duplicate of the paper that I read in the time slot provided, incorporating the 12 slides that I showed during my presentation. I've included additional comments and citation sources in the notes section. The astronomy in the dates embedded in the Tortuguero Monument 6 inscription helps us to more fully understand how the Maya, at Tortuguero, were thinking about 2012. I look forward to the discussion.
John Major Jenkins

J. Christine Tegler-Del Campo
Great stuff! I, unfortunately, am not a 'scientific explorer", but I know JMJ is right on! I still plan on joining The Maya Institute studies in Miami, btw.....$$$ is an issue only

From Wolak Barbara
Dear Mr Jenkins, I hope you dont mind me sharing your article in my blog: http://galacticdoor2011.blog.com/2010/11/26/maya-exploration-by-j-m-jenkins/ Looking to read it soon and will post my reply to it next week.Thank you sincerly B. Wolak

Deni C'è
Great job! My question is if Mr. Jenkins is planning some special event or ceremony, or just a conference (something special for that date), especially in IZAPA, where the monuments where found? It could be fantastic! Thanks

John Major Jenkins
To Barbara Wolak:
Actually, please do not strip out the text and post the article in full on your blog. This is how completeness and clarity begins to erode as, for example, now there are no images and the formatting of tables is messed up. The second step of this erosion process is that pieces get cut and paste out of the exported text version, without references to proper context and authorship. Please remove the duplication and simply provide a link to the original document as it exists on the MEC website or, preferably, a link back to the discussion page that was set up on the MEC Facebook page. Thank you.

From Wolak, Barbara
Dear John,

Sorry if I caused a problem, I placed in a blog because I could not open the file on my home computer. I am using now library but my time here is limited so I wanted to read it at home. I will make correction as you suggested. Thank you.

From John Major Jenkins:
Thanks Barbara!

Maya Exploration Center
This is Ed Barnhart, MEC's Director, with a question for John.

I should just fire up my astronomy program and look for myself, but I want to ask about the time of day, azimuth, and angle above the horizon for each one of the dark rift alignments you identify in the paper. Are they all at a consistent time of night and location in the sky, or different?

For example, your hypothesis about Dec 21, 2012 puts the Sun in the dark rift - 1. At

dawn, a moment that can be consistently noted without a modern time piece, 2. At the horizon line, and 3. At winter solstice, when the Sun rises as very far south along the horizon as it ever can. All these are very exact points and times, observable without modern technology, and to my mind very Maya thinking.

Where were the other dark rift alignments in the sky, and when? Consistency in their apparent observation methods would support your hypothesis, where as a random pattern of locations in the sky and times of night would lessen it. Can you comment?
Thanks, Ed

From John Major Jenkins
Thanks Ed, these are important considerations. The sun's alignment with the dark rift at the Crossroads (of Milky Way and ecliptic) would have been a calculation rather than an observation. This is because, of course, the sun is right there and will obscure the view of the dark rift behind it. However, much like Venus's period of invisibility during inferior or superior conjunction, the dark rift's disappearance during the sun's annual passage through it could have been easily calculated. It probably remained conceptually meaningful to the Maya, evocative of the sun's passage through the underworld (there's a discussion of this with citations in my *Maya Cosmogenesis 2012* book of 1998). The conscious recognition of this by the Classic Maya is suggested by the iconography and astronomy of the 9.14.0.0.0 date on Copan Stela C, which I mentioned in the paper.

Other relevant alignments to the dark rift/Crossroads in the dates from Tortuguero Monument 6, of the eclipsed moon in 644 AD and of Jupiter on both the 667 hotun date and on Bahlam Ajaw's death date in 679, can be addressed. Using Starry Night Pro astronomy software, we can see that in the early morning of the full moon eclipse on May 27 of 644 AD, the eclipse began about two hours after midnight local time, after the full moon passed the southern meridian and began setting in the west. It was a very long eclipse, and was almost completely dark right around 4:00 a.m. at an altitude of 30 degrees, with the Milky Way extending vertically from the SW horizon (at about a 221 degree azimuth). The configuration with the dark rift is visually clear. The position of the eclipsed moon at this moment is approximately 3.5 degrees west of the precise crossing point of the Milky Way and ecliptic. By 6:00 a.m. the eclipse is over, the sky is lightening with dawn, and the full moon has shifted a half degree closer to the precise crossing point.

Diagram 10 in my paper depicts Jupiter's alignment with the Milky Way on the death date of Bahlam Ajaw, May 19, 679 AD (J). The diagram is time stamped 10 p.m. and the view is eastward. Thus, Jupiter was rising with the dark rift in the Milky Way just after sundown. By 10 p.m. it is about 18 degrees altitude above the horizon and will continue to be observable throughout the night. It is positioned, on this day, about 3.5 degrees east of the precise crossing point of Milky Way and ecliptic.

Jupiter's position on the Milky Way on the hotun date of July 23, 667 is about 7.5 degrees west of the precise crossing point. Being west of the crossing point, this provides the visually nice situation of it having access to the more open western side of the dark

rift. Considerations of the celestial features involved in night sky observations need to be held in mind. The dark rift and the Crossroads both had potent mythological meaning for the Maya, not necessarily as precise calculation targets but as visually or conceptually compelling signifiers. In the case of this date in 667, also true of other examples, the interest isn't necessarily and always about pinpointing precise alignment dates, as in a scientific table. This date is a hotun date (9.11.15.0.0), and was meaningful as a calendrical nexus. As I note in my paper, the interval between this date and the 2012 period-ending date (13.0.0.0.0) embodies astronumerological divisors such as 260, 360, 364, 378, and 819. The presence of these "astro"-numerological factors highlights the probability that Jupiter's position on this date would have been part of the date's significance in the minds of the Maya elite. It presents a theme that, for whatever reason and under whatever circumstances, gets repeated twelve years later on Bahlam Ajaw's death date.

So, context is always a consideration. We don't have here a comprehensive and consistent almanac of dark rift alignments with rising times and dates. We have specific uses of certain alignments in the patterning of just 13 dates, within the limits of this specific text, which incorporates general conceptualizations of planetary, lunar, and solar alignments to the dark rift/Crossroads within the rhetorical strategy of a specific king's life narrative. The overall frame of this scheme seems to be the astronomical parallel between Bahlam Ajaw's birthday and the 2012 period-ending date.
John

From John Major Jenkins
Ed, I want to complete my answer to your question by addressing three other dark rift alignments I alluded to in my paper. Other dates of solar or Jupiter alignments with the dark rift/Crossroads include the accession date (501 AD) and death date (524 AD) of the early Palenque king Ahkal Mo' Naab, who may have been the Ahkal K'uk who performed the sweat-bath rite in 510 AD, documented on Tortuguero Monument 6. Also, the sacrifice-death date of Copan ruler 18 Rabbit in 738 AD. Let's explore this one a little. This was a decapitation or perhaps a self-inflicted bloodletting from the neck (see "Ritual Suicide of Maya Rulers" by Jurgen Kremer and Fausto Uc Flores at http://ajchich1.blogspot.com/2009/02/note-from-carl-callaway.html), which was in any case "supervised" by Quirigua ruler K'ak Tiliw. Astronomically, it was a solar zenith-passage day at that latitude and Jupiter was near the dark rift/Crossroads (about 5 degrees west of the precise crossing point).

Two things: the text states that the sacrifice "happened at the Black Hole" which very well may be a confirmation of the celestial location of Jupiter (with the dark rift being designated by "the Black Hole" glyph --- NOT the astrophysical singularity called the Black Hole, but the visually perceivable dark rift in the Milky Way). Second, Jupiter is often associated with the deity K'awil, and 18 Rabbit's name includes a reference to K'awil: Waxaklajun Ub'ah K'awil. Third, the Jupiter/dark rift/Crossroads complex was visible for about 8 night hours. It rose with the dark rift/Crossroads around 10 pm local time, at the 114 degree azimuth (curiously, this is the azimuth of the winter solstice sunrise at the latitude of Quirigua). By 3:30 a.m. it was passing the southern meridian. By

5:30 am Venus was rising and Jupiter was 38 degrees above the southwest horizon (with the Milky Way extending almost vertically from the southwest horizon). By 6:00 a.m. the sky was lightening and Jupiter was sinking in the southwest sky.

The larger context of events outside of Tortuguero involve themes of death and accession and involve alignments of the sun or Jupiter with the dark rift/Crossroads --- this theme is consistent with the astronomical alignments associated with the birth and death (and other) events in the life of Bahlam Ajaw from Tortuguero. It suggests that what Bahlam Ajaw was doing with astronomy (with the 2012 astronomy) was consistent with the strategies evident in a larger context of Maya ritual and rulership.
John

Carlos Barrera Atuesta
John:

Thanks again for taking into consideration my short essay on Tortuguero Monument 6.

Before commenting on your interesting work, I would ask what are the equatorial coordinates for the crossroads of Milky Way and ecliptic, and how much deviation should be allowed to declination and right ascension.

I have also noticed that you use the term "STATION" for what would be the second stationary position of Jupiter. Am I right?
Carlos

John Major Jenkins
Carlos,
Yes, I use the word "station" to refer to Jupiter's apparent stationary position, either prior to retrograde motion or forward motion. These stations occur in different sidereal locations through time. The process is one of slowing motion as the precise stationary point is reached; thus to naked-eye skywatchers Jupiter can appear to hover within a degree for over a month before reversing its motion. If a meaningful celestial background feature was involved, such as the Pleiades or the Crossroads (on 9.11.15.0.0, Date 11 in Chart 1, for example,), the Maya astronomers would no doubt have noted it. And yes, in both 612 AD and 2012 it is the second station of Jupiter.

Regarding equatorial coordinates, it depends on which era you are referring to. In era-2012 (J2000) the Crossroads is at 18 h right ascension (270 degrees from the vernal point, i.e, aligned with the winter solstice). In the precession era of 612 AD, the year Bahlam Ajaw was born, the Crossroads was at 16 h 40 m right ascension, which translates to about 19 to 20 degrees of precessional shifting between 612 AD and 2012 AD. In other words, within a few days of his birth the sun was aligned with the Crossroads, but 19 to 20 days before the solstice. In 2012, the sun is aligned with the Crossroads, on the solstice.

I believe that the T-shape of Monument 6 is a clue that he was born on the day-sign Ik, which within the range provided by the partially reconstructed Distance Number would fall on 1 Ik, November 30, 612 AD (J). If this is the case, the sun is right on the Crossroads on both dates, within a 5 m right ascension variance. The sun is one-half a degree wide, so it's kind of a moot point. In any case, the known range for his birth still provides a compelling case for an astronomical parallel drawn between his birth and 2012, in consideration of the overall rhetorical strategy laid out in the monument.
John Major Jenkins

Carlos Barrera Atuesta
John,

I agree with MEC: I made the respective astronomical simulations and found that your statements about the dark rift are very consistent and open a new and interesting perspective on the study of Maya Archaeoastronomy.

However, I find a bit far those positions of Jupiter described by the dates 9.8.19.10.?, 9.10.15.0.0, 8.15.16.0.5, and 13.0.0.0.0, but only when the criterion used is exactly the second stationary position of Jupiter.

In recent years, I have repeatedly mentioned the importance of the 819-day station of Pakal's birth (9.8.9.12.0) and its relationship with the stationary positions of Jupiter and Saturn (among many others). And it is precisely here that I find something quiet interesting:

The first stationary position of Saturn, on the date 9.8.9.12.0, was aligned with the dark rift!

Moreover, the distance between the dates 13.0.0.0.0 and 9.11.15.0.0, (600 x 819 days = 30 x 16,380 days), would confirm the importance of the "contrive numbers" of Lounsbury (63 x 18,980 days = 73 x 16,380 days), and perhaps also the importance of the intervals I proposed a couple of years ago (9.8.9.12.0 - 12.19.13.3.0 = 83 x 16,380 days; 9.10.15.16.0 - 12.19.13.16.0 = 84 x 16,380 days).

Finally, I would like to mention that the synodic position of Jupiter on the date of "the other end of time", corresponds to that of 9.10.15.1.11, both being excellent representations of the second stationary position of Jupiter.

As if this were not enough, the date of "the other end of time", 20.0.0.0.0 = 1.0.0.0.0.0, is located exactly 399 days after its respective 819-day station, or what I call [Eph.819d + 399d], being 399 days, the canonic cycle of Jupiter.

A more accurate astronomical simulation, will reveal that the date of the 80th CR anniversary of Pakal's accession (20.0.0.0.8 = 1.0.0.0.0.8), describes with astonishing

precision the second stationary position of Jupiter.

So here you have other astronomical relationships between the lives of Bahlam Ahaw of Tortuguero and Pakal of Palenque, wich complement what is already written in my "Open Letter" essay, and of course, what is already written in your paper.
Carlos

John Major Jenkins
Carlos,

Thank you for your interesting contribution. Yes, if the exact mathematically determined date for Jupiter station is used, then you find the LC's often ranging over some variance in precision. This may be expected if the LC had its own importance as a calendrical nexus. But the visually perceived slowing down and reversal of Jupiter --- being in effect at station within a degree, could last weeks.

Your findings support a useful approach to working on the astronomical content of the inscriptions --- namely, that we shouldn't isolate one particular planet or alignment. They were probably being tracked simultaneously and the various astronumerological periods, stations, and alignments were seen to be interdependent. Where certain phenomena got singled out has to do, I think, with their relevance to the rhetorical strategy of a particular king. For Pakal, the 20th Bak'tun worked, because of the calendrical relationship with his birth and accession; for Bahlam Ajaw, the 13th baktun period ending worked, because of the astornomical relationship with his birth and the sweat bath founding rite. It does seem that Pakal, his son, and Bahlam Ajaw were all working with the same milieu of astronomical features.

I like your addition to the astronumerological list I provided for the relationship between 9.11.15.0.0 and 13.0.0.0.0 (the 819 x 600 interval). There are several other compelling patterns going on that I did not include in the SAA piece, because the time slot for presentation was 15 minutes. It was a good exercise to boil it down to the main points. Pakal's association with the 20th Bak'tun ending, it should be said, was asserted after Pakal's death, by his son in the 690s. Other things in the Triad Group at Palenque are very interesting. The date of Kan Bahlam's investiture rite at age 7 in 642 AD occurs at a sun-Crossroads alignment, and this was linked in the narrative with a deep time mythological date in a very compelling way. So, there's a lot more to explore here, which is forthcoming in other publications. Michael Grofe's work on these themes is indispensable. Four out of the 13 dates on Tortuguero Monument 6 involve the sun's position at the dark rift/Crossroads. Another involves a lunar eclipse at that same position. Another involves Jupiter.
John

From Wolak, Barbara
Hello, This all is very interesting reading but is there any possibility that the correlation date that John is supporting is not the right date. In your Tzolkin-Visionary perspective

book You mention list of other correlation dates made by other people. I found interesting that one such date the Julian 588466- by Mukerji 1936 was actually February 19 3102 BC just two days of 17 February 3102 BC date of staring New Kali yuga cycle in Vedic Calendar. I looked at my small astronomy program Red Shift and see that conjunctions of Venus Jupiter also Mars Sun and Moon at the end of Pisces beginning of Aries Constellation. I have also seen other dates from that era that show Venus Jupiter Mars conjunctions. I used to channel spirit teachers who told me to study constellations and they said that our sky is the cosmic clock. The ancient people all over the globe knew that, Mayans Egyptians, Hindu some of them were not influenced by others and their knowledge stayed clean and unchanged like in Vedic tradition. I can not stop feeling that this year 21 December Solstice when few hours before there will be total Full Moon eclipse visible especially well from South America continent is very significant and connected to Maya calendrics.
Barbara Wolak

John Major Jenkins
Barbara,

Yes, I listed many of the proposed correlations in my 1992 book *Tzolkin* (BSRF, Garberville, CA). However, in that book, which presented the culmination of about 4 years of my early studies on the correlation question, it was easy to show that many of the correlation proposals were generated by scientists or mathematicians running computer stats on astronomy routines without considering the interdisciplinary context necessary for addressing the correlation question.

In the end, the issue basically boils down to the GMT family, and in my *Tzolkin* book I looked at the two GMTs, the December 21 one and the December 23 one argued by Lounsbury. Lounsbury's proposal is flawed, for reasons indicated by Dennis Tedlock and John Carlson, and also for reasons I pointed out in my critique of Lounsbury's 1992 article, which is online here: http://www.alignment2012.com/fap9.html

The primary problem with all non-December 21 correlations is that they dismiss, undervalue, or ignore the ethnographic placement of the 260-day tzolkin, which in effect provides a litmus test for any proposed correlation. More recent proposals by Wells-Fuls and the recent well-publicized critique by Aldana continue to dismiss the relevance, or veracity, of ethnographic continuity, a position which can no longer be maintained.

Having said that, this is not the place to rehash the correlation debate. Many of my arguments and comments on this, going back 14 years, can be tracked and followed on the Aztlan archives or the UT Meso forum and in my other books of 1998, 2002, and 2009. For the purpose of the Tortuguero article under discussion here, I use the 584283 correlation (13.0.0.0.0 = December 21, 2012). Nevertheless, even if the 285 was assumed (resulting in only a 2-day difference), all of the dark rift/Crossroads alignments would still be within range.
John Major Jenkins

Miguel Sague
I understand the importance of not getting bogged down in a debate of the correct correlation elements but I feel compelled to make a remark from an Indigenous perspective. This is exactly what John is referring to when he speaks of the "ethnographic" evidence. To put it plainly, Only the December 21, 2012 end-date derived from the GMT correlation coincides with the current day-count followed by the highland Maya people. If we are to respect the veracity of this unbroken tradition then we must accept a correlation that provides a LC end date that coincides with the K'iche Cholk'ij date "Four Junajpu" and stop arguing over other correlations. Taino Ti Miguel

Carlos Barrera Atuesta
John,

I've been applying some methodological procedures that I developed for my research, to the dates of Tortuguero Monument 6, and I think you're right about the T-shape of Monument 6 as a clue that Bahlam Ahaw was born on the day-sign Ik.

The date 9.8.19.10.2, 1 Ik 10 K'ank'in, occurred 286 days after an 819-day station, [Eph.819d + 286d]. This means that 37,960 days before Bahlam Ahaw's birth, there was other 819-day station. I can assure this because 46 x 819 days + 286 days = 37,960 days.

The date in question, 9.3.14.2.2, describes the second stationary position of Mars and, according to the mathematical model that I use, is located 365 days after the opposition of Jupiter, while our original date, 9.8.19.10.2, is located 584 days after the opposition of Mars, being 365 days, one Jaab' calendar, and 584 days, the canonic cycle of Venus.

As we all know, 37,960 days equals 65 canonic cycles of Venus, 104 Jaab' calendars, 146 Tzolk'in calendars, and two Calendar Rounds, so all of this seems to make sense.

By using these same procedures, I was able to extract a wealth of information from the other dates in your document that you might want to check with Michael, whom I consider a great person and an excellent archaeoastronomer.
Carlos

John Major Jenkins
Carlos,
You write that Bahlam Ajaw's birthday, if it did indeed fall on 1 Ik, occurred 286 days after an 819-day station. However, what if the 819-day reckoning was developed after Bahlam Ajaw's birth? You could back project the stations indefinitely into the past, but do we know that the 819-day accounting was being used at the time he was born and before? I think that the haab and Venus numbers you are finding with the 1 Ik date comes from the likelihood that 1 Ik was the Calendar Round initiator for some Maya sites

(including possibly Tortuguero) during the Classic Period, and thus a commensurate astronumerological lineage into the Dresden Codex material you have studied can be identified.

The Calendar Round seating of 0 Pop would have thus happened in 622 AD and 674 AD. In the year of Bahlam Ajaw's birth (612 AD), 1 Ik with 10 Kan'kin was merely a recurrence of the potent 1 Ik. It is in this that I think the relevance is found. For 1 Ik in the CR system would have been conceptually analogous to 4 Ajaw in the Long Count, especially in consideration of the interest in the 13.0.0.0.0 = 4 Ajaw = 2012 date on Monument 6. It (1 Ik) would have provided a nice rhetorical reiteration that Bahlam Ajaw had a special, inborn, role to play in the 2012 ritual with Bolon Yokte. His role in this regard was explored by Gronemeyer and MacLeod in their Wayeb #34 study, released in August. The parallel between Bahlam Ajaw's birth and 2012 could thus be two-fold --- in the shared alignment of the sun-in-the-Crossroads, and in the calendrical analogy between 1 Ik and 4 Ajaw. (In their respective systems, the CR and the LC, these two dates have the same function as era markers). Finally, even if he wasn't born exactly on 1 Ik, the general calendrical nexus (with a maximum of 7 days discrepancy) remains conceptually compelling.
John

Miguel Sague
Hi John
I'm trying to follow this dialogue doing the arithmetic on my calculator, counting Venus Cycles, multiplying them by the number 65 and educating myself on the cycles of other planets and their relevance in regards to the dates at Tortuguero. What I need a little clarification on, if you guys don't mind, is this issue of 1 Ik. This rings a bell concerning the reading I was doing way back in the 1980's when the 2012 meme first hit the public consciousness. At that time, as you know. there was a lot of random connecting of Maya mythology and Aztec mythology to explicate aspects of the 2012 phenomenon. Now, is this "1 Ik"-as-Calendar Round-initiator thing you are discussing here in any way related to the connection made by the Calendar Round-conscious Aztecs between Ehecatl and the return of Quetzalcoatl at some sort of End-of-Cycle event?
Miguel

Carlos Barrera Atuesta
OK, John:

We don't know if the 819-day accounting was being used at the time Bahlam Ahaw was born and before, but we do know that it had to be in use by the time Tortuguero Monument 6 was carved, otherwise, we could not say that the distance between 9.11.15.0.0 and 13.0.0.0.0 equals 600 x 819 days.

In the other hand, I like your argument about the Tzolk'in date 1 Ik and its role as a

Calendar Round initiator for many Maya sites.

Regarding the "master structure" of the Venus Table of the Dresden Codex, please note that not only the date 9.10.11.3.10 seems to be a Mercury projection of the starting point 9.5.10.8.0, but also the date 9.10.11.9.6, (which is located 116 days after 9.10.11.3.10); while the date 9.11.16.8.18 might be a Mercury projection of the terminal point 9.10.15.16.0.

Other potential "projecting points" for Mercury would be the dates 9.10.15.1.11, 9.10.12.3.10, 9.11.15.0.0 and 9.11.16.8.18, but I'm not sure if it is appropriate to address that topic here.
Carlos

John Major Jenkins
Miguel,
I am not all that familiar with the Central Mexican day-sign associations. Grofe has explored connection in the Palenque Creation Texts. But yes, Ik, or Wind, was associated with Quetzalcoatl. All the more reason for it to have been preferred as the senior year-bearer at Western Maya sites like Palenque and nearby Tortuguero. Palenque's Central Mexican associations are known.

Type II year-bearers (Ik, Manik, Eb, Caban) are still used by Maya groups in Guatemala. David Stuart discussed an example of a “1 Ik’ seating of Pop” on Naranjo Stela 18, in “New Year Records in Classic Maya Inscriptions.” The PARI Journal 5(2):1-6. Pre-Columbian Art Research Institute, San Francisco. Electronic version: www.mesoweb.com/pari/publications/journal/0502/NewYear.pdf, John.

Pg2:

Carlos Barrera Atuesta
Miguel,
You can find David Stuart's article here (there was an extra zero in John's link):
www.mesoweb.com/pari/publications/journal/502/NewYear.html
Regards

John Major Jenkins
Carlos,

Thank you for the link correction. These are interesting astronumerological associations. As you noted, the first war campaign of Bahlam Ajaw’s career (near the lunar eclipse) took place 116 days after his accession. I think it’s definitely worth exploring the role of CR periods and the various planetary periods that seem alluded to in these and other Maya inscriptions.

There are other interesting things going on that are appropriate to discuss because the

Maya were naked-eye sky-watchers, such as the times when the moon occults the Pleiades, which defines a certain location of the lunar nodes and thus where and when eclipses may occur. Such a lunar occultation of the Pleiades occurred in the weeks before Bahlam Ajaw's birth. Also, Bahlam Ajaw was born in 612 AD at a tumultuous time in the region, a short time after Palenque's decimation by Calakmul and just about five weeks after the enigmatic figure of Muwaan Maat was installed on the Palenque throne (Pakal followed in 615 AD). Perhaps both Pakal and Bahlam Ajaw came to be celebrated as reformers and champions for the region. They were both "5 katun" kings.
John

Miguel Sague
Thanks for the link gentlemen

Maya Exploration Center
As the moderator of this discussion board, I am making the the decision to delete Barbara Wolak's last lengthy post because it does not relate to the discussion at hand --- that being the subject matter of Jenkins' paper on Tortuguero Monument 6. We are open to having conversations about other topics, including the correlation debate or a comparison of Maya astronomy with that of other ancient cultures, but we ask that this particular string be confined to discussing Jenkins' paper.

Barbara, we appreciate your participation in this discussion. Please send a message through MEC's Facebook page if you would like to suggest we establish another discussion string on the other topics your post brought up.

Robert Sitler's question.
Robert Sitler asked a question whether anyone had catalogued or compiled all the Long Count dates, looking for dark rift alignments. It was a brief question and for some reason it is not preserved in the discussion pages. John's response is below.

From John Major Jenkins
Hi Robert,

A systematic study and/or catalog of dark rift alignments would certainly be useful. The 9.17.10.0.0 date on Quirigua Zoomorph B is interesting, depicting a "cosmic monster" which Looper in his 2003 book *Lightning Warrior* calls a "form of the Milky Way" (174). The sun was positioned on the Milky Way on this day, at the dark rift/Crossroads. Looper wrote: "On Zoomorph B the ruler [K'ak Tiliw] emerges from the mouth of the crocodilian just as the maize deity is reborn from the cleft shell of the cosmic turtle" (176). However, the cleft shell of the turtle is opposite the dark rift, whereas the date of Zoomorph B identifies a sun-dark rift alignment. The clarification of the astronomy is not explicitly made, but nevertheless we see here how K'ak Tiliw is depicted as the sun in the dark rift. In his subsequent discussion (176 ff) Looper discusses Zoomorph B's role as the

"culmination" of a "sacrifice/rebirth cycle" that it shares with the related narratives on Stelae C and A. Maya kings could therefore imitate the solar deity's sacrifice and rebirth. This deity complex, complete with the implicated astronomical features, is congruent with what I identified happening on the carved monuments of Izapa (e.g., Izapa Stela 11 and the ball court throne).

As it stands, such dark-rift alignments have been found and noted, and many of these are doubly meaningful because they are tied in narratives to contexts of accession, death, birth (of kings or deities), or other royal rituals. One is the investiture rite of the 7-year old future king of Palenque, K'an Bahlam, his "coming down from the tree" in the reading of Dennis Tedlock (2010:80), that did occur on 9.10.10.0.0 (December 1, 642 (J)), a *very nice alignment of the sun with the Crossroads near the dark rift*. This circumstance is very intriguing because it is tied to other mythic events in the narrative and meanwhile, nearby at Tortuguero, Bahlam Ajaw would be taking the throne in just over 14 months.

So, a quick answer to your question is that yes, meaningful dark-rift alignments (often solar) that reiterate inscriptional narrative content can frequently be found. Epigraphers should be tracking astronomy, as an aid to decipherment of meaning, and especially take note of dark-rift alignment events if the glyphic phrase "the Black Hole" is present in the dated inscription. For example, as I mentioned in my the SAA paper, 18 Rabbit was sacrificed on April 27, 738 (J). It's been noted that this date was a solar zenith passage at the latitude of Quirigua, but it was also a day when Jupiter was aligned with the dark rift (see previous post). A similar Jupiter-dark rift/Crossroads alignment occurred on Bahlam Ajaw's death date, May 19, 679 (J).
JMJ

From Miguel Sague
Clarification requested: Is the "black hole" reference that you are making here equivalent to Freidel and Schele's "Black Transformer"? Miguel

John Major Jenkins
Miguel,

No, the Black Hole in Schele's usage is when the Milky Way rims the horizon. This occurrence may be relevant in some usages by the Maya, but I do not find it compelling. The "Black Hole" hieroglyph is found in Creation Myth contexts in relation to the Crossroads (the part of the dark rift that allows an alignment with planets, the moon, and the sun is at the Crossroads). It's also connected with king-making and ballgame contexts, and other alignment contexts in which the dark rift is involved.
JMJ

From Miguel Sague:
Thank you for the clarification. I remember that now, including the various sky diagrams illustrating the book that show the Milky Way lying along the horizon. Miguel

Wolak Barbara
Dear Moderator, as you decide to take away my reply, "controling" the so called Topic. I will write my observations in my blog regarding this article and other topics related to Maya long count calendar as being connected to a cycles of Jupiter. I will not participate here in discussion that is controlled by 'Big Brother'. I am learning and was looking for answers to my Questions. So if anybody feels to talk with me on this subject or any other related I invite to post in my blog. http://galacticdoor2011.blog.com/2010/12/07/synodic-jupiter/ My question to panel is Do you think that it is possible that What ancient Maya observe as Long count is the same cycle what Hindu call the Kali Yuga. I think they are the same cycles which probably are based on planetary movement of Jupiter and especially when Jupiter is in Pisces sidereal sign conjuncting Venus being closes to the Earth and The Sun. I apologize to the panel if my posts were in bridge of the rules here. Lovingly from my heart I wish everyone Happy New Year 2011 . Sincerely, Barbara

John Major Jenkins
Dear Barbara,

This discussion page has a specific purpose. The moderator's role is to keep the posts on topic, which is not to say that your information is not interesting. Feel free to email me privately at John@alignment2012.com with your email address and I will respond. Best wishes,
John

Wolak Barbara
Thank You John, I will email you. I 'm not offended and I do not wish to offend anyone here. I'm kind of free spirit, and go with the flow... I just started my discussion on my blog. http://galacticdoor2011.blog.com/2010/12/08/my-discusion-on-jupiter-cycles-connection-with-vedic-calendar-kali-yuga-mayan-long-count-calendar/

Stanley Paul Guenter
Hello John,

we met in Antigua last June but didn't have a chance to talk then. As you know, I am a 2012 skeptic. In fact, I am about as skeptical of everything 2012 as one can possibly be, not believing that 2012 was of much importance to the Classic Maya at all, let alone that their calendar was geared towards this "end date". I have a few comments about this paper of yours, and a few more general problems with the 2012 issue that undergirds your paper.

First to the specific comments:

On page 3 you mention a deity named Tz'up'e, meaning "Split down the Middle", and quote Dennis Tedlock for associating this god with the dark rift of the Milky Way. I find this problematic, as I do not see any reason to read the hieroglyphic name of this deity this way, nor do I see any reason to believe this deity in the Dresden Codex is associated with any particular area of the night sky, let alone the "dark rift". I admit I have not read Dennis Tedlock's work on this, but I don't think it helps your case to simply cite him as an authority, without providing the actual evidence for this. I recognize that this was an SAA paper, and thus painfully short on space, but as it stands, this claim appears to stand on thin air, and won't impress many of our colleagues.

On the bottom of Page 4 you mention that you were unaware of Tortuguero Monument 6 when you began your 2012 research. I applaud you for making this admission, but I think it is still a major problem for you. Tortuguero Monument 6 was not unknown when your research began and while I sympathize that my colleagues did not bring this up when you began discussing this subject with them back in the 1990s, the fact is that this text was known and available to Maya epigraphers before then. So you and other 2012ers came up with interpretations of what this date meant to the ancient Maya without taking into account any actual texts from the period specifically addressing this date. Now, either you guys are exceedingly prescient, or I would expect your "discovery" of this text to cause significant changes to your theories. That is, if you are doing science. That, or, as I said, your are amazingly prescient and phenomenally perceptive. Knowing many Maya archaeologists, I can tell you that is quite rare in our field. And yet the 2012ers, on the basis of no specific evidence, apparently figured out the basis for Maya culture, or at least their astronomy, calendrics, and religion. That sparks my skepticism.

On the bottom of page 5 you mention Sven Gronemeyer and Michael Grofe for ideas about the birth date of Bahlam Ajaw. While I applaud giving credit to young, publishing scholars, the fact is that these guys are not the first to make these observations. I learned about this from Peter Mathews when I was in the University of Calgary back in the mid-1990s and Grube, Martin and Zender have this in the 2002 Texas Notebook (page II-17).

On page 6 you write, referring to Mt. 6, "In order to understand the astronomical pattern of these dates ...". My question is: why assume these dates have any astronomical pattern to begin with? Other than because you assume there has to be one? This is one of the biggest problems I have with not only 2012ers but archaeoastronomy in general. Too often claims are made for which there is not only no proof, but no reason for assuming astronomical significance to begin with. On Monument 6, for example, which are the glyphs that make us suspect the scribes here were concerned with astronomy? I don't see many, and I doubt you do either. In fact, the only one you mention is the AHIIN glyph at F10. However, "crocodile" is a common glyph, appearing in the names of many people and places. There is nothing particularly "celestial" about the ahiin in this text. Where are the sun, moon, star, or sky glyphs that would signal an interest in astronomy tied in to these dates? I think you are ignoring the possibility that the scribes weren't much interested in astronomy here, and, for that matter, in most Maya texts. Explicit mentions of astronomical events are exceedingly rare. So why assume astronomy was so important to the ancient Maya? Personally, I think it is mostly a hold-over from the early 20th

century epigraphers. But that is a discussion for another time. My point is that there is almost no reason whatsoever to think that the dates of Tortuguero Monument 6 are patterned astronomically.

On page 7 you mention that Ahkal K'uk' may be the same individual as Ahkal Mo' Nahb of Palenque. I will use the name Ahkul in place of Ahkal as the former is clearly how this name was pronounced at Bonampak (I and most of my epigrapher colleagues reject Dave and Steve's morphosyllable argument). I do not see why we should see these two as the same person. Yes, both have the name Ahkul as part of their own names but their full names are not the same. Consider that Frederick William III of Prussia was a contemporary of William IV of Britain; these were obviously not the same king. You also mention that he was involved in a sweat bath event. This is not quite accurate. The text actually mentions that an event occurred to the pib naah of Ahkul K'uk'. While pib naah does mean sweat bath, at Palenque it refers to the shrines within the Cross Group temples, and this is probably the reference here at Tortuguero. Remember to contextualize the specific text here. This reference to Ahkul K'uk's pib naah follows directly after a very long text describing the dedication of Monument 6 as part of a structural dedication on 9.11.16.8.18, 9 Edznab 6 Kayab. I suspect this structure, where Monument 6 was housed, was the replacement for this earlier pib naah structure that Ahkul K'uk' had dedicated. That is certainly the normal pattern for many similar Classic Maya texts.

Now, let's move on to the 2012 reference on Monument 6. I don't think astronomy has any basis for the mention of this date, nor do I think it confirms any Classic Maya interest in 2012 as the end date of their calendar. The reason for this reference comes from just earlier in the text. Note that the dedicatory date of the monument, the 9 Edznab date, is specifically linked to the immediately preceding hotun ending, 9.11.15.0.0, 4 Ahau 13 Mol. Far more than being astronomers, the Maya were astrologers or, more precisely, chronomancists. That is, the Maya were obsessed with the patterns not of the stars so much as of their own calendar. The best days were those that mirrored the creation date, 13.0.0.0.0, 4 Ahau 8 Cumku. This can be see in the stelae of Waxaklajuun Ubaah K'awiil of Copan, where the stelae were often dedicated not just on the various katun endings, or hotun endings, but on the last 4 Ahau date, or Ahau date fitted with a Cumku date, that occurred before these major period endings. 4 Ahau was a very sacred date because of this association with creation. Note that the last period ending before the dedication of Monument 6 was a 4 Ahau hotun. This, I believe, is not coincidental, and Monument 6 was likely the monument that Bahlam Ajaw dedicated in honor of that period ending. This, I think, explains the final date, 13.0.0.0.0, 4 Ahau 3 Kankin. Just as we see at Quirigua the association of contemporary dedicatory Period Ending katun endings with similarly coefficiented Ahau period ending dates in the supernatural past, I think Bahlam Ajaw is tying his Period Ending in to grander cycles. The 4 Ahau date of 2012 was going to be the greatest Period Ending presided over by 4 Ahau since the Creation date of 3114 BC itself. I think this handily explains why Bahlam Ajaw has provided us with the only ancient reference to 2012. Not because it marked the end of any "Great Cycle", but merely because it was the greatest Period Ending that 4 Ahau would rule over in the future.

In fact, we know that the scribes of Tortuguero didn't believe 2012 was the end of the calendar because in the text the mention that this is the end of 13 baktuns. Note that they do not state this was the end of 1 pictun, which they would have if this was the end of a "Great Cycle". I have noticed that in Maya period ending texts the reference is always to the end of the highest cycle. Thus baktun endings are never referred to as the end of a mere katun. If the Maya of Tortuguero thought that there were only 13 baktuns in a "Great Cycle" we should have seen a reference to the end of 1 pictun here. That we only see "end of 13 baktuns" means the Tortuguero scribes, like those of Palenque, saw 20 baktuns in a pictun. Yet another strike against 2012.

Finally, I would like to point out one of my greatest arguments against your 2012 interpretations, John, and this is cross-cultural comparison. Calendars fascinate me, and I've looked at quite a number. I don't know of a single Long Count-style calendar from any culture that is predicated upon its "final date". Frankly, I don't know of any calendars that have "end dates". They all have beginning dates that are important, but continue indefinitely until replaced by a new calendar. So, what you are proposing about 2012 makes the Maya extremely unusual. While this is not a mortal strike against your ideas, it does mean that you are going to have to find a lot of solid evidence to get your ideas accepted by the scientific community. And, as I hope to have shown here, the evidence stacks up strongly against your 2012 arguments.

Anyway, those are my thoughts, and I look forward to your response. All best,
Stan

Miguel Sague
Stan, I know your comment is directed at John but I just can't hold back some questions:

The well-documented post-classic text tradition of naming katuns after the last date ie. "katun 6 Ahau", "katun 4 Ahau" etc. that doesn't provide some evidence that at least Post-Classic era Maya were interested in the end-date of a time period? And who said that 4 Ahau- Eight Kumku is a beginning date? It is the Creation Date, yes, but (and correct me if I'm wrong) isn't it actually the end date of a previous time period. Should not 5 Imix 9 Kumku be a better candidate for the actual "beginning Date" of this current time period. Isn't there strong linguistic evidence to suggest that these Ahau dates were perceived as "completion dates", dates when the time periods were neatly tied into "bundles" and new time periods began with the next day?
Maybe in your cross-cultural research you should actually admit that in fact you scholars have discovered in the ancient Maya a culture that is unique in its peculiar interest in end-dates rather than beginning dates.

And you are trying to make an argument that the classic-era Maya were not interested in astronomy. Are you stating that as a generalization (that their astronomical interest was not as intense as John and others make it out to be)? Or are you making a literal statement (they were not at all interested in astronomy)? What were the observatories for? Do you perhaps suggest they were not observatories? Were these buildings used for something

else than celestial observation? What are the Venus and moon and eclipse tables in the Dresden Codex all about? Is this irrelevant material? Does it not appear to you to be some kind of intense classic era interest in the movement of heavenly bodies? What is the well-documented contemporary traditional Maya interest in a huge number of astronomical phenomena? Is this just some recent post-colonial development with no antecedent in Classic era usage?

Lastly I need clarification on a statement that you made about the "Creation Date". Your mention of "pictuns" as the only valid "Great Cycle" periods recognized by the classic era Mayas suggest a preference either by them (or by you) for periods of twenty over periods of thirteen. And yet you mention that the beginning of this creation is the date 13.0.0.0.0 four Ahau Eight Kumku. Do you see where I'm going with this one? Your admission that the current creation began at the end of a thirteen baktun period kind of contradicts your argument. Does the date 13.0.0.0.0 not hint at some sort of recognition by the ancient Mayas of a thirteen baktun time period as relevant, perhaps as relevant as a period of twenty baktuns?

I Know I am a crass amateur and my questions will appear impertinent because I don't have a lot of the updated and fine-tuned epigraphic and archeological evidence at my disposal as you have. But I assume that this forum was created for participation of a wider range of people than just academics so you must expect the interjection of opinions and questions from people without PHD's, and in my humble opinion the challenges that you have made against the theory that the classic era Mayas were interested in the date Dec 21st 2012 appear to have weaknesses of their own. But, of course, that's the opinion of an amateur and I hope that you can clarify my confusion.
respectfully
Miguel

Carlos Barrera Atuesta
A respectful request for clarification to Stanley:

When you say that the Maya were obsessed with the patterns not of the stars so much as of their own calendar, Does this mean that the Tzolkin Calendar or the Jaab' Calendar did not originate, or were not motivated by astronomical observations?

Thanks in advance for your reply. Carlos

John Major Jenkins
Thank you, Stan, for your response and well considered comments on my SAA paper.

Yes, the SAA presentations are brief and this is a detriment to the full exploration that is necessary, and forthcoming. Some of the additional info is coming forth in these posts! I alluded to Tedlock’s identification of a deity in the Dresden Codex with the dark rift in the Milky Way because, in this case, I believe his observations and arguments are compelling. The argument lies in his methodology of reading the sequence of almanac

deities as positions in the sky, and are found in chapter 15 of his book *2000 Years of Mayan Literature*. When I gave my presentation in St Louis I offered audience members a Xeroxed hand-out --- my notes to and review of Tedlock's book.

Another compelling item in Tedlock's book involves the Venus almanac in the Dresden and the sidereal position of Venus on the 1 Ajaw dates. He finds a consistent sidereal backdrop pattern, including the use of the "Ayin" crocodile in the sky. Tedlock writes that on one of the 1 Ajaw Venus dates, "the Great Star [Venus] is caught where the day begins by the Crocodile, when 2,920 days have passed" (208). Tedlock explains this passage in the Dresden almanac as follows: "The last of all the characters is Ayin, or "Crocodile," who catches the Great Star [Venus] when it is in Sagittarius. His home is probably in the Milky Way, perhaps in the part that includes the Great Rift" (2010:212). And this isn't an unfounded assertion, it's a reading based upon the patterning of the dates in the Dresden in consideration of the associated astronomy --- much like my approach to Tortuguero Monument 6.

This Ayin example also partially addresses your comment about the many instances of ayin glyphs in the inscriptions. It's fairly easy to register skepticism based on the prevalence of ayin references, but discerning examination of context can sort out ones that pertain to astronomy. Similarly, we have words or phrases in English --- such as "Milky Way" for example. We could examine occurrences of this phrase and find that some, but not all, refer to candy bars. And some refer to a celestial feature. We can't dismiss the evidence that in some contexts the ayin phrase refers to the Milky Way, especially in light of other iconographic evidence that the Milky Way was indeed portrayed as a caiman or crocodile. Tedlock's idiosyncratic poetic rendering of some Maya names is possibly a stumbling block for some scholars to take a discerning look at his arguments regarding how Maya texts, ritual, and astronomy are interrelated. No offering or reconstruction of ancient motivations and paradigms is perfect, but we can have a discerning eye and I think the Tz'up'e argument (see page 176 of his book) deserves consideration --- you should check it out. In any case, there are numerous other examples of the dark rift's role which could serve the point I was making in citing Tedlock. The best place to find these references are in my previous books and articles. I also alluded to several instances of dark rift uses in the SAA piece and in several of my posts above.

I don't think it helps your position as a "skeptic" (meaning, I assume, unbiased) to be using the phrases "you and other 2012ers" and "you guys" --- please identify the team of "2012ers" that I am colluding with. These are also slightly pejorative phrasings and give rise to prejudicial attitudes by corralling many people into one category. My hope --- and the hope of the MEC --- is that this venue would be a chance for the 2012 discussion in academia to get beyond that. Like it or not, I've been researching Maya cosmology, astronomy, and calendrics with a specific focus on 2012 for over twenty years. I believe you are blending me together with other writers who have distorted my work. This reflex is understandable given the 2012 mess in the marketplace. However, I have invited civil dialogues and have attempted to clarify the factually inaccurate characterization of my work, including the presentation / critique of "2012ers" offered by you and David

Freidel, which I critiqued and sent during an email exchange with David in the summer of 2009. It is here: http://update2012.com/response-to-freidelMay.html. I don't mean for this to be defensive or to open up another debate; I offer this link as a reference point so that misconceptions that you have had, or that any other scholars may have shared with you, in the past about my work can be clarified. I don't know if you or David received this, as our email exchange stopped after I sent it and my subsequent email query went unanswered. Perhaps you already read this and have taken my factual clarifications to heart. In any case, we can address the new exchange at hand.

Yes, it's fascinating that, as you noted, no one offered up the TRT 2012 reference during the many years of debate that occurred on Aztlan and elsewhere beginning with Linda Schele's post on 2012 in 1996. For many years my critics repeated the comment "there are no 2012 references in the inscriptions." It's ironic that one rare early reference in English to the TRT 2012 date is found in Schele's *Maya Verbs* catalog of 1982. That's pretty funny. At any rate, things happen when they will. So, yes, I was drawn to examine intentionality in the 2012 date because it falls on a solstice, according to the 584283 correlation that I had already concluded was the best correlation, from my studies between 1986 and 1992. Focusing on the 2012 question at that time, I found in the academic literature that the pre-Classic context of the Izapan civilization was the likely origin place (and time) of the Long Count system. My examination of the archaeo-astronomical situation at Izapa, the Creation Myth iconography, and the ballgame symbolism, resulted in my so-called "2012 alignment theory," as presented in my 1998 book. This theory involves a solstice-sun alignment to the dark rift/Crossroads in the Milky Way --- a result of the precession of the equinoxes. That we are now finding that 4 of the 13 dates on our Tortuguero 2012 monument involve the solar alignment with the dark rift/Crossroads is not so much an indication that I was magically prescient, but that I had deduced enough from the pre-hieroglyhic evidence at Izapa to get the outlines of the reconstruction correct. I'd really like your opinion on whether you think that the 4 out of 13 dates is a coincidence. Also consider the lunar eclipse date at the dark rift/Crossroads and the Jupiter alignment with that same position on the hotun date of 667, which is linked via many astronumerological numbers (including 819) back to the 2012 date. These are core facts I noted in my paper, which I believe should be a focus of a dialogue.

You wrote: "On the bottom of page 5 you mention Sven Gronemeyer and Michael Grofe for ideas about the birth date of Bahlam Ajaw. While I applaud giving credit to young, publishing scholars, the fact is that these guys are not the first to make these observations. I learned about this from Peter Mathews when I was in the University of Calgary back in the mid-1990s and Grube, Martin and Zender have this in the 2002 Texas Notebook (page II-17)."

I think your statement here about "the ideas about the birth date of Bahlam Ajaw" requires clarification. A compelling linchpin for the argument I present is the astronomical situation that was occurring around Bahlam Ajaw's reconstructed birthday, as a parallel to the astronomy on the 2012 date. In my experience, it was Michael Grofe who first identified this during our discussions of the TRT dates in February of 2009. So, are you claiming that Grube, Martin, Zender, and/or Mathews made this astronomical

observation in the mid-1990s and/or in 2002? That would be astonishing. If so, one wonders why it wasn't offered up long ago --- can you provide a scan or a quote? I'd love to incorporate that. Did they also observe, as I believe Erik Boot did, that the 20 missing glyphs in the left flange provide the correct amount of space for an Initial and Supplementary Series for Bahlam Ajaw's birth?

I think you must be referring to mere reconstruction of the birthday using the surviving Distance Number in the main body of the text. In any case, I can't be aware of everything that goes on in private conversations you've had or at various conferences. This is a minor point. I referenced the birthdate reconstruction through Sven's thorough study of the site, augmented by Grofe's careful examination of the eroded distance number.

You note my astronomical focus in looking at the dates and then wonder, "why assume these dates have any astronomical pattern to begin with? Other than because you assume there has to be one?"

I didn't assume there MUST be astronomical patterns. But since we find astronomical patterns and references in the inscriptions of many other texts from Copan, Palenque, Quirigua, and elsewhere, it's reasonable to suspect that there may be astronomy happening in the Tortuguero inscription. Especially when a royal narrative is involved, we find many links between the king and distant rituals in mythic as well as historic time, and these are often embedded with astronomical repetitions --- involving Venus for example at Copan. Or, demonstrably, sidereal positions of the sun. And yes, as you point out, patterns can include calendrical parallels, such as haab positions or 260-day positions. Why should astronomy be left out of the examination? Why is your default position in the negative, when astronomy is already known to be an important aspect of many rituals and narratives?

You asked: "On Monument 6, for example, which are the glyphs that make us suspect the scribes here were concerned with astronomy? I don't see many, and I doubt you do either. In fact, the only one you mention is the AHIIN glyph at F10."

Here we find your own assumption that astronomy must be explicitly described in the textual statement --- and only in hieroglyphic statements. Iconography is not, in your view, a statement. Astronomical orientation of a mural façade or a stela is not, in your mind, a viable statement or acceptable piece of "evidence" for understanding Maya intent or narrative content. Is it possible that the Maya would not necessarily need, or want, to underscore astronomical content that was already alluded to by the dates or orientations themselves? What about the tendency of Maya ceremonialists or folklorists to mask levels of meaning through allusion? In the narrative of these inscriptions, such an explicit spelling-it-all-out practice, as you would prefer, may have simply seemed redundant to Maya scribes. We can't pretend to know or understand all of the complex motivations of Maya narrative structures, the many subtexts and nuances of glyphic forms, puns, rhymes, inflections, and iconographic insinuations. In any case, mine is a straightforward approach to map out the astronomy of the 13 dates and look at what we find. This is the scientific method --- collect your data-set and organize what you find into categories that

the data represents. Are there repeating astronomical themes and patterns? Yes. Beyond chance? Yes. Since Tortuguero Monument 6 has been known for so long, I'm wondering why this wasn't done long ago. If it was, I'd love to see previous work done, as I'm all for collaborating on reconstructing these interesting areas of astronomy within narrative.

You wrote: "Explicit mentions of astronomical events are exceedingly rare." Yes, this is curious. Don't you think it's unusual that a civilization so universally lauded for their astronomical achievements and abilities would have such a dearth of EXPLICIT mentions of astronomical events? I think your statement indicates that your sights are set too literally, that you are assuming that the Maya scribes would need or want to make such explicit statements very frequently, as if they were writing scientific texts, and you are missing other contextual sources of data and evidence. I submit that the dates themselves provide astronomical "statements" --- it's like a subtext that must me delved into to see the full meaning of the inscription. I think we need epigraphers, astronomers, and poets working on these texts. A grammarian, for example, is concerned only with the surface and literal reading, with correct punctuation and syntax --- but we need something more of a literary stylist sensitive to nuances and multiple references. Astronomy is a manageable resource for fuller context and fuller readings. As an example, please read the fuller reading of Quirigua Zoomorph B that I described in my post to Robert Sitler, above.

You wrote: "My point is that there is almost no reason whatsoever to think that the dates of Tortuguero Monument 6 are patterned astronomically." Stan, this is a very sweeping statement, and must be qualified. I wouldn't say, and do not say, that astronomy is the only factor involved in the choice and placement of the 13 dates on TRT Mon 6. That some kind of intentional structuring of the dates is going on is evident in my Diagram 9. This diagram is not an imaginary construct; it is also not the only way that the structural patterning of the dates can be representation --- the point was to illustrate the symmetry of the two hotun dates and the two dates generated with negative distance numbers. With this diagram, we see that there is more intention going on in the inscription than can be seen literally. It's the perfect example of hidden content --- kind of neat now that I think of it, how it replicates the T-shape of the monument itself. There is no glyphic statement that reads "we the Maya have embedded a symmetrical pattern into this inscription." Yet it is there. It's not far-fetched to suspect that there are things going on in these texts that we haven't quite figured out yet, is it? And then, if we examine the texts carefully, that we can discover them?

As mentioned, you are looking for an explicit hieroglyphic statement --- a problematic approach considering how slippery epigraphic decipherment of meaning is (not the phonetic pronunciation, which is the area of greatest advance in epigraphy, but the meanings are often hard to resolve and often slide between several sets of possibilities).

When you say "there is almost no reason whatsoever to think that the dates of Tortuguero Monument 6 are patterned astronomically" you ignore several reasons that my paper presents:

1. The structural and astronomical parallel between Bahlam Ajaw's birthday and the 2012 date. These are facts.
2. The theme of this astronomical alignment image is repeated on many of the other dates on the monument --- coincidence?
3. The consistent presence, in these alignments, of mythologically potent astronomical features (already known from many Creation narratives such as at Palenque and Quirigua).
4. The astronumerology evident in many date relations, indicating theoretical computations of the planetary number canon, not least of which is the 819 x 600 interval between the 667 AD hotun date and the 2012 date --- thus a concern with astronomy.

Are you saying these aren't reasons, or just not reasons that you agree with? Or that these are the reasons that are "almost no reason?" They seem a little more weighty than that. Plus, they are all facts.

You offered a disagreement as to the spelling of Ahkal / Ahkul K'uk. In my original piece I had it as Ahkul K'uk, but then in my minor editing of this piece I changed it to Ahkal K'uk because that's what Gronemeyer and MacLeod report in their Wayeb #34 study (page 59). Boy, you epigraphers keep my head spinning!

Regarding the POSSIBLE identity of this Ahkal K'uk with the Ahkal Mo' Naab of Palenque, you wrote "I do not see why we should see these two as the same person." Well, we don't have to, but other scholars have noted the possibility, supported by the fact that the 510 AD date of the pibna:h rite coincides with the rule of Ahkal Mo' Naab at nearby Palenque (501 AD to 524 AD). Taking this possibility as a hypothetical, when I looked at the astronomical events associated with this king's accession and death date I found an interesting parallel to the astronomical theme found throughout Bahlam Ajaw's biographical monument, as I described in my paper. These are contextual circumstances that add weight to the possibility that the two Ahka[u]l's are one and the same. Ahkal Mo' Naab was an oft-cited foundational ruler at Palenque; it's possible that he had a similar revered status at nearby Tortuguero, and maybe was even recognized as an early king of the Tortuguero polity, which shares a placename with Palenque.

Also, you register your preference that the pibna:h of Ahkal K'uk does not have a conceptual connection with the sweat bath. Gronemeyer & MacLeod write: "On 9.3.16.1.11 … the text specifies the positioning or placing of something in a dedication ritual for the "steambath" (pibna:h) or temple sanctuary (Houston 1996 : 133), of a person named Ahkal K'uk …" (2010:7). Here, both "steambath" and "temple sanctuary" are referenced. It seems that the multiple meanings inherent in many epigraphic decipherments can result in epigraphers being divided, if they feel compelled to decide on one specific interpretation. I feel this narrows the scope and doesn't serve understanding the full meaning of the text. Since there is some ambiguity on this point, it is more open minded to keep the possibilities stated.

As for Ahkal K'uk possibly not being the agent of the placing of the object in the dedication ritual, I see your point. The steambath / sanctuary is his, but he might not be

present. However, my point remains because he is named in the text and therefore gets evoked in the context of the narrative, my point being that he was an important ancestor or lineage founder in the eyes of Bahlam Ajaw. Here, again, we circle back to my proposal as to the reason why this might be so, which --- if the two Ahkals are one and the same --- could involve the theme of the dark rift alignments that I believe Bahlam Ajaw reiterated in his rhetoric of power. It must be at least a little bit interesting that Ahkal Mo' Naab died in 524 AD when the sun was aligned with the dark rift/Crossroads, the same alignment that was happening on the date of the "pibna:h" rite as well as at Bahlam Ajaw's birth. And, of course, on 13.0.0.0.0 in 2012. I'm not claiming that this presentation of striking parallels provides bullet-proof evidence, and skeptics can always exploit ever-present gray areas or the lack of absolute 100% proof. Reconstructions of narrative intention do not rest on mathematical equations.

You wrote: "That is, the Maya were obsessed with the patterns not of the stars so much as of their own calendar." Not sure why you need to take a mutually exclusive position here. It's clear that they were integrating astronomical, calendrical, and astronumerological considerations --- all of it. In your repeated skepticism of references to astronomy, I sense a bias. So far, you haven't actually addressed or mentioned the main point of my paper --- the astronomical parallel between Bahlam Ajaw's birthday and 2012, and the reiteration of this theme on other dates in the text. The fact of this, as mentioned, is not my own discovery, as Michael Grofe noted this and his work on sidereal positioning at long intervals supports that these types of alignments were utilized by the Maya. The implications of it for understanding Bahlam Ajaw's strategic motivations and construction of his biographical text, asserting his special connection with 2012 and Bolon Yokte (as can be read in Gronemeyer & MacLeod's Wayeb 34 essay), are worth exploring. A useful explanatory framework is the astronomy (in addition to calendrical and astronumerological considerations).

You wrote: "…nor do I think it confirms any Classic Maya interest in 2012 as the end date of their calendar." Hooray! We agree! I do not believe that 2012 is the end of the calendar. Never have. I think it could be conceptually the end of a 13-baktun cycle, perhaps only in certain contexts. It's certainly the end of the 13th Baktun. But not the "end of the calendar." The loose terminology around this in the media and the marketplace is certainly frustrating.

Your comments on the use of the 4 Ajaw parallel of July 23, 667 AD to 4 Ajaw in 2012 is interesting. But packaged with this parallel (a 260 commensuration to 2012) is also the other astronumerological commensurations I pointed out in my paper --- 360, 364, 378, and 819. How do these factor into your suggestion? There are also other haab and tzolkin parallels that are worth exploring, one of which brings in a Venus cycle commensuration and a larger context of the other surviving monument from Tortuguero, including Monuments 1 and 8. Bahlam Ajaw's birthday itself provides a near calendrical nexus with 3 Kankin. This might be a statement that people will jump all over, but: Given the Maya penchant for obscure manipulations and noting mathematical parallels and calendrical commensurations, the most reasonable default position is probably that anything we might stumble across, the Maya probably did too. Someone at Palenque, for

example, figured out that clever connection between Pakal's birth, accession, and the 20th Baktun as a near-80th Calendar Round anniversary. That's a lot more convoluted than Bahlam Ajaw's birth-relation to 2012 (which, by the way, is 1400 tropical years plus approximately 20 days).

You wrote of the presence of the 20th Baktun period-ending at Palenque, and compare it to the presence of the 13th Baktun period ending at Tortuguero and suggest this provides proof that "the calendar doesn't stop in 2012." Van Stone does this too. This is a misleading framework. I'm not saying that the Tortuguero inscription states that 2012 is the end of the calendar. Who is? I don't know. In fact, I allow for the 20th Baktun ending, the 10th Baktun ending, and the 13th Baktun ending in 2012 (and the previous one in 3114 BC) to ALL be viable connection points with Creation imagery and calendrical power points that were exploited by various Maya kings in their rhetoric of power --- that's a key idea in my treatment of this material, which may not be clearly enunciated in this paper but which I am currently working on for another publication. It's not about the calendar "ending" or the world ending, but I do think that these calendrical power stations --- particularly the 13th Baktun endings in 2012 AD and 3114 BC (despite what Pakal's crew claimed for the 20th baktun ending) --- were of great interest to the Maya. Obviously, we see them being used with great effect at Quirigua and at Tortuguero, and elsewhere. But 20? Palenque, only. Nevertheless, it had meaning to Pakal's son and his rhetoricians. The challenge was for the kings to show how they were connected to a power date (whichever one they chose), with a clear connotation of period-ending rites and the sacrifices and renewal that happens in the Creation myth and at period endings. Bolon Yokte's presence in 2012 supports this notion.

I'd like you to read your following statement carefully: "If the Maya of Tortuguero thought that there were only 13 baktuns in a "Great Cycle" we should have seen a reference to the end of 1 pictun here. That we only see "end of 13 baktuns" means the Tortuguero scribes, like those of Palenque, saw 20 baktuns in a pictun. Yet another strike against 2012."

First of all, you seem to be stating that the Maya would equate the completion of 13 baktuns with 1 pik. There's no evidence anywhere that they did or would. And no, this is not a strike against 2012. It is a strike against the idea (an erroneous assumption to begin with) that all Maya people everywhere in all times always thought that the math of the Long Count must stop at 13 baktuns. Many critics of 2012 point to Pakal's son's clever use of the 20th baktun period ending to accentuate the status of his father. But so what? Pure propaganda politics, and not that surprising. In my open-minded recognition of what was actually going on among the Maya elite, in their employment of rhetorical strategies, I see the use of a 20th Baktun at Palenque NOT as a definitive statement that the 13th Baktun period-ending at Tortuguero is meaningless or an abherration from canonical usage, or that it must be "struck out," but that different Maya kings exploited great period endings in different ways --- but with the same motivation in mind. And that was, to accentuate their power. They were challenged with asserting or demonstrating their connection with their preferred big period-ending in the Long Count by highlighting their personal association with it. This could be via calendrical analogies and near-

commensurations, as with Pakal, or via astronomical and calendrical analogies, as with Bahlam Ajaw's use of the 2012 date. It's really not that radical a suggestion. What seems unacceptable to many critics is that the Maya at Tortuguero would have had to have been aware of the sun's positioning at the dark rift/Crossroads on 13.0.0.0.0 in 2012, such that the analogy with Bahlam Ajaw's birth astronomy could be consciously drawn. This involves an awareness of precession, evidence for which is being identified by scholars such as Barbara MacLeod and Michael Grofe. By the way, many of these critiques and questions were already addressed in a long email with Ed Barnhart in July.

You wrote: "I don't know of a single Long Count-style calendar from any culture that is predicated upon its "final date". Frankly, I don't know of any calendars that have "end dates."

Well, there are a lot of things in Maya intellectual achievements that have no precedent in other cultures. And again, that loose terminology --- 2012 is a period-ending date, perhaps a cycle-ending date in some perspectives, but not an "end" date that gives the connotation of a final end to time, the calendar, the world. (Your critique here does not apply to my position; why are you using it?)

Regarding the intention underlying the location of 13.0.0.0.0 on December 21, 2012. Well, the solstice placement of 13.0.0.0.0, according to the 584283, already suggests that some kind of intention is present in the Long Count's configuration in real time. Is that forward projection in the tropical year of 365.242 days permissiable, but a precessional calculation is not? Or must the fact of the alignment of the sun with the dark rift/Crossroads in era-2012 be a coincidence? To qualify my response to your comment, I lately believe that different precessional alignments projected back to 3114 BC and projected forward to 2012 AD were both at work in the construction of the Long Count. This is for another topic.

If Bahlam Ajaw, as my argument and the astronomical data and previous findings of Grofe indicates, was rhetorically asserting his connection to the 2012 date because of the astronomical parallel between his birthdate and the 2012 date, then the Tortuguero elite were aware that the sun would be aligning with the dark rift/Crossroads in 2012. And this is, it must be said, a fact of astronomy. Now, was this just a happenstiantial discovery that was exploited by Bahlam Ajaw? Or was it part of an older knowledge that was laying about? I believe the latter scenario is more likely, and therefore we are faced with grappling with good precessional knowledge being known to the pre-Classic people who devised the Long Count, possibly as late as the 1st-century BC. That would make them on par with Greek astronomy at the same time. Is that really impossible to swallow? The reason I frame it this way is because my work is rejected not on grounds of a lack of evidence or good argument, but because there is deep prejudice against accepting the implications—the level of astronomical achievement required (despite the mounting evidence for it). And the implications have nothing to do with an argument for doomsday, space aliens, or astronomical knowledge that was impossible to achieve. Izapan archaeoastronomy, Tortuguero date astronomy, the 3-11 pik formula, sidereal positions of the sun and other bodies evident in the Dresden Codex and elsewhere, shared

rhetorical strategies employed by Maya kings using 10th, 13th, and 20th Baktun period endings at Quirigua, Copan, Palenque, and Tortuguero---when all the evidence from these different areas are integrated, the picture is clear.

Thank you, Stan, for your well considered questions and critique. I appreciate your taking the time to respond. I do not feel that the specific contexts and arguments you brought up present problems for the arguments I've laid out. You've helped me to see a few areas that need better contextualizing and more cautious or clear phrasing. I reiterated the primary points of my argument above, which unfortunately you did not specficially address, and I clarified what appear to be a few misconceptions about my assumptions and position on how the Maya thought about 2012. It is, overall, great that we are beginning to have a conversation about how the Maya thought about 2012, based on Tortuguero Monument 6. Clearly, they did think something about it, and that something --- as with the use of other big period-endings elsewhere --- utilizes rather profound ideation involving Maya kingship, calendrics, the rhetoric of power, and Creation myth deities. Best wishes,

John Major Jenkins

From Stanley Paul Guenter
Hello Miguel,

Thank you for your comments. Now, I can tell by your last paragraph that my post has struck a nerve with you, and I am sorry for that. I do want you to know that my criticism of John's ideas are not based upon any kind of academic elitism. I work as a tour guide in the Maya area and I cannot tell you how much I have learned from the "amateurs" who accompany me on my trips. I do not believe a degree lends any automatic authority to one's ideas. On the 2012 subject, I think a lot of my academic colleagues are dead wrong on a lot of issues. I actually agree with John on a preference for the GMT 585283 [sic, 584285] correlation, and don't see much going for the 58525 [sic, 584285] variant, or other proposed correlations. I think it is sad that too many of my colleagues cavalierly dismiss his ideas as New Age ravings of the fringe. I have to admit that I don't think John does himself much help on this matter by attending New Age conferences, where he stands shoulder to shoulder with individuals we all admit are indeed on the pseudoscientific fringe of Maya studies. But I think John has done a lot of interesting and provocative work, and while I disagree with his ideas I think we need to have an open discussion of these matters. And the less polemics we have in the matter, the better. Thus I will do my best to speak to you and John on an open, even level, and will not talk down to you and I hope you will not automatically assume I am.

Now, on to your specific points. Regarding the Postclassic tradition of dating katuns to their end date, you are indeed correct on this. However, these katuns, while based upon part of the old Long Count system, are not the Long Count system in and of themselves. These katuns of the Postclassic period are cyclical time, and thus all the confusion of chronology one finds in the books of Chilam Balam. The interest in the end date of

katuns is no different than the emphasis on the end date of the sequence of tzolkin day names, Ahau, and is comparable to how the Jewish "week" emphasizes Saturday as the day of rest. The Long Count calendar is a different ball of wax, however. What reason do we have to believe that the ancient Maya found the end date of a Great Cycle to be more important than the beginning date? We have more than a dozen references to the 3114 BC 4 Ahau 8 Cumku date of 13.0.0.0.0, while we have only one reference to the 2012 4 Ahau 3 Kankin date of 13.0.0.0.0. That is damning evidence against those who emphasize 2012, I believe. Now, did the ancient Maya believe that the 4 Ahau 8 Cumku date was the end of a previous cycle. In later years of the Classic period, yes. (More on this below.) However, note that for the Maya the end of one cycle is the beginning of the next. We see this in both the way the turnover of haab months works, as well as the description Landa gives us for the gods of the year being rotated in and out of shrines. The "creation" events on 4 Ahau 8 Cumku clearly pertain to the following period of time, and do not so much cap off the previous age.

One of the biggest problems, I think, is that the Maya apparently modified the Long Count calendar during the Classic period. Previous references to 4 Ahau 8 Cumku don't mention this as the end of the 13th baktun, and then there is a sudden spate of these in the 7th century. As Mark Van Stone points out in his book on 2012, the "full Long Counts", which have higher units than the baktun, are not in sync around the Maya world. What they hold in common is only the basic Long Count, and that is probably what was invented by the epi-Olmec in the Late Preclassic. At Coba we know the extra cycles add up to 20 units, each set at 13. This includes the baktun, and suggests that the scribes expanding the Long Count did so to include these two sacred numbers and at the same time make the Long Count only one part of a grander series of cycles, thus providing earlier and later "eras" to the one we are living in.

Now, you state that either the ancient Maya or I have a preference for 20 over 13. The fact is that the Long Count is essentially a base 20 system, with only the second level modified to 18 in order to vaguely approximate a solar year. Every other level in the Long Count is based upon 20; that is how the Maya counting system works, of course, and the Long Count is merely a count of the days elapsed since 4 Ahau 8 Cumku. That 4 Ahau 8 Cumku is set at 13.0.0.0.0, I argue, is based upon a later modification to the idea of the Long Count, and I have already pointed out why I think Tortuguero Monument 6 mentions the 2012 version of 13.0.0.0.0. The 13 is an important level in the Long Count, for example as a Period Ending (eg// 9.12.13.0.0 or 9.15.13.0.0), and we see this in the Temple of the Inscriptions at Palenque. I argue this is because the 13th tun ending in a katun replicates the Ahau coefficient of the previous katun ending. Thus 9.12.0.0.0 and 9.12.13.0.0 have the same Ahau date, 10 Ahau in this case, and that kind of chronomancy was very important to the Maya. 13.0.0.0.0 is 4 Ahau, whether in 3114 BC or in 2012, and that undoubtedly would have made this baktun ending special for the ancient Maya. But not inordinately so, and as I've pointed out, it is curious for your position that the ancient Maya made numerous references to 4 Ahau 8 Cumku but only one to 4 Ahau 3 Kankin.

Finally, you ask about my beliefs of the importance of astronomy to the ancient Maya.

Yes, the Maya did have an interest in astronomy, as most ancient peoples did, but I think this interest has been very greatly exaggerated. If astronomy was so all consuming a passion of their society, it is odd that now that we can decipher their texts, we find that almost none of them explicitly reference astronomy. There are numerous mistakes in astronomical calculations and from the codices we can see that the ancient Maya were clearly fudging the astronomy to fit their calendar. Once again, this emphasizes chronomancy over astronomy as a major interest of their culture.

What about the observatories, you ask. Indeed, my position would be to ask the question; what observatories? There are precious few of these, and those that have been proposed as observatories make rather bizarre viewing stations. The Observatorio at Chichen Itza is the only one I have seen a major argument been made for in terms of astronomical observations, and this proposed system of viewing from opposite sides of narrow windows strikes me as bizarre and horribly inefficient. I have noticed in the Mayapan round temple, a copy of the Chichen one, there are four doorways and four niches, each set between two of the doorways. This gives us eight openings, and I find it interesting that these fit the cardinal directions and the intercardinal directions, that in Rio Azul Tomb 12 were clearly of interest to the ancient Maya. As Juan Pedro Laporte pointed out for E-Group structures, they may be astronomical commemoration complexes, but they don't work well as actually observatories.

As for the codices, these indeed do contain a lot of astronomy, but again, the astronomical observations are subordinated to chronomantic concerns. And these kinds of references, with clear glyphs mentioning the sun, moon, stars and eclipses, are notable by their general absence from Classic period texts. The ancient Maya were interested in astronomy, but not every date in Maya historical texts is tied to astronomy. Arguing that Bahlam Ajaw's death date may have been fudged to fit astronomical patterns, in the absence of any reference to astronomy in this text, strikes me of having the theoretical cart before the horse of facts.

All best,
Stan

Stanley Paul Guenter
Carlos,

the tzolkin is a 260 day calendar based upon the combination of cycles of 13 and 20. I do not know of any astronomical cycles that would match this. The haab is a calendar of 365 days that is obviously based upon a solar year. No other celestial cycles or patterns seem to be implicated in these calendars as far as I can tell.

John, thanks for the reply. Given its length, I may take a while to respond. All best,

Stan

Miguel Sague
Stan,
Your argument concerning the supposed "astronmical observatories" admitedly has a lot of merit but does not by itself preclude the possibility and plausibility of naked-eye observation using simple geographical landmarks and impermanent tools such as wooden gnomons and the like to make accurate astronomical observations. And is it impossible to give a people credit for extraordinary astronomical prowess without them getting it all exactly right? So sometimes they fudged! After all we base a lot of current astronomy on the observations of ancient Mesopotamian and Greek astronomers and later Medieval astronomers who thought the sun revolved around the Earth. They obviously did not get it all exactly right either but we respect their accomplishments.

Your comments regarding the 13.0.0.0.0 Long Count assignment to the date 4 Ahau--- 8 Kumku is a surprising one to me. I had no idea that there was impirical evidence that this association between LC and Tzolkin had not always existed, that it was a latter-day concoction not evident in earlier references to Creation Day. I thank you for informing me on the possibility that this associtation may not have been present in the Pre-Classic.

However there is something that still can not be ignored. I know that the Maya numbering system is based on the numeral 20. I often stress this fact to the people I do workshops for that this is not so inconceivable to a culture such as ours which functions on the decimal system, it having been the basis of Lincoln's thinking when he began his Gettysburg Address with the words "Four Score and Seven Years Ago". And yet the basis of the magic and spiritual significance of the most ancient of Maya calendar elements, the Tzolkin, is a permutation between the number 13 and the number 20. So the number 13 is just as important in ancient Mesoamerican numerology as the number 20 (from the very beginning), with as ancient a pedigree as the vigesimal system, perhaps more ancient than all of the other numerals that surface later as important in their culture. Why is it impossible to conceive that the ancient Mayas (even as far back as 200 BC) may have seen the need to establish this same numerical permutation (20 X 13) in the mechanics of their creation mythology.

The 13.0.0.0.0 assignation to the date 4 Ahau 8 Kumku obviously yields a numerical permutation that mirrors the Tzolkin, thirteen periods of twenty katuns each. I believe, and so do a lot of people who subscribe to the 2012 theory that the Long Count, as expressed in the 13 baktun cycle is a kind of macroscopic representation of the Tzolkin. The much-maligned Arguelles, whom everybody loves to dump on, actually makes a pretty elegant representation of the symetry that exists in the comparison between a thirteen-baktun expression of the LC and a Tzolkin, presenting 100-year periods in the LC as the counterpart to the individual days in the Tzolkin, yeilding 260 LC "tun-centuries" which compare with the 260 days of the Sacred Almanac.
Miguel

Carlos Barrera Atuesta

Stanley,

Please take your time to check the following astronomical applications for the Tzolkin Calendar that I proposed some months ago:

First time that Mercury reaches its Greatest Western Elongation (ideally 19 to 21 days after Inferior Conjunction) + 2 Tzolkin Calendars = First day(s) of visibility of Mercury after Superior Conjunction

First days of visibility of Mercury after Superior Conjunction + 1 Tzolkin Calendar = First stationary position of Mercury

Last days of Greatest Eastern Elongation of Mercury (ideally 19 to 21 days before Inferior Conjunction) - 2 Tzolkin Calendars = Last day(s) of visibility of Mercury before Superior Conjunction

Last days of visibility of Mercury before Superior Conjunction - 1 Tzolkin Calendar = Second stationary position of Mercury

ELAST/Inferior Conjunction/MFIRST of Venus + 2 Tzolkin Calendars = Greatest Eastern Elongation of Venus

ELAST/Inferior Conjunction/MFIRST of Venus - 2 Tzolkin Calendars = Greatest Western Elongation of Venus

First Stationary position of Jupiter + 1 Tzolkin Calendar = Superior Conjunction of Jupiter

Superior Conjunction of Jupiter + 1 Tzolkin Calendar = second stationary position of Jupiter

First Stationary position of Saturn + 1 Tzolkin Calendar = Superior Conjunction of Saturn

Superior Conjunction of Saturn + 1 Tzolkin Calendar = second stationary position of Saturn

First Stationary position of Jupiter + 2 Tzolkin Calendars = second stationary position of Jupiter

First Stationary position of Saturn + 2 Tzolkin Calendar = second stationary position of Saturn

Now, I'm going to subtract 7 Tzolkin Calendars (5 Computing Years) from the date 9.11.15.0.0, 4 Ajaw, so that you can identify some interesting astronomical patterns:

9.11.15.0.0, 4 Ajaw = Base Date:
Near...
First day(s) of visibility of Mercury after Superior Conjunction; second stationary position of Jupiter; Saturn in Opposition.
[Neptune is aligned with the DR]
About one lunation after this date, The Sun will be aligned with the lunar node

9.11.15.0.0 - 1 Tzolkin Calendar = 9.11.14.5.0, 4 Ajaw:
Near...
First stationary position of Mars; first day of invisibility of Jupiter before Superior Conjuction.
[Neptune is aligned with the DR]
About one synodic cycle of Mercury after this date, The Sun will be aligned with the lunar node

9.11.15.0.0 - 2 Tzolkin Calendars = 9.11.13.10.0, 4 Ajaw:
Near...
Greatest Western Elongation of Mercury; Greatest Eastern Elongation of Venus; first stationary position of Jupiter.
[Neptune is aligned with the DR]
About one lunation after this date, The Sun will be aligned with the lunar node.
About one synodic cycle of Saturn after this date, it will be the EFIRST of Venus.

9.11.15.0.0 - 3 Tzolkin Calendars = 9.11.12.15.0, 4 Ajaw:
Near...
First stationary position of Mercury; MLAST of Venus; second stationary position of Jupiter; Saturn in Opposition; Full Moon
[Neptune is aligned with the DR]
About one synodic cycle of Mercury after this date, The Sun will be aligned with the lunar node.
About one synodic cycle of Venus after this date, Saturn will be in Superior Conjunction.
About one synodic cycle of Jupiter after this date, Saturn will be in Opposition.

9.11.15.0.0 - 4 Tzolkin Calendars = 9.11.12.2.0, 4 Ajaw:
Near...
Autumn Equinox; Mercury projection of the starting point of the Master Structure of the Venus Table of the Dresden Codex [9.5.10.8.0 + 378 cycles of Mercury]; MFIRST of Venus; first stationary position of Mars; Superior Conjunction of Jupiter; second stationary position of Saturn.
[Neptune, and perhaps Saturn, are aligned with the DR]
About one lunation after this date, The Sun will be aligned with the lunar node.
About one synodic cycle of Jupiter before this date, Mars will be in Superior Conjunction.

9.11.15.0.0 - 5 Tzolkin Calendars = 9.11.11.7.0, 4 Ajaw:
Near...

EFIRST of Venus; first stationary position of Jupiter.
[Neptune], and perhaps Saturn and Mars, are aligned with the DR
About one synodic cycle of Mercury after this date, The Sun will be aligned with the lunar node.
About one synodic cycle of Mercury after this date, Jupiter will be at its second stationary position.

9.11.15.0.0 - 6 Tzolkin Calendars = 9.11.10.12.0, 4 Ajaw:
Near...
Greatest Western Elongation of Mercury; Greatest Western Elongation of Venus; second stationary position of Jupiter; first stationary position of Saturn.
Saturn is aligned with the dark rift.
About one synodical cycle of Saturn after this date, Jupiter will be at its second stationary position.
About one synodical cycle of Mercury after this date, Jupiter will be in Superior Conjunction.
About one lunation after this date, The Sun will be aligned with the lunar node.

9.11.15.0.0 - 7 Tzolkin Calendars = 9.11.9.17.0, 4 Ajaw:
Near...
First stationary position of Mars; second stationary position of Saturn.
About one synodical cycle of Saturn after this date, Jupiter will be in Superior Conjunction.
About one synodic cycle of Mercury after this date, The Sun will be aligned with the lunar node.

So maybe you should consider reviewing your position on this issue. Carlos

From the Maya Exploration Center
Carlos, this was a bit too long a reply for a comment that strayed from the topic of John's paper. Again, we can set up another discussion of the Tzolk'in's astronomical significance, but please help us stay on track on this thread.

As I look at this discussion, I begin to wonder if Jupiter was not the hidden focus here. I agree with Stan's caution that we should not automatically assume that a text has an astronomical pattern to discover and I am also troubled by the question of why texts don't speak to astronomy more directly. However, I also believe that Maya scribes, for whatever reasons, embedded hidden astronomically based numerology in distance numbers.

Its interesting that the even multiples of 819 and 478 have come up here, and also interesting that Jupiter was at stationary retrograde positions in a few dates. Given that a young Kan Balam could have been developing the 819 cycle and watching Jupiter at this same time in Palenque, and that Tortuguero's emblem glyph connects it so closely to Palenque, its possible that Balam Ahaw was focused on the same subjects. As Kan Balam

was running 819 numerology into the past to creation, perhaps Balam Ahaw was running it into the future 13 bak'tun date.

Thoughts?

From Carlos Barrera Atuesta
Sorry about the length of my previous post.

In my opinion, there was as much implicit information in the dates as there was explicit information in the texts that a good Maya "reader" was able to figure out.

Going a little further, I would say that it was so important one date itself, as it was its immediate surroundings and distant relationships with other relevant dates.
Carlos

Stanley Paul Guenter
John,

Thanks for the response. As I have not yet had a chance to read Tedlock's book, I'll reserve further comment on that subject. On the question of Gronemeyer and Grofe cited at the bottom of page 5, my comment on Grube, Martin and Zender having already mentioned this was due to your sentence "Sven Gronemeyer first suggested the Distance Number preceding this date can be subtracted from the date to reach an earlier date that would have been recorded in the missing left flange of the monument – his birth date". That information, at least, was known and published earlier is all that I meant to point out. This was published in the 2002 Texas Maya Meetings notebook. This is the most important glyph conference there is, and anyone writing about ancient Maya hieroglyphs should be certain to get ahold of these publications. Admittedly they are not the easiest to purchase, if you don't attend the conference, but if you want to be up to date on epigraphy, they are crucial, and no, this does not qualify as mere "private conversation". I agree this is not crucial to your arguments, but I do think it helps your position to be citing earlier work.

Now, you admonish me for referring to "you and other 2012ers" and "you guys". I am sorry if you find this offensive, but frankly, I don't know what else to call "you guys" who emphasize 2012. I agree there are many different ideas about 2012, and that your position is quite different from, for example, Daniel Pinchbeck and Joseph E. Lawrence and other 2012ers. However, I do admit I find it somewhat curious that while you protest your being lumped in with these other guys you appear at New Age and 2012 conferences shoulder-to-shoulder with them, all trying to present a common front on the 2012 subject for whatever audience you're in front of.

Now, you mention astronomical patterns in the texts of "Copan, Palenque, Quirigua and elsewhere". Frankly, I am skeptical but am willing to be convinced. What astronomical patterns that parallel what you are proposing for Tortuguero Monument 6 do you think

are most compelling? Why my "default position [is] in the negative" regarding astronomy is simply because as a scientist, the null hypothesis we should be testing against is, frankly, null. Without firm evidence, we are not in the right to make the claim the Maya were encoding astronomical patterns. They may have been, but without firm evidence, we cannot make that a scientifically supported position. Why I want to see explicit reference to astronomy in the hieroglyphs is because without that the patterns may just be in our own heads. Especially when the astronomical patterns can be almost anything under the sun or night sky(literally), these could easily be coincidental and not intentionally patterned by the ancient scribes.

You state that "I submit that the dates themselves provide astronomical "statements"". I find that to be a very dangerous position. Now, I will be the first to claim that to truly understand ancient Maya inscriptions we need to read between the lines, or double columns if you will, in order to understand what message the scribe was trying to get across, this involves looking at what each individual dated event in a text is talking about, and then considering them as a whole. The events themselves are at least explicit in the text. What you are proposing is something completely different; that the message not only has to be read between the lines, but that there is no reference in any of these individual events to their actual significance. This does not strike me as convincing and without any basis. It reminds me of the Mormon claim that the Book of Abraham that Joseph Smith translated is indeed just a common late Book of the Dead, but that there was a hidden, 2nd message, encoded (somehow) in the text, which is what Joseph Smith actually translated. The simpler hypothesis is that Joseph Smith's "translation" was something he invented and was only in his own mind. Without some solid evidence, such as explicit hieroglyphic references to astronomy in these texts, why should we assume there is a completely hidden message here? Occam's Razor doesn't support your arguments.

Now, one way you could get around this is to find a pattern that was super strong. However, the patterns I've seen proposed don't come close. Your analysis of Mt. 6 notes that only a few of the dates here come close to fitting a "dark rift" alignment. You count as "hits" in this pattern either the sun, or Jupiter, or a lunar eclipse, and even there give yourself a good amount of latitude in the dates and alignments (the lunar eclipse falling three days before Bahlam Ajaw's first victory). Sorry, but without explicit hieroglyphs telling us that these are significant, this strikes me as you just looking for anything that aligns with the "dark rift". That's not scientific. Now, the fact that the sun was in the same position in the sky on Bahlam Ajaw's birth date and the 2012 date does strike me as interesting, and this may well have been intentional, in why the 2012 date was referred to on this monument. But we don't have any proof of this, and like so much in Maya epigraphy, cannot be confirmed. It is an interesting proposal, but I think we have to leave it at that.

So, as for your numbered "reasons", reason 1 is interesting but inconclusive. Numbers 2 and 3 I disagree with, or at least feel you have no solid evidence for. As for astronumerology, I think the popularity of this is still just a holdover from Thompson's era of "epigraphy". I obviously accept the 260 day pattern between these dates; this is

what has the 2012 date replicating the 4 Ahau date of the hotun ending, and what I think is most important in understanding the 2012 reference. The 360 day replication I do not think is significant; this is automatic with any two period ending dates. The 364 and 378 cycles I don't see as being significant, unless you have a specific, explicit reason for citing these. The 819 day pattern is interesting, but could well just be coincidence; neither date is provided with an 819 day count reference, which seriously weakens this argument I believe.

Now, regarding Ahkul K'uk' and Ahkul Mo' Nahb I, I simply don't buy that you've found any significant pattern here. You argue that Ahkul Mo' Nahb's death occurred on a Jupiter alignment with the Dark Rift while Bahlam Ajaw's birth fell on this same alignment, and that this may suggest that Ahkul K'uk' = Ahkul Mo' Nahb I of Palenque. That isn't going to impress many Mayanists, I can assure you. One alignment is a birth, the other a death, and no text at all at either Palenque or Tortuguero suggests any alignment with the Dark Rift, let alone specifically with Jupiter, was important. Nor is there any reason to believe that Ahkul K'uk' is Ahkul Mo' Nahb I. All you have is ungrounded speculation used to further yet other ungrounded speculations. What I want to see is something concrete that indicates your ideas have some basis. I see none of that.

Yes, you do sense a bias in my post; a bias for facts as opposed to speculation. I stand by my statement that the Maya were obsessed not so much of the patterns of stars as they were by patterns in their own calendar. The Dresden codex proves this point, as it has long been known that the cycles were fudged in order to have these cycles end on Ahau dates and the like. I'm not saying the Maya weren't interested in astronomy, but their astronomy was second to chronomancy.

I will respond to the second half of your reply in a separate message.
Stan

Gary C. Daniels
John:

You state: "I lately believe that different precessional alignments projected back to 3114 BC and projected forward to 2012 AD were both at work in the construction of the Long Count. This is for another topic."

I know this is off-the-current-topic but if you've developed this idea further elsewhere, could you post a link? Thanks.

From JMJ: Postscript. See link at: http://www.Alignment2012.com/SAA-MEC-2010.html

From Stanley Paul Guenter
John,

You argue that 2012 represents the end of a 13 baktun "Great Cycle" and that the 20

baktun cycle was not important to anyone but the scribes of Palenque. Now, here is the problem. There is no evidence for a 13 baktun "Great Cycle". None. The only reference to 2012 doesn't mention this as the end of a "Great Cycle", it is merely the end of 13 baktuns. You have no evidence of any 13 baktun Great Cycle, but we do have evidence from Palenque that there was a "Great Cycle" of 20 baktuns, forming a pictun. You are proposing a new "cycle", but have no evidence for it, other than by citing earlier epigraphers, who we know were wrong on a lot of things. My point is that the way the scribes of Tortuguero Monument 6 referred to 2012, as the ending of 13 baktuns, makes it clear that they didn't believe in a 13 baktun "Great Cycle", because in every other case the Maya refer to the end of the highest cycle to "turn over" on that Period Ending date. There are many references to the 10.0.0.0.0, 7 Ahau 18 Zip Period Ending in Maya texts and none of them refer to the end of the katun on that date. Rather, all refer to the end of 10 baktuns as that was the greatest cycle that ended on that date. The "Great Cycle" that is higher than the baktun, in all inscriptions that have higher units of time, is the pictun.

At Palenque we know it is formed of 20 baktuns. At Tikal, on Stela 10, we have a reference to a date with a very odd extended Long Count, with the pictun position at 19. So here again we have positive proof that a pictun is 20 baktuns. And, as I pointed out, Tortuguero Monument 6, with its reference to the end of 13 baktuns, makes it clear that the pictun here too was not thought of as ending at 13 baktuns, and that means that it must have been thought of as being formed of 20 baktuns, just as at nearby Palenque. Therefore, we have 3 sites where we can say that the pictun, the only "Great Cycle" we know the Maya were interested in above the baktun and below the calabtun, was based upon 20 baktuns. This fits with the basis of the Long Count calendar, on which all other cycles are based upon 20 (or the slight tweaking of the uinals to vaguely fit the solar year). There are no references to a 13 baktun "Great Cycle". None.

Now, you write that "What seems unacceptable to many critics is that the Maya at Tortuguero would have had to have been aware of the sun's positioning at the dark rift/Crossroads on 13.0.0.0.0 in 2012, such that the analogy with Bahlam Ajaw's birth astronomy could be consciously drawn." I don't think our problem, or at least mine, is that the Maya would have had to have been aware of precession here, but that there is no evidence that they were. Without some specific reference to astronomy here, and the fact that you have to stretch to get even a few "dark rift alignments", you don't have much of a scientific argument that there are astronomical patterns in the text of Monument 6. As I said above, there may be something to the pattern of the sun on the first and last dates of this text, but at present I have seen no evidence to progress this idea beyond that of an interesting coincidence.

As for cross-cultural examples of calendars, you argue that there are lots of things in Maya culture for which there are no precedents. Sorry, but in the absence of evidence for 2012 as having been an important station in the Maya calendar, let alone that the Long Count was invented with this specific date in mind, when your argument flies in the face of all other cultures, you've got a problem. No evidence in favor of your claim, and no precedent for it either. In every other case of Long Count-style calendars, the calendar was invented with a specific beginning point in mind, and the calendars just continue on

indefinitely. We've got the Jewish calendar, the Christian calendar, the Muslim calendar, the Greek Olympic calendar, the Roman calendar based upon Rome's foundation, the Hindu Shaka calendar, the Buddhist calendar … I could go on and on. All of these calendars count elapsed time, and all count it from a specific, intended beginning point, and not counting down to some future end date, or even towards some future astronomically important station. Your claim has no support, and no precedent, and for those reasons, I cannot accept it.

All best,
Stan

Stanley Paul Guenter
Miguel,

I have no doubt there were many great Maya astronomers, who did great work considering their primitive tools. That is not my point. I simply think that there is still too much emphasis placed on this, especially in interpreting hieroglyphic texts, when we can now read these texts and they contain almost no explicit references to astronomy at all. Regarding the relationship between the Long Count and the tzolkin, note that the latter is held in common throughout Mesoamerica. John and I are in agreement on using the 585283 correlation, which sees a lot of commonality of this 260 day calendar throughout Mesoamerica. However, only the Maya and the Isthmian, epi-Olmec had the Long Count calendar. The earliest evidence for the calendar, and the fact that it spread around Mesoamerica in the Preclassic period, at the same time as Olmec religious beliefs and iconography were spreading, make me suspect the Olmec invented the 260 day calendar. They gave this to all of Mesoamerica, but only a few peoples, many centuries later, adopted the Long Count calendar.

As for Maya numerology, you are indeed correct that both 20 and 13 were sacred numbers to the Maya. We know that the tzolkin is based upon a combination of these two. However, while "full Long Count dates" from Coba and Yaxchilan suggest a preference for placing these Long Count cycles at 13 on the day of creation, they all seem to be based upon cycles of twenty (other than the slightly tweaked uinal cycle), and not 13. I think it was the symmetry between 13 and 20 seen in the tzolkin that inspired the scribes of the Classic period to decide that the higher units of the Long Count were 20, but all set at 13.

The Maya were obviously aware of the symmetry between the Ahau coefficients of dates that fell 13 katuns apart, so that 9.12.0.0.0 and 9.12.13.0.0 were both 10 Ahau dates, for example. And this extends to dates 13 baktuns apart as well. This, I think, is the intention of the Tortuguero scribes in referring to 2012. However, there is no evidence the Maya saw any "Great Cycle" in 13 baktuns, just as there is no evidence for such in terms of a lesser great cycle of 13 katuns. The Long Count calendar does not end, nor end any major cycle on that date. It is merely one of 20 baktun stations since creation, leading up to 1 pictun in 4772. Cheers,
Stan

Stanley Paul Guenter
Carlos,

I'm afraid I don't quite get your point with all of your dates. You seem to want to emphasize all of these connections the 9.11.15.0.0 date has with astronomy, if you add or subtract 260 day periods. But all of your references are to astronomical events that are "near" or "about" this date. Without specifics, this doesn't sound very impressive, and without specific hieroglyphic references to these planets, why can't these simply be taken as coincidental? There are alignments going on all the time, if you aren't going to be very specific about what alignments you will count as "hits". If you have some specifics, do let me know. Unfortunately, I do not have time to go through your dates further at this time.
Stan

Carlos Barrera Atuesta
OK, Stan:

First of all a clarification:

Actually when I say "near" and "about" I'm talking about differences of less than one degree of angular distance, and less than one day.

Second:

I understand you do not have time, but at least you may want to check a couple of examples that illustrate the commensurability between the Tzolkin Calendar, Jupiter and Saturn, for example.

To avoid digress, I will suggest a date that is closely vinculated with the 819-day station of 9.10.11.3.10: the 819-day station of Pakal's birth (9.8.9.12.0), according to my essay on Bahlam Ahaw of Tortuguero and Pakal of Palenque.

Please check that Jupiter is located on its second stationary position and Saturn is located on its first stationary position when it is the date 9.8.9.12.0, by using the GMT correlation of your preference (584283 or 584285).

Now, please go back 2 Tzolkin Calendars until you reach the date 9.8.8.4.0, and please tell me if Jupiter is not exactly located on its first stationary position.

Finally, please go forward 2 Tzolkins Calendars from the date 9.8.9.12.0, until you reach the date 9.8.11.2.0, and please tell me if Saturn is not exactly located on its second stationary position.

That's all. All best,
Carlos

Stanley Paul Guenter
Carlos, unfortunately as I said I don't have time to get into a whole lot of discussions here that are not directly related to John's article. I still don't understand what your point is here. Jupiter and Saturn may well have been on stationary positions on Pakal's birthdate. Is this important or mere coincidence? Are you suggesting anyone fudged his birthdate to fit this astronomical pattern? I just don't see the significance of this observation of yours. And why should we go back 520 days to see Jupiter at its first stationary position? Is this significant? If so, why is there no reference to it in the hieroglyphic texts? Same goes for going forward 520 days to a stationary point of Saturn. I fail to see the significance of any of this. All best,
Stan

Carlos Barrera Atuesta
Stanley,
First you said that you did not know of any astronomical cycles that would match the Tzolkin and when I show you that in fact there are many astronomical cycles that match the Tzolkin then you say that if I have some specifics, do let you know, and when I let you know about some specifics, then you say that you fail to see the significance of any of this.

OK. We better leave it at that and continue discussing John's paper. Carlos.

Pg. 3:

From Wolak, Barbara
First to Maya Exploration Centre:
Dear Moderator,
I like what you said, “As I look at this discussion, I begin to wonder if Jupiter was not the hidden focus here…”
That’s exactly why I was guided to put here information about Jupiter that was deleted. So perhaps it would be a good idea to open new discussion but also investigation about Jupiter’s role in Calendar systems of Ancient Maya and relevant connection with other Ancient civilizations as well as current Jupiter influence in our now consciousness.
I also like to add another observation I see that all people who wrote here have a great individuality and knowledge that is required for this next investigation.
I see all working in cooperation not in competition on that project. Each has a piece of the puzzle that will eventually create breaking thru picture next year 2011.
As the year suggests 2- working together, cooperation 1-1 individuality united in-group activity 11 master number…
But please, forget for now about 2012 date. Imagine you are driving a car and your destination is 2012 so you see only this ahead of you and you don’t see other posts on the sides of the road. But the passengers in your car (this panel) say: look there is ‘Detour

sign" so for this next part of journey you taking new unknown previously road that is ahead of you. We'll be surprised what waits with Jupiter being closest to Earth next year.

Dear Stan
I like your replay to Miguel you are showing great intellect and consideration and even your skeptic attitude is admired and I know I can learn much from you. Thanks

Dear Raymond
I agree with your comments and this is what I feel personally about this year 21 Solstice and Full Moon eclipse. I wish I was younger and could travel to any of the Maya pyramid or temple places but especially I would love to be in Machu Picchu and see that eclipse from there.
Perhaps witness& experience dancing ancestors, what was described in book" Island of the Sun" here is link to my blog about this book meditation.
http://galacticdoor2011.blog.com/2010/02/16/island-of-the-sun/
But I feel that someone here may be inspired by this and write about it next year.

Finally I like to thank John for informative replays to Stan. Thanks again,
Barbara W.

Stanley Paul Guenter
Raymond,

I have not heard that the Hebrew calendar is scheduled to last for only 6000 years. Do you have any citation for this idea? As for connections between Egypt and the Maya, I know of none. Yes, the each had "solar" calendars of exactly 365 days, but their calendars were completely different, in every respect. It is far simpler to see both as simply products of people who were trying to get a solar year, but couldn't deal with fractions.

Carlos,

my apologies, I now see what you're trying to get at. As I said, I don't have time to check on all of your calculations. However, I will admit up front to being extremely skeptical that even if your calculations all work out this is anything but pure coincidence. The tzolkin calendar is the common ritual calendar throughout Mesoamerica and is clearly in use already in the Olmec period, that of the earliest complex society of Mesoamerica. If the Maya or Olmec were basing their 260 day calendar upon your planetary calculations, those calculations would have to have been carried out earlier than the earliest Mesoamerican calendar. That doesn't make any sense, and would have a culture of amazingly sophisticated astronomers living in small farming villages. That doesn't make any sense and flies in the face of reason and evidence. I am curious as to where you got your figures from, and what your source is for these astronomical periods. At some point I would like to check your figures, because, as just stated, I am extremely skeptical that the tzolkin has any astronomical patterning. However, I am open to being proven wrong.

I simply require a lot of good evidence in order to accept such an extraordinary claim. All best,
Stan

John Major Jenkins
Stan,
A quick response to your conversation with Carlos about the tzolkin and astronomical patterning. The 260-day period is used as a predictive framework in astronomical almanacs because it allows for repeating markers in astronomical cycles such as with Venus or eclipses. For example, obviously it is part of the 104-haab Venus Round; also 2 x 260 = 173.3 x 3 = 520 (that is, 3 eclipse half-years). It has astronomical uses. It sort of misses the point to say that 260 itself has no "astronomical patterning."

Stanley Paul Guenter
John,

I'm not seeing it. You have to double the tzolkin and triple the eclipse half years to get a match, one that falls a day out of step every 14 years. The Maya certainly would have found this coincidence interesting and significant, but there is no reason to believe any of these astronomical cycles went into inventing the tzolkin. That is my point. The patterning is that the Maya patterned their astronomical tables after cycles in the tzolkin, not that the tzolkin was invented to follow these astronomical patterns. Just as with the Bible Code, give yourself large enough repetitions of cycles and you can find almost any pattern you want. That doesn't mean these are significant.
Stan

Maya Exploration Center
I think a more conservative view would be to say that the tzolkin, created first among Mesoamerican calendars, was then used in subsequent astronomical calculations. In the same way the first solar calendars used the symbols of the tzolkin, calculations of lunar cycles and Venus were also expressed in terms of tzolkin cycles. Since its their first, most sacred calendar, the Maya were probably still "mod-260"-centric well after they created the long count system.

John Major Jenkins
Stan,
I may have missed the point you were making; I was responding to what appeared to be a rejection of the idea that the 260-day tzolkin had anything to do with astronomical patterns and/or tracking. The Bible Code analogy is inappropriate, especially in the context of the examples I gave because I wasn't speaking about a vast array of random potentials expanding into hundreds of years within which a desired pattern could be selected (Carlos wasn't either). Since the origins or "invention" of the 260-day period is

under question, consider the solar zenith-passage dates at the latitude of Izapa, which defines a 260-day interval. Coincidence? (Izapa was first settled around 1500 BC). That's astronomy. Not a "cycle" per se, but we may need to expand our limit-definition of what is allowable. You often use the phrase "there is no reason to believe that..." when it is actually the case that there are reasons for the argument being made, but you reject them outright or mitigate them via the application of a limit. For example, the 260-day interval between zenith passages at the latitude of Izapa could be dismissed because a precise 260-day interval is provided NOT at the latitude of Izapa but actually a few miles south of Izapa. The interval at Izapa is actually 260.1696567 days (or something). Van Stone made this argument. But such an observation, while respecting of the high god of precision, is irrelevant considering whole-day rounding and results in a false negative. It's like firing the carpet layer because he did not cut the carpet following room dimensions to the ten-thousandths of an inch. Similarly, the relationship between the tzolkin period and the eclipse half-year has a small imprecision, which can be accounted for in adjustments to the predictive table. In any case, this may be a "which came first, the chicken or the egg" dilemma. As the MEC post above points out, its clear that at some point "calculations of lunar cycles and Venus were also expressed in terms of tzolkin cycles."
John

Carlos Barrera Atuesta
I'm about to think that the main difference between a skeptical and scientific position is that the scientific position is always open to consider ANY POSSIBILITY that can REASONABLY explain a FACT, while the skeptic deprives himself of certain possibilities just to keep a position.

Why, if it is a FACT that the times it takes Jupiter and Saturn to move between their first and second stationary positions is "about" 520 days, should I dismiss this as a POSSIBLE phenomenon that COULD have motivated the ancient Mesoamericans to develop the Tzolkin?

Other better POSSIBILITIES are, of course, those mentioned by Malström about the passage of the Sun across the Zenith in IZAPA, or Teeple's 3 eclipse half-years, or the Tzolkin-Venus relationship described by Toribio Motolinia in 1903.

And another REAL POSSIBILITY is, of course, that all of this is a coincidence. Why not?

Why then, if there are so many POSSIBILITIES based on REAL events (FACTS), should I consider only the last mentioned?
Carlos

Stanley Paul Guenter

John,

I can see we have fallen into a common problem on discussion boards such as this, where messages to different people appear to get crossed and the point of it all is lost in the confusion. You and I seem to share the same position, along with MEC, that the Maya astronomers noticed and used these patterns between the tzolkin and astronomical phenomena to construct their astronomical tables. I would emphasize that these patterns weren't exact and that the Maya preferred to follow the tzolkin cycles over actual astronomical ones, emphasizing that their interest was more in astrology than astronomy. My comments were in response to Carlos, who appears to think that the tzolkin itself was invented with these astronomical patterns in mind.

Now, as for the Izapa connection, I'm afraid while this is an interesting proposal, it doesn't pass muster with me. The tzolkin was in use long before Izapa's monuments were being carved. (And I must strongly object to your statement that Izapa was occupied by 1500 B.C. While this is true, you are using it to argue that Izapa had a role in the creation of these calendars, and at 1500 B.C. we have the earliest evidence of any human occupation at all in the area. That is, there is evidence at best for a few families living at the site. To use evidence to argue for an Izapan role in the formation of the tzolkin calendar in the Early Preclassic is sloppy scholarship at best, and deceptive at worst.) The 260 day calendar is in evidence from the Guerrero caves already back in the early Middle Preclassic, so I cannot see the tzolkin as having originated in Izapa. As for the Long Count, there are no Long Count dates from Izapa itself, and this is a major problem for any claim that Izapans created that calendar. All in all, I don't see much evidence for Izapa as having played a major part in the invention of any Mesoamerican calendar.

Furthermore, if zenith passage was so critical to the formation of the tzolkin calendar it is odd that there are so few inscriptions that refer to, or even fall upon, zenith passage. Once again you have an interesting proposal that is simply not supported by the evidence.

Now, as for Van Stone's point about Izapa not falling on the exact latitude for a 260 day zenith passage, I have to point out to you that it is you especially of the 2012 proponents who have championed the astronomical precision of the ancient Maya. That is your entire point about 2012, that this demonstrates an amazingly precise ability to calculate precession down to the specific day thousands of years into the future. This precision is precisely why you think the 2012 "end date" can't be coincidental. This is why so many of skeptics find your need to now refer to the "era of 2012" as slight of hand in order to disguise the fact that your dark rift alignment is anything but as precise as you originally proposed. You argue with Mark Van Stone over the "misplaced precision" of Lounsbury, in regards to choosing the 585285 [sic, 584285] correlation over the 585283 one, and yet you argue that this two day precision is exactly why 585283 [sic, 584285] should be chosen because of the 2012 solstice event. That's not consistent.

But anyway, that is getting us quite off topic. My point is that there is no reason to believe the tzolkin was invented with astronomical patterns in mind. Rather, the astronomical tables we see in much, much later Maya texts reflect the need of the Maya

scribes to fit their astronomical observations and tables into an already existant tzolkin framework.
Stan

Carlos Barrera Atuesta
John,

Please let me mention a few things that might have some connection with the dates of your paper that maybe Michael and you would like to explore:

The 491400-day interval is also divisible by the canonic cycle of Mars.

On the date 9.10.17.2.14, Mars is not only close to Pleiades, but also at its second stationary position.

9.10.17.2.14 is located 1363 tropical years before 13.0.0.0.0, exactly.

1363 tropical years roughly describe 1248 synodic cycles of Jupiter.

On the date 9.10.17.2.14, Jupiter and Saturn are in Opposition.

On the date 9.10.17.2.14, Mercury is at its Greatest Western Elongation.

9.10.17.2.14, is located 105 days before an 819-day station [Eph.819 - 105]d. This means that the values of the components G(F) and Z(Y) of the Supplementary Series and the numerical coefficient of the Tzolkin are at maximum, so:

G(F) x Z(Y) x Tzolkin# = 819

The following could be coincidence, but since [Eph.819 + 260]d seem to have some astronomical and calendrical significance:

On [Eph.819 + 260]d, Jupiter is located at its first stationary position and Jupiter in Opposition. Interestingly, the next time that Saturn will be in Opposition, Mars will be at its second stationary position.

Please also note that on the date 9.8.19.10.2, not only Jupiter, but also Saturn is located at its second stationary position.

Finally, on [Eph.819 - 105]d of this last date, Jupiter and Saturn were again at their second stationary positions.

Carlos Barrera Atuesta

Sorry, I meant:

"On [Eph.819 + 260]d, Jupiter is located at its first stationary position and SATURN in Opposition..."

Stanley Paul Guenter
Carlos,

I teach a class on pseudoscience in which I make the point that skeptic and scientist are one and the same, or ideally should be. You claim that a scientist should consider any possibility that can reasonably explain a fact. I agree. However, your proposition, that the tzolkin was invented to match these astronomical patterns, is neither reasonable nor supported by the facts. It requires us to believe that people living in small farming villages, with no writing system or calendar, had incredibly precise records of astronomical patterns. That doesn't make sense, and would fly in the face of cultural patterns seen around the world, where those kinds of astronomical observations are products of complex societies, not simple farming villages. After all, note that neither John nor MEC seem to accept your position, but rather see these astronomical tables as having been fitted to a pre-existing tzolkin calendar.

Now, while it is true that some closed-minded persons can deprive themselves of certain explanations, it is also true that there are many people of non-skeptical minds who will too easily believe falsehoods or convince themselves that patterns they see are significant, without sufficient reason or evidence to do so. As I pointed out, I don't have time to go through your calculations, but neither have you provided the supporting evidence here, and I have already pointed out that my skepticism is justified by your use of the words "near" and "about", which suggest your observations are not as precise as you imply.

You note that coincidence is a real possibility we should consider, but I don't see you actually doing that. You seem insistent that these observations have to be significant. Again, however, your proposal flies in the face of the fact that the tzolkin is earlier than any evidence for these astronomical tables the Maya produced, and flies in the face of the facts of the level of culture the Early Preclassic Maya had reached. All best,
Stan

Carlos Barrera Atuesta
Stanley:

After all is said and done, one question still remains:

What motivated the creation of the Tzolkin Calendar?

Any suggestions?

Carlos

John Major Jenkins
Hi Stan (in reply to your long email),

I think it best to begin my response with your conclusion. And in so doing I will have to repeat what I stated in my previous post. You wrote (in regard to "evidence for 2012 as having been an important station in the Maya calendar") that there is "no support" for my "claim" that December 21, 2012 is an "astronomically important station." My response: It's a solstice. That's an astronomically important station. That was the beginning point of my research, circa 1990. You conclude, or believe, that there is no evidence that December 21, 2012 is an astronomically important station. Your observation, or conviction, is factually incorrect. Beyond this, and more relevant to my argument, the sun is in actual astronomical fact positioned at the Crossroads of the Milky Way and the ecliptic on December 21, 2012. Since the Crossroads is an important feature in Maya Creation Mythology, I believe we can consider this sidereal location to also be an "astronomically important station." So, on two counts, both astronomically factual, your position is not tenable. To qualify your position, we would need to state the factual astronomy, and then insert that you --- I'm not really sure how to phrase this --- that you do not believe in the facts of astronomy, or that you are unwilling to accept or investigate the implications of those facts. More probably, that you do not believe those facts are relevant to Maya intention; that they are accidental. Or (I'm stretching a bit here), that the solstice occurrence of 13.0.0.0.0 is a coincidence. Is that it? You must be defaulting back to the "null-set" position of coincidence, which has been the default safe harbor of most 2012 detractors going back two decades, so we sort of have a rerun happening here. But in any case, to use your terms the Long Count does "count down" to "some astronomically important station" --- the solstice. So the statement you provided upon which you base your final assessment is factual untrue.

But to bring this back to the sequence by which a rational investigation proceeds, the solstice placement of 13.0.0.0.0, as I said earlier, at least suggests intention. And so my investigation as to intent began twenty years ago.

In your earlier post you alluded to conversations you had with Peter Mathews in which Bahlam Ajaw was discussed, which I could not have been privy to. The prior observations of Bahlam Ajaw's birthday reconstruction that you mentioned occurring in a conference workbook of 2002 were not known to me, and I appreciate your calling them to my attention. I take it then, as a confirmation of the clarification, that none of those you mentioned had noted that Bahlam Ajaw's birthday-range implicated the positioning of the sun at the dark rift/Crossroads, in parallel to the same alignment on 13.0.0.0.0 in 2012? That was my reference, and you originally seemed to suggest that other scholars had noted this before Grofe. I now see, with your clarification, that the other scholars had not noted the astronomy associated with Bahlam Ajaw's birthday. So my emphasis on Grofe's finding as an original, previously unrecognized, factor of Bahlam Ajaw's birth stands.

I have spoken at many conferences, it is true, including academic venues, universities, high school classes, silly New Age events, gatherings, bookstores (even an LGB one --- omg!) and many other forums and media outlets. I have a very non-restrictive policy as to the events I have been willing to present my findings at. However, your interpretation that I stand "shoulder to shoulder" with the other "2012ers" in a "common front on the 2012 subject" is completely without basis; it's an undiscerning guilt-by-association criticism. I've pointed out many times that I, among the burgeoning number of 2012 writers, stand alone in that I am concerned with reconstructing ancient Maya beliefs and perspectives on 2012, whereas the others invent new models and trademarked idiosyncratic systems, reject basic facts of the Maya calendar's operation, transfer murky understandings of Maya concepts onto Western astrology frameworks, use 2012 on the marquee of pop-culture rallying cries for peace or love, and so on. Do you agree completely with every other scholar that shares a podium or panel with you at a conference? I think not.

I have been very discerning and critical, and quite public, about my objections to the perspectives and motivations of very many of the "New Age" writers on 2012. And more recently, I've addressed factual errors in the 2012 writings of degreed Maya scholars who only recently appeared on the scene as a result of the 2012 movie (see October update at http://Update2012.com/ and my book *The 2012 Story*). Many scholars, I note, have believed for years that I was one of those doomsday guys, and have even insinuated as much in their assessments of me during interviews. This just underscores their superficial treatment, for never I was. You can also read my clear, fact-based critiques in the article I wrote, published in the anthology *You're Still Being Lied To* (2009), which can be found online.

You wrote: "Now, you mention astronomical patterns in the texts of "Copan, Palenque, Quirigua and elsewhere". Frankly, I am skeptical but am willing to be convinced."

That's great. Such astronomical references at these sites are well known in the academic literature. I described in brief detail the situation with Quirigua Zoomorph B in my response to Robert Sitler, posted above, which I mentioned to your earlier. My SAA paper mentions the 9.14.0.0.0 date at Copan and the iconography of 18 Rabbit on Stela C. As for Palenque, I mentioned in a previous post the investiture rite of K'an Bahlam in 642 AD. This rite was tied to the deep time birth of a key deity in the text narrative, and that provides an astronomical parallel. This involves some important work that Michael Grofe is doing. I encourage you to keep your radar up as many more of these kinds of astronomical identifications are now being offered, and they implicate the same astronomical features employed by Bahlam Ajaw. Also, Elizabeth Newsome's book on Copan (*Trees of Paradise and Pillars of the World*) and Matthew Looper's book *Lightning Warrior* are filled with explications of astronomical patterns in the inscriptions of Quirigua and Copan.

To answer one of your questions, the astronomical "pattern" that is most compelling on TRT Mon 6 is the one defined by the sun's position in 2012. It's right at the center of the

Crossroads. This position of the sun is found on 4 of the 13 dates on the monument. I repeat, the sun is positioned at the dark rift/Crossroads on 4 of the 13 dates on TRT Mon 6, including Bahlam Ajaw's birthday and the 2012 date. I find it surprising that you do not find this compelling and that you minimize the fact of this by characterizing this situation as my noting of "a few" alignments. (Check out Chart 1 on page 16; there are, to say the least, more than "a few.")

I perceive there are two things you seem to be invoking to mitigate the importance of my observations. One is the precision which you believe is necessary in order for the 4 solar-dark rift alignments to be considered relevant. This is related to your need to have an explicit hieroglyphic statement regarding the intent of these dates, which I addressed in detail in my previous post. The other is your generalized assertion that "astronomical patterns can be almost anything under the sun or night sky." This is, I must say, a completely misleading critique, and not applicable to my methodology. Again, as I alluded to earlier, context is a limit-function in the parsing out of what astronomy is relevant. Since the monument is about Bahlam Ajaw, the astronomy must be relevant to him and his life. His birth, the first date in the left flange, is a defining precedent for what comes after. Because of the "hidden" symmetry evident in the construction of the text (see my Diagram 9) as well as the explicit structural symmetry of the T-shape of the monument, the last date on the right flange (the 2012 date) presents itself as an important counterpoint to his birth date. Why? Because of the structural symmetry. We can look at those two defining dates and identify the commonality: sun at Crossroads. We've just eliminated the relevance of Mars-Jupiter oppositions, Venus conjunctions with Antares, lunar alignments with the Pleiades, and about ten thousand other possible situations that your critique implies could be viable candidates as "anything under the sun or night sky."

A superficial treatment of the text, without taking into account the full context and the evident theme, easily leads to your position. A comprehensive analysis of the text with an understanding of the defining structural framework results in my position. The proof of intention is in the context and the evidence of meaningful pattern, well beyond chance. As I mentioned earlier the reconstruction of paradigms and intentions and non-explicit strategies usually does not proceed with the benefit of 100% proof. So, in this regard you will not be convinced of very many things in Maya studies, and perhaps life in general, that are less than 100% tangible. Legal cases based on sets of indirect evidence are argued in the courts and reasonable people can come to the conclusion that a good case has been made. I've seen you offer your own deductive interpretations, not resting on bullet-proof direct evidence, in your interesting article on the Temple of the Inscriptions at Mesoweb. (By the way, your analysis could be nicely augmented by an inclusion of the astronomical events occurring on the many dates you discussed.) The multiple sets of interrelated evidence as to motivation and intention is what I've put on the table here. Remember, this is a brief treatment. Nevertheless, there is enough here for reasonable people to agree that something very interesting and compelling is going on in this TRT Mon 6 narrative, and astronomy is an underlying key.

You have to admit, you are a hard nut to crack! I respect the rigorous questioning you bring to the presentation of the argument, but you are very much on the far edge of

having a useful approach to this kind of data (integrating multiple sets of data) that can produce results. Frankly, I don't see your extreme application of scientific precision with a null-set default as being a strong position. It's useful to acknowledge and incorporate many types of evidence and contextual motivations. As you can, and do, peel away each one of these considerations one by one on grounds of this or that *possible* complication or limit-case, we lose the entire map that can alone lead us to understanding the overall intention of the narrative. So, I think we are up against a difference of approach. But we both claim to follow the evidence. I say the evidence is there, that there are ways of looking rationally at the text and its construction which provides data for deducing a reasonable interpretation. A big picture, truly reflective of the Maya intention, can be reconstructed, rooted in an integration of multiple sets of evidence, data, and contextual considerations. But you can smoosh my interpretation through a very narrow filter of allowable data and render the picture a wasteland. This approach can also be applied to epigraphy, which we often assume rests on bullet-proof evidence. Rather, the resulting decipherments and readings rest on received beliefs or convictions which have collapsed the reading inappropriately into one interpretation, and with sufficient effort at intellectual deconstruction and exploitation of gray areas and disagreements among experts, they too can all be torn apart. So, ones own motivations must be taken into consideration. I've frequently observed that the arguments I provide for the various reconstructions I've presented over the years are powers of ten more cogent and well-documented than many ideas I've seen blindly accepted and repeated in academia, including arguments I've seen presented in accepted PhD dissertations. Consensus trumps evidence. The old classic *Social Sciences as Sorcery* by Andreski is a good book to ponder.

You responded to my four points of evidence, or reasons, for accepting that astronomy is an intended reference in the Monument 6 text. I repeat the four here in brief:

1. The structural and astronomical parallel between Bahlam Ajaw's birthday and the 2012 date.

2. The theme of this astronomical alignment image repeated on many of the other dates on the monument.

3. The consistent presence, in these alignments, of mythologically potent astronomical features (already known from many Creation narratives such as at Palenque and Quirigua)

4. The astronumerology evident in many date relations, indicating theoretical computations of the planetary number canon, not least of which is the 819 x 600 interval between the 667 AD hotun date and the 2012 date---thus a concern with astronomy.

I want to summarize your responses with the hope that other readers will comment. Your opinion is that the structural and astronomical parallel between the first and last dates, on the left and right flanges (i.e., Bahlam Ajaw's birthday and the 2012 date) is inconclusive (and that these parallels do not provide any "conclusive" evidence for Bahlam Ajaw

having or asserting a personal relationship with the 2012 date.) It must be clarified here that the fact of these parallels exists, and you must be asserting that the evidence for intent is inconclusive. To augment the items I mentioned, we should also acknowledge here the 1 Ik – 4 Ajaw analogy I mentioned in a post above, and the 3 Kankin haab near-commensuration as well. (The "nearness" should be allowed, since we allow the 8-day variance on Pakal's 20th Baktun anniversary DN.) All of these reinforce my position that a relationship between Bahlam Ajaw's birth and the 2012 date was intended. The mutually reinforcing nature of these four sets of evidence either brings us right to the cusp of "conclusiveness" or it's an incredible coincidence.

If you want a DN connection similar to the series linking Pakal's birthday with the 20th Baktun 80 CR near-anniversary, then on Monument 6 we have a simple three-step DN linkage from Bahlam Ajaw's birthday to his accession date to the 669 AD building dedication to the 2012 date. The Palenque and Tortuguero strategies are almost identical. In Pakal's case, the 20 Baktun / 80 CR anniversary strategy is indicated in the calendrical mathematics (with an 8-day error), but not explicitly stated (show me the statement "here we are showing that Pakal's birth is related to the 20th Baktun"), it must be deduced from the DN series. With Bahlam Ajaw, his link to the 2012 date is implied by a DN series and three other items of calendrical commensuration, astronomical repetition, and structural parallelism. So, I wonder why we apply two different sets of standards in assessing the cogency of the two arguments. Really interesting.

As for the role deductive reasoning, without the benefit of having an explicit statement provided as to intent, you seem comfortable with the following statement in your Temple of the Inscriptions essay (page 44):

"This passage merely reiterates that the day 5 Lamat 1 Mol will reoccur eight days after the one pictun Period Ending of 10 Ahau 13 Yaxkin. The Calendar Round of this future Period Ending is ALMOST exactly the same Calendar Round as the last Katun Ending of Pakal's reign, 9.12.0.0.0, 10 Ahau 8 Yaxkin. The similarity of these dates would also have pleased Palenque's scribes, and undoubtedly the king himself" (CAPS added for emphasis).

So, 10 Ahau 8 Yaxkin is "almost exactly" 10 Ahau 13 Yaxkin (10 Ahau 8 Yaxkin and 10 Ahau 13 Yaxkin are separated by almost 5 years). Although there is no explicit statement as to what you propose, you assert, with absolutely no explicit evidence, that "The similarity of these dates WOULD HAVE pleased Palenque's scribes, and UNDOUBTEDLY the king himself." And yet, we can't have Bahlam Ajaw or his scribes "being pleased" with the calendrical, structural, and astronomical "similarities" or analogies between his birthdate and the 2012 date. I think this indicates, quite clearly, that you can allow for a deduction not based on explicit evidence and you are willing to apply a double standard to the assessment of my paper, if it is efficacious for rejecting its findings.

As for points 2 and 3 and 4, you just disagree. The 4 solar alignments to the dark rift/Crossroads are factually there, but you believe that coincidence is the most reasonable

position to take. And the lunar eclipse at the dark rift is invalidated because it occurred 3 days before the first war event, which may have been timed by the appearance of the eclipse, followed by war preparation and the subsequent 13 Kimi (Death) date three days later. But those contextual factors cannot be allowed because all dated events in the inscriptions must fall precisely on their intended reference (even though the 1 pictun period ending and the 80 CR anniversary are 8 days apart). Also, Venus risings and eclipses often do not correspond precisely to the predictive frameworks in the almanacs. So there's another double standard. You suggest that astronumerology is an antiquated holdover from Thompson days. Lounsbury, anyone? Astronumerology has proven to be a very useful tool for reconstructing narrative intent. You state that the 819 x 600 interval could be coincidence. Your case for this would be much stronger if the round number 600 (also divisible by 4 thus bringing in the directional character of the 819 x 4 count) was not involved, and if the interval did not also include 360, 260, 364, and 378, and if a Jupiter alignment with the dark rift/Crossroads was not involved. You treat these one by one and dismiss most of them, except for the 260 which you found useful for your argument that the relationship is ONLY calendrical. I think your anti-astronomy bias shows here, for the evidence is present, but is disallowed on rather shaky grounds that ignores the full context and evidence. The dates are reference points to the fact of the astronomy, which is the evidences for the argument. The assumption, yes, is that the Maya were always interested in what was going in the sky. I think that's a very reasonable assumption, borne out by the many instances of astronomy being integrated with inscriptional narratives, a few of which I alluded to in my paper, and above.

As for the Ahkal Mo' Naab accession and death astronomy. He died on a sun-dark rift alignment in 524 AD, not a Jupiter alignment as you have it. An Ahkal K'uk was referenced by Bahlam Ajaw in association with the sweat bath / sanctuary rite, which was performed in 510 AD on the date of a sun-dark rift/Crossroads alignment. Since Bahlam Ajaw's birthday embodied this alignment, I found it interesting that Ahkal Mo' Naab of Palenque, whom several scholar already suspect could be the Ahkal K'uk mentioned on TRT Mon 6, died on a day in 524 AD when the sun was positioned at the dark rift/Crossroads. My proposal that these astronomical parallels add a degree of weight to the likelihood of the equation of the two Ahkal ancestor/kings is, linguistically and conceptually, a valid statement. All stated astronomical events on the stated dates are facts. You and others might not accept the relevance of them, but supportive data from a separate discipline (astronomy) that adds to the likelihood of the original proposition (which heretofore was based only on name similarity and appropriate timing of the Palenque king's rule) is exactly what I said it is --- a degree of supportive weight.

Stan, you began your response by writing:

"You argue that 2012 represents the end of a 13 baktun "Great Cycle" and that the 20 baktun cycle was not important to anyone but the scribes of Palenque. Now, here is the problem. There is no evidence for a 13 baktun "Great Cycle". None. The only reference to 2012 doesn't mention this as the end of a "Great Cycle", it is merely the end of 13 baktuns. You have no evidence of any 13 baktun Great Cycle…"

Yes, there is a problem here. The phrase you quoted me as writing, "Great Cycle," does not appear in my article nor do I use it in any of my posts. Furthermore, your comments here ignore what I actually stated about cycles versus period-endings and you derail this exchange by suggesting, incorrectly, that I pledge allegiance to the "cycle" concept. I already qualified the phrasing of "13th Baktun period-ending" versus "cycle ending" in my previous comments to you, which you must have missed. You are exploiting a misreading of my intention --- which I already clarified --- to underscore your incorrect assertion that I am "proposing a new cycle", and thereby you avoid the good points I made about allowing for many Baktun endings, including the 10th, the 13th, and the 20th, to have been meaningful to different kings.

Having said that, could there have been a concept of a 13-baktun cycle somewhere at some time by the Maya? Sure. Most likely at Quirigua, because of the necessary mathematical and calendrical equation of the previous 13.0.0.0.0 with a turnover back to 0. I'll send you numerous examples of your colleagues who take this for granted, because all Classic Period Long Count dates must count backward to 0.0.0.0.0 = 13.0.0.0.0 on August 11, 3114 BC. This has always been a weird sticky point for math-minded scientists because they find it hard to reconcile with their desire for 20-based repetitions at all levels of the Long Count, a futile dream since already the Tun level is 18 x 20 not 20 x 20 (but you gave this anomaly a pass as a "slight tweaking"). A 20-baktun "cycle?" Sure. A 1-baktun cycle? Uh, yeah, you can say that too. You seem to want there to be one answer, one correct perspective on this particular point. And your bias is that Palenque had it "right." I find that to be unhelpful in understanding the full complexity of the variations in Maya cosmological and calendrical thinking at different sites. Bahlam Ajaw clearly liked the 13th Baktun ending, because he cited it but not the 20th. But I'm sure he could have played that card too if it could serve his rhetorical purposes. Pakal's crew liked and exploited the 20th Baktun ending. I've suggested that we might transcend such debate and identify the underlying reason why Maya kings liked to relate themselves to big period endings in the Long Count. Do you feel that this is a useful approach? To pursue the answer to such a question, we could bring in what K'ak Tiliw was doing with 13.0.0.0.0 in 3114 BC, and what 18 Rabbit did with the 10th Baktun ending in 830 AD (a hundred years after his rule). I mentioned these in my paper.

You wrote: "I don't think our problem, or at least mine, is that the Maya would have had to have been aware of precession here, but that there is no evidence that they were." Stan, you must avail yourself of all the academic literature on this that I cited in Appendix 2 of my 1998 book *Maya Cosmogenesis 2012*. More importantly, please contact Barbara MacLeod on the 3-11 pik formula and Michael Grofe for his dissertation and other work on this topic. Or perhaps they can chime in with their thoughts, if they are following our exchange. You have an oft-repeated refrain such as "but there is no evidence for ____." Your assertion of this, in various contexts, is very often simply not accurate and gives a misleading impression to unsuspecting readers.

You wrote: "Yes, you do sense a bias in my post; a bias for facts as opposed to speculation. I stand by my statement that the Maya were obsessed not so much of the patterns of stars as they were by patterns in their own calendar. The Dresden Codex

proves this point, as it has long been known that the cycles were fudged in order to have these cycles end on Ahau dates and the like."

You should read Michael Grofe's PhD dissertation on the Serpent Series in the Dresden Codex. Perhaps he will send it to you if you inquire.

Best wishes, John

From Stanley Paul Guenter
Carlos,

to be perfectly honest, I don't know. There have been many proposals, but none have any supporting evidence and all seem unlikely to me. The human gestation period sounds interesting, but human gestation isn't that regular and if this was the reason behind the calendar, it was pathetically inefficient at predicting birth dates. Furthermore, this presumes the tzolkin is already in existence, for why else would you need to figure out "lucky days" on which you want your child born. Now, that said, one of the most important functions of the 260 day calendar was to name children after the day on which they were born. So there is something here.

The zenith passage arguments don't strike me as likely for the reasons given above. As for agricultural cycles, these follow a solar year far more than a 260 day cycle, and so would immediately fall out of sync before the first year had even passed. That doesn't work either. Arguments for a connection with Venus are also far too fuzzy - the periods of morning and evening star don't fit 260 exactly, and would immediately fall out of sync. Furthermore, only one of the twenty day names refer to any celestial body, and while it is a star (Lamat), it is not specifically Venus. As for the moon, Rice's idea that the Yukatekan word "uinal" comes from the word for "moon" strikes me as absurd; it doesn't work linguistically (uinal comes from the word for "twenty/human", which is winik) and the uinal is 20 days long, not 29/30.

In the end, I simply don't know. The 20 days is understandable, as 20 is a sacred number for ancient Mesoamericans, reflecting the basis of their counting system and not coincidentally, the number of digits a human can count on. The 13 is harder to figure out. It too is an obviously sacred number, and I think the 260 day calendar is simply a combination of these two sacred numbers and has no reference to any natural cycles (except maybe gestation, but I'm skeptical of this). The big question is why was the number 13 so sacred? It is interesting that the Maya numbering system has separate words for the numbers 1 through 12, and then from 13 on the numbers are simply combinations of other numbers. Thus 14 is actually "4-10", just as in English. But 13 isn't part of the original number series; 13 is "3-10".

I don't know why 13 was so sacred a number, but it reminds me of the situation of Sumerian and Mesopotamian mathematics and calendrics, which have a base 60 counting system. Many scholars emphasize the number 60's ability to be divided by the first six

number, and a bunch of other numbers, and that this makes fractions easier. However, this leaves us with the same problem as the Maya calendar one; you have to presume the existence numbering system in order to explain its origin. You can't figure out the most divisible number without already having a counting and numbering system well established. I consider this numbering system as currently inexplicable as the Mesoamerican 260 day calendar. Cheers,
Stan

John Major Jenkins
Stan, (in reply to your shorter latest email),

You wrote: "I have to point out to you that it is you especially of the 2012 proponents who have championed the astronomical precision of the ancient Maya. That is your entire point about 2012, that this demonstrates an amazingly precise ability to calculate precession down to the specific day thousands of years into the future. This precision is precisely why you think the 2012 "end date" can't be coincidental."

Your assessment here about my valuing of precision is 100% incorrect. Your last sentence expresses something I never enunciated, do not believe, and do not hang my theory upon. I've stated hypothetical ranges for the alignment going out a hundred years which could still be considered compellingly close enough to investigate further whether intention was involved. Your misconception here is also evident in the presentation you co-wrote with Freidel, which I linked to earlier so we could get past the misconceptions you may still harbor. To reiterate, I do not require that the Maya made an absolutely precise forward calculation in precession. I have noted the 14-year discrepancy between Meeus's 1998 calculation and the 2012 date --- in fact, I was one of the very first people to point out his calculation (along with Daniel Giamario) and it's ridiculous to think this causes a problem for the Maya's end date placement being intended to mark the alignment of the sun and the Crossroads. I have noted the fact that the half-degree-wide body of the sun is still in contact with the galactic equator on December 21, 2012, and therefore it is accurate to say that the sun is in alignment with the Crossroads on that date. I've dealt endlessly with precision-obsessed astronomers who ignore the fact I have clearly defined and discussed all the caveats and ranges and parameters of the alignment. I have stated that the 14-year "discrepancy" between 1998 and 2012 is still amazingly precise given that it would have to have been a forward precession calculation of some 2,000 years. Perhaps that is where your misunderstanding derives from. Again, please read the long response to the presentation you use against my work, which contains literally dozens of factual errors and misconceptions. Just on the level of decency I hope you can stop presenting those in your classes --- it promulgates misinformation about my work, my associations, my motivations, and my assumptions.

I also have been pointing out that while the Maya were clearly doing decently accurate astronomy, their calendar cosmology seems to have been more concerned with showing commensurations, a comprehensive vision of calendrical model making. I said on a Discovery Channel interview in 2000 that "to celebrate the Maya calendar for its

accuracy is like celebrating Einstein for being a decent patent clerk!"

So, please take to heart my corrections here, regardless of your previous beliefs. As for Lounsbury's 2-day argument, that boils down to the litmus test provided by the surviving 260-day placement --- a very different issue. And yes, this does pull us off track, but I'm glad we got to clear up some deep-set misconceptions. Some of my scholarly critics even believe I preach the doctrine of Planet X! Again, understandable since I have enemies who aggressively spread disinformation about my work and toss around ad hominen judgments. But I encourage everyone to just engage the material I present and the evidence and arguments I lay out. That's why I'm glad for this forum.
John

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Next, there was a post from Ray Mardyks containing his typical accusations and claims. Mardyks became increasingly hostile, and after three warnings, and much tolerance, the moderator deleted his posts. Jenkins's response to Ray's post:

From John Major Jenkins
Ray,

This forum should not be a dumping ground for your complaints and personal issues with me. As I've said to you many times, I was not aware of your work until my breakthrough article was published in MA in December 1994, and an article you wrote was in there too. Remember? And I mailed you a cordial letter? I came into a knowledge of the solstice-galaxy alignment through Terence and Dennis McKenna's *Invisible Landscape* book (first edition, 1975), which I read in 1985, and their referencing of *Hamlet's Mill* (1969) — in which the alignment can be discerned if you read carefully. Furthermore, in the interest of documenting the "history of the idea" I included a reference to you in Appendix 1 of my book *Maya Cosmogenesis 2012* (1998), along with James Roylance, Moira Timms, Nick Fiorenza, and several other writers who I had become aware of. Upon reading some of your writings, I noted you have a distinct western astrology interpretation of the alignment. My effort to reconstruct the presence of the galactic alignment concept within Maya traditions (the ballgame, king-making symbolism, the Creation Myth) and at Izapa, is not based on anything you've ever written, was well underway before I knew about you, and the reconstruction I offer has no precedent in your writings or anyone else's. That is clear if you compare the two. Yes, the alignment concept was floating around, but even in 1994 it had never been clearly discussed with any degree of cogency.

I posted our discussions in the links you provided above because it reveals your unfounded accusations. Your continuous assaults against me — for over a decade now — in emails, Youtube videos, websites and god knows where else are revealing of who you are; it's the recourse I maintain to counter your disinformation campaign. Finally, your post violates the focus of this forum, but I'd suggest the moderator leaves it and my response up and carefully monitor your future posts for relevance, civility, and non-slanderous content. Best wishes, John

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Next was another post from Ray, with claims that McKenna gave a 300-year range for the alignment, and other misleading things. Jenkins responds again:

John Major Jenkins
Ray,

I have the first edition of *The Invisible Landscape* right here. 2012 is mentioned, albeit briefly. Via the *Hamlet's Mill* reference, the galactic alignment is presented as occurring at the turn of the millennium (circa 2000). McKenna mentions looking at winter solstices on which eclipses occur over a 200-year period. I don't see any reference to 300 years. Terence was talking about 2012 and the Maya calendar in relation to his time wave zero theory and the *Invisible Landscape* book by the early 1980s at the latest. Your comments and claims over the years have been inconsistent and contradictory, and my efforts to speak to you and with you have always ended in irrational explosive outbursts on your part, followed by weeks or months of harassment.

It seems you inserted an inventive notion into the Arguelles discussion around Harmonic Convergence that there should be a 26-year countdown from Harmonic Convergence (Tony Shearer's idea based on Calendar Round periods) and 2012 — all of which is New Age astrological ideation not connected with authentic Maya cosmology or traditions. But sure, you may have spun some astrological interpretations around 1999, 2012, 1987, countdowns to whatever and Harmonic Convergence. I recall you asserting in several emails that the galactic alignment isn't related to 2012, as you apply an astrological precision of interpretation to different years and configurations. You spun the reading into your own astrological reading which could incorporate 1987, 1999, and 2012.

The fact remains that what I have offered as a reconstruction of Maya cosmology is unprecedented and is not based on or an extension of your work, and your accusations are just unfounded. The Arguelles movement's material you used to follow, Tony Shearer's basis for the Harmonic Convergence in 1987, and astrological interpretations of 2012 and/or the galactic alignment are things I've commented on and I believe they are not that relevant to the work I am doing. I've encouraged you in the past to continue your journey, and to stop fixating on me as the source of your angst and frustrations. I've tracked my encounter and journey with these ideas honestly and fairly.

The task at hand in this forum is very different from what you are dredging up out of your unresolved past, so please let's bring a focus back to the material on my SAA paper.

Best wishes, John

Maya Exploration Center

Thanks to everyone who is participating in this discussion. While there are but a few voices in the discussion, MEC has received many emails from people saying that they are closely following it. We will continue for about one week more and then MEC will post a summary of the discussion and move on to other subjects

Raymond - you are welcome in this conversation but we ask that you stay on the specific topic of John's paper and communicate in a civil, respectful tone. Please do not discuss past debates or his larger body of work here.

Barbara and Carlos - Both of you have interesting views to share on Jupiter and we suggest that we start a new discussion thread on the topic. Let's stay focused on discussing John's paper for now and we'll begin a new thread some time next week.

This discussion, perhaps inevitably, is being pulled into a larger debate about 2012. Again, we suggest a separate discussion board be made. Mid-next week we will start a 2012 discussion board, beginning with posting a recent email between Barnhart and Jenkins regarding Jenkins' previous publications on 2012.

Wolak Barbara
My discussion part 2- Vedic Calendar connection with Maya Classical Tzolkin
Dear Panel,
I don't have internet at home so I come to use public library and usualy I dont come here on Saturday but I see now why I need to add my post to this discussion today.
At this moment I can post it in my blog www.galacticdoor2011.blog.com but I will as soon as I get connected just in case my post may be removed from this discussion as it was with other post I put here few days ago about Jupiter connection to Vedic calendar and Long Count.

Last night I was shown another piece of the puzzle concerning Maya Tzolkin and Vedic Calendar. I don't know if this is just a coincidence or if there is deeper connection between those calendars. But I know that my spirit guides showed me this yesterday for the first time in relation to a discussion on FB and previous post in my blog about Jupiter connection with Vedic Calendar and Maya Long count calendar.

Yesterday I was looking for information on Kali Yuga in a book *Beneath a Vedic Sky - A Beginner's Guide to the Astrology of Ancient India* written by William R. Levacy. I got this book many years ago from Kawai Hindu Monastery.

I read in chapter' What is Panchanga? On page 370 this information quote:
"The second category of the panchanga is the nakshatra, or "Moon sign."
There are 27 nakshatras, each with its own territory of influence. The referred literature on nakshatras will give you insight into how to pick an auspicious event according to the nature of a particular nakshatra.
Nakshatra mark the amount of time the Moon spends in one of the 12 suns or zodiac signs.

Each nakshatra counts for 13 20' of the 360 annual "path" of the Sun.
Each nakshatra is further divided into four subsections of 320', called a "pada," or foot of a nakshatra. A pada is similar in length to a navamsa or one-ninth division of a 30 Sun sign. Nine nakshatra padas make one Sun sign". End of quote.

In Glossary of this book page 383 this explanation is given quote:
" Constellation -1/27 division (1320') of the zodiac. Also naksatra or asterism; used in astronomy to describe any grouping of stars. Those star groups close to the ecliptic have the same names as the astrological signs but do not exactly occupy the same space in the sky." End of quote.

On Page 202 there is chart of 27 nakshatrea and associations with Yoni, Gana, Sex, Disposition, Body Part, & Guna. I put this table and more information from book in my blog here is link:

What I found interesting is that each nakshatra has Yoni – the birth source, the external form of a woman's reproductive organs' explains in glossary.

There is 27 nakshatra but 20 animal symbols for Yoni so some repeat. Some Yoni names are same as in Tzolkin glyphs: Snake, Dog, Monkey.
So Vedic Calendar divides ecliptic journey in parts of 13 and associates with those parts 20 symbols. Sounds similar?

Now compare this definition, which describes Mayan Tzolkin 260 day cycle.

Tzolkin is often referred as13x20cycle. The 260 days are divided by 13 columns of 20 days they consist of 13 tone numbers and 20 glyphs creating unique days.

So my questions are:
Is there a connection of 13 –20 used in Vedic Calendar and Maya Tzolkin?

Did Maya know about Vedic astronomy system?
Did they replace in their observation of 360 ecliptic as 1 year and used 1/27 section of 13 as 13 tone days?
Is their Glyph system associated with Vedic Yoni if so is Tzolkin some sort of measure of Moon cycles? Especially, Moon association with creation- Yoni birth source of a woman's reproductive organs'.
I know that this creates another puzzle game that my spirit guides-teachers are playing.

I also felt they were showing me the movie 'Fields of Dreams" with Kevin Kostner Saying 'If You build it "they" will come. Meaning follow inner guidance and that's what I do sharing this with you here for further research and discussion.
I don't have a sticker on my forehead with sign '2012 END' I am just passenger in the car looking out the window seeing other signposts in this journey.
Sincerely Barbara

Here is more from the book about Nakshatra in chapter 9 page 199 quote:
Nakshatras- Moon signs
The Vedic night observers divided the circle of the sky into 27 sections. These divisions, separate from the signs of the zodiac, were used in ancient times to mark the movement of planets, especially the Moon, against the main star groups that were located in or around those 27 sky sections. Each fixed star group, or nakshatra, had a bright, primary star to help observers find it. This was called the Yoga Tara. It was once believed to mark the union (Yoga) or boundary between nakshatras. Due to precession, or the shifting back of the earth relative to the stars, the current orientation of the earth observers has moved back a few nakshatras from those early times. Around 4000-2000 B.C., Aldebaran in the sign of Taurus and in the nakshatra of Krittika was believed to mark the equinox. Today's observers, adjusting for precession, use the star Spica (Alpha Virginis) at the border of Virgo and the nakshatra of Chitra (opposite Pisces) to mark the new astrological year. When the Moon crossed over the Yoga Tara star or its group, it designated a specific Moon nakshatra and signaled that it was time to perform certain rituals (yagyas) or to start or stop specific events (Muhurtha). End of quote.

I refer you to this book and authors website as given in the book printed in 1999:
www.vedicsky.com

Ps. I see that a symbol of degree is not appearing in my post next to 13 or in case of 360 degree.
Barbara Wolak

Maya Exploration Center
Strike two Mr. Mardyks. This is a discussion board to John's paper on Tortuguero Monument 6. If you misuse it again, your posts will be deleted.

Barbara, your last post also seems to have nothing to do with a commentary on John's paper. Please explain how it relates to John's paper or refrain from posting off topic texts.

Stanley Paul Guenter
OK, let's look at a few monuments you think have astronomically significant texts or iconography. You mention Quirigua Zoomorph B. Trouble is, there is no reference to any celestial body in this text, let alone the sun or the "dark rift". The imagery is of K'ahk' Tiliw Chan Yopaat emerging from the mouth of a celestial crocodile, the Celestial Monster. Now here is a good chance to look for some associated astronomy, I will concur. Now, why should we conclude that the sun in the "dark rift" was intended here? Now, perhaps one could argue that the king represents the sun and as the king is in the mouth of the celestial crocodile, we should see this as a reference to the sun in the "dark rift". Unfortunately, there is no way to confirm this, and nothing in the text indicates such a connection. However, it is quite possible, and I will admit you could well have a point here.

As for Copan Stela C, this monument does have on one side Waxaklajuun Ubaah K'awiil wearing a crocodile loincloth. Unfortunately, there isn't much beyond that that I know of. Do you have any further evidence for this connection?

As for Palenque, which "key deity"s birth is connected to Kan Bahlam's heir designation event?

Now, as for the Sun in Dark Rift dates on Tortuguero Monument 6, we can also state that these four dates simply fall at approximately the same time of the solar year:
Nov. 23 – Dec. 3, 612 Birth of Bahlam Ajaw
Dec. 6, 647 unknown event
Dec. 5, 510 pib naah of Ahkul K'uk' event
Dec. 21, 2010 Bolon Yokte' event

Now, this looks impressive on its own, but we have to include the other events on this monument as well, as well as recognize that the first date is on the outer edges of possibility to fit this pattern. This makes only 4 at best of the 13 events on this monument fit this pattern, possibly only 3. Note that the only reference to a crocodile in the text does not fit with any of these dates, and there is no reference to any "dark rift". How much latitude do you give yourself to consider a date a "match", I should ask? For example, how far out of exact alignment do you consider to still be significant? This greatly expands how many "hits" one is going to expect. And this makes coincidence more and more likely, in my books.

Ok, regarding the "hidden symmetry" in your Diagram 9, I agree this looks interesting at first glance. However, I think it is rather misleading. Your lines w, x, y and z are only in your own mind, and there is no explicit connection between dates 1, 7, 8 and 11 with the 2012 date. The only date that is explicitly connected to the 2012 date is date 10, the dedicatory date of the structure that housed Monument 6 and presumably the monument itself. If the Maya were trying to pattern dates with 2012, it would be with date 10. However, there is no match in terms of the astronomy. The events of dates 10 and 12 are clearly patterned, both being house dedications, but the astronomy doesn't match between these dates either. Now, the fact that dates 1, 12 and 13 are the only ones on the flange, and all fall at the same time of year is certainly interesting. So I'll grant that there may be some astronomy going on here. However, why does it have to be the Dark Rift and the sun? Why can't it simply be the general time of the solar year and that Bahlam Ajaw was simply wanting to include a few dates that occurred at the same time of year as his birth? After all, there is nothing in this text to suggest anything having to do with the "Dark Rift". A birth, a house event, and a future period ending involving an enigmatic god do not make for a compelling argument for an emphasis on the Dark Rift in this text, especially when none of the glyphs you argue refer to the Dark Rift make any appearance here at all.

Now, you argue we should allow the 1 Ik 4 Ahau connection, which you think should be permitted because of the 8 days between the 1 pictun event and the anniversary of Pakal's accession. Trouble for you is that the Temple of the Inscriptions makes this connection

explicit, exactly what is missing on Tortuguero Monument 6. There may be a patterning between dates 1 and 13, but it could as easily be coincidence. After all, given so many Maya monuments, such coincidences are guaranteed to occur time and again, even if there was no intentionality. You claim there is a simple three-step DN from Bahlam Ajaw's birth date to the 2012 date. Sorry, but this sounds like a bad game of Six Degrees of Kevin Bacon. By that criteria practically any date can be connected to any other. 3 separate DNs connecting as disparate events as birth, accession, a house dedication, and a future PE do not connect anything close to a connection.

I should also point out that this emphasis on wanting to read date 1 as the day 1 Ik cannot be supported by the shape of the monument. We don't know what the building around Monument 6 located and there could be very practical reasons for its design as a T-shape and even if it was patterned after the Ik' symbol, we know from Palenque that this was an important design for that dynasty. The Ik' design, if that's what this is, may have no reference at all to Bahlam Ajaw's birth date.

You attempt to chide me by referencing my own Temple of the Inscriptions writeup on Mesoweb. Nice try, I do admit. However, for someone who admits that you simplify your ideas for a public audience, you don't seem to be very charitable in that way with others. There is a very close pattern between these two dates, 10 Ahau 13 Yaxkin and 10 Ahau 8 Yaxkin and as you know from Quirigua and Palenque, ancient Maya kings loved to make connections between events falling on the same tzolkin. What you are proposing isn't simply another pattern like this, because this pattern at least has the dates written out explicitly, and we know from many other monuments that kings did regularly make these connections. Your pattern is entirely hidden. Not just the connections between dates, but the astronomical significance as well. Hidden connections between hidden astronomy. At some point someone has to point out that this emperor of yours isn't simply wearing invisible clothes, he's stark naked. Practically everything you propose is "hidden". A hidden "Great Cycle" of 13 baktuns that isn't explicitly recorded anywhere; hidden astronomical references of dates; hidden connections between these dates (that do not involve like-in-kind events even).

You accuse me of an anti-astronomy bias, and you are almost correct. I fully admit to having a major bias against archaeoastronomy. Why? Because so much of it is presented without any solid basis. Alignments are proposed, but there is usually no confirming evidence that these were intended, and by giving yourself 3 or 4 days on either side of a precise alignment as a hit, and allowing for any kind of astronomically significant event (solstice, equinox, lunar and Venus positions), you can find that almost any building fits at least some pattern. Whether it was actually intended is another matter entirely. The astronomical significance of many Maya dates is proposed, but there is no consistency in what features are considered significant, or why the ancient Maya would have patterned dates together. To do science you need something predictive. Do all dates that have the sun aligning with the "Dark Rift" bear similar iconography? No. We don't even have a majority of them doing so, and none of these record anything astronomical in terms of these dates, such as using "Dark Rift" glyphs. Why not? We have many Maya texts that refer to astronomical events; the Lunar Series of the Long Counts. We have a few

references to Venus and eclipses at Copan and other sites. So the Maya weren't shy about referring to astronomy. So why, if these astronomical connections were so important, were the Maya so reticent about making any of this explicit?

Regarding Ahkul K'uk' and Ahkul Mo' Nahb, yes, the astronomy is there, but you haven't any evidence that astronomy was an important consideration for any of these events. And yet you are using this pure speculation to argue that two men with different names are the same individual. Your speculation about the astronomical significance of one guy's death date and a house event for the other guy in no way constitutes evidence supporting the claim that they were the same individual. Yeah, astronomical events happened on these days, but the events are unrelated, and there is no other reason to believe these are the same individual. You keep citing these other epigraphers who have speculated that these may be the same individual, but there is no good reason for such a claim. It isn't impossible, I will admit, but there are tons of things that aren't impossible. To say that something isn't impossible doesn't make it necessarily likely, and isn't science. Without proof that astronomy was actually intended here, across monuments and between sites, your speculations do not constitute anything near approaching "a degree of supporting weight".

You can save yourself the trouble of sending me the names of my colleagues who believe in a 13 baktun cycle, because I am well aware of these people (Aveni, Milbrath, and Rice being most prominent amongst them). They are all wrong, demonstrably so. Thompson got it right half a century ago, and there a bunch of Mayanists who followed Edmonson's ideas about the calendar, many of which are simply not supportable.

And again you protest at supposedly being misquoted. You object to my referring to you talking about the 13 baktun "Great Cycle" and insist that you didn't use the term in your article. This is, frankly, pedantic, as you are not adverse to using the exact term in your publications and interviews:
http://johnmajorjenkins.com/interviewbrazil
You now claim that you refer only to the "13 baktun Period Ending", and apparently consider it on par with the 10, 13 and 20th baktuns. Trouble is, as we both know, all of your writings about 2012 presuppose that the 13th baktun was not simply special, but an end date of a "Great Cycle" (whether you use that term or not). After all, if 2012 isn't the end of a major cycle, but merely one of many, then your whole argument about the Long Count having been designed with this Dark Rift alignment in mind become meaningless.

"A 1-baktun cycle: Uh, yeah, you can say that too". No, not really. This so cheapens the term "cycle" as to make it all but meaningless. We both know that this is not how you've been using the term cycle, and your occasional use of the terms "Great Cycle" and "end date" in reference to 2012 makes it clear that you think in terms of 13 baktuns forming an explicit and full cycle of time.
Stan

Stanley Paul Guenter
John,

You wrote that for you, the fact that 2012 is a solstice makes it an astronomically important station, and chide me for not accepting this. You mistake my point. While Dec. 21, 2012 is indeed a solstice, what evidence do we have to believe that Tortuguero Monument 6's scribes had this in mind when they recorded the only ancient Maya reference to that date? I've already posited an alternative explanation for the importance of this date to these scribes, that of the pattern of the 4 Ahau date. Grofe apparently has noted a possible astronomical pattern between the birth date of Bahlam Ajaw and this 2012 date. You want to add that this is a sun in the Dark Rift alignment, and that the Long Count calendar was designed with this alignment in mind. There may be some intentional connection between the astronomy of these dates, I will grant Grofe that. Possible, but I don't think the evidence makes this any more likely than coincidence.

The much bigger problem is your larger position, which admittedly isn't entirely explicit in this one article. That is, the origin of the Long Count calendar and the meaning behind the 2012 date. You seem to finally be softening your stance, and now seem to want to argue that a 13 baktun cycle is as equivalent as a 20 baktun cycle. I know that in your earlier publications you were quite adamant that Linda was dead wrong about preferring a 20 baktun cycle, something you seem to now admit has validity. The trouble is, as I have pointed out, there is no evidence for any "Great Cycle" of 13 baktuns. 13 baktuns don't seem to have been any more significant to the ancient Maya than 13 katuns. These result in interesting repetitions of Ahau dates, but do not constitute cycles in and of themselves. While the Postclassic Maya did see 13 katun cycles as important, they had abandoned the baktun and the Long Count, and what we are looking at is apparently an evolution in the calendar. I see at least four periods in ancient Maya thought about the Long Count calendar.

Period 1: No Long Count (lasting until probably the 1st or 2nd century BC)
Period 2: The Basic Long Count (consisting of only the first five levels)
Period 3: The Expanded Long Count (which wasn't consistently followed at all sites, but in all sites where we have evidence, consists of levels based on 20 and set at 13)
Period 4: Abandonment of the baktun and the Long Count, and retention of only the katun

There is no evidence that the Long Count calendar was invented with 2012 in mind. So 13.0.0.0.0 falls on a winter solstice. So what? What evidence is there that the solstices were of much importance to the ancient Maya? As Mark Van Stone has pointed out, there isn't much evidence of this at all. There is no reference to anything astronomical in the one textual reference to 2012 the ancient Maya carved, and there are many references to the origin date of the Long Count calendar, but only one to its supposed "end date", however you want to parse that term. 2012 does not appear to have been very important to the ancient Maya.
Stan

From Miguel Sague
Stan,
Even granting that there may not exist all of this explicitness which you are demanding in the actual archeology and epigraphy of Classic era Maya concerning the 13 baktun period as an important element of their time-keeping, I am still confused in the face of your apparent reluctance to admit any possibility that it may have been just as vital to the ancient Mayas as JMJ claims. My earlier question remains. There is this recognized confirmed existence of a very old and established tradition (an explicitly expressed one) of creating permutations of the numbers 20 and 13, evidenced by the most ancient of calendric elements, the Tzolkin. The 13 baktun cycle appears to reflect this tradition in a way that (as far as I know) is typical of classic era Maya thought (to create patterns in one element of their calendar system that already exists in another element of their calendar system).

It is not unheard of to seek clues in other Mesoamerican cultures to try to fill in possible missing blanks in Maya culture. We know of an explicitly expressed tradition of "five suns" in central Mexican culture, a culture that dates back at least to Teotihuacan during the classic era of Maya civilization. The central Mexicans did not use the LC, yes, but to create a five-Great Cycle pattern which all maintain Tzolkin day names associated with the numerical coefficient "four" (read 4 Ahau) seems a bit more than a coincidence to me.

I read John's theory to suggest that there exists a five-cycle pattern in the Long Count which creates a larger 260-tun century grand cycle. I don't have explicit proof of that but I feel that its parallels with the apparently related Mexican calendrical traditions of five cycles and end dates that include Tzolkin days with a number 4 coefficient provide compelling food for thought, if not definitive proof.

And oh BTW. concerning the crack bout John's association with people for whom the 2012 theme is less a scientific exercise and more a spiritual journey (New Agers I think you called them) Please correct me if I am wrong but I think that you have respected scholarly colleagues associated with Brigham Young University that profess a religious belief that Indigenous people of the Americas arrived here in boats from the Middle East, that hey built the Mesoamerican pyramids as part of a biblical agenda, that they left revelatory evidence of their presence here in the form of inscribed metal tablets and no one in academia doubts the results of their scholarly research simply based on their religious association. Please don't get me started on how many archeologists who deal in the topic of ancient Palestine are actually practicing orthodox Jews who have no compunction in practicing a religion that accepts on faith the idea that their ancestors were purposely led out of Egyptian captivity by a column of fire created by an invisible deity. The fact that these people profess these beliefs in and of itself does not preclude their believability as scholars in the topic of ancient Middle Eastern archeology. It’s OK to attack John's theories based strictly on the merits of scholarship. To attack his credibility based on who he stands next to at a public event is frankly a cheap shot. I feel that what is good for the goose ought to be good for the gander.

http://www.reachouttrust.org/articlePDFView.php?id=406
http://www.mayanbeachgarden.com/arch-Bof-M-TofL.html
http://www.facebook.com/l.php?u=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FChiapa_de_Corzo_&h=71e14 (Mesoamerican_site)

You might or might not disagree with the scholarly opinions of Stephen B. Houston of Brigham Young University but would you take him to task simply based on his affiliation with an institution that is associated to the Mormon Church? Miguel Sague

Stanley Paul Guenter
Miguel,

my reluctance to admit that the 13 baktun cycle was as important to the ancient Maya as John claims is based upon the fact that there is absolutely no evidence for a 13 baktun cycle at all. Remember, we are dealing with the Long Count here, and we have a number of inscriptions from across the Maya world with "expanded Long Counts" or references to these higher units. Without exception when we have evidence, it is clear that the Maya of all of these places thought of them as having a base 20, not base 13. At Coba and Yaxchilan these higher units were set at 13, but these are symbolic numbers, as pointed out by Mark Van Stone.

The 13 katun cycle we have in the Postclassic is not in evidence for the Classic period. Back then we have a 20 katun cycle which leads to the baktun. And we have 20 baktuns that form a pictun. Those are the "Great Cycles" of the Long Count. There are no texts that provide evidence of this cycle; it is simply a modern construction by scholars in the mid-20th century who were so enamored of the symmetry, and the assumption that the 13 in creation dates had to be the equivalent of a 0 and indicate a parallel between this "cycle of creation" and the last. But they ignored the fact that all evidence indicates the next highest cycle after the baktun is the pictun, and all evidence indicates the pictun was seen across the Maya world as having been base 20.

As for using the Aztec 5 Suns calendar, you are running into a major danger by assuming that all of these variants must just describe different aspects of a larger "Mesoamerican calendar". While the 260 day sacred calendar appears to have stemmed from one original Mesoamerican (probably Olmec) calendar, there is no such uniformity in the next calendar, the 365 day solar calendar. There isn't even consistency within the Maya world on this. The Long Count is known only from eastern Mesoamerica; the Maya and epi-Olmec. The 5 Suns calendar is known only for the Aztecs and there is no evidence for anything like this in the Maya world. Remember that as Mark Van Stone points out, while the Maya creation date is 4 Ahau, there is no 4 Flower in any of the Aztec suns. The Maya 4 Creations myth comes from Highland Guatemala, which had already been heavily Mexicanized for 1000 years before the Spanish arrived. We simply have no reason to believe that the Classic Maya or earlier folks believed in 5 Creations. That is another modern myth.

As for John and the New Agers, this whole discussion stemmed from John's taking umbrage at my reference to him as a "2012er". In my original reference I was simply pointing out my criticism of all of those people who take 2012 to have been an end-date of the Maya calendar and of crucial importance for Classic Maya culture. John may disagree with these other scholars, but I disagree with many of my Mayanist archaeologist colleagues as well. The fact that we all study the archaeology of the Maya makes us all Mayanists. By the same token, John qualifies as a 2012er. If he prefers the term 2012ologist, I'll use that term instead. I did not mean that as a pejorative, although it is obvious I think anyone who believes 2012 was of some undue importance to the ancient Maya is clearly wrong.

Now, as for Mormon archaeologists, I should tell you that I work for a number of Mormons on one of the archaeological projects I work with in Guatemala. However, you will not find in any of their published works a Mormon interpretation, and they do not present their work with "Mormon archaeologists" and bristle at that term. They recognize there are Mormon archaeologists, but as for them, they are Mormons and archaeologists, but they keep their work and their faith separate. John doesn't. After all, the subtitle of his book *Galactic Alignment* is "Transformation of Consciousness". However, I am not here to discuss the validity of a New Age interpretation of the ancient Maya. I am here to discuss the scientific basis for believing 2012 was as important to the ancient Maya as John has argued. I have not criticized John's New Age beliefs but rather his ideas about the Maya Long Count calendar, and his interpretation of Tortuguero Monument 6.

And as for the Biblical archaeologists, I couldn't agree with you more. There are a lot of pseudoscientists in that field, which is why "Biblical archaeologist" is seen as quite the insult to most of my archaeological colleagues. That field is held in quite a lot of disrepute due to the bad scholarship it has generated. On that, we are in agreement. Let's stick to the science, and keep faith out of it.

Stanley Paul Guenter
Raymond,

thanks for the info on the Hebrew calendar. I note that the idea that this era we are in is only going to last a maximum 6000 years is still an idea that does not equate what John is arguing for 2012 and the Maya Long Count calendar. The idea you bring forward is a Talmudic interpretation, so it is a later interpretation, and was not the basis for the invention of this calendar. Furthermore, this calendar isn't scheduled to end on a specific date; the rabbis just argue that it can't go longer than that; it could end at any point earlier, though. But the important point is that this is only one rabbinic view, and not that of the creators of this calendar. John argues that the Long Count calendar was invented with the 2012 end date in mind. On that point not only do I disagree, but I find no precedent in world history for such a calendar.

From Carlos Barrera Atuesta:
Stan,

I decided to delete my previous posts on "the Tzolkin question and the number 13" because it had so many typos, so here it goes again:

"What about the simultaneous observation of Mars, Jupiter and Saturn?

I'm thinking about ancient people living in small farming villages that barely know how to count twenties, OK?

As you said, there are alignments going on all the time, so let's suppose that a configuration similar to that observed during the life of Kan Bahlam on the date 9.12.18.5.16 was present at those ancient times.

Those people didn't have TV so the only thing they had to watch at night was the sky, so that configuration of "stars" should have caught their attention.

After some years of careful observation they noticed that Mars was about the same position in the sky after 39 twenties of days, Jupiter after 20 twenties, and Saturn, after 19 twenties

So 20 had to be a sacred number.

They also noticed that Mars moved backwards for about 4 twenties of days, Jupiter for 6 twenties, and Saturn for 7 twenties, and when they counted the twenties elapsed between what we call the first stationary position of the current cycle and the second stationary position of the next cycle, they found that there were about 2 x 13 twenties (520 days), both for Jupiter to Saturn.

But There was a problem of commensurability: Jupiter needed one more twenty than 13 twenties (280 days) to reach the next first stationary position from its previous second, while Saturn needed one twenty less than 13 twenties (240 days) to do the same movement.

Mars was not a problem because it could be described by only using 13 twenties (3 x 13 x 20), so they had to wait 13 twenties in all for Jupiter and Saturn, with respect to these second stationary positions, until Jupiter and Saturn were in sync again.

So, not only 20, but also 13 had to be a sacred number too!

What do you think?

It's a possibility, Isn't it?"

Please feel free to reply here or directly to my email (carlos@dresdencodex.com), OK?

All best,

Carlos

Carlos Barrera Atuesta
Dear John,

I know you've been busy replying so many posts, but please don´t forget to take a look at those Mars/Saturn/Jupiter/Mercury/Solar events that I last mentioned about the dates 9.8.19.10.2 and 9.10.17.2.14.

I did not find much of this information in your paper and perhaps it could be useful.

Cheers!

Stanley Paul Guenter
Carlos,

I'm still not buying it. I agree that these people were far more in tune with the night sky than us with our TVs and internet. However, the idea that they were not only making careful notes about the periodicities of the planets long before the invention of writing or the Long Count calendar, and yet designing a calendar that in and of itself matches no astronomical patterns, but only through much larger permutations of this cycle, strikes me as absurd. You want to make 20 an important number because Mars was "about" in the same position 39 x 20 days, Jupiter 20 x 20, and Saturn 19 x 20. No, 20 was an important number because it is the basis of their counting system, which is based upon the countable digits a human has. 20 was important long before any astronomical observations were being made.

The same goes for 13. Your permutations of these numbers are all much larger than 260, and you keep using vague terms such as "near" and "about". Your information is not in the least bit convincing.

So is your idea a "possibility"? Only insofar as there are many ideas that cannot be disproven that are obviously not true. I can't disprove the existence of a teapot floating in orbit between Mars and Jupiter, but it isn't reasonable to believe this either. The same goes for your ideas about the basis of the 260 day calendar. Your "solution" involves such complex calculations as to simply be unbelievable for small-scale, farming villagers, especially when only one of the 20 day names has anything to do with celestial objects.

Pg 4:

Carlos Barrera Atuesta
Stan,

I know 20 was important long before any astronomical observation were being made and I also Know that 20 was an important number because it is the basis of their counting systems but, Why should I rule out other possibilities that could reinforce its importance?

And, How can you be so sure that 20 is based upon the countable digits a human has?

Yes it sounds logical. Yes, I know that a possible meaning of the glyph "winal" is "human", but not necessarily "finger and toes". See what happens when I take a position similar to yours?

And, How can you be so sure that only one of the Tzolkin signs has anything to do with celestial objects?

Yes, "Lamat" means "Venus" and "star", but also "Kan" means "sky". Doesn't it?

And, How can you be so sure that the "Ahaw" sign doesn't refer to the solar aspect of "Junajpu", or "Ix" to the lunar aspect of the underworld "jaguar", or "Ok" to the mythological aspect of Mercury & Venus as "dogs" that guides the Sun in its journey through the underworld, or perhaps "Imix" as a celestial dragon?

You said my "solution" (I would say proposal) involves such complex calculations as to simply be unbelievable for small-scale, farming villagers.

I don not agree at all. C'mon, Stan: Is it so hard to use a stone to represent 20 days, and after a while count 13 stones? Please, do not underestimate those who have proven to be the masterminds of ancient Mesoamerica.

Do you agree that the Tun seems to be a "mod-20" representation of the solar year, and one Katun, a "mod-20" representation of a cycle that is suspiciously close to 7182 days = 18 x 399 days (Jupiter) = 19 x 378 days (Saturn)?

Then, Why can't 39 x 20 be a primitive "mod-20" representation of Mars, 19 x 20 a primitive "mod-20" representation of Saturn, and 20 x 20 a primitive "mod-20" representation of Jupiter?

If you have a copy of Thompson's Commentary on the Dresden Codex, and some time, I can show you something that strongly suggests that what I am saying about Mars, Saturn and Jupiter is quite probable, and by the way, could solve a small "mystery" about one of its tables of multiples.

You said my permutations of these numbers are all much larger than 260, and in fact they are, but What would you say if I´d tell you that I took my time to review the calculations for both the "primitive" values and modern astronomical constants, and guess what?

BOTH WORK!

Skeptical? Well, the range of error is less than 5 degrees of angular distance for Saturn, less than 2 degrees for Jupiter, and almost exactly for Mars.

I know these results are not perfect, but they are within a reasonable range of error.

Does it still strike you as absurd?


Stanley Paul Guenter

Carlos, simple answer is yes: your ideas are absurd. I know they are your ideas and so you're attached to them. I was quite attached to my first ideas in epigraphy, but ultimately I've had to admit I was wrong. Why? Because the basis for my ideas changed, when new decipherments came along. I fear that like many, you are becoming obsessed with your own ideas and no matter what I say, you will remain certain you have stumbled upon something significant. This will be the last I have to say on the subject, unless you want to provide us with the exact periods you claim are so significant.

20 in Maya belief is based upon the digits of human; this is common knowledge because of the linguistics. Winik means human and winik means twenty. The day sign Kan does not mean sky. You are ignoring the linguistics here. The day sign in Yukatekan language is pronounced K'an (colonial spelling Kan), whereas sky in Yukatekan is Ka'an. They are pronounced completely differently and are not in slightest bit related words. Furthermore, the day sign is depicted by the image of a tamale. It has nothing to do with the sky. As for the rest of your speculations, not even a single time are any of these day signs associated with astronomical symbols. There is no evidence here to support your idea.

As for counting by stones, I have no doubt that the Maya would have counted like this. That they were counting the periodicities of Saturn and Jupiter before they had ever invented the tzolkin calendar is absurd. Furthermore, your claims, as I keep pointing out, are regularly prefixed with the terms "near" or "about". The katun is 7200 days long, and you are trying to base this on the periodicities of Saturn and Jupiter, but you are 18 days off in just the first katun. So after the first katun the observer would already be out on his calculations by nearly a full 20 days. And yet these supposedly amazing astronomers are going to base their calendar on such a shoddy correlation? Again, your idea is absurd.

I will end by pointing out that you exhibit one of my biggest problems with archaeoastronomy. You consider your calculations to be significant, and yet you also admit that your calculations only work if you give yourself a 2-5 degree wiggle room. And yet you also insist these Maya were wonderfully accurate astronomers. Therein lies my skepticism.

Now, as this is supposed to be a discussion of John's paper, I suggest we drop this issue. I doubt I've convinced you, and you certainly haven't convinced me. All best in your future research Carlos.

Carlos Barrera Atuesta
Ok, Stan.

This will be the last that I have to say on the subject too:

When you make statements like:

"The katun is 7200 days long, and you are trying to base this on the periodicities of Saturn and Jupiter, but you are 18 days off in just the first katun",

You're ignoring that in REAL life the cycles of conjunctions of Jupiter & Saturn are defined by mathematical expressions like 7,254 ± 292 days.

This means that ANY value between 6,962 days and 7,546 days IS valid.

That's why I use terms like "near" or "about".

According to your "standards", even the Venus Table of the Dresden Codex would be wrong because in real life, Venus periodicity is defined by 583, 587, 583, 585 and 582 days, and not only by a constant value of 584 days.

So I agree: you're not going to convince anybody with such weak arguments.

I wish you the best too.
Carlos

From Ce Akatl (Gerardo Aldana):
I have to admit that when I first read in the Newsletter that the MEC would be doing a form of "peer review" for one of Jenkins's pieces through an on-line forum I felt pretty certain that this was a bad idea. And as soon as I wrote that thought down in an e-mail to a friend, I felt bad that I had even thought it. In this global age, shouldn't we be more open to alternative forms of evaluation? Shouldn't we use technology to increase the number of voices participating in any given conversation? Had I really become an old curmudgeon after only 10 years as a professor?

After "lurking" behind the discussion for the past few days now, I've come to realize that my gut feeling was right, but that it's a lot more complicated than I had anticipated. The primary complication that I will acknowledge up front is that peer review is more than

just an idea; it is an enacted process. And as such, it is subject to all kinds of social pressures and influences. At its most detrimental, "peer review" is nothing more than a euphemism for 'gatekeeping.' In this role, legitimized authorities determine whose work gets published according to intellectual genealogies, political inclinations, drinking buddies, or what-they-felt-like-when-they-got-up-in-the-morning criteria. That is when it is at its worst-if it ever goes that far.

I will not try to argue that some aspects of this kind of 'gatekeeping' never go on in the academy. In the end, the academy is made up of individual humans, with all the loveable complications that go with them. But neither will I argue that this is the most prominent feature of peer review, and it is certainly not what makes the latter valuable even when it's not perfect.

When it is engaged properly, neither is peer review intended to be punitive. It should guide the reviewee to relevant work, rather than punish the author for what s/he may have overlooked. It should point out inconsistencies in argumentation, or misinterpretations of evidence in ways directing the reviewee for revision, not nitpick at trivialities in order to cast doubt on otherwise strong results. In short, peer review is intended to make the work stronger so that it becomes better able to withstand yet other critiques, and eventually become integrated into the body of knowledge as a whole.

But a feature of peer review that I find to be most critical in this-the MEC's-forum is that it provides boundaries. When a manuscript of any size is submitted for review, it is a bounded argument. The reviewer only considers the evidence and the argument within the manuscript. That's it. There's no appeal to the results of someone else's study written five years ago that all of a sudden now is realized to possibly corroborate an argument. There's no questioning whether an opinion expressed ten years ago contradicts the argument in the manuscript. By the same token, it is entirely the author's responsibility to include the whole argument and the relevant evidence within the manuscript.

I suggest that these are the greatest complications confronting the utility of a Facebook discussion board as a form of review. For one, specifically in this case, the manuscript presented is not a self-contained publishable manuscript. It is the transcript of a 15-minute (or so) presentation. There's simply not enough argument or evidence for a self-contained discussion/evaluation. This, I suggest, is why we are seeing so many appeals to other material despite the moderator's pleas to restrict the scope. And this is key. Without a self-contained argument (and I don't mean self-contained to imply an absence of dependence on the work of others through an appropriate literature review), it is completely artificial to try to enforce boundaries regarding what is directly related to Jenkins's paper, and what is not. If Jenkins had cited David Kelley's work in a literature review, then Wolak would be perfectly justified in raising the issue of the Kali Yuga since that is very relevant to Kelley's argument on the calendar correlation problem. If Jenkins is suggesting that there is a vastly developed astronomy at Tortuguero because the tzolkin was invented based on astronomical inspiration, and so Mesoamerican astronomy's development was over a thousand years old by the time B'ahlam Ajaw encountered it, then Carlos's posts, too, become relevant. But as it stands, we can't make

these assessments because the manuscript being addressed is just the sketch of an argument-it is not in publishable form.

The upshot is that this forum really doesn't become a viable alternative to traditional peer review. There may be some interesting points coming out every now and then, but mostly this is just another on-line discussion board. It won't provide Jenkins the credibility of having properly vetted his work, nor any would-be reviewers the material to conduct a relevant review.

Now, I do hate to be a naysayer without having anything constructive to contribute. And it has just occurred to me that if the parameters were changed a bit, the MEC may just have on its hands a new space in line with its stated interest in honoring Schele's perspective on "outside" voices.

What about a more structured alternative to traditional peer review that takes advantage of the internet and allows for productive "independent" scholarship? Specifically, I would suggest something along the lines of:
i) put out a call for articles (include word length restrictions and number of figures, charts, etc. if desirable);
ii) post the articles on a "review" thread;
iii) invite anyone interested to submit a single post reviewing the article-a single post so that the review is self-contained, well thought-through, and "complete";
iv) once the number of reviews is deemed sufficient, make a determination of whether or not the manuscript can be (appropriately revised and) moved over into a separate "published" thread to continue the discussion in other ways. ("Determination" might be solely the webmaster's call, or it could be put to a vote of subscribers, or ???)
As far as I know (since I'm just coming up with this off the top of my head), this would be a unique forum that would provide a more open "peer review" process, benefiting from a community of like-minded researchers, but not confined to the purview of academics. This wouldn't make the resulting literature academically legitimate, mind you, but at some level, that would be the point, wouldn't it?

In any case, whether or not the MEC takes up such an alternative forum (which, by the way, would entail a significant outlay of work, as do journals in general, which, again by the way, often goes unrecognized), the current version is really just random points and counterpoints without direction and tenuously connected to the original document. It's kind of like tennis warm-ups with multiple players rotating through. Every once in a while there's a good shot, but there's never a sustained rally, and it's pointless to try and keep score.

Gerardo Aldana

John Major Jenkins
Hi Stan,
Thank you for your direct treatment of several points I brought up. In regard to my referencing of Quirigua Zoomorph B, and how the iconography supports the astronomy associated with the dedication date of that monument, you state that "nothing in the text indicates such a connection [between the mouth of the celestial crocodile and the dark rift]." The date itself provides the astronomical picture that leads to the deduction regarding the role of the dark rift in the celestial monster iconography. My argument here, of drawing meaningful analogies between iconography and astronomy, can effectively go no further because, as you stated, you disagree with this approach. I cited Looper's own words to show that my methodology is not my own and is not anomalous. It is in fact found in the kit bag of an entire array of scholars, including those you mentioned (Aveni, Rice, Milbrath).

Your objection to this integrative approach to available data includes, as you stated, a bias against archaeoastronomy. Therefore, according to you my Diagram 4, which shows the orientation of the Izapa ballcourt to the solstice sunrise and associated iconographic monuments that confirm the intentionality of the solstice alignment, is not admissible to you and highly suspect. So, again, the methodology I employed is the issue. You've just set yourself apart from a large number of your colleagues whose efforts to reconstruct Maya astronomy and iconographic intention utilize this same methodology. It would be nice at this stage to hear some defense of their methodology from those scholars whose conclusions are consequently, in your words, "all wrong, demonstrably so." Many of these scholars I included in my short-list invitation to this discussion last week. (However, this could be a topic for another discussion.) If they prefer not to contribute their defense (possibly because it would appear to support my approach), then I think at least we can say that the basis of your objections to many of my points is not something that many Maya scholars agree with, particularly those who have spent the most time studying the related disciplines. For in objecting to my methodology of using contextual iconography and archaeoastronomical orientation as a basis for interpreting intention (as with my Izapan ballcourt argument) you are objecting to a great number of significant contributions by your colleagues in understanding Maya astronomy. Hey, you might be even more of a rebel fire-brand than me!

Thank you for your direct attention to the four dates of sun/Crossroads alignment. Rather than saying the four dates fall at approximately the same time of the solar year, it is more relevant to note that the four dates indicate alignments happening in approximately the same sidereal place. This is especially true in relation to the 612 and 2012 dates, where the tropical year has slipped while the sidereal backdrop is approximately the same. The tropical-year shifting between these two dates (i.e., solstice precession) is curious, and in this regard I'd like to remind readers about Grofe's interesting point on the two other dates (510 and 647). Yes, they too position the sun close to the dark rift/Crossroads. And the interval is 50,040 days, which is 139 Tun of 360 days each AND 137 tropical years of 365.2422 days each [Note: I was corrected; this should be a sidereal year period of

365.25636 days, not tropical years]. One could say that there is here a demonstrated interest in associating whole-number tropical [correction: sidereal] year periods with Long Count periods, meaning that there was a concern for tracking astronomy in relation to Long Count periods. So, there's a lot of contextual factors that can come into play in making reasonable deductions about what's going on here. But you disallow these because you only allow precise and explicit, directly stated evidence.

In Diagram 9, the arrows connecting the 2012 date to other dates in the text include the DN association as well as calendrical and astronomical associations. Dates 8 and 11 are hotuns and therefore embody Tun astronumerological commensurations (as well as others, including the 819-day count, 378, 260 and 364). Dates 1 and 7 share the sun-Crossroads alignment with the 2012 date, and Date 11 further embodies the Jupiter-Crossroads alignment. So, again, you disallow these because they are not explicitly stated. And yet, as I pointed out, you can make an allowance for non-expicit deductions of intent as with your statement about Pakal's CR analogy with 9.12.0.0.0. I actually agree with your deduction there, by the way, my point was that you apply a double standard when you assess the merit of my deductions.

What's interesting to me about the 3 DN links I pointed out between Bahlam's Birth, his accession, the building dedication, and the 2012 period ending is that all four of those events partake of the same theme --- new birth / renewal. Think about it: 1) Big period endings are always associated with transition & renewal rites occurring on a cosmological level, which in the case of 2012 is borne out by the epigraphic analysis of Bolon Yokte's role in the 2012 date; 2) building dedications, as with the one in 669 AD, represent the birth of a new temple sanctuary ---as symbolized by the lighting and entering of the inaugural altar fire; 3) an accession (utilizing the upturned frog-mouth glyph meaning "to be born") was the birth of a new being, the king; and 4) 612 is Bahlam Ajaw's human birth. It's as if we have here the idea of birth/renewal represented at four conceptual levels --- human, kingly, city-state, and cosmos.

In terms of having a real grasp of what is going on here, I think there is a connection between these dates, in terms of both explicit DN linking and conceptual analogy. But wait, let's get some concurrence here. Okay, hold on … all right, I just called Kevin Bacon, and he agrees!

Now, these responses can go very long so I just want to address the period ending vs cycle ending thing. I make an effort these days to use the phrase "13th Baktun period ending" (especially in relation to discussing Tortuguero Monument 6) out of respect for the VERY recent determination by Gronemeyer & MacLeod (Wayeb #34 piece, August 2010) that it's an ordinal usage of 13 in the Pik phrase of the inscription, thus "13th" baktun rather than "13 Baktun" with the possible of "13 baktun cycle." I do this also to be conciliatory towards those who fixate on the cycle ending vs period ending distinction. This doesn't mean that I now reject the idea that the Maya ever had a 13-Baktun CYCLE concept --- and I discussed this in a previous post. The vast prevalence of cyclic concepts in Maya time philosophy suggests they would have utilized a cyclic notion, and there are numerous examples in academic phraseology in which a 13-baktun CYCLE concept is

taken for granted. However, and most importantly, we can circumvent going around in circles on this because the point is this: In the astronomical parallels that I argue were made by Bahlam Ajaw and his rhetoricians, it doesn't matter. The 13.0.0.0.0 4 Ajaw 3 Kankin date is stated; it is there. "Cycle ending vs period ending" is a separate discussion, and one that will probably end up allowing for --- at least as a possibility --- BOTH perspectives in different contexts at different sites at different times. While you characterize my effort at conciliation and clarification as "softening" my positioning, I'm actually doing what any good researcher does --- adapting to and incorporating new context-specific data into the evolving work. Which is what should be done with the Izapan ballcourt alignment orientation and iconography, which has been almost completely ignored by critics despite my frequent emphasis (see further comments below) .

My comment that a Baktun can be thought of as a cycle wasn't meant to cheapen anything, and it doesn't. Rather, it exalts the Maya's ability to recognize cycles within cycles, right down to the 1-day cycle of the Kin, and mutually interpenetrating cyclic time frameworks. We see this in the mutually interfacing cycles of 13 and 20, weaving the 260-day tzolkin loom. The recognition by the Maya of larger patterns generated by the weaving of differently phased but simultaneously occurring cycles, converging at specific points in their unfolding, is a central tenet of the Maya genius in tracking time, measuring astronomy, and making calendars.

Finally, there is evidence for the Maya interest in the solstice and seasonal quarters despite Van Stone's avoidance of academic findings on this which I pointed out to him, which are cited in my 1998 book *Maya Cosmogenesis 2012* and elsewhere. The key piece that indicates that the pre-Classic people of the Isthmian-Izapan civilization who most likely devised the Long Count (see Coe, Rice, Malmstrom) is the Izapan ballcourt's alignment to the December solstice sunrise, which I deduced long ago from data provided by the BYU map plans. I first published this observation in 1995, and confirmed it on my self-funded field trips to the site. This is an important key, taken in the proper context of it being found at Izapa, a still greatly underappreciated archaeoastronomical site notwithstanding important studies by Garth Norman, Julia Guernsey, Prudence Rice, and others. It might not mean anything to you, because you doubt archaeoastronomy, but in 2000 Aveni & Hartung published their survey of Izapa and other pre-Classic sites in the region and confirmed the Izapa ballcourt's solstice sunrise alignment, concluding that a solstice-oriented calendrical cosmology was prevalent during the pre-Classic in southern Mesoamerica (Aveni & Hartung, "Water, Mountain, Sky: The Evolution of Site Orientations in Southeastern Mesoamerica," in *Precious Greenstone, Precious Quetzal Feather*, ed. Eloise Quinones Keber, Labyrinthos, 2000). Van Stone take note.

I'm glad you are offering some admissions that perhaps there at least MAY be meaningful connections going on here, and that Grofe's observation of the astronomical parallel between Bahlam Ajaw's birthday and the 2012 date is an empirical fact and therefore has merit as an interpretive aid. Cheers, John

Carlos,
Yes, I certainly think your observations are worth discussing and exploring, but I'll have to return to them this evening as this weekend has been rather busy with events.

Gerardo,
I appreciated your contextualizing and proactive offering of possible directions for future MEC topics. Your correlation paper would be a good one. In response to a few of your comments, the simple point of my paper is to show that there are meaningful astronomical and astronumerological patterns in the TRT Mon 6 inscriptions, providing evidence for intent going on, and this can augment epigraphic analysis to help us understand the narrative more fully. It doesn't pretend to provide all the answers or comprehensively present all the arguments and related evidence (of which there is more). The brief confines of the original paper were decided to actually be a better format for these provocative implications, because longer treatments would be daunting for scholars and the interested public alike to follow. And, the basic factual points that support the proposition of "astronomy within the TRT Mon 6 inscriptions" are rather easy to lay out.

I disagree with you that my paper is a less than legitimate offering. I'm playing by the rules here. The length of *Austin Notes*, *Copan Notes*, *PARI* articles, and other well-cited papers are often very brief yet serve as the frequently referenced origin place of new ideas, because they represent the first place that an idea was presented in an academically approved and filtered venue. In the case of my paper, this was the by-invitation-only 75th annual *Society for American Archaeology* conference (St Louis, April 15, 2010), whose papers are legitimate and often cited sources in academic research.

In any case, my SAA paper was actually a reduction of the original piece I wrote. As I mentioned in the postscript to my paper, an expanded version is being prepared for publication with a University press anthology, so feel free to wait for that paper if you want to critique the argument. Best wishes,

John

Maya Exploration Center
Gerardo Aldana's points on how this kind of discussion could be managed are well taken. This discussion is our first attempt at such a forum and a learning process. We should perhaps distinguish between a discussion and a review, since both have value. This has been a discussion, and as it turns out boarding unfortunately on argument. For the future, the idea of having one post per reviewer of a paper like John's, then perhaps a chance for the author to respond, capped by a summary by MEC may be a better route. Thanks Gerardo for reading and offering this honest critique.

This discussion board will remain open through the next week, hoping for new

participants, and then the results will then be summarized.
Thanks and Happy Holidays, Ed Barnhart

Ce Akatl (Gerardo Aldana)
John,
You've missed my point… maybe a couple of them.
i. "legitimacy" is not as general as you imply. You can have a legitimate presentation at a conference, but that does not make the argument legitimate for publication. Conferences play different roles in the production of scholarly knowledge than peer-reviewed journals, with the latter, clearly more substantive and complete.

ii. likewise, "citation" is not as general as you imply. The Texas Notes and Copan Notes were not peer reviewed, nor were the first articles posted on Mesoweb (PARI), though I believe the latter now are. These "Notes" venues (as indicated by the titles) were created to try to keep pace with the development of the hieroglyphic decipherment. It was only accelerating through the 80s and 90s, so the Notes were intended to make ideas available to other scholars quickly and effectively. By the same token, many of these Notes almost immediately became irrelevant; others turned into peer-reviewed articles. The citation of these notes now, or since their publication, is to point to the origins of ideas, as you mentioned, or for historiographic purposes, not to use them as complete arguments—not as coherent contributions to the academic body of knowledge. The same goes for conference papers. They are meant to get investigations going, or keep them going, not to provide the last word (better: latest word). If all you want is for all future uses of your interpretations of Tortuguero Monument 6 to cite your work, then your SAA presentation already takes care of that legitimately.

iii. regarding the intent of your paper, there is nothing simple about "meaningful astronomical or astronumerological patterns" as this discussion board attests and then some. Every single one of those terms is contestable. Especially in these contested/interdisciplinary cases, it is the author's responsibility to be as thorough and convincing as possible. When I found an interesting pattern among the Cross Group and Temple of Inscriptions texts at Palenque according to Floyd Lounsbury's criteria, I developed even more constraints to run the data through in order to ensure that they weren't just "patterns in randomness." The author has to be harder on him/herself than they expect their critics to be. And even that doesn't always work.

iv. finally, my calendar correlation article actually wouldn't be a good example of the kind suggested for the MEC forum (besides the fact that I wasn't suggesting topics). While I'm happy to see that my article is already being considered on-line, it has already gone through the traditional academic process. In fact, I first circulated drafts of it to my colleagues who I knew would be its harshest critics before revising it and sending it for review by the volume editor and press itself. My understanding of Ed's intent for your paper on this discussion board was to include material that was not being published in

traditional academic venues. My suggestions were directed toward making that alternative forum a productive one. The point is that even with alternative venues, as Ed seems to be noting in his last post, some structure is necessary.

So while I'd be happy to comment on some well-defined parts of your current paper, or on the publication version when it is finished, the current version, in my estimation, is not ready for academic review.

Gerardo

John Major Jenkins
Gerardo,

Your points are well taken. I believe I have been very thorough in addressing the items of contention brought up. I don't believe my SAA paper is the "last word" on the astronomy in the TRT inscriptions, and my intent is and has been to open ongoing dialogue on this. And yes, there are endless levels of complexity that can be unpacked in any proposition and any argument, even simple ones. So, I'm already in agreement on these points you've made. I think Ed's idea of opening a Discussion page was good, although I wasn't expecting it. Being adaptable I'm willing to address feedback in this kind of forum, which indeed seems experimental. Ed's idea of limiting the critiques to one per respondent, that the author then responds to, is good, as the debate starts to go around in circles and becomes repetitious. And it would be worth seeing the post next week, as Ed suggested, of the email exchange that Ed and I had last July on the content of my SAA paper, which I sent to him at the time. It's a good example of open-minded dialogue. Cheers,

John

Jim Reed
Ed, thanks for continuing to post this discussion, it is very interesting.

John, you have some interesting ideas. Concerning Diagram 9 in your PDF, how did you come up with that? And how is the symmetry depicted?

Anyone in the South Florida area on Wednesday, January 19th, can see John present his views about Tortuguero Monument 6 at the Institute of Maya Studies, 8 pm, Miami Science Museum. Come and ask you questions in person.

FYI: The next "New Year" (initial day) of the 260-day sacred calendar is July 11, 2011.

I'll be arranging a group to participate in the ceremony with Tat Rigoberto Itzep in Momostenango. Travel dates are July 9-17, and after Momos, we'll head to Izapa. John Major Jenkins will probably be with us. Perhaps it's time for you to join in a modern Maya fire ritual. Get "real" with the people you love to study and discuss. Jim Reed

From Barb MacLeod:
Hi, John, Ed, Stan and All,

There are a number of issues raised in this discussion concerning Tortuguero Monument Six that I'd love to discuss, but time allows me only a portion. Some of you may not be aware that Sven Gronemeyer and I recently published a lengthy treatment of Tortuguero 6 on the Wayeb website as Wayeb Note #34. To call it a "note" is glorious understatement, and much of the epigraphic discussion appears as footnotes. Here's the link:

http://www.wayeb.org/notes/wayeb_notes0034.pdf

I'll give a quick summary. In this paper, we do not consider astronomy. Our attention is on a new interpretation of the 13.0.0.0.0 event featuring Bolon Yokte', and we are reasonably confident that we understand the event in spite of the condition of this part of the panel. We regard it as the anticipated investiture of the god (/uhtoom il yeen Bolon Yokte' ta chak joyaj/) and compare this in detail to the celebrations of the Mam in Santiago Atitlan, Guatemala as documented by Allen Christenson. Allen has recently told me that he supports our comparison. While epigraphers may quibble over whether we've got it right, I submit that we do, by virtue of having collaborated for months with colleagues in turning every stone of possibility, and thanks to the availability of a new mosaic photograph of the right panel prepared by Mark Van Stone and Paul Johnson (this appears on the cover of Mark's new book on 2012). Of necessity, Sven and I carefully examine, transcribe and translate the entire text of Monument 6, and we offer some new decipherments—including a reading for the "unknown event" (more below) which has been a notorious epigraphic headbanger for years. We considered the entire Tortuguero corpus as well, though only a few things from other texts made it into the paper. One significant item from Monument 8 will be mentioned shortly.

I would like to comment on John's suggestion that there was an intentional sidereal link between the /hekwan/ event of December 5, 510 AD and the contemporaneous (hitherto "unknown") event of December 6, 647 AD. Michael Grofe had brought this to my attention in 2008, noting that the sun was in precisely the same sidereal position on both dates. In this case, "precisely" means no wiggle in either direction; my understanding is that it's as spot-on as a system which does not break the day into hours and minutes can permit.

John said:

"I'd like to remind readers about Grofe's interesting point on the two other dates (510

and 647). Yes, they too position the sun close to the dark rift/Crossroads. And the interval is 50,040 days, which is 139 Tun of 360 days each AND 137 tropical years of 365.2422 days each. One could say that there is here a demonstrated interest in associating whole-number tropical years periods with Long Count periods, meaning that there was a concern for tracking astronomy in relation to Long Count periods."

I trust that what Michael said and what John intended to say was that this interval of 50,040 days represents a whole-number multiple of a *sidereal* year and not a tropical year. It did get my attention that both dates fell 1.11 after a hotun ending. And while the term "tropical year" here is incorrect, it's imperative to not sweep under the rug a suggestion that the Maya documented commensurations of Long Count periods with precise whole multiples of astronomical cycles, including the sidereal year. With regard to the tropical year, let's not forget that old saw (first proposed, I believe, by Teeple) that 1508 haabs equals 1507 tropical years of 365.2422. Given this, for which evidence exists which Michael (who will hopefully jump into the fray) can more readily explain, I feel we must remain open to this as *possible* evidence of an underlying astronomical agenda. Perhaps not the evidence we expect; we are only just learning how to look. I myself feel that Teeple's work on determinants deserves re-examination; his work—as espoused by Thompson in 1932—suggested that the Maya of Copan and Quirigua employed a "24 days a century" haab-tropical year correction and that during a certain period at Quirigua (what we know to be the reign of K'ahk' Tiliw), this correction was refined further to reflect a very accurate tropical year. In support, I have found that one of the millions-of-tuns monstrous Distance Numbers on Quirigua Stela F represents a whole-number multiple of 365.2422 as well as of 260. I am not aware of anything in that statement concerning the sun. Therefore this must be…coincidence?

The two events in question on Tortuguero 6 are worth a good look. Sven and I interpret the earlier event, featuring a verb /hekwan/ meaning 'place something on or into something else' as a reference to the placement of a foundation cache associated with the construction or renewal of a sanctuary or /pibnaah/. It's followed by a nominalization qualifying it as a 'first making-sacred'. This like-in-kind event foreshadows the central event of the monument and the datum from which all later and some earlier dates are reckoned: a house dedication in 669 (surely contemporaneous with the carving of the monument) employing the same verb. There's no suggestion of an astronomical connection between these /hekwan/ events. Concerning the earlier event, John in his paper said:

"Curiously, the other date on the right flange (December 5, 510 AD) is also a date on which the sun was aligned with the dark rift.[11] The event recorded in the inscription for this date was a sweat bath rite. Sweat baths were seen to be underworld places. Upon emerging from the sweat bath a person was considered to be emerging from the underworld, much like a rebirth experience. The doorway of the sweat bath was thus a portal into the watery underworld. The inscriptional content is thus reinforced by the astronomy. In other words, the astronomy associated with dated inscriptions can help elucidate an often missing dimension in the purely phonetic decipherment of texts.

The performer of the sweat bath rite was a person, probably an ancestor or lord, named Ahkal K'uk in the text. A king named Ahkal Mo' Naab ruled Palenque from 501 to his death in 524.[12] Gronemeyer (2004) wrote that it is probable that Tortuguero was founded by an early Palenque king (the two sites share a place name), and thus these two may be the same person. The sweat bath rite at Tortuguero occurred during Ahkal Mo' Naab's reign, in 510 AD. It may have been the foundational rite that began the dynasty at Tortuguero, separate but related to Palenque."

There are some prodigious leaps of faith here, John. As Stan has pointed out, that these structures---like the sanctuaries of the Group of the Cross at Palenque---are called /pibnaah/ does not obligate inferences about the rebirthing and restorative properties of sweat baths and sweat lodges. It's one thing to note a clue and set it aside to be joined to others later, and it's another to grab it and swim in a cascade of self-propagating epiphanies. I suggest that in this passage, you're swimming in unsupported connections leading to improbable history. I remember well when I did things like this (I still do sometimes, but I keep them to myself).

I want to now consider the apparent sidereal partner—the event I have deciphered as /k'axi t'aan/ 'is bound the word'. I won't argue at length for the reading, but some of the evidence is presented in the Wayeb paper linked above. I am in the process of writing up the T271 /xi/ evidence in a larger work with Peter Biro; we have (finally!) a direct substitution with the other /xi/ in an identical context. The /T'AAN/ argument awaits a writeup. The various contexts either support it or do not disconfirm it; the piktun would thus appear to have been called 'fat pik'. The T42 sign itself is, I believe, a flowery speech scroll. The phrase 'bind the word' is found as such in Yucatec with meanings pertaining to sealing agreements and forming alliances. But there is another vantage point on this: on Tortuguero Monument 8, on the same December 6, 647 AD date, there is another headbanger eroded verb. Thanks to the best-possible photos of Elli Wagner and Joek Skidmore, Sven and I were able to start out like the six blind men and the elephant and, over a couple of weeks, have a synthesis. This is an inchoative verb /pi'alaj/ meaning 'become a spouse'. Significantly, this event follows by 1.11 the arrival of a foreign woman to Tortuguero, as stated on Mon. 8. So the "unknown event" (and an earlier one just like it) is apparently a political alliance sealed by a marriage. We think this is very cool, but I see no astronomy here. It's a lovely conundrum: an apparent formula which commensurates the Long Count with the sidereal year employed to link an earlier building dedication with a marriage-cum-alliance. Why link these? It's not just any marriage, or they'd never have reckoned back to the first /k'axiiy t'aan/ (now with deictic) in 353 AD. According to Michael, there's no astronomical come-hither here. In order to pursue this further, we might ask: did they manipulate the dates of these events *as a pair*? Was it intentional or accidental that they both just happen to fall 1.11 after a hotun ending? For me, this is a clue to be set aside and not forgotten. But it is curious that this appears on a monument whose initial and final dates also place the sun in approximately the same sidereal position. Ah, that "approximately"; that's trouble.

Stan said:

"OK, let's look at a few monuments you think have astronomically significant texts or iconography. You mention Quirigua Zoomorph B. Trouble is, there is no reference to any celestial body in this text, let alone the sun or the "dark rift". The imagery is of K'ahk' Tiliw Chan Yopaat emerging from the mouth of a celestial crocodile, the Celestial Monster. Now here is a good chance to look for some associated astronomy, I will concur. Now, why should we conclude that the sun in the "dark rift" was intended here? Now, perhaps one could argue that the king represents the sun and as the king is in the mouth of the celestial crocodile, we should see this as a reference to the sun in the "dark rift". Unfortunately, there is no way to confirm this, and nothing in the text indicates such a connection. However, it is quite possible, and I will admit you could well have a point here."

I agree with this. Rather than taking either exclusive position (astronomy-hither-and-yon—as Linda Schele did—vs. no astronomy whatever), I feel it's best to just have to have our antennae up and to not lose track of the clues. This may all get easier in 2013, when the circus is over. The 2012 meme has dropped into the global arena some outrageous constructs built from thin air. In contrast, while performing for the same audiences, John Jenkins offers a more reasoned—if not always scientific—approach. I understand the demands of the popular audience, having presented to them a bit myself, but a paper given to an academic audience requires a different sort of appeal. I feel that we must remain open to the possibility that the Classic Maya were capable of observing sidereal motion (as in fact Aveni and the Brickers claim for the Postclassic) and that they left us some clues to that effect, if only we are able to recognize them. Clues aren't going to appear as a whole document (akin to, say, the discoveries of Hipparchus) for later astronomers to preserve and refine. Thousands of codices in the Classic contained the subtexts of everything recorded on durable monuments. Some of that lost material was astronomical, some of it calendric play; all was creatively intertwined with history. And history was apparently fudged; hence contrived numbers. Could Bahlam Ajaw's birthday have been a contrived date? We seem to be taking for granted that it was. Of all things we should normally assign to coincidence, a birth as the sun transits the Dark Rift (and it does happen once a year for several weeks) seems a likely coincidence. But not if we view the monument as intentionally bracketed by these Dark Rift dates—though I do not know where we are in terms of degrees and minutes of exactitude. At one point, in degrees and minutes, does coincidence become likely? How much data must we have in the corpus as a whole to argue against coincidence? Or to prove it? I suggest that we are just beginning to ask the right questions.

Barb MacLeod
Austin, Texas

John Major Jenkins
Hi Barb,
Many thanks for your contribution and taking the time to engage this discussion. I'll try to be brief so as to allow mental space for other responses to your post. The scrutiny you

and Sven have brought to the TRT Mon 6 inscription has resulted in important new perspectives and decipherments. I wonder if the original photos might help us clarify the broken kin position in the DN at E4 which allows us to reconstruct Bahlam Ajaw's birthday. Even without better photos, as I look at this in Ian Graham's drawing it seems to me that the space available to the left of the vertical bar in the kin position could only allow for another bar or row of dots. Also, it seems unlikely that the remaining vertical bar is intended to stand alone, as the space to the left is intended for something, otherwise the remaining bar would be flush with the edge, or placed against the nearby glyph (if there was one), as in the 2-bar "10" at F13 for example. This means that there would have to at least be a dot next to the bar, giving us a "6" for the kin position. At most, there could be another bar, giving us a "10" for the kin. The space available, again, makes it unlikely that more dots or another bar could fit so that the kin part of the DN would be as much as "15." As such, it seems to me that the likeliest DN is between 1.11.11.6 and 1.11.11.10 --- giving a birthdate between November 28, 612 AD (J) and December 2, 612 AD (J). Within this range, the middle date (November 30) provides the exact sidereal parallel to the sun's position on 13.0.0.0.0. This November 30 date is also the tzolkin day 1 Ik, which would be compelling given the 1 Ik / 4 Ajaw CR-LC analogy I previously mentioned.

So, in terms of precision --- if this narrower reconstruction of the DN is deemed more likely given the allowable space --- the maximum disparity between the sun's sidereal position on Bahlam's birthday and the 2012 date is just 2 degrees. But I'd like some feedback on this --- do you think the space available allows for more than one additional column of dots/bar? If so, it's a pretty tight squeeze. In any case, the quest for exact precision in these date/astronomy relations may not be the gold standard in settling the question, as the motivation behind asserted relationships depend on context (such as whether we assume the inscription represents a scientific almanac or rhetorical propaganda). As for whether Bahlam Ajaw's birthday would have to have been contrived, that's a good question for the group. If he was born precisely on 1 Ik (and we may never know for sure), that is a mighty nice coincidence in terms of calendrical and astronomical analogies with the 2012 date. I'd suspect he was born near this date-range, and contrivance nailed it for rhetorical purposes. This would merely emphasize all the more that a constructed relation to 2012, exploiting real astronomy and calendrics, was at play.

Regarding the 510 – 647 astronomical parallel --- yes, I meant to use the sidereal year, thank for the correction. Kudos to Ray for noticing this too.

Regarding my sweat bath speculations. As a reference I did cite the use of the term "sweat lodge" for this pibna:h in the Wayeb 34 piece, in my response to Stan above. If you think that the possibility that the pibna:h term could refer to a sweat bath is definitely incorrect, I will take your assessment to heart. I take your point as a reminder to carefully qualify any speculations such as this with liberally applied "maybe" caveats, which I did in the section on Ahkal K'uk's potential relation to the Palenque king. I still believe that the associated astronomy of Ahkal Mo' Naab's accession and death adds to the possibility of a connection.

The dedication of a foundation cache in this pibna:h “sanctuary” --- this was an earlier foundation rite later replicated at the 669 building dedication, is that correct? Would it be best to say the 669 building dedication “renewed” the earlier sanctuary, or “replaced” it? Is the earlier rite a “foundation” rite; does it have to do with the dedication or birth or inauguration of anything? Did the Maya see dedications and inaugurations as types of “birth”? If there are analogies between these concepts in Maya thought, and I think there are, then it’s still appropriate to include the 510 rite in the “birth” theme that unites the four DN-linked dates, from Bahlam Ajaw’s birth to the 2012 date.

Finally, when you say you don’t see astronomy in the Dec 6, 647 inscription on Monument 8, you mean in the inscription itself? If so, that’s fine. That is Stan’s issue and default to explicit statements. Astronomy would have been one of probably many factors that went into the construction of narratives and the dating of ceremonies. The lack of always-stated explicit reminders doesn’t preclude the possibility that the astronomy associated with dates was known and provided a subtext to events; we just can’t know for sure in some cases. We only know that astronomy was important in many Maya narratives, and sometimes can be explicitly reconstructed (as with the Quirigua 3114 Creation narrative). That’s one of my points in providing Chart 1 as a guide to the astronomy of the 13 dates, which may (or may not) aid in the decipherment of meaning in the inscriptions.

I appreciate you mentioning the astronomical work you and Michael Grofe are doing, which explores evidence for sophisticated astronomy (sidereal year and precession) being utilized by the Maya. It seems to me that this kind of astronomy is also suggested by the date relations on Tortuguero Monument 6. So, the supposition of many of my critics, that the implications of what I argue for is tantamount to saying that the Maya were hyper-advanced galactic space aliens, is simply not the case.

Thank you, Barbara, for your contributions, corrections, and insights! Best wishes,
John

From John Major Jenkins
Jim,
Thank you for all the work you are doing with the traditional Maya spiritual guides in Guatemala, and at The Maya Conservancy. Congrats on your new granddaughter too.

Diagram 9 --- The symmetry comes directly from the sub-bases which the narrative casts back to when it picks up a new tack. We have a direct sequential narrative in Dates 1-6. Then, interestingly, the narrative goes back to Bahlam Ajaw's accession date to generate the two new sub-bases (Dates 7 and 10). Here the symmetry begins because from each sub-base date there are two negative DNs. Two of these negative DNs are tiny and result in the hotun dates (8 and 11). Two of the negative DNs are large and result in "deep" Dates 9 (353 AD) and 12 (510 AD). This is a "hidden" structural patterning of the dates. It shows that structural symmetry was a value applied by the Maya to TRT Mon 6 --- and

therefore the structural parallel between the left and right flanges (Dates 1 and 13) would also have been an important "hidden" framework.

Other hidden or indirectly implied patterns in date sequences on Maya stelae are well known --- for example the woven mat pattern of Copan Stela J (see Newsome 2001:77). The sequence of reading is not explicitly evident in Stela J's construction. Therefore, according to a default reflex that recognizes only explicit information, as in Stan's critique, the reconstruction of Stela J and the pattern structure in TRT Mon 6 are unbelievable and fantastical. Best wishes,
John

From Barb MacLeod
Just a quick reply to John's query about the k'in coefficient in the DN which counts back to the birth date of Bahlam Ajaw: yes, I agree completely that we can narrow the range to between six and ten, and not less, nor more. This understanding is also Michael's and Gerardo's. Michael just sent me a nice close-up photo of that portion of the text. The relevant part of the coefficient is not simply eroded; it has broken off due to the removal of the left flange from the main body of the stone. Nothing can be seen of it.

A correction to my previous post: the paper in progress which details the /xi/ reading for T271 (amid a broader discussion of the "Cumku" superfix) is being authored by Peter Biro, myself, and Michael Grofe, who contributed some pivotal pieces of data to the discussion (thanks, matey!).

OK, gotta run; I hope to have a little more time for this discussion later today.
Barb

Note from JMJ (12-26-10): the following photo of the DN section of TRT Mon 6 suggests that the area just to the left of the vertical "5" bar in the K'in portion of the DN is not flush with the edge of the monument. It is, granted, a poor photo but closer examination seems warranted:

====➔

Here is the K'in portion of the DN. There seems to be some stone surface to the left of the vertical bar. It might be worth examining the surface more closely for remaining nubs of dots. The edge falls off to the left of it --- was it cut or broken?
JMJ

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From Carlos Barrera Atuesta:
Hello everybody,

Please allow me to emphasize these remarkable words that I have read here (worth reading at least twice, anyway):

"it's imperative to not sweep under the rug a suggestion that the Maya documented commensurations of Long Count periods with precise whole multiples of astronomical cycles, including the sidereal year. With regard to the tropical year, let's not forget that old saw (first proposed, I believe, by Teeple) that 1508 haabs equals 1507 tropical years of 365.2422"

"Given this, for which evidence exists... I feel we must remain open to this as *possible* evidence of an underlying astronomical agenda. Perhaps not the evidence we expect; we are only just learning how to look."

"Clues aren't going to appear as a whole document..."

"Was it intentional or accidental that they both just happen to fall 1.11 after a hotun ending? For me, this is a clue to be set aside and not forgotten."

"I have found that one of the millions-of-tuns monstrous Distance Numbers on Quirigua Stela F represents a whole-number multiple of 365.2422 as well as of 260. I am not aware of anything in that statement concerning the sun. Therefore this must be…coincidence?"

"Thousands of codices in the Classic contained the subtexts of everything recorded on durable monuments. Some of that lost material was astronomical, some of it calendric play; all was creatively intertwined with history. And history was apparently fudged; hence contrived numbers. Could Bahlam Ajaw's birthday have been a contrived date?"

Especially these last two sentences have inspired me and gave me enough courage as to present here "a clue to be set aside" that hopefully will be useful to persuade each of us involved in this forum about the *possibility* of an interdisciplinary approach to the subject.

I'm aware that this could be only an absurd idea of mine, so I entirely assume the responsibility for what I'm going to suggest:

Could U'kix Chan's ("Snake Spine"'s) birthday have been a contrived date, connected in some way with the life of Bahlam Ahaw of Tortuguero?

Let's review some astronomical, calendrical, "structural", mathematical and historical evidence (All rights reserved, just in case):

The predynastic ruler Uk'ix Chan was born on 5.7.11.8.4, 1 K'an 2 Kumk'u, exactly 1999 Tzolkin calendars before the accession of the historical ruler K'uk' Bahlam I, on 8.19.15.3.4, 1 K'an 2 K'ayab.

Perhaps by coincidence, 1999 Tzolkin calendars not only equals 1423 tropical years, but also 1303 synodic cycles of Jupiter.

Moreover, 1999 x 260 days = 27 Calendar Rounds + 7280 days.

In the other hand, we have that 1508 haabs equals 1507 tropical years of 365.2422, and (1507 - 1423) tropical years, equals 84 years.

But, as I have pointed out in my essay on Tortuguero Monument 6, 7280 days + 84

tropical years = 37960 days = lenght of the Venus Table of the Dresden Codex.

Coincidentally, Pakal's birth's 819-day station is located exactly 7280 days before the main Base Date of the Venus Table of the Dresden Codex (9.9.9.16.0, 1 Ahaw 18 K'ayab) and therefore, 84 tropical years before a date, which is at the same time located 21320 days after the terminal date of "my" master 37960-day structure.

Providentially, the starting point of that same "master structure" is also located 21320 days before the Pakal's birth's 819-day station, so we have here a symmetrical structure.

Those 21320 days not only equals many "Maya Composite Cycles" (2340 + 18980; 2 x 2340 + 1/2 x 33280; 3 x 2340 + 7280; 4 x 2340 + 11960; 37960 - 1/2 x 33280), but also 184 synodic cycles of Mercury (-1 day), and 722 lunations (-1 day), so perhaps we should consider a *possible* iconographic support:

The nine stucco figures on the walls of the crypt of Pakal hold out a K'awiil-serpent (Mercury?) scepter and wear a Bearded Underworld Jaguar (Full Moon?) God shield on their wrists.

But incidentally, on Pakal's birth's 819-day station was Full Moon, (according to GMT-285 correlation), and Mercury was located at a very strategical reference point, so perhaps here we have another clue to be set aside for further examination/integration.

A similar "strategical reference point" for Mercury can be found on the date that Bahlam Ahaw of Tortuguero sat into rulership (9.10.11.3.10, 1 Ok 3 Kumk'u), which is also located 21 tropical years after the main Base Date of the Venus Table of the Dresden Codex (9.9.9.16.0, 1 Ahaw 18 K'ayab)... Etcetera, etcetera.

Guys,

I have found many more pieces of this enigmatic puzzle that involves many other rulers, deities and cycles, but at least I'm aware that I desperately need help from other disciplines so that the final image includes all desirable colors and shades.

It would be great if we could all count on everyone.

All best,

Carlos

Carlos Barrera Atuesta
Thanks Ray for commenting.

If that would be the case, there would be then many of those "personalities" because it is

a huge puzzle actually, but I couldn't say, Ray, because I ignore everything about Astrology.

Stanley Paul Guenter
John,

Now, I did say your analysis of Quirigua Zoomorph B was interesting, but the trouble is that you have absolutely no corroborating evidence for your hypothesis. The only "evidence" you have is the iconography of this monument, which, it should be noted, does not directly reference either the "dark rift" of the Milky Way, nor the sun. Only through extra iconographic arguments is anyone lead to your interpretation. The trouble is that there could easily be other reasons for that iconography. There have been far too many interpretations of this sort that seemed certain to the original proponents back in the day, that are no longer accepted by anyone. This is why corroborating evidence is so crucial and necessary, and why if you don't have it, you can't claim to be doing science or have a factual basis for your claims.

Now, luckily we do have a test of sorts. If astronomy was as of crucial an interest to the ancient Maya as you claim, especially this "dark rift" alignment, we should see it referenced elsewhere. Not at Izapa, where there are no calendric dates at all inscribed to tell us when these monuments date to, but in Classic period texts, especially with monuments that have dedicatory dates falling on "dark rift" alignments. Luckily, we have lots of these. We have a number of monuments from around the Maya world that date to the same 9.17.10.0.0 date we see on Quirigua Zoomorph B, including ones from Naranjo (Stelae 13 and 19), Coba (Stela 20), Bonampak (Stela 1), Ixkun (Stela 4) among others. Is there any evidence for similar "dark rift" alignment iconography on these other monuments as seen on the Quirigua? No, not as far as I know. Neither does the "dark rift" hieroglyph appear in any of the texts associated with this date on these monuments either. The possibility that explanations other than the dark rift alignment are behind the iconography on Zoomorph B becomes more and more likely, as we see all of these other monuments apparently ignoring this alignment that you think was of such great importance to the ancient Maya.

Your response is to trot out the names of Looper, Aveni, Rice, and Milbrath in support of your methodology. This is simply an appeal to authority, a logical fallacy. I have no problem in telling you that I have problems with at least some of the work of each and every one of these scholars, and it is precisely in the times when they engage in a similar methodology to that which you are using here. (For example, when they talk about the 13 baktun cycle, they are as demonstrably wrong as you are. My criticism on this point isn't directed only at you.) It is not based upon solid evidence, but upon unfounded speculation. I have no doubt that astronomy was of some importance to the ancient Maya, but appeals to the epigraphy and iconography of their monuments has come up with precious little that has any confirmatory value. Hypotheses cannot be consistently followed across the Maya area and thus coincidence, or alternative hypotheses, appear equally valid.

Now, let's get back to Monument 6 of Tortuguero. You argue that the 2012 date is referenced because of the sun's alignment with the "dark rift" matches that of Bahlam Ajaw's birth date. Again, we need to test this claim. If the scribes of Bahlam Ajaw were really so interested in matching different dates through completely unrecorded astronomical alignments, then it stands to reason that we should see similar patterns in other monuments. Otherwise, coincidence or alternative hypotheses to explain the choice of these dates becomes far more likely. First, we can note that there is no direct connection of the birth date of Bahlam Ajaw and the 2012 date. The most important date in the whole text, as your Diagram 9 nicely shows, is his accession. Yet there is no astronomical connection here. The 2012 date is only connected directly (through a DN) with the dedicatory date of the building that presumably housed Monument 6. This dedicatory date is also directly connected to the much earlier house event of Ahkul K'uk' (which, it should be pointed out, is not itself directly tied to the 2012 date). However, while these are related events in terms of content, there is no connection in terms of astronomy. So what you are arguing, it must be pointed out, are for unseen references to astronomy with unseen connections between them. There is too much of your argument (essentially all of it) that relies upon the scribes not telling us what they really meant to.

But let's test your hypothesis. We have the closest analogy, in terms of your argument of the true message of this text, with the panels of the Temple of the Inscriptions at Palenque. These talk about K'inich Janaab Pakal I, Bahlam Ajaw's contemporary and both of these kings bore the same title, and this suggests they both revered a similar political history. Furthermore, their adjoining kingdoms also indicate a probable similar cultural background. While the Temple of the Inscriptions tablets provide a much longer text, it too gives a history of Pakal, as well as a reference to a Period Ending falling far, far into the future. Here the connection of the future PE with a contemporary event is far more explicit: Palenque's scribes connect this future PE, the 1 pictun ending in 4772, with the CR repetition of Pakal's accession date, which occurs only 8 days later. Here the connection is explicit, and has not to do with birth or any astronomical alignment, but rather with the king's accession date. And, there is no astronomical alignment similarity between these two dates, as far as I know. So, in the best analogy between Bahlam Ajaw's Monument 6 and any other ancient Maya monument, there is no corroboration of your method of interpreting this text.

In fact, I know of no such astronomical pattern that finds corroboration on multiple Maya monuments. This has to seriously call your entire hypothesis into question. Since we cannot eliminate other, alternative hypotheses (including sheer coincidence) from explaining these facts, your own hypothesis is just one of many, none of which are better supported by the evidence at hand than the others.

Now, let's look a little closer at your methodology that you argue is supported by its being followed by academic Mayanists. You mention "Grofe's interesting point" about the period between the 510 and 647 events 7 and 12, as being separated by 139 periods of 360 days, which equals 137 tropical years of 365.2422 days. The trouble is, there is absolutely nothing in this text to suggest that this interval is significant, or of interest to

the scribes who drew up and had this text carved. The dates are not connected in the text itself through a DN or any other method, nor do the events parallel each other. The ONLY reason Grofe and yourself have chosen to highlight these dates, as far as I can see it, is because of this tropical year calculation. A calculation, I emphasize, that you and he have come up with; it is not referenced in the text itself. You have simply assumed that astronomy is encoded in these dates, or at least are proceeding upon that assumption. When you find a match, you highlight it and assume it is significant, without any outside confirmation, such as from epigraphic references, or from associated iconography.

You are, in fact, doing exactly what the "epigraphers" of Maya hieroglyphs in the early 20th century did. Already back in the 1960s Tatiana Proskouriakoff demonstrated that Classic period texts recorded historical events, not random astronomical and calendrical calculations. You are trying to revive a type of pseudo-epigraphy that was shown to be bankrupt in terms of explanatory value half a century ago. Except that back then those earlier scholars didn't know what the content of the inscriptions was. We do now, and we see hardly any references to astronomy whatsoever. So you have to plead that there are "hidden" references to astronomy in all of these texts. I'm afraid your association with the New Age movement has made you too ready to see "gnostic" interpretations of such texts (assuming there are hidden and esoteric, unrecorded meanings other than the exoteric information contained in the words of the text itself). Unfortunately, while that may be how Mormons interpret the Book of Abraham papyrus, that is not a scientific position and falls apart anyway, when we note that your methodology has no consistency. Why should we believe the Maya scribes of Mt. 6 were interested in calculating the change of the tropical year off of 365 whole days? There is nothing in the monument to suggest any such interest. Again, you have only emphasized it because you are looking for anything astronomical and counting it as a hit when you find anything. So you throw out all the dates and periods between dates and when you find any numbers that are astronomically significant you say "bingo!". But what reason do we have to believe that this is anything other than coincidence? The Maya knew how to highlight connections between dates. They knew how to reference astronomy. The fact that we don't see any of that here, or hardly any other place, should tell us that astronomy was far less important to the ancient Maya than the earliest 20th century "epigraphers" thought. They were imposing their own astronomical biases on the ancient Maya texts, just as you are.

So, your mention and promotion of Grofe's ideas about dates 7 and 12 proves your own bias in this matter, and your methodology appears very pseudoscientific. Now, if you would actually accept this criticism, I would happily drop the claim that what you are doing is pseudoscience. However, you don't. After all, your beliefs about 2012 (and this paper of yours is just a small part of your bigger argument) are ones you consistently turn into proselytism for your New Age/shamanic wisdom religious views. Therefore, it should surprise no one that your methodology and research here bears striking similarity to the pseudoscience practiced by Mormon scholars in Mesoamerican research and Christian fundamentalists regarding Biblical archaeology. You go into your research assuming a certain position and only present the data that supports your hypothesis. When this is called into question, you either claim that you are being persecuted by the academic orthodoxy, and/or ignore the contradictory evidence and/or at last resort, plead

for gnostic interpretations of the texts.

Now, I hope you can prove me wrong about this. I hope you can accept that your ideas about 2012 have been given a fair analysis by Mayanists and epigraphers, and shown to be wanting. There is no evidence for a "Great Cycle" of 13 baktuns, and your statement that "there is abundant evidence that the Maya held this era-2012 alignment to be the most significant evolutionary event that human beings experience" is wholly without foundation. (Quote taken from: http://www.grahamhancock.com/forum/JenkinsJM2-p1.htm)
The 13 baktun Period Ending of 2012 is only one of 20 baktun endings that go towards making up 1 pictun, and in every case where we have the evidence to determine what the Maya thought of the pictun, we can see that they considered it to indeed consist of 20, and not 13, baktuns. There is no evidence for any cycle of 13 baktuns, and no evidence that the Maya based the Long Count upon the end date of the 13th baktun in 2012. Claims that the solstices, let alone the winter solstice, were of over-riding concern for the ancient Maya are not supported by epigraphy. And while your determination of the orientation of the ballcourt at Izapa is interesting, it is just one building. Do all ballcourts share in this orientation? Do most, or even just many? If not, we can again assume that there are other reasons behind the orientations of ballcourts, and therefore something other than this orientation could be going on at Izapa. In any event, one ballcourt alignment does not suffice as demonstration of a claim as profound as the one you are making.

So the 13th baktun ends on a winter solstice. So what? This could be just coincidence (and relies entirely upon the GMT 585283 [sic, 584285] correlation to be correct, something I think is likely, but far from certain). After all, there is nothing particularly significant about the winter solstice that can be gathered from evidence derived from the ancient Maya and you yourself note that your interest in this date was sparked simply because this date of December 21st was astronomically significant. However, let's be honest; if it had been the summer solstice or one of the equinoxes, this would also have been significant to you back then, especially if we look at what you consider to be "significant" in ancient Maya texts. If there are 20 baktuns in a pictun, then chance alone will dictate that there is a one in 4.5 chance that one of these baktun endings will fall directly on one of these dates. As you regularly give yourself a latitude of a day or two on either side of one of these astronomical events when considering a "hit", this pushes chance alone being behind this to nearly 1:1.

But when you noticed the dark rift alignment of the sun on that day, you really thought you were on to something, and this has been the basis for your whole publishing career so far. However, your history of publication reveals that you have had to consistently back off of your earlier strong opinions. Now we see you talking about the "era of 2012", when it became apparent that the dark rift alignment wasn't as perfectly correlated with the winter solstice of 2012. Dec. 21, 2012 doesn't even fall into the middle of this "era of 2012", however, which is why so many of us are as unimpressed by your argument as we are. Following the "dark rift" glyph that you have taken from Freidel and Schele, we don't see a good correlation with actual occurrences of the sun and the "dark rift".

Conversely, when you do present iconography that may fit this idea, we don't see references in the epigraphy to the dark rift glyph. The "evidence" doesn't fit together, John, and it should if you were really onto a real pattern here.

OK, I have written far more on this than I had intended, as tends to happen when I get into things like this. I look forward to your response, but cannot guarantee one in return, due to my schedule over the next month or so. I will say that while I disagree with your ideas profoundly and fundamentally, I appreciate your amicable attitude in this debate and if some of my statements appear unduly harsh, I apologize for the tone. All best,

Stan

From Barb MacLeod:

Before I jump into a bit of speculative calendrics, I want to correct an error I made earlier: I said that there were *two* events on TRT 6 which follow a hotun ending by 1.11. The dates are in fact 9.3.16.1.11 (the first hekwan, which follows a hotun ending by 1.1.11) and 9.10.15.1.11 (the second k'axi t'aan, which indeed does follow 9.10.15.0.0. by 1.11).

From these two dates, one derives the interval which represents---intentionally or otherwise---a commensuration of the sidereal year with the Long Count: 6.19.0.0, or 50040 days, as Michael and John have previously noted.

This would yield a "Tortuguero Sidereal Year" value of 365.2554745 days. Rounding this off and subtracting it from the modern SY value:

365.25636
-365.25547

.00089 days

The interval between the hekwan event of 9.3.16.1.11 and 13.0.0.0.0 is:

13. 0. 0. 0. 0
- 9. 3.16.1.11
---
3. 16.3.16.9 or 548609 days

548609 x .00089 days =488.26201 days or 1.336765252 SY (using the modern value) Nine decimal places being a bit unnecessary…

In consideration of points made above regarding the damaged k'in coefficient, and using the latest possible birth date of Bahlam Ajaw (i.e. a k'in coefficient of 6), there is a total of 511356 days between the birth date and the 13.0.0.0.0 date. Dividing this by the

"Tortuguero Sidereal Year", we get 1399.995443.

But assuming they were after a whole-number value of 1400:

365.2554745 x 1400 = 511357.6643. Rounding up, we have 511358 days, putting the ideal (but lost) k'in coefficient at 8 and the ideal birth date at 9.8.19.10.2 1 Ik' 10 K'ank'in---right where John wants it, on 3 December, 612 (Gregorian, 584283 correlation constant).

I'm not saying this is what the Maya must have recorded, but assuming (and perhaps this is an overly bold assumption) that there is intentional data providing a value for the sidereal year, then that same SY value can be applied to the interval between 9.8.19.10.2 and 13.0.0.0.0.

I'm not persuaded that the monument's shape was intended to represent the day sign Ik'. The dimensions aren't quite right. Donald Hales once suggested that it looks more like a spread-out highland huipil (and it does), but I will not take that as a cue for the final /joyaj/ verb either.

Hope I got the math right; I've been hurried. Please check it.
Barb

From Stanley Paul Guenter:
Barb,

good to see you've joined the discussion. I think it is great to have another academic Mayanist joining the fray, especially one who sees more astronomy (or possibility of such) in the texts than I do. As I admitted to John, I do have a bias against archaeoastronomical interpretations, just because so many are based upon a pseudoscientific methodology, and the supposed patterns seen in one monument can't be transferred over to help us understand other texts. We simply have a search for any astronomically "significant" numbers in the distances between different dates on a given monument, and no decent (or testable) explanation of how the astronomical data help us understand the underlying message of the monument as a whole.

This is my issue with the supposed importance of the period between dates 7 and 12 on Tortuguero Monument 6. There is nothing in the text itself to suggest a direct connection is being made between those 2 dates. Neither is there any explanation for why the scribes of Bahlam Ajaw would have been interested in encoding that astronomical calculation into this text, with those dates. The entire connection seems contrived by modern, astronomically-inclined, scholars.

Now, I admit that astronomy was clearly of an interest to the ancient Maya, and I would be surprised if Maya mythology wasn't based at least to a degree on astronomical phenomena, as we can see for other areas of the world. However, when we can't even

come up with consistent correlations between specific deities and the planets, I think we have a major problem. One thing I note is that in the Lunar Series of the Long Count, we can see that the Maya divided up the lunations as a set of different deities. If the Maya did the same thing to other planetary bodies, it is going to be exceedingly difficult to figure out which deities are which heavenly bodies, if they indeed represent such celestial objects at all.

So my major problem is not so much with the possibility that the Maya were carrying out long-term astronomical observations and such, but being able to test any of these hypotheses that assume this astronomical information to have been encoded in the texts. We know that the Maya could, on occasion, record astronomical information explicitly in their texts. So why would they have normally not made such references explicitly, but only secretly encoded apparently completely irrelevant astronomical calculations into their otherwise historical texts? When we're dealing with mythological events involving deities, I am right with you in thinking we should be on the lookout for contrived numbers possibly based upon astronomy. But in a historical text such as Tortuguero Monument 6, I think the argument is stretched. Without good reason for believing that the Maya intended for a connection to be made between two otherwise unrelated events on Mt. 6 (dates 7 and 12), I think the astronomical calculation hypothesis is better interpreted as simple unintended coincidence.
Stan

John Major Jenkins
Hi Barb,
This is very interesting. I like your attention to exacting calculations here. The calendar math all checks out. If I may summarize:

The interval between two dates of sun/Crossroads alignment (in 510 AD and 647 AD) provides a possible "Tortuguero Sidereal Year" constant which is only .00089 days off from the modern value. (As you know, this kind of identification of a possible "constant" for the sidereal year, and applying it as a test to other date intervals, is an approach that Michael Grofe has taken to the Dresden Codex, with interesting results.)

Next, you use the identified TRT Sidereal Year constant (without assuming that it is of necessity intentional) and find that 1400 of these equal (rounding up to the next whole number) the exact interval between 13.0.0.0.0 and the ideal 1 Ik birthdate for Bahlam Ajaw (9.8.19.10.2).

Here's something else: The two solstice dates on TRT Mon 6 are Date 6 (9.10.17.2.14) and Date 13 (13.0.0.0.0). The interval is 497826 days, which divided by the tropical year value of 365.2422 equals 1363.002413 tropical years (accurate to within 21 hours).

John

John Major Jenkins
Stan (quick comment to your shorter email to Barb above),

You wrote:
"Neither is there any explanation for why the scribes of Bahlam Ajaw would have been interested in encoding that astronomical calculation into this text, with those dates."

I did suggest a motive or explanation for this in my SAA paper, which involve those two dates of sun-Crossroads alignment (7 and 12) combined with the other two dates of sun-Crossroads alignment which bracket the entire text (Bahlam's birthday and the 2012 date). Why all these references to this astronomy? Let's assume we had 100% explicit proof that the associations were intentional. We'd still be left wondering why. My suggestion is the historical motive of many kings --- to accentuate their power and status through relating themselves to LC period-endings, Creation Myth deities, and in K'ak Tiliw's case, the associated astronomy.

You wrote:
"we can't even come up with consistent correlations between specific deities and the planets, I think we have a major problem... it is going to be exceedingly difficult to figure out which deities are which heavenly bodies, if they indeed represent such celestial objects at all."

This was a problem for ethnographers because they assumed that at all times deities must represent celestial objects. Progress was made in identifying deities when it was realized that particular phases of a "celestial body" was a factor in the name reported by Maya informants. For example, the deity-name for Venus as eveningstar is X, while the deity-name for Venus as morningstar is Y. It's more about segments of time, or we might say the context, than the physical object in space. Different deities associated with full moon and new moon is another example.
John

John Major Jenkins
Stan (replying to your cycle comments in your long email above),

First of all, you're digging through layers of writings, apparently to debunk or defame me, which should be considered below the goals of this Discussion. I would like to send you my short story, "Why I Want a Pony for Christmas" that I wrote when I was 7. Man, there's some crazy stuff in there. I really wish you could get over this "Great Cycle" obsession. I've already explained my position on this, extremely clearly, and you are just being repetitious now. Your referencing of articles I wrote years ago, digging through the archives, is misleading. You seem to assume that many years of my published writings (or any author's) must remain rigorously consistent. This is unrealistic generally and especially in regard to my chosen topic, 2012, which 20 years ago was a distorted topic

already chewed on by lots of crazy squirrels that required definitions, caveats, the incorporation of new information, and carefully enunciated terms. The work evolves, and I've spoken in many different contexts to many types of audiences. I already said that.

Usage of the phrase "Great Cycle" in the academic literature? Here's one:

"The burden of the K'atun, and indeed of the Great Cycle, is upon our shoulders." (Gronemeyer and MacLeod 2010:43) --- the recent Wayeb #34: http://www.wayeb.org/notes/wayeb_notes0034.pdf

You can't just assume that anytime you see this phrase it indicates an exclusive worship of the cycle concept because --- here's the kicker --- elsewhere in the source cited above the authors argue against it! All of which is perfectly fine by me. Different contexts. Please reread my previous comments. I'm saying to you, "here is my position on this, please hear me and represent it accurately." But you insist on rejecting it. You say I've now received fair analysis and treatment; that's not fair at all.
John

Stanley Paul Guenter
To John and others,

in order to move these ideas beyond mere coincidence or pseudoscience into the realm of real science, I would like to see some explanation of why and how these astronomical calculations are being encoded in this text. Now, I think the exoteric message of the text is fairly clear. The monument itself helps dedicate a house (in which it was placed) in January of 669. The amount of space given over to describe this event (44 glyph-blocks) is enough on its own to highlight it as the prime event of the entire monument.

And yet this date is one of the least significant on the monument in terms of astronomical phenomena falling on that day. Now, this date is connected directly to three others through explicit DNs, making it clear the scribes wanted us to see a connection between these dates or their associated events. These are dates 2, 12 and 13, being respectively the accession date of Bahlam Ajaw, the Naah K'anjal of Ahkul K'uk' event, and the 13th baktun ending. The connection with date 2 is understandable, given that Bahlam Ajaw is the king who commissioned this monument and accession is the most important event in a king's life. However, there is 9108 days between these two events, and I don't think this matches any major astronomical cycle. (Correct me if I'm wrong about this.)

Event 12 provides us with a like-in-kind event, being a house event. There are 57,747 days between these events, and again, no apparent "hidden" astronomical pattern in this DN.

Event 13 is the 2012 date. This is 58,862 days from the 669 house dedication event it is explicitly connected to by a DN. Again, no apparent astronomical pattern in this explicit DN.

So, with no astronomy in the explicit DNs, I really have to ask why you all are assuming there is astronomy encoded in DNs that you guys had to invent yourselves?

Let's look at the two DNs that John has presented in his last post. We have the invented DN between dates 11 and 12. This invented DN connects the aforementioned 6th century house event with a Period Ending that is mentioned only as a base date, to situate date 10 in its proper position. Why on earth would we assume this contrived (by you guys) DN had any significance to the ancient Maya whatsoever?

John's other invented DN is between dates 6 and 13. The first is the final climactic "star war" against Ux Bahlam of Comalcalco and the second the 2012 PE date. How does not explicitly referencing this DN (when he was throwing out long DNs left right and center on this monument) "accentuate [his] power and status"? Remember, he did explicitly connect the 2012 date to the house dedication, a connection that apparently has no astronomical basis.

The patterns you are finding are best described as coincidental. When the DNs you guys invent connect events that are completely unrelated, or, in the case of the one between dates 11 and 12, connecting one event with a date that is nothing more than a base date to tie in another, more important event, into the Long Count, your contrived DNs seem very unimpressive indeed. You guys are simply blinded by these apparently astronomically significant numbers, and demonstrate that you have failed to learn the lesson that Tatiana should have taught us all half a century ago.

Barb MacLeod
Haha... I knew it. I said:

"548609 x .00089 days =488.26201 days or 1.336765252 SY (using the modern value) "

Disregard this as a brain-fart. The straight dope is here (thanks, Michael!):

Michael told me backstage:

"But your error here is in taking this difference per sidereal year and then multiplying it by the number of days between the pibnaah event and 2012. There is no reason to do this.

More accurately, take the number of days between the pibnaah event and 2012 and divide them each by the different SY values and then compare, and you find a very similar result:

Using the TRT6 SY: 548609 days / 365.2554745 days = 1501.98707 = 1502 SY – 4.72 days
Using the current SY: 548609 days / 365.25636 days = 1501.983429 = 1502 SY – 6.05

days."

I concur. Hypothetically, of course.

I hope to find time for a longer reply, but wish to say that I trust that no one perceives my methodology to be pseudoscientific. If we establish that a certain possible calendric/astronomical relationship (i.e. a Long Count-sidereal year correction formula of 6.19.0.0) is present on a monument, then why not further explore the possibility that it was intentional? My investment is only in the *possibility* that there is astronomy encoded in places we don't expect it.

Stanley Paul Guenter
John,

you objected to my referring to you as one of the "2012ers" and you also object to my use of the term "Great Cycle" when referencing your ideas. Now, I perfectly accept that your ideas have changed over time, and consider this to be the norm of how scientists and good scholars work. However, my problem isn't so much with you using the term "Great Cycle" as your ideas being based upon the concept of the Great Cycle.

Now, you object to my citation of your earlier papers, and I accept the criticism that this may not accurately reflect your current views. However, in the very article of yours under discussion here, and which you wrote this year, you say (page 3) "My "2012 alignment" theory, first published in 1994, utilizes the dark rift in the Milky Way and argues the creators of the Long Count intended the end of the current 13-Baktun period (in 2012) to target the rare precession-caused alignment of the December solstice sun with the dark rift in the Milky Way."

This quote indicates not only that you have not backed off of your basic argument, but that you still consider there to have been a "13-Baktun period" that had some sort of independent significance to the ancient Maya. Furthermore, it indicates you still believe the Long Count calendar to have been invented with that specific date in mind. I see no basis for any idea of such a separate "13-Baktun period", which is of course identical to the old use of the term "Great Cycle" to which you now so object, nor do I see any evidence that the Maya invented the Long Count with that date in mind. And, in terms of this paper, I disagree that there is much evidence that the "dark rift alignment" was necessarily being referenced on Tortuguero Monument 6.

From John Major Jenkins
Barb,
This requires clarification.
I disregarded the calculation line under question because it didn't seem relevant to your point about the TRT SY Constant being generated by the relationship between the 510

AD and 647 AD dates, which when applied to the interval between the ideal 1 Ik birthdate of Bahlam Ajaw and 13.0.0.0.0 yielded a consistent result. That result remains unchanged, correct? It might be useful to hear how many of these types of sidereal constants and parallel usages have been identifed in inscriptions and codices.

The minor correction above involves the SY interval between the 510 AD date and the 2012 AD date, which is indeed 4+ days off. This may mean that other factors were involved in the choice of the 510 AD date (perhaps the 8 Chuen tzolkin position?), or that there was no interest in performing an exact SY commensuration on those two dates. Hypothetically speaking, of course.

Exploring possibilities --- yes, that's what I've been my modus operandi, beginning 20 years ago with the solstice position of 13.0.0.0.0 in 2012. Uncovered a lot by asking the right questions. I just watched a documentary on the Wright Brothers. Amazing. They explored possibilities, and solved all the problems of air control, lift, and thrust in about 4 years.

John

John Major Jenkins
Stan,
Yes, I know that you do not "see any evidence that the Maya invented the Long Count with that date in mind." In spite of the solstice. Your null-set default is filled to the brim with coincidence. Your filter of allowable "evidence" renders my work, and a large amount of important contributions to Maya studies including all of archaeoastronomy, unacceptable (to you). I get it; I totally understand where you are coming from.

Thank you for your summational comments. Mine will be forthcoming. Best wishes,

John

Stanley Paul Guenter
Barb,

as you know, I definitely don't consider you to be a pseudoscientist, but one of the best linguistically-minded epigraphers out there. That said, I do find your methodology here to be dangerously verging into the realm of pseudoscience. You and John and Michael and the others here are not testing out explicit DNs the Maya have given us to see if there is any astronomical significance; you are merely testing every date on a monument against every other date, and seeing what pops up. Now, you are more cautionary about the results of this playing around than John, but you aren't adverse to basing one speculation about dates that are not explicitly connected upon other, similarly unfounded speculations.

In your above post (Post 123 of this discussion) you note that dates 7 and 12 are only 1 tun off of both following a hotun by 1.11, and that the interval between these two dates provides a commensuration of the sidereal year with the tun. Trouble is, we have no reason to believe that the scribes who laid out this monument meant for us to connect these dates. We see no astronomy in the intervals between the dates they definitely did want us to directly connect, so why assume astronomy here, other than the fact that you (or in this case, John and Michael) have noticed an interesting, "astronomically significant" number? Why, if the Maya of Tortuguero were interested in the sidereal year, didn't they connect like-in-kind events on dates with similar positions in the sidereal year? Why would they have to use such a convoluted method of "encoding" their sidereal year calculations into an otherwise historical text that has explicit connections between certain events? Doesn't this whole line of inquiry strike you as almost a prescription for pseudoscience?

Stanley Paul Guenter
John,

no, with all due respect, I don't think you do "get" my position. I accept that there is astronomy in the Dresden codex. I accept that there is astronomy in the Lunar Series of the Long Count. I accept that the Poco Uinic stela mentions an eclipse. When the Maya wanted to refer to astronomical events, they didn't have to be shy about it. So why, if astronomy was so important to the scribes who laid out Monument 6 of Tortuguero, didn't they mention it?

More problematic for me is the methodology you are using to even derive the idea that astronomy might have been encoded here. You, and others, simply throw up all of the dates on the monument, without any regard for their content or actual connection by explicit DNs, to see if there is any astronomical significance between any possible pair of dates.

There are 13 dates on Monument 6. It is late and my math-skills at the moment are not the most reliable, but by my calculation that makes 728 possible DNs between the 13 dates on Monument 6. Chance alone is going to dictate that 2 of those possible DNs are going to get very close to, if not fall directly upon, the length or repetition of a sidereal or tropical year. What do you know; you've found two of them, exactly as pure coincidence would predict. That's not significant, and I see no reason to consider the "Tortuguero Sidereal Year" to be anything but a modern fantasy.

Did the scribes of Tortuguero measure out the year and notice the difference between a tropical and sidereal year? Almost certainly. However, did they encode these calculations in a historical monument? The idea itself strikes me as absurd, without explicit references to such. It is the equivalent of trying to find geometrical calculations in the Anglo-Saxon chronicle. Why on earth would anyone do that?

The basic idea is as pseudoscientifically based as the messages Dan Brown discusses in "The Da Vinci Code" that are supposedly encoded in popular architecture and works of art or the ideas of 19th century quacks that the dimensions of the Great Pyramid encode the entire history of the universe, or size of our world. Or the pseudoscientific bunkum that is the Bible Codes. It is all pseudoscience, produced by people who love numbers. Hey, I'm a number man as much as the next guy, but I recognize that chance alone is going to come up with a lot of patterns that are entirely insignificant and unintentional. Give yourself a big enough sample and you can come up with pretty much any pattern you want. If you want to move this discussion beyond the realm of pseudoscience you and the others are going to have to provide some explicit reason to believe astronomy is being referenced in this or any other Maya text or at least find patterns that can't be ascribed by statistics to pure chance.
Stan

From Ce Akatl (Gerardo Aldana):
Please bear with me on this post. I just came across a set of dates that are structurally similar to Tortuguero Monument 6. The intervals among them in Long Count notation are (from the initial date):

7.17.0
18.5.4
1.3.4.19
1.5.17.1
-2.18.6.17
1.10.7.17
1.11.7.14
1.13.13.1
1.12.0.12
1.13.13.11
1.14.10.4
6.13.8.17

So I ran two analyses on them. The first analysis was a check for astronumerology (and which paralleled the recent analysis I performed on TRT Mnt 6 and sent to John among others; if anyone else is interested in the .pdf, feel free to contact me at gvaldana@yahoo.com). The second analysis was for sidereal patterns.

The astronumerological results were not quite robust: only two factors fell out as significant, 260 and 399. From the astronumerology, then, we would (perhaps tentatively) expect a significance of Jupiter within the text.

When looking at the reconstructed night skies, though, a much clearer pattern emerged.
1. The major astronomical event appears to have occurred on Date 5. On this date, Venus, Mercury, and Mars were all in conjunction with the Sun adjacent to the dark rift.

That was undoubtedly an impressive single event, but the larger pattern emphasized a "straddling" of the Sun: planets as Morningstar/eveningstar reflections of each other—probably a type of "twinning" reference, or maybe an expression of duality.

2. On Date1 Mars and Venus were twins as evening star and Morningstar respectively. Mercury was near maximum elongation at the longitude of Orion's Belt, and so may have referred to a Creation theme.

3. On Date 2, the same visible pattern occurs, only this time Jupiter plays the twinning role with Venus about the Sun, and Mars moves to Mercury's position near Orion's Belt. Clearly the symmetry of these two first days was important.

4. A different kind of twinning occurs on Date 3, with Mars and Saturn straddling the dark rift. This may be a reference to 2012 since the dark rift could be seen as playing the role of the Sun on the earlier dates.

5. Date 4 is interesting visually, but doesn't conform to any pattern relative to the other dates.

6. The combination occurs again on Date 6, with Mercury and Venus straddling the Sun, but this time at the edge of the dark rift.

7. The straddling pattern does not occur in the next few dates until Date 11, in which case Mercury and Venus again play the roles.

8. But the extremely impressive twinning occurs on Date 12 with Mercury and Saturn in conjunction as morning stars in Taurus and Mars and Jupiter in conjunction as evening stars in Gemini—a double twinning event.

9. The final date, Date 13, seems to invoke the Creation theme metaphorically since Jupiter and Saturn are both near their stationary points in a very tight triangle with Spica, mimicking the three cosmic hearthstones.

In addition to the twinning and the mass conjunction, there is a strong association with the dark rift since:
Date 3 – Mars and Saturn straddle the dark rift;
Date 5 – Sun, Mercury, Venus, Mars at the edge of the dark rift
Date 6 – Mercury and Venus at the edge of the dark rift
Date 9 – Mars in the dark rift
Date 10 – Mercury in the dark rift
Date 11 – Mars in the dark rift
Date 13 – Sun at the edge of the dark rift

So 7 out of 13 dates have some relevant planetary association with the dark rift, which might lead us to consider that the practice of including 13 dates in a text—like Monument 6—is connected conceptually to the dark rift.

We might be concerned that Jupiter was not singled out in the observable patterns, but did come out of the astronumerology. But let us put that aside for now. Instead, having gone over the astronomical and astronumerological patterns, we should check whether or not they carry any meaning relative to the textual records they anchor. Here are the actual dates and events anchoring the above intervals of time:

Date 1 Birth 6/5/1968
Date 2 First Communion 4/4/1976
Date 3 Graduation from High School 6/15/1986
Date 4 Graduation from College 5/15/1991
Date 5 Zapatista Rebellion 1/1/1994
Date 6 Mexican Revolution 11/20/1910
Date 7 30th birthday celebration 6/5/1998
Date 8 Purchased first house 5/28/1999
Date 9 First academic appointment (postdoc) 9/1/2001
Date 10 Y2k 1/1/2000
Date 11 WTC 9/11/2001
Date 12 First faculty job 7/1/2002
Date 13 New Year 2100 1/1/2100

I honestly just pulled these events out of the personal history of someone I know without any prior knowledge about the celestial patterns therein. I sprinkled in some international history that is relevant to interests and ethnic identity, but again without concern for astronomical implications. Finally, I chose a future event that I consider culturally parallel to that on Monument 6.

Now, I honestly don't intend this to be mean-spirited at all. This is simply a version of the concern that I confronted very early in my graduate school research. (I urge you all to try your own version of this experiment.) And this is why I think we are still some ways from utilizing ANY calendar correlation in Mayan astronomical research. We WILL find patterns among any collection of dates… but we really can't take them as secure corroboration of anything at this point---at least in my opinion---until we understand the astronomy better in a correlation-free methodological environment.
Gerardo

Barb MacLeod
Stan,
I'm *not* checking other intervals on Tortuguero 6; I have no interest in doing it. I chose these two dates because (1) I was aware that they fell in precisely the same sidereal positions, and (2) I understand fairly well what these events are about, making clear in my comments that there was nothing astronomical about them. I have never assumed, nor do I now, that this apparent commensuration had to be intentional here. It is nonetheless an intriguing formula; one cannot help but wonder whether the Maya used it elsewhere, assuming they did in fact pay attention to sidereal intervals. But rather than immediately

dismiss this context as coincidence—which I might well do after giving it due consideration—I decided to suspend disbelief, to see what hypothetical SY value it yielded, and then test that in turn against the other more interesting pair represented by the initial and final dates. I'm no happier that they seemed to support the idea of a "Tortuguero Sidereal Year", even though I named the beast. That is to me about as problematic as it must be to you, but you don't know me well enough to see that. I am obviously more dispassionate about this than you are; I have no bones to pick on either side. I certainly haven't an agenda that would send me out among the multitude of texts of other sites looking for corroboration; I'm participating in this thread because I have a great interest in this monument and am—in my own way (different from yours)—exploring the legitimacy, and the limits to legitimacy, of John's arguments. That's all.

What I feel in your responses to my posts (please be aware that I have no disagreement with anything substantive in them) is your annoyance and frustration that John likes what I say (ah, he may run off with it). Thus you lump John, myself and Michael (and which others?) together and tar us with the same brush. I take little offense, for you don't know me well, nor I you. But you are verging dangerously close to a prejudicial judgment of "us guys" as if we have circled wagons against you. I submit that you misunderstand me.

I've said what I have to say in this discussion, and have given it more time than I have. If anyone wishes to contact me privately and discuss Sven's and my paper, particularly the new decipherments, I'd enjoy that.
Barb

Pg 5:

From Barb MacLeod
On Quirigua Stela F there are two monstruous distance numbers, one of which Thompson cracked and the other he states he did not. For the DN he understood, Thompson determined the interval to be 91,683,930 tuns. Multiplying this by 360, we get 3,30062140 x 10 to the 10th power. Dividing (3,30062140 x 10 to the 10th power) by 365.2422, we get 90,368,021 TYs.

Exactly.

This DN also leads from a day 1 Ajaw to another 1 Ajaw.
Coincidence seems unlikely. I found this about a year ago, but would not be surprised to learn Dave Kelley beat me to it.
Barb

Carlos Barrera Atuesta
Pardon me for interrupting, but I would like to add to what I mentioned before that not only the birth date of Uk'ix Chan (5.7.11.8.4) is 1423 TY away from the accession date of K'uk' Bahlam I (8.19.15.3.4), but also 2316 TY from the accesion date of the primordial

GI of Palenque (12.10.1.13.2).

I also have a good one commensurability between the tropical year and the synodic cycle of Venus (12.14.11.16 = 91676 days) which could be used to go from one transit of Venus to other, just because 91676 days = (243 + 8) TY.

Thanks for your attention. Carlos

From Stanley Paul Guenter:
Gerardo, thanks for that excellent demonstration of the problem in assuming that a few apparently "significant" astronomical events or periods in a set of dates may actually be significant. It reminds me of how the BBC took the piss out of Graham Hancock's sky-ground patterning he argued for at Giza and Angkor. In their program "Atlantis: Reborn" they pointed out that one could construct a pattern of buildings and monuments in New York that mapped out the constellation of Leo, if one didn't have to have absolutely exact angles, and could simply pick and choose whatever points were needed to fit the pattern, without regard for their historically documented dates and reasons for construction.

And Barb, this is precisely the danger I see in what you are doing here as well. You admit that you are not examining any other intervals on this monument, and yet you find this to be an "intriguing formula". ie// while you back away from assuming this is significant, you clearly think it has that potential. The trouble is, as I think my calculations and Gerardo's example demonstrate, in a text with this many dates, we would expect by pure chance to find apparently "significant" astronomical patterns in a number of these contrived DNs between unrelated events. What has been presented so far does not bring us beyond that point. By failing to examine the other possible DN intervals on Monument 6 you decontextualize the one you are interested in, and at the same time, ignore the statistics that say this interval you have found is insignificant. Furthermore, you ignore the more basic problem of trying to understand why on earth the Maya scribes would have wanted to encode sidereal year calculations into the distance between unrelated events (or event just dates) of an otherwise transparently historical monument. For example, date 11, one end of one of these supposedly astronomically significant (contrived) DNs is merely a base date, helping to anchor date 10 (the most important one on the whole monument) into the Long Count. Doesn't it strike you as inexplicable why the Tortuguero scribes would have tried to encode a sidereal year calculation into the distance between this non-event, mere base date and a historical event, when they didn't make such a connection explicit with an actual DN? Remember, there are real DNs aplenty on this monument. Shouldn't we consider that none of these real DNs having any astronomical significance to be a significant fact in itself?

If I lump you together with Michael and John here, it is because you have adopted their methodology, and in so doing, you appear to legitimize it. The trouble is that this methodology is almost a prescription for pseudoscience, since the methodology you all share ignores the actual context of the contrived DNs you are playing with. Without taking the statistics into account all three of you consider, at least temporarily, that these

one or two DNs that look astronomical are or may be actually significant, when in fact they are easily explained as pure chance and merely coincidental. Without acknowledging up front that pure chance is going to provide us with a number of false positives here your common methodology indeed looks very pseudoscientific.

So again I ask any one of "you guys" to address this issue of statistics and explain why the Maya scribes would have a) wanted to encode a sidereal year calculation in an otherwise historical text; and b) done so in such a convoluted manner as the unstated distance between a historical event and a base date, which merely helps to anchor a CR in the Long Count.

Now, getting off my soapbox, I will say that your information on the huge DNs of Quirigua Stela F seems, at first glance, to have far more potential. As I was telling John, this is, in my mind, a much more likely place to find astronomical calculations at work; in explicit DNs that involve obviously contrived dates connected to mythology. However, again, I want to contextualize this possibility you have presented. There are two such extremely large DNs on Stela F, and a bunch of others on Stelae A, D and E as well. How do these DNs work; any apparent astronomical patterns in them? All of these DNs lead from a historical PE to a mythological one with the same Ahau number; so we know chronomancy was at work here. However, is there good evidence that astronomy was as well, or could this one instance just be coincidence?

From Raymond Mardyks:
Count the days
Count the nights.
When Mother Earth darkens
Grandmother Moon,
And makes her blush ...
Look to the stars!

~ thanks for all the fish ~

From Carlos Barrera Atuesta
Dear Gerardo,

You said:

"We WILL find patterns among any collection of dates… but we really can't take them as secure corroboration of anything at this point--at least in my opinion--until we understand the astronomy better in a correlation-free methodological environment"

And I completely agree, but...

What would you say about solutions that work well in a correlation-free methodological

environment, and also in an environment linked to a correlation?

I'm thinking of my two solutions for the 1.5.5.0 interval of the Venus Table.

Both were developed in an abstract environment, chronologically speaking. That is, both were developed to operate independently of any correlation, and both fit perfectly into the structure described by the Maya in the Dresden Codex.

The first solution corresponds to a point located 4680 days before the end of the structure.

When this 4680-day interval is projected backwards in (abstract) time, coincides exactly with the Base Date 9.9.9.16.0, 1 Ajaw 18 K'ayab, and also with a CR 1 Ajaw 18 Wo, and when this 4680-day interval is projected forward in time, coincides exactly with the end of the structure. That's a good sign.

The second solution is incredibly simple, and exactly matches an 819-day station.

In other words, the first solution is "structural" and the second one, "calendrical", both being independent of any correlation.

There are many other factors that indicate that the structure obtained is consistent and reliable. We can review that later.

The interesting thing is that when this structure is "tied" to the GMT correlation, also works, and when a cycle within that structure suggests that it may represent a specific astronomical event, it does.

Does that necessarily be coincidence?

But there's more. For some reason we have to find out, this structure fits into chronological patterns of Palenque and Tortuguero, and this includes the dates carved of the TRT 6 (the subject of this forum).

My questions are then:

Did you know about this structure?

Would this structure be worthy of consideration?

I am writing this because many of my statements are based on analyzes of this structure that I openly shared about 3 years ago and apparently is being completely ignored.

Ce Akatl (Gerardo)
Stan,
first off: "Phew!" After looking over my post this morning, I was afraid that the satire

might have been under-emphasized ... (I guess that's the risk of posting late after a long day of grading.) Thanks for making it clear.

I also want to make clear that I'm not suggesting that I'm the first to recognize the danger of false positives, or patterns in randomness. I tried to provide a history of the problem--and how archaeoastronomy has been dealing with it since its foundation--in my book on Palenque (which is out in paperback now... woohoo!), but folks should really go back to the debates on "megalithic science" as well as the back-and-forth between Keith Kintigh and Anthony Aveni... we don't have to re-invent the wheel here.

On the other hand, I think Barb is right in making room for the suspension of disbelief. Actually, I don't think your opinions are very far apart. I think it boils down to recognizing that any of these patterns are setting up a hard sell, which you both do. The issue is what kinds of contextualizations are compelling. My opinion, though, is that spot-on "accuracy" by itself is never going to be enough--no matter how accurate.

So it's really the "enough" question. But I think it's about the height of the bar, not whether there's a bar to get over at all. Was Monument 6 for a public or private audience? I think that changes the height of the bar, i.e. the kind of argument that will be compelling. Is there historical precedent to projections into the future that B'ahlam Ajaw may have been aware of and mimicking? That might also change the bar. And of course there are the issues of how the astronomy might relate to the events recorded in hieroglyphic text among others.

Finally, and this is of great importance to me, what is the evidence for a mathematical and or physical apparatus used by B'ahlam Ajaw and/or his colleagues to come up with a sidereal year with this accuracy? Tycho Brahe had to come up with some mammoth mechanical constructions to get the precision leading to Kepler's planetary models. We don't have anything like Uraniborg in Mesoamerica, so how much accuracy is it reasonable to expect?

My point is that we should be treating astronomical patterns more like archaeological artifacts. In many cases, we can tell the difference between a looted artifact and a modern replica by the tool marks. Why have a different standard for astronomy?

From Barb MacLeod:
All right, you debunker guys. What follows is Gerardo's random data (eleven intervals counted from an initial date) which contains, for the sake of argument, so-called "significant" astronomy. I understand, of course, that neither of you considers it significant in the least. Dunno about anyone else here, but in my perusal of it, I saw nothing of interest to me either, so we are in agreement at this juncture. Nonetheless, you both claim it as a counter-argument, so let's have a looksee.

I had my doubts that any of it would prove to be sidereally significant according to the criteria I consider valid. I did this math rather quickly, so it is not impossible that there is

an error or two. I converted Gerardo's Long Count intervals into day totals and then divided these by (1) a proposed Classic Maya Tropical Year of 365.2422 and (2) the modern Sidereal Year of 365.25636.
Here are the results.

1100 3.01170 TY 30.11583 SY
6584 18.02639 TY 18.02569 SY
8379 22.94094 TY 22.94005 SY
9035 24.73701 TY 24.73605 SY
21017 57.54263 TY 57.54040 SY
11314 30.97670 TY 30.97550 SY
12141 33.24095 TY 33.23966 SY
11532 31.57356 TY 31.57234 SY
12151 33.26833 TY 33.26704 SY
12444 34.07054 TY 34.06922 SY
48057 131.57570 TY 131.57060 SY

As I expected, there is nothing even remotely approximating a whole-number multiple of either 365.2422 or 365.25636. In contrast, please consider this:

50040 137.00497 TY 136.99966 SY

The argumentation Gerardo employs here, and which Stan has uncritically accepted as evidence that all of this sidereal brouhaha is coincidence, is a straw-man challenge which falls flat on computational inspection. Unfortunately, it also deflects—or attempts to deflect—a legitimate inquiry, and this is a much bigger problem. It leads to the presumption that the huge DN on Quirigua F must also embed nothing more than coincidence (by the way, I can't crack several of these; Thompson tried and he was the maestro; give them a try yourselves).

I have demonstrated that there is no *computational * sidereal evidence (regardless of what one sees in the sky) in Gerardo's series of dates; chance alone does not provide a hit. I also would expect that in a hundred such examples, one would still not get a hit. What about a thousand? I don't know what the odds are, but they do not motivate me to go digging through Distance Numbers looking for hits. I don't go picking up all the pebbles on the beach either; I do take home one or two.

I have checked the DNs on Tortuguero 6 that interest me, and I find that one which commensurates the sidereal year with an even number of tuns to be intriguing—precisely because the odds of finding precise computational intervals (much less clean ones like this) are small. But please go out on the beach and prove me wrong. I have never claimed (though John has) that its use here is intentional; I have instead suggested that we explore the possibility that it *might* be intentional (especially since we—or at least Stan, dunno about Gerardo—concurs that the Maya were aware of both the tropical and sidereal years). Give it its day in an unbiased court. If at the end of that exercise—which we appear to be engaged in collectively, unhappily, and with inevitable bias—we find a

preponderance of evidence for coincidence, then so be it. That still does not prove the interval is accidental and something the Maya never used. It's not proof of anything.

At the moment I believe I understand the events of Tortuguero 6 as well as anyone, better than most, having spent most of a year examining and discussing it. I also see myself as less biased than others in this discussion. I agree wholeheartedly that there is nothing apparent in these events or in the relationships between them which motivates an astronomical explanation. There is a lunar eclipse which falls in the same sidereal position, but it's three days off the date of the event. In my view, that demotes it to coincidence. I do not regard the /nupte'aj ta ayiin/ statement to be astronomical . But Michael and/or John may put it on the table for discussion, so let's give it its due. Stan and I clearly disagree on what it means to do that. As for the charge of tiptoeing to the brink of pseudoscience, I trust I have made my position a bit more transparent. It concerns me that you, Stan, so critically buy "ammunition" which you have not vetted, simply because it appears at first glance to support your position; that's tiptoeing on the brink. If indeed Teeple and Thompson—operating in ignorance of the historical record--simply cherry-picked intervals at Quirigua, tossing aside all others (I believe the determinants employed mostly sequential dates) then a close examination of those "determinants" and all other recorded intervals should demonstrate that; I haven't had time to do it. Neither have I a stake in proving them right or wrong. What I see on the surface is that Teeple found a number of intervals suggesting an initial tropical year value of 365.24 which was later refined to 365.242 or .2422. Of course it baffles me that the Maya would record such correction formulae within historical inscriptions. Maybe they didn't, after all. But is your certainty that they didn't based on a critical examination of computational data, or on intuition? Or do you believe that an examination of computational data is unnecessary in the face of overwhelming reasonableness?

Absent the notoriety of the writer whose paper we are reviewing, would this discussion have acquired such an intensity? John's position as a popular author on a hyped-to-the-max topic ups the ante for some of us here. Certainly it does for him and others with astrological and gnostic perspectives, and it does for Stan, whose critique is—I agree in closing— *mostly* overwhelmingly reasonable.

**
Edit to add: I wrote this before Gerardo's most recent post. Will send it on its way and ruminate. cheers, Barb

From Ce Akatl (Gerardo):
Hi Barb,
my point wasn't that sidereal years would turn up in any given set of thirteen dates. My point was that patterns will emerge--as a mathematical rule--out of randomness. If a given set of dates is random relative to events discernable in the night sky, then patterns will emerge among them even when they are not intended. The problem, as Thompson recognized long ago, is that because they are not intentional, these patterns will contradict each other across samples. We'll get a set of dates from Quirigua, for example, and one

set of patterns will emerge, which we can then interpret against the iconography, text, etc. Then we take another set of dates from Naranjo, and another set of patterns will emerge, but there will be contradictions between the patterns/results from Quirigua and those from Naranjo. They contradict each other because are artifacts of randomness.

So it's actually the opposite of your claim: if we found a sidereal period in the set that I posted, then we would have a consistency across random sets, and then we would actually want to dig deeper to find a non-random reason for it.

As for the rest of my perspective on sidereal periods, I believe I covered them in the post that crossed with yours in cyberspace.

Regarding Carlos's post to me:

I see two different types of questions in your post:
i. what about a result you've obtained regarding the DCVT;
ii. why is your work being ignored.

For the first, based on your summary, I would say that you have every reason to believe that you are on to something. That is, if you've developed a result that is derived independently of any calendar correlation, and then that result stands up and/or is productive in other contexts, then that is a very strong basis for moving forward and looking for other types of corroborating evidence.

If these results are also productive once you introduce the GMT, then it may be that:
i.a. the GMT was built to accommodate a number of astronomical phenomena, so it makes sense that your work falls in line even if the GMT is wrong;
or
i.b. you have new evidence supporting the GMT.

And this leads to point ii.
I think this is a good argument for the kind of forum that the MEC might be able to provide. If researchers are not able to publish in traditional venues (and I have no idea if this is your situation or not, and/or what the reasons might be), then the MEC might provide a unique and much needed space for this work to find an audience and provide the kind of feedback that would make the work more accessible.

I realize this is a curt response; I'd be happy to discuss this further by e-mail correspondence, but 1.5.5.0 does get us a bit far from the Jenkins paper or the Tortuguero monument.

John Major Jenkins
Hello everyone,
At the risk of missing a chance to sit back to enjoy some dialogue among others, I am going to post my response to Gerardo's "experiment" below, composed this morning

before a long day dealing with various life challenges. I see some new comments have come in. I very much appreciate all of you engaging the material here, and hope that we can reconvene around the amazing work that Barb and Sven have offered with Wayeb 34.

I won't open up new directions in responding to the recent posts (above) by Gerardo, Stan, and Barb, accept to say that I do consider many of these astronomical and astronumerological patterns to be unlikely to be coincidence. Rather than quickly claiming intention here, I pursue related avenues of inquiry and look for corroborating evidence. This may seem like an immediate and undiscerning endorsement of intention, but in fact it is merely open-mindedness. And while I agree with many of Barb's observations, and acknowledge her diplomacy, I think that the assessment that Stan's critique is "mostly overwhelmingly reasonable" is overly conciliatory and overlooks his debunking methodology which mitigates huge areas of Barb's work as well as major breakthorughs in more nuanced areas of Maya studies (more nuanced than basic-level hard science archaeology derived from explicit data). The apparent reasonableness is merely the safest possible position, but is not really scholarly investigation committed to getting at the truth. This is a problem based on simplistic and unwarranted assumptions and his personal convictions, including such revealing statements as December 21, 2012 being about "a bunch of hung-over, dissatisfied hippies crowded into Maya sites wondering what the fuss was about." I think a discussion could revolve around asking Stan to define 1) science and 2) pseudoscience. But this is, obviously, a complex discussion best reserved for elsewhere. This could be a mutually benefical topic for all.

My response to Gerardo's post about his experiment (which unlike his posts to others addresses me indirectly in the third person, as if I am somehow "outside" this conversation), follows....

Gerardo,
Thank you for taking the time to perform that interesting date analysis. Clearly, this person is Bahlam Ajaw reincarnated! As I glance at the dates you've randomly selected, the following occurs to me as a problem with your critique. This problem applies to the specific example you presented, but the larger point you make, "that we WILL find patterns among any collection of dates," is worth revisiting and I will address it afterward.

I first note that your random selection of 13 dates contains three New Year's Day hits (January 1). This statistically unlikely occurrence probably derives from New Year's Day frequently representing important milestones or turning points in a person's life, or markers of larger historical collective events that a person might identify with (as with the Zapatista Rebellion and Y2K in your example). These specific January 1 dates will therefore be predictably present for a statistically large number of people. So, with 3 out of 13 January 1 hits, you've already set the stage with a preponderance of solar and inner-planet alignments to the Milky Way / dark rift region. This is because the inner planets are very frequently close to the sun and, in our era, will be within or near the edge of the Milky Way on January 1.

Your experiment is based on the "good science" idea of randomly selected dates. However, because of the temporal congruence between New Year's Day in the modern calendar (the era of your example) and the solstice / dark rift / Milky Way theme of my argument, you have predictably high numbers of suspicious parallels built into your analysis. If your experiment was truly random, it would be more likely that you would find solar and planetary patterns constellated around a sidereal location not related to my argument. Why? Because of the vast array of possible things happening and patterns in the large expanse of the sidereal sky.

I can't help noticing that it would be polemically elegant for you to indict the actual feature that is the centerpiece of my alignment reconstruction (the dark rift). Similarly, it would be polemically compelling for you to show that alignment complexes similar to the primary one that is featured in my reconstruction can be found in your "random" collection of dates. The problem here, as I'm sure you'll appreciate, is this: Since the central involvement of the dark rift in any truly random performance of your critique is statistically quite unlikely, I must suspect that your experiment is possibly biased and the results, whatever your conscious motivation, are certainly skewed and unreliable. However, to honor the free play given to Coincidentalism in these discussions, this all may be just a big coincidence, and you may not at all be consciously engaged in weaving a net to catch me or expose my methodology as being fallacious. In any case, your little experiment is adorable.

More importantly, your somewhat stacked deck approach was intended to make the point "that we WILL find patterns among any collection of dates." This is really just an echo of Stanley's objection to the patterns I've identified on TRT Mon 6, that astronomical alignments (of some kind) are always happening somewhere. And therefore my observations do not suggest anything, except perhaps an overactive imagination. I circle back now to my earlier response to Stanley on this point, but I will take a slightly different angle of approach to hopefully elucidate more clearly my position on this.

If you, or anyone, were told to select dates from your life to highlight astronomical patterns that would accentuate something that you believed to be a defining theme of your life, then anyone with this advantage certainly could construct a narrative, with dated astronomy, that would accomplish this task. I suggest this was the strategy employed by Bahlam Ajaw --- a strategy employed by many Maya kings, of rhetoric and propaganda referential to asserted connections with specific astronomy and Creation Myth deities. Specific astronomy. My position is that I am identifying the specific astronomical biases of Bahlam Ajaw, based on the clue of his birthday-2012 parallel. Your position is that I am seeing only the pattern I want to see, and the TRT Mon 6 dates provide an endless array of possibly perceptible patterns. But there are limits that have factored into my assessment, in which astronomy is important. These limits are defined by, as I mentioned, the sun's sidereal position on Bahlam Ajaw's birthday in parallel to the 2012 date. That is the core of the construct. It defines his "identity" in his biographical narrative. A slightly larger pattern is suggested by the inclusion of calendrically relevant alignments of Jupiter and one eclipse to this same sidereal location. When we apply the limit-framework provided by the structural and astronomical

parallelism between Dates 1 and 13 (perhaps we can call this the “key”), we find that a nebulous theoretical field of near-infinite patterns collapse into a rather simple picture. A very simple picture.

This is an important framework of my argument which should be taken into consideration. That a very precise congruence of an ideal Sidereal Year constant (very close to the modern SY) is found in two sun-Crossroads date-pairs on TRT Mon 6 should be deemed far beyond coincidence. It’s interesting to note that the themes and the astronomical alignment that I propose Bahlam Ajaw exploited are also found in the life events and narratives of other Maya kings. My SAA paper and my posts above mention examples from K’an Bahlam, Ahkal Mo’ Naab, K’ak Tiliw, and 18 Rabbit. Many of these mutually confirming usages of astronomical alignments are not subject to recurrence at multiple CRs and therefore provide traction for the GMT correlation “family”, of which the 584283 I use is pinpointed by the surviving 260-day calendar in Guatemala (assuming the evidence for tzolkin continuity is not fabricated by mysterious ne’er-do-wells and is not an incredible coincidence). Although this isn’t the purpose of my argument in the SAA paper, it’s interesting that if my proposal is true it is only true if the GMT family is accurate. Furthermore, the useful approach of identifying astronomy within dated narratives --- in some cases parallels between dates separated by thousands of years and anchored to a specific and relevant sidereal location --- promises in the near future to completely mitigate any non-GMT correlation. Although I’ve accepted the 584283 GMT since I concluded my four-year study of the correlation issue in 1992, the probably intentional astronomical data found on TRT Mon 6, and elsewhere, support the GMT family.

John

From Barb MacLeod:
I had an inquiry about a citation for the huge DNs under discussion. Several chapters of Thompson's Maya Hieroglyphic Writing: An Introduction may be found here:

http://www.sacred-texts.com/nam/maya/mhw/index.htm

Appendix IV Calculations Far into the Past
Appendix V Determinants

From the Maya Exploration Center
Mr. Mardyks has been barred from this conversation based not on his ideas, but rather the disrespectful ways in which he states them. Please ignore any post he makes to this discussion board until which time they can be deleted.

Mr. Mardyks, if you would like to suggest an alternate website in which people may

listen to your ideas, that is the one and only post we will allow on this board from you. We regret having to draw this line and sincerely wish you a happy holidays.
---MEC Director, Ed Barnhart

From Stanley Paul Guenter:
It has not escaped my attention that both John and Barb are ignoring my request for an explanation of the actual implications of their arguments here. Perhaps that is because a few of my posts are rather lengthy, so I will keep it short here. You both argue that perhaps the scribes of Tortuguero encoded sidereal year calculations in the distances between dates on Monument 6. Given that absolutely no such astronomical pattern appears in the explicit DNs, which tell us precisely what connections these scribes considered most significant, why would these scribes have encoded these calculations in apparently random distances between unrelated events, or, even worse, in the distances between one historical event and a base date, which are used in texts only to anchor other CRs in the Long Count.

So I kindly request a response from each of you on this matter. I think that it is easy to engage in this kind of speculation when you divorce these mathematical calculations from their cultural and historical contexts. If you guys are correct, this has major implications for our understanding of the ancient Maya, and the practices of Maya scribes. So explain to me and the others here why you think the scribes would have chosen such a convoluted manner to include sidereal calculations in a text that otherwise has no explicit references to astronomy. And, while you're at, have a shot at explaining why the scribes did not choose to include any apparent astronomical calculations in the explicit DNs.

From Carlos Barrera Atuesta:
Thanks Gerardo for your replying, I appreciate it.
And again, I totally agree with your analysis.
Please feel free to contact me at carlos@dresdencodex.com so that you please can let me know about your updated e-mail. (I'm not sure if I've got the right one). Best wishes.

From Michael Grofe:
Hi, John, All,

John, I have not had a chance yet to post my review of your paper here, as this has all coincided with the very last weeks of the semester and its enormous amounts of grading! I respect your willingness to hash it out with everyone, and I hope that some of the feedback has been beneficial. I've been able to follow the discussion off and on, and I would like to respond before it is finally closed, especially given that you mention my work here. I hope that I might at least be of some help here in clarifying some of the references you cite for my work, and to provide you with at least some feedback from

where I stand, which I see as the original purpose of this discussion.

In composing this message for the past few days, I've become very aware that it is difficult to cover all of the topics brought up here, so I may need to post this in sections. I will try to address my comments to everyone, while the majority of my post is intended as feedback for you, John. Where I am responding to others, I will do my best to address them directly.

First of all, my overall impression is that your paper serves as a first draft for the larger chapter you plan to publish, and I hope that this discussion will at least help you further clarify some of your ideas for that chapter, many of which I know you have already addressed here and in the chapter. I tend to agree with Gerardo that this review process could be more helpful if it is more limited in scope, and that the reviews need to address the specific content of the paper itself. At the same time, I think that this kind of forum may be an opportunity to get some outside feedback, and you can certainly do with this what you choose—or throw it out the airlock ;)

In this case, it is certainly difficult just to isolate this discussion to the text on Tortuguero Monument 6 and your proposals, but I think it would be beneficial to strive for this. Taking the journal "Current Anthropology" as a model, MEC might consider sending future papers through an initial review process that leads to revisions from the author, followed by solicited reviews that could be posted, along with a response from the author. Having worked as an editorial assistant at Current Anthropology, I can tell you that many initial papers were rejected or sent back for revision, and they never were published or received any published feedback. It might be helpful for MEC to both publish a series of shorter notes like this, akin to "Glyph Dwellers", as well as having longer papers with posted reviews. In the meantime, I think that this discussion has brought to the surface some important points and questions for all to consider, and it makes public the often messy and contentious processes of science, which can be exhausting, but hopefully also informative, educational, and exciting.

It is my admitted bias that I think that there is a considerable amount yet to learn concerning astronomy in the inscriptions, and if we approach the topic with humility, we may be able to figure out some very interesting things in the process, while we may also find that some of our proposals and dearly held ideas may not bear much fruit. I don't think there is anything wrong with this kind of bias, so long as we are willing to be open to whatever the results may tell us. We often do not have the luxury of proof or smoking guns in this work, so we are left to entertain the evidence and to come up with the most likely scenarios to explain any consistent patterns where possible, to ask more questions, and to always leave many unanswered. I appreciate Barb's suggestions about keeping our antennae well-tuned, as well as being willing to both entertain and, if need be, abandon multiple clues from multiple sources.

I think it is very important in our work as both scholars and critics to de-exoticize Maya astronomy, which has often been depicted as something so esoteric and super-human. In so doing, it will help us to compare Maya astronomy with the practices of ancient

astronomical observation from other parts of the world, while also recognizing the unique traditions found in Mesoamerica.

In my opinion, it is not far fetched to suggest that the Maya were capable of measuring either the sidereal year or the tropical year with some accuracy, though we are left with the burden of finding evidence to support these claims. One major hurdle that I have found is that many are unfamiliar with the differences between the sidereal and tropical years, or how naked-eye observations for both can be performed quite easily, without needing any complex apparatus.

Gerardo, this is in response to your important question about how such observations of the sidereal or tropical year might have been recorded. I think it will be useful for all readers to review some of the basics. For most casual observers, the length of the year can be measured in one of two ways:

1) The tropical year: The length of a year can be measured by the return of the sun to the same solstices and equinoxes—and in the Mesoamerican tropics, to the precise days of the solar zeniths and nadirs. The value for these intervals differs slightly depending on what time of year they are taken (due to the complications of precessional wobbling interacting with the changing speed of the earth in its elliptical orbit), and this is further complicated by the fact that the length of the tropical year changes slightly over time due to the changing rate of precessional wobbling itself. We currently take a yearly average of the four different measurements of the length of the tropical year from the two solstices and the two equinoxes as the mean tropical year (now 365.24219 days). Like other ancient civilizations, we know that the Maya observed and recorded some form of a tropical year interval or intervals, but the question remains regarding how accurate these calculations may have been (at the time), and how the unique phenomenon of the solar zenith may have affected these measurements.

2) The sidereal year: The length of a year can also be measured using the first appearance of stars or asterisms like the Pleiades after close conjunction with the sun. In fact, all that is needed for relatively accurate measurements of the sidereal year are consistent observations of such star risings recorded over many hundreds of years, particularly using stars close to the ecliptic. We know that observations of the Pleiades are still used by the Maya to orchestrate the agricultural year, and similar observations are found throughout the world.

Over the course of an average individual lifetime, it appears as though a star becomes first visible on the same day of the tropical year, but this is not the case over hundreds of years of time, since the sidereal year—or the time for the sun to apparently return to the same star—is slightly longer than the tropical year. Interestingly, unlike the tropical year, the sidereal year of 365.25636 days is highly stable over many thousands of years as it reflects the period of the earth's orbit around the sun, relative to the stars. In fact, early astronomers in Egypt and Mesopotamia used heliacal star risings as a primary measurement of the length of the year, apparently thinking that the sidereal year was one and the same as the tropical year. Ancient Egyptians used the heliacal rising of decan

stars to organize their year into ten-day periods, and the heliacal rise of Sirius was used for a time to announce the annual flood of the Nile. Perhaps more relevant to this discussion, we can see that Babylonian astronomers used the sidereal year as the length of their "year", and they apparently did not differentiate between the sidereal and tropical years: http://tinyurl.com/2ez7tz3

It was Hipparchus in who is widely recognized as having first attempted to calculate the accumulating difference between the sidereal and tropical years that manifests as precession of the equinoxes, which he himself discovered and named. He estimated that the difference did not amount to more than one day per century, while the current calculation places it at around one day every 71 years or so. His error was mostly in his value for the tropical year, whereas his implied sidereal year value was quite accurate.

But it is important to realize that one need not understand the dynamics of precession to record the regular pace of the sidereal year over centuries of time. Naked eye observations of heliacal star risings and long-term record keeping are sufficient alone, though Hipparchus also utilized the sidereal position of total lunar eclipses coordinated with the tropical year. He thus only measured the tropical year, together with the estimated number of degrees of precession rather than directly measuring the sidereal year itself. However, if the Maya were capable of both calculations of the sidereal and tropical years, they would most likely have been able to project the net result of the difference over long periods of time. This is, perhaps, a radical statement to consider in the history of astronomy, but I think it is an important and valid question to consider.

Methodologically, I think we can continue to build on what we do know and we can approach various proposals with degrees of certainty and security. When we observe a possible pattern, it leads us to ask the question of whether that pattern was intentional or not, and we can hopefully test that pattern with additional data. If there are multiple explanations for the data, we must remain open to multiple possibilities. There are more supportable arguments and less supportable ones, as there are more supportable critiques and less supportable ones. There is always bias in our interpretations of these scattered points of data, and new data inevitably stands to change what we previously thought. Pointing out poor arguments and challenging biases are all part of the scientific process, but, Stan, I think that what we do can be labeled as pseudoscience only when we cling to the certainty of ideas without being open to their being falsified. We are left with trying to make sense of mere imprints and endpoints of possible Maya calculations, and our task is to identify verifiable and repeatable results wherever possible.

John, as you know, one disadvantage to your argument is that I have not yet published my work on sidereal parallels in the Classic inscriptions, so my research on this topic has not yet had the benefit of much peer review. As a result, you are partially bearing the brunt of criticism that should be directed at my work when others have had a chance to read it through, but this is not the venue to present all of it here. Certainly, my work will also need to stand up to criticism and the possibility of equally valid, alternate explanations, and that's the nature of science. In that respect, I think both Stan's and Gerardo's positions here serve as a helpful counterpoint, and the entire discussion

benefits from a critical and skeptical perspective. At the same time, it is usually more productive if there are concessions on all sides so that this doesn't degrade into personal attacks or punishments for what we surmise to be problematic conclusions, as Gerardo suggests.

I'll be posting additional comments after this one when I have the chance.

Cheers,
Michael Grofe

From Michael Grofe:
While taking a skeptical approach, I also feel reasonably assured that a case can be made for intentional calculations of the sidereal year and the tropical year among the Classic and Postclassic Maya, particularly in association with multiple shorter and longer distance numbers associated with deep time intervals. As Floyd Lounsbury and later Gerardo both demonstrate, these long-range calculations of specific counts of days are certainly contrived to count from historical time into mythological and pre-historic time. Gerardo has provided a rigorous methodology for analyzing how some of these intervals are specifically contrived through the use of several numerological multiples, some of which derive from iconic astronomical cycles, such as Venus as 584 days. I suggest that we might also widen our lens to look out for specific astronomical cycles like whole multiples of the tropical and sidereal years.

I will be sharing some examples of my work here, while those interested might want to take a look at my prior work on the Dresden Serpent Series—or wait until a revised and much more readable version comes out!

John, if it is at least partially verified, some of the evidence I have found may provide your paper with more of a leg to stand on, at least concerning the specific proposal about Tortuguero Monument 6 (hereafter TRT6) and the sidereal year. However, while it will help to invoke a comparison with other similar texts, I suggest that your paper will be more successful if it cautiously limits its scope to posing questions about the interpretation of the unique text on TRT6 within its specific political and temporal context, rather than as a confirmation of your earlier proposal about the intentional placement of the Long Count, as tempting as that may be. That is a separate argument with its own set of challenges, both scientific and political, as we know.

John, in my opinion, I think it will be important to tackle the issue of the sidereal and tropical years separately from other astronomical phenomena. Extending the evidence to include Jupiter or other planetary transits opens the paper up to considerable additional criticism, and it dilutes your underlying argument.

Gerardo, as you humorously pointed out with your experiment, we can easily invoke Thompson's response that "significant" astronomical patterns can be found for any set of random dates, thereby producing false positives. But I would argue that we should not

include every form of planetary, solar and lunar position in our analysis of TRT6 or any monumental text. Instead, we need to narrow our focus to just one variable like the tropical year. I also agree with John's point that within your random dates can be found intentionality in the choice of citing repeated dates falling on January 1, which reflects the cultural use of our Gregorian year and its starting point. Both the Zapatista's choice and your own choice of January 1 for the millennium and the century period endings bring with it a cultural and astronomical tradition that can be deduced from the resulting data set. The whole multiples of the tropical year do indeed pop out, and I would add that this is significant. It is the very bias of the scribe that we are interested in. I think the more important point is that it is exactly this kind of astronomical and cultural intentionality that we are looking for.

Gerardo, as I recall from your "Solar Stelae and a Venus Window", you noticed that Copan Ruler 12 celebrates the tropical year anniversary of his accession, almost exactly 24 years earlier. This is very interesting, and I agree that it is most likely significant. But it is a good example of how texts that appear to incorporate astronomical intervals like the tropical year often do not explicitly tell us they are doing so. The text itself does not give us much corroboration with astronomy here, given that it describes the birth of YAX-CHIT, which Barb reads as "first companion". I suggest that the text describes this event as the covering (la?-ma-ja) of blood and bones. Given that Stela 2 also posthumously refers to Ruler 11 on the east side in association with an event 10 days earlier (roughly corresponding to the anniversary of his death), it is likely that the accession anniversary deals with an exhumation event of the bones of Ruler 11. We see the same kind of reference to the deceased Ruler 11, complete with blood and bones and YAX-CHIT in the text on Stela A, where Ruler 13 (18-Rabbit) apparently impersonates his grandfather Ruler 11 himself. Interestingly, the initial date on Stela A is also very close to the same time in the tropical year to the anniversary of the Ruler 11's death. While the accurate tropical year anniversary in Stela 3 is evident, we are left to ponder what significance it held, and how it may have served as a focal point for ancestral worship. Why celebrate an anniversary at 24 years, and why dig up dad's bones then? Might this have something to do with conjuring Ruler 11's spirit, to be born as Ruler 13. Is this why Ruler 13 impersonates Ruler 11 on Stela A? There are many unanswered questions and possibilities here.

So when we find potential astronomical patterns, how do we separate the signal from the noise? What can we consider admissible evidence, and how can we tell the evidence from sheer coincidence or our own projections? As I proposed above, one way to begin is to very specifically take on one variable at a time, and to constrain the evidence. We can establish whether patterns work regardless of what calendar correlation is used, as above. We can examine the issue of sidereal year alone, as well as the tropical year alone. We can then examine the data using specific correlations with these intervals, and I think there are very important reasons to consider the relevance of these when they show consistent corroboration between text, iconography and astronomy. At each step of the way, we have to allow for possible random chance and contesting explanations, while also taking note of possible intentional patterns.

John, thank you for clarifying my proposal about the possible range for Bahlam Ajaw's birth date. An inspection of the monument itself might help to settle this issue more thoroughly. Alas, we are left with Murphy's Law of Epigraphy… Still, I agree with both you and Barb that we can most likely narrow down the possible dates to within a five-day range. I had originally conservatively proposed that from the available remaining space in the eroded k'in coefficient, the distance number that counts back from his accession on 9.10.11.03.10 to his birth appears to range from 1.11.11.6 to 1.11.11.15, providing for a ten day window from 9.08.19.09.15 to 9.08.19.10.06. However, a closer inspection of the thickness of the visible bar, and a comparison with other similar coefficients in the text suggests that the remaining available space really does appear to leave room for only one more bar or from 3 to 4 dots, giving a narrower five-day range for the DN from 1.11.11.6 to 1.11.11.10, leading to the dates 9.08.19.10.00 to 9.08.19.10.04. The date 9.08.19.10.01, 13 Imix 9 K'ank'in is an exact whole multiple of sidereal years from the 13 bak'tun completion date at the conclusion of the text on the right flange of the monument, meaning that the sidereal position of the sun on any one of his possible birth dates would be within three days or less from the sidereal position of the sun on the 13 bak'tun completion date (Gerardo, in response to your proposal, please note that this close sidereal parallel *is* actually correlation free— it is a whole multiple of sidereal years regardless of what calendar correlation is used, though the winter solstice position of the latter requires the 584283 correlation, of course).

As Stan and Gerardo suggest, is this sidereal parallel a mere post-hoc coincidence we are noticing, given our easy access to instantly gratifying astronomy programs? This is a fair and necessary question that we have to try to answer. How might we determine if such a parallel was intentional? Did the Maya even measure the sidereal year? Given my work on other similar sidereal parallels found in deep time intervals, the above sidereal parallel jumped out at me as potentially significant, especially considering that Bahlam Ajaw's birth date must have been first mentioned on the left flange, and these two sidereal parallel dates bracket the entire monument. Taken alone, the text on TRT6 does not in itself seem to provide us much evidence to support the idea that this is an intentional calculation of the sidereal year. However, when we compare this text with other similar texts, we find important parallel patterns that I'd like to explore further.

As Ray and Barb noticed, and as you had intended to say in your paper, I also found two other candidates for a whole multiple of the sidereal year in the TRT6 text: the earlier hekwan Pibnaah event on 9.03.16.01.11, 8 Chuwen 9 Mak, and the later k'axi event on 9.10.15.01.11, 11 Chuwen 4 Muwan. This interval jumped out at me because it was also a whole multiple of the sidereal year, while it is also very close to the same sidereal position as both Bahlam Ajaw's birth date and the 13 bak'tun completion date, which is linked specifically with the earlier Pibnaah event. I still have my antennae up about this, but I must admit that Barb and Stan have a point that we have no underlying rationale for why these two events would have been intentionally linked through a sidereal year calculation. Why not link the two kaxi events sidereally, or the two hekwan events? The text itself provides no explicit corroboration with astronomy here, so we have little to go on. However, this does not indicate to me that such a pattern is necessarily unintentional or that the Maya astronomers did not notice it. There may be a very good reason why

these dates may be intentionally linked in this way, but we are left only with the astronomical result, much as with the anniversary of Ruler 12's accession in Copan Stela 3.

John, while you accidentally labeled the above events as linked through the tropical year, what you didn't mention in your paper (but perhaps you did mention this in this discussion and I missed it) is that your date number 6 is actually a whole multiple of tropical years from the 13 bak'tun completion date. In other words, the date 9.10.17.02.14, corresponding to the war event against Comalcalco, falls on the same day of the tropical year as the 13 bak'tun completion date. This is the last mentioned war in a series, and the accompanying text mentions how Bahlam Ajaw derived from this a replenishment of divine power. While in your chapter you make the interesting association between these war events and the known war deity Bolon Yokte' K'uh, mentioned in the event to take place on the 13 bak'tun completion date, this type of proposed linkage through the tropical year begs similar questions to those concerning the sidereal linkages proposed above. Was this linkage intentional? If so, why should this last historical war event on Comalcalco be linked to the 13 bak'tun and not the others? Why would this proposed linkage utilize the tropical year in this case and not the sidereal year? Is this again merely due to random chance? Perhaps there is an obvious correlation with the winter solstice and the dry season as the known time for warfare. But there seems to be a particular emphasis on the Comalcalco war event as also spiritually significant in the strengthening of divine power.

Incidentally, As Barb and Sven mention in their paper on TRT6, I've identified this strengthening verb (9-IP-na-ja) in association with bones and blood (here piled and pooled in warfare) as the same verb root (9-ii-pi-la-ja) mentioned in Copan Stela A, with the bones and blood of the deceased Ruler 11. The Stela A text interestingly seems to refer to the strengthening of the bones and blood of the sun, while the bones of the dead (Ruler 11) are cut and scraped (su-sa-ja). What's more interesting to me—as I entertain heresy with neck outstretched— is that all of this is said to have taken place on the date that corresponds to Stela H, on 9.14.19.5.0, December 3, 731 (using the '83 GMT correlation), which places the sun in conjunction with the Milky Way in essentially the very same sidereal position we find it on the 13 bak'tun completion. Stela H curiously depicts Ruler 13 impersonating the Maize God, interwoven with images of the divine soul force. Interestingly, in yet another reference to strengthening of divine power on TRT6, we find that it involves that of the Maize God himself. Herein seems to be some association between the deceased and their symbolic resurrection as the Maize God. Might this have some association with the sidereal position of the sun in conjunction with the Milky Way in the winter? How might we begin to even evaluate these types of references and their possible associations?

As Stan, Ed, Gerardo, and Barb have all mentioned here, one of the most difficult things to contend with is the lack of known references to astronomy in many of the texts that are used to as evidence to support astronomical intentionality. The purely astronomical approach to the inscriptions was common prior to the era of phonetic decipherment, while the purely historical emphasis in the interpretation of Maya texts provides a challenging

null hypothesis that any given inscription is not astronomical unless we might be able to falsify this claim using additional evidence. If we can recognize them, text references to related astronomical events would be considered a good source of evidence. But where we lack text evidence, what else might we consider to serve as evidence for intentionally placed, contrived astronomical dates?

I would agree with John, Stan and Barb that certain iconographic patterns are worthy of consideration and raised antennae, as it were. Elsewhere, John, I think you make an important case for iconographic evidence, such as the association between caiman imagery and the sun in conjunction with the Milky Way on Copán Stela C, Quirigua Zoomorph B, and in the Dresden Venus table, and I think repeating patterns like this are certainly interesting and admissible. While not necessarily conclusive alone, these iconographic patterns take on added significance if they are paired together with known astronomical intervals and possible positions of the sidereal and tropical years.

In this regard, I think it is important to mention that the Copán Stela C k'atun ending on 9.14.0.0.0 is also linked to the associated date of 9.14.19.5.0 on the nearby Stela H, and its reference on Stela A, as I mentioned above. As Teeple demonstrated, these intervals are separated by one metonic cycle, thereby placing both of them on the same day of the tropical year, as well as at the time of the full moon (both using the '83 GMT correlation as well as the lunar series data). This is a clear example solar and lunar astronomy that is arguably intentional, particularly given the repeated use of the metonic cycle in Copán in the monuments of Ruler 12 that I have written about in a chapter to be published next year. That both of these dates also place the sun in precise conjunction with the Milky Way is potentially significant, particularly given the caiman imagery on Stela C. Like TRT6, Stela C also links itself to several distant mythical dates in deep time, in this case a shorter interval that counts back to before the current era, as well as several much longer intervals, including one which counts back to 13 kalabtuns prior to the Era Base on 4 Ajaw 8 Kumk'u. I am currently working on astronomical interpretations of these specific, contrived distance numbers, some of which I'd like to share here in my next post.

-MG

Pg 6:

From Barb MacLeod:
Hi, Stan,

Please rest assured I am not ignoring the question. But before I make the effort to answer it, I would like to know what your position is regarding Classic Maya observations of the solar tropical and (especially) the sidereal year.

In one of your earlier posts you stated that you had no doubt that the Maya observed both the tropical and sidereal year. Now I cannot find that statement, and I am certain that it

existed. Have I missed it in a review of your posts? Or have you deleted it?

But prior to this, in an earlier post, you had said:

” I don’t think our problem, or at least mine, is that the Maya would have had to have been aware of precession here, but that there is no evidence that they were."

You have also said that the Maya, like many ancient cultures, probably employed astronomy as a foundation for mythology.

Before we can address the matter of whether and why the Maya might have embedded sidereal data in historical texts, I feel we should first establish (1) whether you believe the Maya observed sidereal motion at all; (2) if you believe they did, or could have done so, why you think so, and (3) what purpose the documentation of a sidereal year served.

I trust we'd agree on the likelihood that they observed the tropical year for its usefulness in seasonal calibrations.
Barb

Stanley Paul Guenter
Hello Barb,

no, I haven't deleted any of my posts, nor have I edited anything in my posts other than a few typos. I did notice yesterday that about half a dozen posts seem to have gone missing, as earlier I had referred to "Post 123 of the discussion" or something like that, and with these apparent deletions, that numeration would obviously be affected. I don't know what's going on with this, but that might explain why you can't find that specific post of mine in question.

But you needn't look any further, as I did indeed write that I have no doubt the Maya would have been aware of the difference between the sidereal and tropical year. After all, from the Dresden codex we know that those Postclassic scribes had inherited a system of astronomy that required many years of observations of various celestial bodies. The Classic Maya kingdoms were remarkably stable, despite their occasionally being conquered and we see a lot of continuity between the centuries in their art styles and architecture, suggesting a relatively stable coterie of specialists associated with the royal courts. As Michael has pointed out, the observation of a difference between sidereal and tropical year is not that difficult to make; it simply requires multi-generational observations.

Now, while I fully agree that the Classic Maya could have followed the sidereal year, I think a lot of the proposed arguments that supposedly prove this are highly suspect, given the lack of confirming evidence and that these arguments are often no better than the discredited ones put together by scholars in the early 20th century, working before the benefit of the decipherment and revelation of the historical content of the inscriptions. I

already pointed out to you that I think you may well have something on Quirigua Stela F. However, when you ignore the explicit DNs on Tortuguero Monument 6 that do not exhibit anything astronomical and yet argue that an unrecorded DN on the same monument, connecting a historical event with a mere base date in the inscription, is a sidereal calculation, I think the argument that this may be significant is highly suspect.

So, I think I have already answered your questions 1 and 2. As for question 3, what purpose the documentation of a sidereal year might have served, I do not know exactly. However, if the Maya conceived of the celestial bodies as deities or aspects of them, as we seem to have proof for Venus and the Moon at least, then a slippage between the tropical and sidereal year would have had a religious importance.

Now that I have played your game and answered your questions, I do have to ask why this was necessary at all in order for you to finally answer the questions I have posed to you a number of times already. You seem incredibly reluctant to do so, and while I have answered your questions you don't seem to be very charitable in returning the favor.
Stan

Carlos Berrera Atuesta
Stan,
I think that posts' numeration has changed because Ray's comments have been deleted. That's all. Regards.

From Stanley Paul Guenter
Carlos,

thanks for that clarification. That makes perfect sense.

From Stanley Paul Guenter
Michael,

thanks for joining the discussion. I will try to be brief, but I did want to say that I think what is necessary to make this a truly scientific pursuit and line of inquiry, we need to acknowledge the "misses" as well as just the "hits", in terms of finding astronomy encoded in these texts. As I pointed out to Barb, I think the idea that the extremely long DNs on the Quirigua monuments may encode sidereal or tropical year calculations is eminently reasonable. The idea that the Maya encoded such in explicit DNs on monuments with historical texts is a bit of a harder sell, as it presumes the Maya were fudging historical dates to fit astronomical patterns when astronomy is almost never even a partial concern of the exoteric texts. The idea that the Maya encoded such astronomical calculations in inexplicit DNs, especially when the historical texts make no mention of astronomy or mythology, is far more suspect. And finally, when your contrived DNs connect historical events with mere base dates, I think the idea that these intervals are

significant is not only extremely unlikely, but rather unreasonable as well. After all, if astronomy was of such a concern to these scribes, why didn't they mention it explicitly or encode it in actual DNs, or even just DNs between real events.

This has been my gripe with the arguments that John and Barb have put forth here. They do not acknowledge that the basic, underlying premise of their arguments, that the Maya encoded astronomical calculations in the intervals between dates of a historical nature on these monuments, has failed all of these earlier tests. With the case of Tortuguero Monument 6 they concentrate only on the apparent "hit" they get at this lowest, 4th level argument.

No glyphs of an astronomical nature appear in the Tortuguero text, least of all the "dark rift" glyph John is so fond of, and the only mythology appears with the 2012 date. However, this 2012 date is not directly connected with any of these other dates, except for the 669 house dedication. However, this DN has no astronomical significance, apparently. The scribes who laid out Tortuguero Monument 6 weren't shy about DNs. There are 3 DNs in this text that connect non-sequent events in the text's narrative. Those connections have to be considered significant, but they are being ignored in favor of a concentration only on intervals that appear significant astronomically, even when these intervals appear entirely random.

This is why I see this methodology as pseudoscientific. If there was an acknowledgment upfront of these problems, and that there is no good reason to believe the ancient Maya scribes intended these contrived intervals to be dissected in this way, I would be much happier with this exercise in "open-minded" research. Merely pouncing on these intervals, divorced from their actual context within the monument's narrative, merely makes this exercise seem like a cousin to the Bible Codes calculations of Rips and Drosnin. The supposed findings of the names of medieval rabbis and the assassinations of modern political leaders in the Torah seems quite amazing, and the math seemed to support it. But then skeptics noted that these scholars were apparently guilty of "tuning" their cases, making them appear more significant than they were by first off looking for anything they considered "significant" and then presenting their data as if they went into the test looking for just these names, or just those variant spellings of these names, when in actuality they seem to have looked for a whole lot of different names that didn't show up, and these "failures" weren't acknowledged in estimating the chance of finding these names in this text.

I know my description won't mean much to those of you who aren't familiar with this case, but I encourage you to look into it a bit, as my problem with the methodology used here regarding Tortuguero Monument 6 is very similar to these problems with the Bible Codes. I think you guys are "tuning" your test here, by not acknowledging all of the misses of your basic hypothesis up front. Let's be honest, before any of you (John, Barb and Michael) addressed Tortuguero Monument 6, you had done extensive investigation of, even publication on, archaeoastronomy. You guys started your investigations of Tort. Mt. 6 by presuming, at least for the sake of argument, that astronomy was encoded in this text somewhere. Anywhere. John was already looking for dark rift alignments, but apart

from this I don't think that any of you 3 were looking for any specific astronomical periods or phenomena. Certainly you would have had no reason to be so specific.

I have already pointed out that there are over 700 possible (contrived) DNs between the 13 dates on Monument 6. You guys are concentrating on this apparent sidereal year calculation, but what about all the other periods that I cannot believe you weren't also testing these intervals against. While Barb acknowledges that she is simply picking up on Michael and John's sidereal observation, John's paper in question actually notes a whole slough of other astronomically significant periods he was looking at. So we need to consider all of those different periods against all of the different possible contrived DNs on Monument 6. This makes coincidence far more likely.

After all, let's consider why you guys are considering the Tortuguero scribes to have been encoding a sidereal year here more than a tropical year. Why? Not because you have any evidence in this text that such was of interest to the scribe, but merely because the calculation falls closer to a sidereal year than to a tropical year. But if the calculation happened to fall closer to the tropical year would you guys have considered it any less "significant"? With all due respect, and not wanting to be too presumptuous, but I think your writings indicate that all 3 of you would have still considered that significant. Taking that into consideration, I think this yet further ups the possibility of chance being involved. Especially when we see that the extension of this sidereal year calculation to the difference between the birth date of Bahlam Ajaw and the 2012 date is off of the true value by 4+ days, according to John's own admission. Even granting his whole argument, he still has to admit that other factors are at work here, "or that there was no interest in performing an exact SY commensuration on those dates". With such caveats, can I really be blamed for my skepticism?
Stan

From Barb MacLeod
Stan, you said:

"Now that I have played your game and answered your questions, I do have to ask why this was necessary at all in order for you to finally answer the questions I have posed to you a number of times already. You seem incredibly reluctant to do so, and while I have answered your questions you don't seem to be very charitable in returning the favor."

I highlight this paragraph in the interests of (re-)establishing a dialogue that is as free as possible (could be a tall order) of unnecessary one-upmanship, prejudice, innuendo and presuppositions. The discussion we both---we all---want to have about this is difficult enough, and sufficiently laden with "hard-sell" items (I note that you have two differing positions in nearly identical sentences there), that if we wish to make any progress then we should agree to come to the table equally prepared to persuade and to be persuaded. We are not there yet.

I'm happy to know you think that the Maya could have observed the sidereal year and

tracked its relationship to the tropical year. That point alone has been a hard sell in our field, and I have watched Aveni, for one, waffle on it for decades. So that point is now reasonably clear.

Regarding the second point (evidence for sidereal observation), I find it necessary that you be willing to consider some of the recent evidence---in particular, that which Michael will present directly. Are you open to this?

Your final paragraph above, and parts of your reply to Michael, portrays a view that I (speaking for myself only) have been evasive, "incredibly reluctant", and uncharitable. You call my request a "game" and make clear a condescending distaste for having to play it.

I find it necessary to appeal to basic propriety in the interests of productive dialogue. Without it, any round-table discussion is hosed. We are, after all, on a collective fact-finding mission---or this is my perception; is it not yours? Or is your mind already made up? I can't help but call to mind the image of Khrushchev banging his shoe on the table.

At this point, I expect you to take this post as further incredible reluctance regarding questions for which I have no answer. For my part, I am not keen on taking the time to answer when I feel talked down to and that no answer will ever suffice. That doesn't mean I have no answer.

One relevant item is this: Tortuguero 6 is as much mythological as it is historical.
Barb

From Stanley Paul Guenter
John,

you got upset at me for quoting you here from papers you wrote up years ago that I found on the web. Considering this, I find it odd that you don't seem to hold yourself to the same standard. In a recent post you cited a quote of mine in which I say that I expect Dec. 21, 2012 to lead to "a bunch of hung-over, dissatisfied hippies crowded into Maya sites wondering what the fuss was about". Other than you and myself, that quote is going to appear to other readers here to come out of left field, for it isn't found in the discussion here, or on any other publication, on the net or in print. This is because it doesn't come from any publication, but rather is from a powerpoint I prepared for a lecture on the 2012 phenomenon, in my class on pseudoscience and archaeology. As I pointed out to you in our private conversation on this powerpoint, my class was 50 minutes long in which I had to explain the whole 2012 controversy to a class of students, most of whom knew nothing about the Maya, let alone their calendar or your interpretation of it. The quote in question was from the final slide of the powerpoint, and was my tongue-in-cheek conclusion to the topic for that day, pre-emptively answering the expected students' question about what I really think is going to happen on that date.

This powerpoint was not prepared as a scholarly publication, something which you of all people should appreciate given your repeated statements that your use of the term "end date" is often done when dealing with public and not scholarly audiences in mind. I think it was rather unfortunate that David Freidel passed that powerpoint on to you, not because I am embarrassed by or regret anything I wrote in there, but because it was not a scholarly article and David never consulted with me before sending that off to you. I think it even more unfortunate that you decided to respond to it as you did, with a whole webpage on your internet site devoted to taking on the powerpoint slide-by-slide, when the powerpoint itself is not available for anyone reading your post. As I pointed out in our private conversation, I found your review of my class powerpoint quite by accident and did accept some of your criticisms, especially of certain images I was using that did not adequately reflect your own beliefs about the galactic alignment. I made these changes for my subsequent teaching of this course. While I appreciate this constructive criticism, in this forum I don't think your quoting me from this otherwise unavailable powerpoint, and one that you do not cite, is the best form.

Now, let's move on to some more interesting material. You have mentioned that you think the fact that Bahlam Ajaw's birthdate and the 2012 date are sidereally similar is not only probably intentional, but likely serves to define his "identity". I would like to first thank you for this explanation, as I think it moves us forward in the ways that I was arguing were necessary for us to make this a truly scientific discussion. Now we are getting something that is testable. What I find interesting with this proposal is that the most important event in a king's life, his accession, doesn't match this "identity astronomy". Furthermore, you connect Jupiter aligning with the dark rift on his death date with this identity and suggest thusly that his death date may have been manipulated. We have no other reason to believe this death date was fudged, however, and if we look at the one commonality between all of these dates, it isn't the sun in the dark rift, but merely the dark rift itself. So are you claiming that Bahlam Ajaw thought of himself as the embodiment of the dark rift? I doubt it, and that wouldn't be very supportable through epigraphy or iconography. If anything, the king should represent the sun, not the dark rift. If the dark rift was thought of as a cave or tied to the underworld, and the king is tied to the sun, then a sun/dark rift alignment should be connected more to death than birth, no? You have argued that Jupiter and dark rift is tied to at least two king's deaths. Let's test this. The Zacpeten altar refers to a lord's death and here is one of the few cases where a death is referred to as a birth into the "dark rift". I am somewhat hesitant to bring this up, as I know John will have a heyday with it, but in the interests of being completely open and examining all of the evidence dispassionately, let's look at this date: 9.18.19.8.17, 8 Caban 0 Cumku, or December 25, 809. Unless I'm mistaken, and I don't have an astronomy program with me to check at the moment, this would have the sun being at least vaguely in the dark rift area. Now, while I do believe that the reference to birth here is actually a euphemism for death, I do not that the pattern here is the opposite that John is arguing for on Tortuguero Monument 6. It is the death, and not the birth, that has a sun/dark rift correlation. Furthermore, the Zacpeten altar states that the bloke in question, Foliated Ajaw, was born INTO the dark rift, indicating that he was not seen as being the dark rift itself.

Now, again, if Maya kings were in the habit of being identified with certain astronomical patterns that were evident on the days of their birth, I would expect to see this show up with their accession dates, for these are not only the most important date in a king's life but also the one most easily manipulated. Unfortunately, it is rare to get both a king's birth and accession date, let alone his death date as well. Palenque provides us the best evidence, and here no pattern shows up with any king, unless one wants to argue that Casper's accession date, falling 1 day more than exactly 13 years after his birth, counts. However, given the complete lack of any pattern with the other kings, this could easily be nothing more than coincidence. John, you argue that Ahkul Mo' Nahb I also has an astronomical identity that you have managed to decipher, for in your paper you point out that on his accession Jupiter was aligned with the dark rift, and he died on date when the sun was aligned with the dark rift. Again, the only connection between the two is the dark rift itself, and in Ahkul Mo' Nahb I's case, he wasn't born on a day with such dark rift connections (correct me if I'm wrong here), so shouldn't he have had some other "astronomical identity" for him? I submit that you are simply looking for ANY king whose historical dates have any kind of astronomical alignment with the dark rift and then assuming you have figured out his "identity". However, there is no corroboration for any of this, nor can the patterns found for one king be used to help understand other cases.
Stan

Ce Akatl (Gerardo Aldana)
John and Michael,
I think there are two important points being overlooked in your comments on my experiment:
i. of course I used multiple New Year's dates, but this does not compromise the experiment and it does not depart from the texts we are looking at;
ii. both of your posts actually extend the importance of my comments on "astronomical toolmarks".

Regarding i., texts always have period ends in them, as on Mnt 6 text, so it is culturally parallel. Before you protest that that's different since the 360-day haab doesn't carry along tropical year intervals, note that it doesn't have to for the point of the experiment to remain the same. When you have haab period ends in a text, you introduce other astronumerological patterns involving the planets since you have the important factors of 4, 9, and 20 in the haab itself. This is why in my analyses, I leave intervals between period ends out—they are especially primed for false positives… and by the way, this is precisely where 819 shows up on Mnt 6, between the 9.11.15.0.0 period end and 13.0.0.0.0.

The point is that my experiment would have been more contrived had I left New Year's dates out. The fact that this picks up tropical year patterns instead of planetary periods is just an artifact of the calendric system in use, but it derives from the same generation by randomness. (However much you may doubt my sincerity, John, I honestly put the list of dates together without consideration of astronomical contrivance. (If you were someone

who knew me, I would be offended that you would even suggest that I might be less than honest about my scholarship.)

Point i. also bleeds into point ii. although no one has commented on the major pattern that I claimed to find within my modern historical dates: "twinning." Now, if you pull up an astronomy program and run through those dates, it becomes very clear what I mean by this term: planets are angularly balanced on either side of the Sun or the "dark rift". It's clear on the computer screen, but what would that have looked like to an ancient astronomer? Well, sure: it would look like a planet hanging above the horizon at sunrise, and then another in the same position above sunset. Okay, but how would that have been recorded so that a scribe would be able to draw from the pattern in putting together this list of records? That's what I mean by toolmarks; the pattern is recognized as such based on the technology generating the representation. (And this, I think has already been commented on regarding Schele's proposal that the Milky Way looks like a tree… maybe on a computer screen, but…)

The same goes for the sidereal year. Two dates separated by an exact multiple of sidereal years is provocative—I totally grant you that. Worth further consideration? Why not. But what evidence do we have that they were making measurements demonstrating an interest in the sidereal year that would have produced that kind of accuracy? Michael, you say that:

"The length of a year can also be measured using the first appearance of stars or asterisms like the Pleiades after close conjunction with the sun. In fact, all that is needed for relatively accurate measurements of the sidereal year are consistent observations of such star risings recorded over many hundreds of years, particularly using stars close to the ecliptic. We know that observations of the Pleiades are still used by the Maya to orchestrate the agricultural year, and similar observations are found throughout the world."

Doesn't that brush a whole heck of a lot under the rug? "Relatively accurate"… well, how accurate is "relatively"? Is it sufficient to provide the accuracy you're claiming in the TRT text? What would it take to get such accuracy? An astrolabe? Trigonometry? "Consistent observations" is another important factor. How did Mayan scribes from Tortuguero account for star data they may have acquired from Tikal or Calakmul or Copan? Did they? How would their geographic differences recognized or unrecognized have influenced the accuracy they would have had access to? "[S]tar risings recorded over many hundreds of years" – Mayanists can't even agree on what the zodiac looked like yet; can we really be suggesting that there is evidence for the same stars being tracked and recorded over many hundreds of years? And by B'ahlam Ajaw's reign? Wouldn't the zodiac (or parallel construct) be obvious to us by now if they had? These are the kinds of issues I'm getting at.

And you're right that this relates to the tropical year calculations that I worked on at Copan. Without explicit mention of solar period references in Ruler 12's stelae (well, excepting the possible k'alk'in), I looked for the toolmarks that might suggest that the

pattern was valid. I argued that the toolmarks could be found in the alignments identified by Morley, then expanded by Aveni, and further extended by my own research. Am I saying that K'ahk' Uti' Witz K'awiil was the discoverer of the tropical year? No. But the alignments and the pattern of dates suggest the method by which he elaborated the tropical year interest in the texts.

Same goes for the astronumerology at Palenque, which I argued had a very explicit tool behind it: the 819-Day Count.

I'm not saying that Mayan scribes could not have computed the sidereal year or that they didn't, but that the strongest arguments are accompanied by a demonstration of how they came up with the results we claim to find. (Random thought: maybe my Glyph G paper could be of use in delimiting some bounds on sidereal year accuracy?)

And again, I really don't think this is an extreme position. I think we can all remember a time when it was at least reasonable to consider that there was some (albeit literarily playful) relationship between the uses of k'an, ka'an, and kan in hieroglyphic texts. Whether or not arguments built of a connection among them were very convincing, at least the thought could be entertained. But that similarity is entirely an artifact of the technology we use to transcribe the original words. If we didn't use an alphabet, and if we didn't use the Latin alphabet, that pattern would probably never have been conceived of. The relationship between epigraphy and linguistics is now much more nuanced than it was even a decade ago. I'm saying we should be approaching the point in the study of Mesoamerican astronomy in which we can follow suit.
Gerardo

From Stanley Paul Guenter
Barb,

I apologize if you feel talked down to in this discussion. That was certainly not my intent. However, I stand by my criticisms. The fact that you have been reluctant to answer my questions has been amply demonstrated by now, not least by your latest post. I couldn't agree more that we should strive to keep the polemics down and try to discuss these matters as dispassionately as possible. However, I have to honestly ask why this seems to require me answering your questions but you not having to reciprocate? Can you not see why I would see why I would consider your position to be rather uncharitable in this discussion?

As for my calling your questioning me without answering my questions a "game", how else can I take it but stalling tactics when you don't provide any discussion or explanation of why my answering those questions was a necessary prerequisite to you being able to honestly answer my questions? Any evidence from Grofe for Classic Maya sidereal calculations is irrelevant to the present discussion, because I have already admitted I don't have a problem in believing they could have done so. The question on the table is whether there is any encoded sidereal year calculation hidden in the text of Tortuguero

Monument 6.

For someone who claims to want to "(re)establish a dialogue" free of one-upmanship and condescension, you were apparently not bothered in engaging in this very conduct yourself in your last post, and that is the last I will say on that matter.

So I guess I will just have to take it that whether you have a response to my questions or not, I shouldn't hold my breath waiting for one. This is most unfortunate, I think, because my criticism of your methodology, right from the beginning of the investigation, is my main bone of contention here. Without acknowledging this methodology, of how many dozens of fruitless dates and intervals were tossed out for not showing any astronomical significance before these few, random intervals were seized upon, makes them appear far more significant than otherwise.

Furthermore, I think it is necessary to admit up front that the underlying premise of John and Michael's argument, and the one that you are at least considering for the sake of argument here, is that the Maya encoded sidereal year calculations in otherwise historical texts. The Maya did provide us with DNs to show us which dates they found were significantly connected, and there is no hidden astronomy here. If you are going to then argue that astronomy was encoded in DNs that you guys contrive, I think it incumbent that you provide an explanation for this discrepancy.

As for your statement that Tortuguero Monument 6 is as much mythological as it is historical, I disagree. Yes, it mentions many mythological characters, but except for the 2012 date, they aren't acting. They are essentially just idols who are mentioned as witnessing or "accompanying" Bahlam Ajaw in dedicating the structure of his temple. The other events are historical events that occurred to a historical individual, the king Bahlam Ajaw. Could these events have been staged because of astronomical concerns? Sure, theoretically, but the evidence is sorely lacking that they were.
Stan

Stanley Paul Guenter
Gerardo,

thanks for another excellent post. I work on three different archaeological projects, and the directors of two of them still want to equate k'an with kan/ka'an etc. No matter how hard I try to argue that linguistics does not allow that, they continue to play with the idea because it is so attractive. I think that the basic problem here is in being able to come up with testable hypotheses. That is, after all, the goal of science. Personally, I think the decipherments over the past half-century provide us with a test of sorts, and it behooves us to make us of this additional information, rather than just searching through a series of decontextualized dates for anything that on the surface appears significant astronomically. The scribes of Tortuguero clearly wanted us to see the date of the dedication of the temple as not only connected to the accession date of Bahlam Ajaw, but also to the earlier ekwan event of 510 as well as the 2012 date. However, there is no

reason to believe that they wanted us to see the 510 event directly connected to the 2012 event. After all, they didn't connect these two; 2012 is referenced in relation to 669. If we can't explain these explicit DNs how much hubris is it to not just assume we know what they meant to say through hidden DNs but to invent these DNs ourselves?

It is like an epigrapher working on Etruscan who decides he can read hidden messages in an otherwise undeciphered language by reading the letters diagonally, rather than along the horizontal lines the script is laid out in. Actually, the analogy with the Bible Codes I referred to earlier is still better, for we can actually read the Torah and there is nothing in it to suggest a hidden code of messages. Furthermore, the messages that supposedly come out of the Bible Codes are not that dissimilar to what is being proposed here with Tortuguero Monument 6. We don't get proper, grammatical sentences in the Bible Codes, just at best short, stilted phrases, or even just single words that supposedly criss-cross other words in a way that is taken to be "significant". Likewise, the hidden references to sidereal year calculations that are supposedly found in Tortuguero Monument 6 randomly connect otherwise unrelated events, or even just dates. These supposedly hidden calculations don't help us understand the text as whole, and the calculations are not transferable to other texts. At best we get a whole bunch of different scribes on different monuments at different sites, all apparently using different formulae to figure out the sidereal or tropical year, or periods of Venus or any other heavenly body, none of whom thought it necessary to make any of this explicit.

Again, I think there could be something to these gigantic DNs on the stelae of Quirigua. Rather than swimming around in the mud of Tortuguero Monument 6, I think our time would be far better served looking at these monuments where we have a much better basis for expecting such astronomical calculations to be found, if they were ever recorded in this manner in the first place.
Stan

Carlos Barrera Atuesta
Hi Michael,

It's glad to hear from you again!

John:

I would like to attempt an approach to some dates of Tortuguero Monument 6, from a "structural" perspective.

My intention is to suggest how some of these dates could be established through a modulation of 364-day cycles by using 819-day stations as "anchors."

Also, there's something kind of enigmatic about a 7254-day cycle (and some aberrant/peculiar numbers).

Do you think it would be appropriate to address that topic here?
Carlos

Maya Exploration Center
This has been great discussion, but all good things must come to an end. We will accept posts for one more full day, until 12 midnight CST on Friday. If the participants have any final comments on John's paper, please post them between now and then. John will then be given the courtesy of having the last post, in which he will hopefully make some concluding remarks about the comments he has received here. MEC will then take a break for the holidays, posting a summation of this discussion on our website in January.

With well over 100 posts to this discussion board, I think we can already conclude this is an effective venue in which to promote dialog. We at MEC will evaluate how we can improve our management and moderation, but definitely plan to start a new series of similar discussions in early 2011.

Geoff Stray
We keep hearing that there is "absolutely no evidence for a 13-baktun cycle at all". However, consider this:

1. Creation dates. We have the 4 Ahau 8 Cumku Creation dates – at least 12 instances. The Long Count date was 13.0.0.0.0 4 Ahau 8 Cumku. This means that it was the completion of the thirteenth baktun after a previous base date – 4 Ahau 8 Zotz. (April 1, 8329 BC Gregorian 584283). However, it was also the base date for the majority of inscribed dates. This implies that when the baktun count reached 13.0.0.0.0 in 3114 BC, the counting re-started, and after this, the next baktun to be completed was baktun 1 (no, I am not suggesting that the calendar was in existence at this time).

2. Previous era dates. There are a few dates that are also only in five-place format (days, uinals, tuns, katuns and baktuns), that refer to a time before the last Creation event. An example is 12.19.13.4.0 8 Ahau 18 Tzec (December 5, 3121 BC), on the central panel of the Temple of the Cross at Palenque. This refers to the birth of First Mother. Another distance number given on the same panel gives the date 12.19.11.13.0 4 Ahau 8 Muan (June 14, 3122 BC)– the birth of First Father. These dates are also counted from 4 Ahau 8 Zotz and are discussed by Lounsbury here:
http://www.mesoweb.com/pari/publications/rt05/problems.pdf

3. Following the discontinuation of Long Count usage at the close of the Classic era, the 13-katun cycle was used in place of it, in Postclassic times. The 13-katun cycle is exactly 20 times smaller than the 13-baktun cycle. The katuns still consisted of 20 tuns each, and the cycle apparently had a prophetic function, since the Chilam Balam books list the events that were expected to repeat every time the named katuns repeated. This suggests that the 13-baktun cycle, like the 13-katun cycle, may have had a prophetic function. 13 uinals, was the most sacred prophetic cycle, since it was one tzolkin, which was and is still, used as an almanac. Coe and Milbrath have suggested that the 13 –katun cycle was probably used in earlier times, giving time for the observations to build that became prophecies (almanacs were written in codices, most of which have not survived). So, it is possible that the 13-katun cycle was in use at the same time as the 20-katun cycle - the baktun. In a similar way, the Maya had a 13-day cycle and a 20-day cycle that were both used in conjunction to form the tzolkin.

This is a good illustration of the possibility that there were two systems running in Classic times, with two different purposes. A 13-baktun cycle would be used for the recording of any historical events, within the current 13-baktun era, or in special cases, from a previous one, as we have seen. For mythological events, or events outside the 13-baktun era, the vigesimal system would be used (with the exception of uinals). In these cases, the pictun, calabtun, kinchiltun, alautun, and higher cycles could be used, where 20 baktuns make a pictun; 20 pictuns make a calabtun, and so on. There are at least 25 of these dates – the most famous being 1.0.0.0.0.0 10 Ahau 13 Yaxkin and 1.0.0.0.0.8 5 Lamat 1 Mol dates from the Temple of Inscriptions at Palenque, referencing the calendar round anniversary of Pacal's accession to the throne, 8 days after the end of the current pictun. There are at least 25 of these dates that use 6 places or more, or are shortened versions indicating a date in excess of six places. See the link that Barbara gave, to Thompson's study of these dates in his Maya Hieroglyphic Writing.

Just as the Maya could handle a 13-day cycle at the same time as a 20-day cycle, and probably a 13-katun cycle at the same time as a 20-katun cycle, the evidence points to them having a 13-baktun cycle as well as the 20-baktun cycle we now call the pictun.

The constant discussion of whether or not they had 13 baktuns or 20 necessitates the proponents of each side of this argument to constantly ignore those inscriptions that don't fit their preferred number. This argument has already been done to death, over the half-century between Goodman's time and Thompson's time. Why should they not have had both, since this allows nearly all the stelae to be explained.

Imagine a day in the future, long after our civilization has burned itself out and disappeared, (nothing to do with 2012) and an archaeologist from the future digs up an old clock from the 20th century and starts to decode our timing systems. He produces a paper saying that in the 21st century, they split the day into 12 hours. Then another archaeologist comes along with another clock that has just been found in a shipwreck, but it seems to have 24 hours on the clock-face. The argument starts – "Did the Earth culture of the 21st century have a 12-hour day or a 24-hour day? Imagine that argument going on

for 50 years, until its settled by an archaeologist called Mr. T – they had both! Then the Mr. T dies and the archaeologists try to avoid mentioning hour-numbering, since most of them are annoyed with Mr. T for one reason or another. Then, 40 years later, with no new evidence, the archaeologists all suddenly start saying that the days had 24 hours, not 12. Sound familiar?

There are still four inscriptions that don't really fit any of the schemes. There are 3 Coba inscriptions and one from the hieroglyphic stairway at Yaxchilan, that have places in excess of five, but the pictuns and above are all set at "13".

Mark Van Stone and others have said these are symbolic, and until someone comes up with another idea, that's reasonable. But to use these as evidence that the Maya had a 20-baktun cycle instead of a 13-baktun cycle leaves at least 21 of the other inscriptions with more than six places, unexplained, as well as the Creation dates and the previous era dates.
Geoff


John Major Jenkins
Hi Stan,
You hold Maya texts to a standard of perfection, consistency of content, and directness of communication that is unrealistic. All of that would be nice and make the job of interpretation easier, but it isn't so. You have an assumption about what they should contain, how things should be expressed, and how things should be connected that keeps you from recognizing how things are, in the narrative constructs, being expressed and connected. We have to work hard to understand these narratives, empty our minds of assumptions, and explore what is there. Many Maya scholars have already been doing this kind of analysis, integrating interpretations of narrative inscriptions with iconography, calendrics, and astronomy. This kind of approach, which is being employed in the analysis of TRT Mon 6, is not coming out of nowhere. You seem to believe this approach is anomalous and unprecedented, whereas many briliant scholars --- Milbrath, Coggins, Schele, Kelley, B Tedlock, D Tedlock, Powell, Newsome, MacLeod, Looper, etc etc etc etc etc --- have been doing this kind of thing for decades.

What you prefer to look for represents only one aspect of how information is embedded in textual narratives, but it is commonly understood that iconography often reiterates or reflects the content of the text, which in turn may be reiterating astronomical events associated with the relevant date in the narrative. Sometimes only part of this information is available, as not all of the information was necessarily spelled at all the time. Royal narratives weren't intended for mass viewing and often, as Aldana explores, royal scribes embed astronumerology and other sub-text information in date intervals and even, perhaps, intentional scribal "errors." Looking only for explicit information is like a crime investigator expecting the dead person to tell him who the murderer is.

if this is to be a "truly scientific pursuit and line of inquiry", then you need to empty your mind of the many assumptions you clearly have as you approach the TRT Mon 6 text. One, I would say, is your belief (in your post to Gerardo) that the TRT Mon 6 is "mud." Huh? Why even say such a thing? While you espouse the value of null-set default and scientific inquiry, you don't seem to be practicing it (in fact, no one fully can, thus the fundamental folly of scientific objectivity). That's a performative contradiction. I see in your writings repeated assertions that are simply not true, as with your statement that December 21, 2012 has nothing to do with astronomy. (It's a solstice.) It's better, as Michael advised, to be honest and acknowledge ones own biases and continue to evaluate all forms of evidence with an open mind. I think that is currently the crux of the issue you are having here; you resist seeing the interpretive value of many types of information and evidence.

You wrote in your post to Michael: "And finally, when your contrived DNs connect historical events with mere base dates…" The phrase "contrived DNs" (not to mention "mere") is misleading, as it contains a slight value judgment with the term "contrived." It is going to be important to standardize accurate language in these discussions. What you refer to as a "contrived DN" is simply "the interval between two dates." As with the interval between, for example, Dates 7 and 12 (647 AD and 510 AD) on TRT Mon 6, such an interval exists, and is not contrived (i.e., is not "made-up" or "invented"). The relevance of examining a given interval between dates may be indicated by other factors suggesting a conceptual association, such as a not-explicitly indicated calendrical congruence (same tzolkin day for example) or a not-explicitly stated astronomical congruence (such as, for example, both dates being a first Venus rising). I believe Barb clarified the idea of context that highlights certain date pairs over others.

You brought up the Bible Code (again); I already addressed the questionable validity of such an analogy (intended to suggest that it's all imagined patterns), in my response to you, in my comments to Gerardo, and Michael also addressed this issue. I think it would be a good idea to not go in circles with repeating points, especially when they have already been addressed multiple times. Otherwise, they just serve as repetitious talking points.

Oops, I'm reading your post to Michael. I'll let Michael respond to your other comments and questions to him.

In your post to me, yes, I was playing a bit at "what goes around comes around" there (with your 2012 quote); my apologies and I take to heart both Barb's and Michael's call to focus in an open minded way to the issues brought up. I really like Barb's reminder that we should all be in this together trying to figure out as-yet unclear aspects of ancient Maya religion, astronomy, calendrics, and history. We all somehow share a passion for these topics, and I've always held close the idea of collaborative work, but that can be challenging when dealing with new ideas that may be perceived as threatening.

You requested a response to your question earlier about what are the implications and why would the Maya have cared to do all these secret things in the text. Well, these

things are not really all that hidden or random and, as I've responded earlier, it's precisely the kind of thing that the Maya elite did. Ritual, astronomy, power rhetoric, narrative histories, Creation mythos themes, all woven together. It's not just history. The first part of your question was about the implications. As Michael described, it means the Maya had a reasonable level of astronomical knowledge, including the Sidereal Year which with a tropical year value results in knowledge of precession. This level of knowledge is not far-fetched. Hipparchus didn't have a telescope and was using star position data that was only 140 years old. I always like to remind people of the amazing work done by Marion Popenoe Hatch on astronomical knowledge at La Venta and Tak'alik Abaj ---very suggestive of awareness of precessional shifting of star positions.

You wrote: "What I find interesting with this proposal [that the sun's position on Bahlam Ajaw's birthday parallels the same position on 13.0.0.0.0 in 2012 is defining "identity"] is that the most important event in a king's life, his accession, doesn't match this "identity astronomy".

A king's accession timing is always demanded as a result of the death of the former king, and the timing of it may not fit into astronomical themes. On TRT Mon 6 a sequence of 3 DNs link Bahlam Ajaw's birth, his accession, the building dedication in 669, and the 2012 date. This DN sequence begins and ends with the "defining" sun-Crossroads alignment. I also believe that there may be many defining moment's in a king's life, and they may be interrelated by a theme. For Bahlam Ajaw, the 7-tun anniversary of his accession occurred right at the end of 650 AD, just over one year after his defeat of Comalcalco on the solstice date of 649 AD. This 7-tun anniversary, on TRT Monument 8, contains an interesting text that perhaps Barb or Michael could elucidate. I'll probably mangle this off the top of my head but I recall it involved a new status given to Bahlam Ajaw in a type of investiture rite, which in the text is called a "binding" of a sun god deity. The rite took place during the solstice time (within ten days). The rise azimuth of the sun is virtually the same for ten days around the solstice; a possible reason why the 7-tun anniversary "sun binding" rite did not take place precisely on the solstice is, obviously, to take into account the calendrical nexus required by the 7-tun anniversary. There is more data on this inscription of great interest, and is relevant to your question. The bottom line is that we often need to take into account a rather complex set of related events.

This is speculation, but I toss it out anyway for consideration: I believe it's possible that the 7-tun anniversary binding event granted Bahlam Ajaw an additional status (a kind of accession upgrade) which set the stage for his involvement in the rite with Bolon Yokte in 2012. He may be required to attend Bolon Yokte in 2012, as the Telinel attends Maximon, and Bahlam Ajaw must be prepared to be invoked to be present in 2012, similar to how the Classic Period Maya frequently invoked their distant ancestors of the past. (This speculation is rooted in the God L research by Grofe and in the Bolon Yokte-2012 rite as reconstructed by Sven and Barb.) I have a clearer write-up on this on my laptop, which is currently broken, but the astronomy of Dec 29, 650 (Bahlam Ajaw's 7-tun "accession upgrade") does connect more directly with solstice, sun binding birth/death, "underworld portal," and the dark-rift themes.

That example you brought up (9.18.19.8.17, 8 Caban 0 Cumku) is interesting. The question revolves around death and birth both being related to the dark rift. Well, it is conceived by the modern Maya as “xibalba be” --- the portal to the underworld. I think that idea can be maintained back into the Classic Period with Starry Deer Crocodile and Skeletal Maw symbolism [and into the pre-Classic at Izapa]. As a central axis that connects different domains in the Maya cosmos, it works both ways. Devouring and birthing, death and life --- here we see a reflection of the rather profound philosophical idea that these opposites are two sides of the same coin. Definitely off topic here, but yes, the dark rift/xibalba be is an entrance to and exit from the underworld. Your own observation, that you believe “the reference to birth here is actually a euphemism for death” (in the 9.18.19.8.17 inscription) likewise suggests a conceptual conflation of birth and death in Maya thought. This theme has been explored elsewhere, and is a very common construct in many religions.

You wrote: “So are you claiming that Bahlam Ajaw thought of himself as the embodiment of the dark rift? I doubt it, and that wouldn't be very supportable through epigraphy or iconography. If anything, the king should represent the sun, not the dark rift.” Yes, I agree with you here; king as solar lord, dark rift as birth/death location. That’s been my position. It should be noted that the Crossroads (of Milky Way and ecliptic) is involved here too, and crosses denote centers and “creation” places, often used on thrones.

Stan, with all due respect your last paragraph contains many assumptions and several misleading assertions. Michael addressed very clearly how we can have a more open-minded approach to different types of data and your declarations aren’t accurate. At one point you write: “Again, the only connection between the two is the dark rift itself, and in Ahkul Mo' Nahb I's case, he wasn't born on a day with such dark rift connections (correct me if I'm wrong here), so shouldn't he have had some other "astronomical identity" for him?

I’m happy to address this. A king’s asserted connection with the dark rift/Crossroads would not have to occur only on his birth. Bahlam Ajaw’s circumstance allowed for this through either precise- or near-happenstance of his birth (likely) or through manipulation (perhaps few days?). It’s kind of like he hit the jackpot, whereas previous and other kings had to manufacture their rhetorically potent association with the dark rift/Crossroads by other means. See, for example, my previous post on K’an Bahlam’s investiture rite at age 7. And yes, I suspect kings and queens could claim or use several astronomical features, depending on the ritual or context. A king’s identification with the sun is pretty much a given, on some basic level, or the Maize God. He, or a queen, may have associated himself ritually with the moon, or Jupiter, or Venus, and the associated deities --- you know, deity impersonation.

You wrote: “I submit that you are simply looking for ANY king whose historical dates have any kind of astronomical alignment with the dark rift and then assuming you have figured out his "identity".

No, this is an inaccurate characterization. As I do with the three hearthstones Creation Myth, I do recognize that the dark rift/Crossroads location was a mythologically potent astronomical complex, based on several examples of Maya kings relating themselves to this sidereal location (K'ak Tiliw, 18 Rabbit, Bahlam Ajaw, K'an Bahlam, and others). As with K'ak Tiiw and the Hearthstones, a Maya king's association with the dark rift/Crossroads celestial location grants a kind of divine status. At least this is my understanding, based on the above examples and other considerations. The "shared identity" is not to the same object, as you may expect, but is perhaps better phrased as a "shared mandate" --- such as "I the king am close to the Creation mythos and cosmology" --- in whatever way they might manage to pull that off in their asserted or demonstrated rhetorical statements, through birth, accession, investiture rite, 7-tun anniversary rites, or even death. Status and legacy continue post mortem. But a shared kingly interest in a specific celestial location certainly seems present. The Crossroads of the Milky Way and the ecliptic, at the southern terminus of the dark rift, conveys the meaning of all crosses to the Maya: a center and a "creation place." Thrones had crosses on them because the king symbolically occupied the center of the cosmos. As Taube and others argued, the king is like a symbolic birther; there's a section in my 1998 book on that. I think Maya kings would have had an interest in showing that they had an intimate connection with astronomical features that had the connotation of "cosmic center" and "creation place." We have an inflection here toward the 2012 astronomy, of course, but it's much like the 3114 BC astronomy associated with the previous 13.0.0.0.0, which was claimed by K'ak Tiliw. Again, we don't need to decide that one of these cosmological complexes is right and the other is wrong. We need to figure out the various ways one or the other (or both?) were preferred or rejected by different kings. These are possible frameworks of interpretation.

Here's your final statement: "However, there is no corroboration for any of this, nor can the patterns found for one king be used to help understand other cases." Stan, why do you have to end with such declarative closure? Both clauses in your statement, stated so definitively, are very misleading. And I recall that we've already gone around with this in a previous post. I think you have a framework of interpretation that is not built from the material at hand. This could move along the lines of seeing what is there, as the Maya presented it. Otherwise, you force the data into a preconceived notion of what should be there, how, and why. Gerardo discussed the problem of this tendency in his book on Janaab' Pakal, as the "cMd" framework of interpreting indigenous knowledge systems (circum-Mediterranean-derived). It has led to all manner of mistaken notions and interpretations and rejections of valid indigenous concepts. As a methodology, it isn't that useful. At best, it gets us to certain point of understanding with the more tangible characteristics of a culture and its knowledge systems, but a more complex and challenging "systems analysis," you might say, with a sensitivity to how data is being communicated and preserved, is necessary. Best wishes,
John

From Barb MacLeod:
(posting this before reading John's reply)

Stan,
Thank you for the apology.
I wish that you had better understood the constraints on my time and schedule, as I stated at the outset that I would be hard-put to stay in the discussion. I teach flying for a living, and get home in the evening rather beat-up after sitting through several dozen bad crosswind landings. And then I have many cat duties, including care for one who became paralyzed by a spinal tumor a month ago. I am not trying to make excuses, but considering that this conversation will be coming to a close tomorrow I don't mind offering a bit of my own life. I *have* to get enough sleep in order to fly. The writing of these epistles takes big bites out of my sleep.
It truly surprises me that you insist that I am being uncharitable. I haven't felt that way at all, nor have I felt I was stalling or being evasive. I regret that you take my last post as condescending, but I stand by my impression of what has seemed impatient badgering. You either misunderstand or do not share my strategy for proceeding from knowns to unknowns. I've made it clear from the beginning that I retain some skepticism about the intentionality of these dates. I take a more middle-ground position than you do—largely because I still do find it challenging to consider it coincidental that two intervals on the same monument share a common factor of an accurate sidereal year (I appreciate Gerardo's points on this matter even as he finds it interesting; it's something I assume he's discussed elsewhere with Michael). This fence is a sore point with you; you want to pry me off it or make me justify my position on your terms. That I have not checked all 700 permutations between dates on the monument is somehow evidence that I am not playing fair. What statistical results would suggest evidence of intention to you? The rarity of close sidereal year values turning up in random intervals (I've done enough of these to know) inclines me to expect no others beyond those identified already, especially since Michael has determined the sidereal positions and planetary data for all dates on the monument. Neither of us is particularly interested in the planets, although John is.
I should make clear that, after having given the matter ample thought, I do not advocate the purposeful placement of the start and end dates of the thirteen bak'tun interval. There is more to say, but I'll give it a pass. Perhaps Michael will get into it, as he has developed a useful alternative hypothesis.
You said:
"Again, I think there could be something to these gigantic DNs on the stelae of Quirigua. Rather than swimming around in the mud of Tortuguero Monument 6, I think our time would be far better served looking at these monuments where we have a much better basis for expecting such astronomical calculations to be found, if they were ever recorded in this manner in the first place."
Thank you for acknowledging the possible significance of my discovery. If you are so inclined, please give those hitherto inscrutable DNs a go. I'll be interested in the outcome. Throw in the Stone of Chiapa and the Serpent Numbers. Since I've beat my head on the latter quite a bit, I'd be prepared to discuss them in detail, so long as it's reasonably fun.
You said:

“Any evidence from Grofe for Classic Maya sidereal calculations is irrelevant to the present discussion, because I have already admitted I don't have a problem in believing they could have done so. The question on the table is whether there is any encoded sidereal year calculation hidden in the text of Tortuguero Monument 6.”

No, it is absolutely *not* irrelevant. You’ve dismissed it without a hearing, because you seem to think you know what it is. Michael’s data—whatever he is willing to share, as it is unpublished—contextualizes sidereal calculations and helps explain their function in deep-time mythology. This would in turn help to contextualize—shall I add ‘putatively’ to the sentence?—the possible employment of a sidereal *background* on Tortuguero 6. But before you howl in disagreement, let me toss in the pointy bone that I do see mythology as more fundamental to the monument than you do. There’s more to this than a bunch of idols passively witnessing the building dedication. You should appreciate as well as I the animate supernatural landscape of the Classic Maya. Divine forces and deified ancestors interface with the king’s actions at multiple junctures (the charter for war and the blood-offerings of war as bounty in the first heaven, for instance) and provide a back-story we can partly cobble together from similar references on other monuments. The main text opens with deities, so the last part of the missing panel should have been their verb; thus they are actors. Do you acknowledge our interpretation of the passage which mentions ‘they (who) set in order the “kalabtun” at a place called Yax Pet Kabnal‘? The parentage statement itself encodes the rituals which summon deified ancestors as depicted on several Yaxchilan lintels. There’s a *huge* amount of mythology on this monument, unless you disbelieve the work that Sven and I have done. I submit that this—in contrast with the human narrative linked by the DNs—provides a possible rationale for the insertion of sidereal information into the text. In particular, we have not just a cold calculation of higher-order periods, but a testimony to the ordering of this period (160,000 tuns) by gods we barely understand (those eight turtle-bakabs? and four raccoons). Some of our interpretations may not stand up in the long run, and surely they’ll be refined. And no, I cannot point to an explanatory sidereal back-story linking the first house-dedication with what must have been a whoppingly important marriage and presumed political alliance (assuming you accept my decipherments), but how can there not have been a mythological and chronomantic lattice tying these and other events together?

More speculatively, taking as a template the humanly-accessible Lacandon pantheon in relation to their mysterious, inaccessible god K’ak’och “the remote god” (who calls the ultimate shots), I might suggest that the sidereal back-curtain, seen to move ever so slowly against the progress of the sun, moon and planets along the ecliptic, provided a punctuation of deep time and was the seat of the unimaginably distant and perennial rule of beings like, say, the square-nosed beast. He’s on Tortuguero 6 and on the Tablet of the Inscriptions and on Naranjo Altar 1, and, well...he rules.

I fully expect you to find this explanation severely wanting—perhaps even to be pseudoscientific newagey Dan Brownish hokum. So be it. These thoughts about a possible sidereal-year presence here are in the formative stage, and typically I do not share such stages publicly, but your wish is my command. These ideas are provisional inasmuch as I am not certain that the apparent sidereal intervals were intentional. Furthermore, I have not, as you have assumed, been cooking this all up behind the scenes for a long time, nor did I approach this monument, as you have assumed, with the

expectation of finding astronomy in it. If you've read Sven's and my paper, you'll see that there is not one drop of astronomy in it. It's not because I was overriden.
Barb

From John Major Jenkins (Dec 16, 2010):
Geoff,
Good to see your contribution. I think there could be a lot of hand waving around this topic of 13 vs 20. It's worth exploring. But just to reiterate, I don't believe it is critical or in any way threatens my position in my SAA paper. Call it the "13th baktun period ending," and that's fine, as that seems the ordinal usage deciphered by Sven and Barb. There are other contexts in which we can't be sure of the variant ways it was conceived, including how the "13 baktuns" of the Long Count which is demonstrably present as a concept in your examples dovetails with the Mesoamerican World Age concept found in the Popol Vuh and elsewhere. Why shouldn't the philosophical idea of an "Age" or "era" dovetail with the CR or LC? How many Baktuns comprise an Age? The Quirigua Creation Texts say 13, but rather tortured and unconvincing arguments claim that it might go to 14 and then toggle back to zero. I think it's really a wheels within wheels conception, small period endings within big period endings. 13 Pik seems preferred at Tortuguero and Quirigua, 20 at Palenque. There are strange 13 baktun references at Copan too, but they are in another time frame, it would seem. So much we haven't figured out yet. Carl Calloway is doing a study of era event dates --- will be very interesting to see what he finds. I assume he will include the TRT date.
John

Michael,

Thank you for your many clarifications and comments. I think we should all read and re-read and re-re-read what you sent. I appreciate the advice and suggestions, and look forward to your forthcoming work. There are some things on the Palenque Dumbarton Oaks Panel and the Tablet from Temple 14 that I want to send you (re: Bolon ip la). A former reading of the phrase was "apotheosis" which I assume is superseded now, but in any case the iconography involves the two kings' souls exiting from Xibalba. I'm sure you're already on to all that. Another topic, another time. Thank you again for taking the time for your detailed contribution. Best wishes,
John

From John Major Jenkins
Carlos,
I'd be interested in seeing your work on a 7254-day period, although I haven't had time to digest your previous posts. I'm more of an early bird these days, up at 4 am sometimes, and pushing midnight is not as easy as it used to be. Do you have all your research on your website?
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Carlos Barrera Atuesta
Yes, John. All that I've been able to post is there, but I also keep some notes on subjects pending to post. I hope I can find the time to do it. Some of I have tried to contribute here has been taken from those notes.

I'm just following some lines of research based on John Teeple's, Christopher Powell's, and especially on Lounsbury's work. I wish I had had the opportunity to meet Floyd. It is an immense loss.

Have some rest, John, and please contact me whenever you think I could be useful. OK?

And congratulations for your paper!

From John Major Jenkins:
Hi Gerardo,

Thank you for your clarification and caveats. I would like to read your earlier papers and explore your methodology more deeply, if you are amenable. I appreciated your approach to the Palenque texts in your book, but feel that anchor points to sidereal positions, identifiable with the GMT, add a dimension of confirmation to the narrative content. As you know this is a huge topic.

In your response you mention that intervals between period endings are "especially primed for false positives." Yes, these intervals have built-in numerological commensurations and conveniently provide "aha!" responses in investigators. But wouldn't the Maya scribes themselves also have easily noted such obvious parallels? What is the criterion to determine conscious recognition by ancient scribes? Mathematical commensurations in the intervals between period endings may have been so obvious to Maya scribes that they didn't require further elaboration or reiteration. They may have provided convenient ideological anchor points, and perhaps this is why the 669 AD building dedication is hitched with a tiny DN back to the 667 hotun, which provides so many nice astronumerological connections with the 2012 date. Were the Maya at TRT aware of this? Here, in this specific case, I think it's a pretty clear yes; but a generalized methodology that can be applied to an analysis of conscious intent across Maya time and geography has a greater challenge, as it may eliminate context-specific data in specific examples that can help to answer the question. Just my opinion.

Yes, there is a danger that computer images can give modern viewers a false sense of what ancient skywatchers may have perceived. For example, you can speed up the time-factor of the sky in SkyGlobe software and see the Milky Way undulate up and down. Is this why the Milky Way is associated with snakes? I don't know. The display is a sped-up time machine that ancient Maya skywatchers would be hard pressed to cognitively replicate over many days of observation. Schele's note that the Milky Way looks like a tree on the screen may seem facile, but I think her idea was also influenced by

ethnographic data --- such as the Lacandon report that the “nuclear bulge” of the Milky Way between Sagittarius and Scorpio is thought to be the clumpy roots of a giant tree.

Quick response to your question that seems more addressed to Michael: “Wouldn’t the zodiac (or parallel construct) be obvious to us by now if they had [tracked star shiftings]?” The Maya methods of measuring and tracking is what is currently being worked out, and Michael is identifying internally consistent examples from different areas. The methods are so non-cMd that they have evaded detection for a long time. But I believe they can be, and are being, identified and argued for with good rational acumen and evidence. All your questions and cautionary caveats are reasonable and should be on the docket for addressing and consideration. Can you send me your Glyph G paper?
Best wishes,
John

From Michael Grofe:
Hi, All,

Good to see you here as well, Carlos!

So many good points, good questions, and so little time!!! I’m afraid I’m also losing sleep doing this along with my other grading responsibilities as well, so I’m thankful that it is coming to a close, though I would be happy to continue discussions off list by email when I have more time. Thanks to all for your thoughtful participation. We most likely will not resolve everything here, but I look forward to the chance to discuss these topics with you again.

Stan and Gerardo, thanks for your questions, points, and feedback. I think we are in agreement that we certainly need to acknowledge the misses as well as the hits in any given scientific test, but also that there needs to be continuous new testing and retesting as we begin to ask more pointed questions. I would add that we need to continually refine the boundaries of these tests, but not to abandon further questioning and testing based on the results of any one test, however it may be framed.

I certainly agree that any random collection of dates will produce some unintended false positives, as Gerardo’s experiment illustrates. A truly random sample would certainly also show this. However, when we narrow our scope to test for specific astronomical cycles like the tropical year, our test becomes more fine-tuned, and we reduce the chances of getting so many false positives. My point about your selection of dates, Gerardo, was that, as random as you intended them to be, an outside analysis of the dates that you chose *does* show a significant astronomical and cultural pattern in the repeated use of January 1 as a period ending. Certainly, using the dating system of years like 1968 also implies the unstated Era base date of January 1, AD, which is equally interesting to an outside observer. Of course, we already use this system and know how to read it. We are already familiar with the fact that it is based on the tropical year, so I realize that it is difficult to compare our system with the Maya system of Long Count period endings.

Were you to throw in a mythological and religious festival like Christmas, perhaps (being hypothetical alien archaeologists) we might also have deduced its original association with both the winter solstice and the beginning of the year, as well as the beginning of the Era.

Stan, I think we can see that the astronomical information deduced from *some* of the dates in Gerardo's sample is not rendered insignificant just because most of the other intervals between the dates in do not show any whole multiples of the tropical year. Again, more refined tests of larger data sets may help us find what is actually going on, or not. In this way, I'd encourage us to use our tests to articulate more focused questions. Supposing some astronomical information is contained in a series of dates, how might we identify it, and what might qualify as a falsification of the null hypothesis that there is no astronomical information in these dates?

We may find additional support for astronomy in text references and in architecture, as Gerardo suggests. Beyond, this, I think one of our best bets is to look at deep time intervals.

I am primarily interested in examining deep time intervals linked to historical time, as well as intervals between historical dates exceeding hundreds of years. These are the intervals I test and compare throughout the corpus, with some interesting results concerning the sidereal and tropical years. TRT6 became a candidate to me because of its reference to the future deep time position on the13 bak'tun completion, and the possible linkage of this date to the birth of Bahlam Ajaw through a near whole multiple of sidereal years. As John reiterated, these dates become even more interesting given that they are stated at the beginning and the end of this text. While the narrative utilizes various distance numbers to link the historical dates with one another, I don't think it is crucial that there is no direct linkage of a DN between the first and last dates. As Barb mentioned, what we may be seeing are anchorable dates as endpoints to unstated calculations made before a monument is even carved.

Regarding whether there is anything in the TRT6 text relating to astronomy, I first noticed (using the '83 GMT) that the eclipse John mentions in his paper fell three days prior to the date 9.10.11.9.6, which describes Bahlam Ajaw's first war campaign as his "flint shield" event, and then an unusual verb followed by ta-AYIN "in/at the caiman". This was interesting to me, given that the hieroglyphic image of the caiman in the text resembles the Milky Way caiman, with the crossed bands in its eye. We find a similar caiman in the Dresden Venus Table that most likely represents the Milky Way in Sagittarius, and there are no known toponyms named AYIN. Furthermore, the position of this visible, total lunar eclipse on May 30, 644 (May 27 Julian) was directly in conjunction with the Milky Way in the same sidereal position as the sun on Bahlam Ajaw's birth, and on the 13 bak'tun completion date, as John mentions.

At first glance, I read the verb root as /tup/ "extinguish", followed by TE' "tree" and UH "moon", possibly relating to the eclipse, but I consulted with Barb about this, and she proposed that it reads /nup/ "join". The UH sign is also more commonly read as a final

syllabic ja in passive verbs, but the presence of TE' here seemed like a head scratcher in this case. When Barb and Sven were completing their paper on TRT6, they concluded that the phrase reads something like "lances were joined at Ayiin". The imagery of crossed lances recalls the crossed spears and jaguar shield on the Palenque Tablet of the Sun, which I have good reason to believe is imagery related to the moon and eclipses. The imagery itself evokes the crossing of the lunar path with the path of the ecliptic at the lunar nodes, while the jaguar shield evokes the moon covering the sun. As Susan Milbrath describes, some contemporary Maya see eclipses as bites from a celestial jaguar.

Furthermore, a lunar eclipse such as this could theoretically enable Maya astronomers to determine the sidereal position of the sun when it is in this position exactly one half-year from the date of this eclipse. Thus, it is not necessary to directly view the sun in conjunction with the Milky Way in order to understand its sidereal position.

As Alonso Mendez, Carol Karasik, Ed Barnhart and Christopher Powell from MEC have demonstrated in their 2005 paper, the Temple of the Sun is also closely associated with the solar nadir. The recording of the solar nadir itself, directly opposite the solar zenith, may have been utilized for the purposes of eclipse prediction in association with the tropical year. A full moon at the time of the solar nadir places the moon close to the position of the zenith, but a full moon that rises exactly opposite the sun at this time will be eclipsed in the exact sidereal position of the solar zenith. Such observations are what Hipparchus used to observe precession.

Though Barb has argued that this eclipse is three days earlier than Bahlam Ajaw's first "Flint-Shield" event with crossed lances in the Caiman, I maintain that it is possible that dramatic eclipses like this may have evoked the imagery of warfare, perhaps providing a celestial underpinning for the beginning of Bahlam Ajaw's war career.

Milbrath also describes how contemporary Maya astronomers notice that the rainy season begins when the full moon crosses the Milky Way in Sagittarius, and this time of the year corresponds to the onset of the hurricane season. I'm compelled to wonder whether the highlighted reference to the celestial caiman in TRT6 also has something to do with the Postclassic seasonal ritual of the sacrifice of a caiman effigy, reflecting the mythological story of the end of the previous Era as Erik Velasquez describes in his paper about the Mesoamerican and Mayan flood narrative.

In this respect, I maintain that it is quite possible that the war lord Bolon Yokte' K'uh, mentioned on TRT6 in association with the conclusion of the 13 bak'tun period, is equivalent to Bolon Ti K'uh from the Postclassic Yucatec Books of Chilam Balam. In the Chilam Balam of Maní, Bolon Ti K'uh raised up the celestial caiman into the sky following an eclipse, thereby causing the flood at the end of the previous era. But in so doing, Bolon Ti' K'uh prevents the caiman from destroying the world, and he forms the earth from its body. I therefore suggest that there may be very significant celestial references that relate to creation mythology within the TRT6 mytho-historical text that itself projects forward to the completion of another 13 bak'tuns, perhaps akin to. Can I prove it? Absolutely not… Is it possible? I think it is, and I think we can make an

argument for this kind of synthesis. Mind you, I'm not suggesting that we take this mythological story literally!

As for the smaller interval of the sidereal year on TRT6, I agree that this is suspect and difficult to support, for all of the reasons we have discussed. However, I do not think it should be disregarded entirely, given its possible (albeit tenuous) association with the longer deep time interval. There are similar examples in the corpus that suggest a precedent for not only including astronomical information in deep time intervals, but also within intervals that link a contemporary historical date with an important historical date in the past, perhaps involving a lineage founder.

One example that may show this type of pattern can be seen in Quirigua Zoomorph P, with its initial series date of 9.18.05.00.00. The monument is unfortunately badly eroded, but we can make out a number of dates. Highlighted on the north side, in Cartouche 6, we also find the early date 8.19.10.11.00, on which a Quirigua lineage founder plants a stone and accedes to the throne under the lineage founder Yax K'uk' Mo' from Copán. This date is also mentioned on Altar Q in Copán, as well as on Copán Hieroglyphic Stair 62. However, it is the only reference to this foundational date in Quirigua, and it happens to be a close whole multiple of 369 sidereal years (= 134780 days).

The initial text on QRG Zoomorph P also includes a very interesting reference to 13 bak'tuns, though *not* in association with the Era Base itself. In addition, we find the use of the Era verb JEL with yet another non Era Base date, and Carl Callaway and I are working on some other very interesting astronomical implications of this and other references to the Era verb. But that will have to wait until another time...

Gerardo, as far as accuracy is concerned, I think that is an excellent question in terms of both the sidereal year and the tropical year, and we know very little about how such measurements were performed. We can only see the results of such measurements, as in the highly accurate corrections found in the Dresden Venus Table. I would suggest first that the Maya had the added benefit of using an exact count of whole days in their chronological and calendrical system, much like the Julian day numbers that continue to be useful for astronomers. Thus, an exact count of days between widely separated astronomical events like a repeating heliacal star rise can provide for precise predictions of future such events, and further fine tuning of these predictions. Canonical cycles like the 365-day Haab year, or the 584-day Venus cycle were apparently allowed to continue as counts of whole days, while minor corrections to these intervals were no-doubt noticed and performed in conjunction with these counts over long periods of time.

Chronological counts of days like the Julian day count and the Maya system do not rely on using an adjusted tropical year for a measuring stick. Nor do they rely on the sidereal year, lunar cycles, or any other astronomical cycle, and they are free to continue on, ad infinitum. Combining this count of days with more easily manipulated multiples of the Tzolk'in, Haab, Long Count and many other cycles provides a good foundation for accurate record keeping, providing that the observations over time are consistent and

accurate themselves. The longer the intervals of time between observations, the potentially more accurate they may be. Given that the Long Count was used continuously for up to a millennium into the Postclassic, it is perhaps not surprising that their records may reveal a great deal of accuracy. We may also wonder how and when measurements changed and developed or were lost over time and at different sites, and you bring up an excellent point about how data taken from different sites may have affected the astronomical accuracy of predictions at another site.

Sidereal Measurements using the Copán Baseline:

Returning to Copán Ruler 12 and his program of monuments, I'd like to propose an example of how sidereal measurements may have been performed. In the previously mentioned chapter that will be published next year, I discuss the Copán baseline from Stela 10 to Stela 12. The text on Stela 12, the eastern stela of the pair, contains an interesting reference to the "Three Hearthstones at the edge of the sky", but in this case, it is the only time they are ever mentioned separately from the Era Base. In fact, in this case, I read the text as describing how Ruler 12 "witnessed them first, at the edge of the sky" on 9.11.0.0.0, the k'atun commemorated on all of Ruler 12's outlier stelae.

The Three Hearthstones are a known contemporary K'iche asterism found in Orion, consisting of Alnitak, Saiph and Rigel, with the Orion Nebula as the smoke from the central fire. Other interpretations of the Bonampak murals hold that the three belt stars represent these stones the crack in the turtle shell of Orion.

At any rate, I was curious to see where the Orion Hearthstones appeared at the time of 9.11.0.0.0, and I found that the Orion Nebula in fact rose precisely at the eastern azimuth indicated by the Copán baseline, looking towards Stela 12 from Stela 10. However, they it was not heliacally rising on this date, using the GMT, as I expected (here's where a non-GMT argument might be interesting, Gerardo!). However, I instead found that the sun rose precisely at the eastern azimuth of the Copán baseline on 9.11.0.0.0 using the '83 GMT.

This is highly suggestive, given that the text, the alignment, the date, and the astronomy seem to corroborate Ruler 12's witnessing the rising of the sun at the same azimuth as the Orion Nebula, perhaps linking this particular k'atun sunrise and the king to the birth of the sun itself in the hearth fire of the Era Base on 4 Ajaw 8 Kumk'u.

What is also interesting about Ruler 12's monuments is that his texts are in fact the very first monumental texts to mention the three hearthstones in connection to the Era Base (there is a much earlier one on a very cool Early Classic unprovenanced greenstone mask of the god GI from the Palenque Triad). Ruler 12 is also the first to *ever* mention that the previous Era ended after the completion of 13 bak'tuns! Though we have evidence that the Long Count was used as early as the First Century BC, the first text to mention that the previous era ended after the completion of 13 bak'tuns is found on the late, great Copán Stela 23, sadly now destroyed. Stela 23 dates to just prior to 9.11.0.0.0, and it is only at this late that we find any reference to a period of 13 bak'tuns.

Stela 23 is also the same first monumental text to mention the Three Hearthstones, and its GMT date interestingly corresponds to the first visibility of the heliacally rising Orion Nebula when standing from the vantage point of Stela 10. I suggest that it is precisely this kind of sidereal observation that could have been used to record the sidereal year over a long enough period of time to project it backwards and forwards in time.

Soon after this reference to the previous Era's 13 bak'tun completion date in Copán, we find the reference on Cobá Stela 1 along with its "mega number", and then the very future 13 bak'tun reference we are discussing on TRT6, followed by later well-known references to the completion of 13 bak'tuns in the previous era in Palenque and Quirigua and elsewhere.

Certainly, this idea of the previous Era ending when it reached 13 bak'tuns was highly influential throughout the Maya area, and the fact that we see it first mentioned in Copán among astronomically motivated monuments is very interesting indeed. But I think we can only conservatively suggest that this parallel future 13 bak'tun completion date held significance for Bahlam Ajaw at this one site and at this one time. Beyond this, we are left with more questions that are difficult to answer, given the different ways we can interpret the evidence. Regardless of whether the sidereal parallel with his birth date was intentional, or whether other Maya sites also recognized this future date, I agree that the far future reference to the 13 bak'tun completion is at least an interesting and unique curiosity worthy of pondering.

In my dissertation, I provided other possible astronomical rationales for the intentional placement of the Long Count Era Base, but I'm afraid that there is simply a lack of space to discuss all of this, or enough evidence to support such claims with any degree of certainty. However, I think that this is also something worth pondering and exploring from many astronomical, historical, and mythological perspectives.

OK, I'll be back to post an example of astronomical patterns in deep time intervals. Thanks for indulging me here. I realize this is meant to be a discussion of John's paper, but I wanted to address some of the questions posed, and there is a great deal to discuss that has some bearing on considering the use of sidereal and tropical year intervals in deep time calculations.

Cheers,
M

From John Major Jenkins:
Michael and all,

Your much appreciated observations are definitely related to the TRT text and the larger field of considerations which my paper touches upon. Here is a brief example of how the larger narrative program of Bahlam Ajaw (which could not be integrated into my brief

SAA presentation) was working with LC dates found at other sites --- in this case, the same very important LC date you explore at Copan (the 9.11.0.0.0 date, in 652 AD). As you note, Copan Ruler 12 utilized 9.11.0.0.0 as an astronomical marker for a narrative involving the first known mention of the previous 13 B'aktun era. On TRT Monument 1, a DN of 7 Tuns links the 9.11.0.0.0 date to 9.10.13.0.0 (November 15, 645 AD (J)). This date is 1 Ajaw 3 Kankin, and was the dated inscription that Blom sent to Morley back in the 1920s. (Carlos, the 1 Ajaw is interesting because of Venus considerations which I won't go into at the moment.) As Sven Gronemeyer suggested in his study of TRT, this date may provide a calendrical nod to the 2012 date. Not only because of the 3 Kankin parallel, but because the text states that the monument is the "first in order," and Sven suggests it could thus be the first stela in a ritual monument program initiated by Bahlam Ajaw that leads to the 2012 statement on TRT Mon 6. As you know, Stela 10 and 12 at Copan are part of the larger valley monument program created by Ruler 12. A more complete study of all of the TRT monuments, which I'm happy to hear from Barb is underway, will certainly further help us understand TRT Mon 6. Best wishes,

John

Pg 7:

From John Major Jenkins (evening of Dec 16, 2010):
Michael,

Thank you for your many clarifications and comments. I think we should all read and re-read and re-re-read what you sent. I appreciate the advice and suggestions, and look forward to your forthcoming work. There are some things on the Palenque Dumbarton Oaks Panel and the Tablet from Temple 14 that I want to send you (re: Bolon ip la). A former reading of the phrase was "apotheosis" which I assume is superceded now, but in any case the iconography involves the two kings' souls exiting from Xibalba. I'm sure you're already on to all that. Another topic, another time. Thank you again for taking the time for your detailed contribution. Best wishes,
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Have some rest, John, and please contact me whenever you think I could be useful. OK?

And congratulations for your paper! Carlos

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Thank you for your clarification and caveats. I would like to read your earlier papers and explore your methodology more deeply, if you are amenable. I appreciated your approach to the Palenque texts in your book, but feel that anchor points to sidereal positions, identifiable with the GMT, add a dimension of confirmation to the narrative content. As you know this is a huge topic.

In your response you mention that intervals between period endings are "especially primed for false positives." Yes, these intervals have built-in numerological commensurations and conveniently provide "aha!" responses in investigators. But wouldn't the Maya scribes themselves also have easily noted such obvious parallels? What is the criterion to determine conscious recognition by ancient scribes? Mathematical commensurations in the intervals between period endings may have been so obvious to Maya scribes that they didn't require further elaboration or reiteration. They may have provided convenient ideological anchor points, and perhaps this is why the 669 AD building dedication is hitched with a tiny DN back to the 667 hotun, which provides so many nice astronumerological connections with the 2012 date. Were the Maya at TRT aware of this? Here, in this specific case, I think it's a pretty clear yes; but a generalized methodology that can be applied to an analysis of conscious intent across Maya time and geography has a greater challenge, as it may eliminate context-specific data in specific examples that can help to answer the question. Just my opinion.

Yes, there is a danger that computer images can give modern viewers a false sense of what ancient skywatchers may have perceived. For example, you can speed up the time-factor of the sky in SkyGlobe software and see the Milky Way undulate up and down. Is this why the Milky Way is associated with snakes? I don't know. The display is a sped-up time machine that ancient Maya skywatchers would be hard pressed to cognitively replicate over many days of observation. Schele's note that the Milky Way looks like a tree on the screen may seem facile, but I think her idea was also influenced by

ethnographic data --- such as the Lacandon report that the “nuclear bulge” of the Milky Way between Sagittarius and Scorpio is thought to be the clumpy roots of a giant tree.

Quick response to your question that seems more addressed to Michael: “Wouldn’t the zodiac (or parallel construct) be obvious to us by now if they had [tracked star shiftings]?” The Maya methods of measuring and tracking is what is currently being worked out, and Michael is identifying internally consistent examples from different areas. The methods are so non-cMd that they have evaded detection for a long time. But I believe they can be, and are being, identified and argued for with good rational acumen and evidence. All your questions and cautionary caveats are reasonable and should be on the docket for addressing and consideration. Can you send me your Glyph G paper? Best wishes,
John

Geoff Stray
John and Michael,

I am very interested in the reference to mentions of 13.0.0.0.0 at Copan. Can either of you give me a reference where I can find out more about them - particularly stela 23. Are there photos anywhere? Thanks.
Geoff

From Michael Grofe, ca. 3 pm Dec 17, 2010
Hi, All,

OK, here goes...I'm not sure that posting such long winded messages is helpful, but I wanted to include some of the work I've been preparing that has some bearing on the current discussion of the sidereal and tropical years.

Deep Time Intervals:

Following Floyd Lounsbury, Gerardo has proposed a helpful model for determining intentionality in deep time contrived dates, particularly using the 819-day count in Palenque. Along with various planetary cycles, it is also possible to use the 819-day count and its to calculate multiple astronomical intervals, and one of its component intervals of 91 days is used repeatedly in the Dresden Codex tables. Victoria and Harvey Bricker first suggested in 1988 that the 91-day tables accompanying the Serpent Series were utilized to calculate the tropical year and the 365 day Haab, as well as the eclipse year. Subsequently, based on finding multiple whole multiple intervals of a constant sidereal year value in these long distance numbers, I proposed in my dissertation that the Serpent Series also incorporate calculations of the sidereal year. Therefore, I also think that we can examine various deep time intervals to see if we can determine whether constant values for the sidereal year, the tropical year, and lunar cycles were involved in

these kinds of calculations.

From lunar data given in the inscriptions, Teeple similarly demonstrated that the deep time calculations in Palenque involve known constant values for the lunar synodic cycle used by the Maya in the Dresden of 29.5308642 days. I have similarly shown that an extremely long distance number on PAL Temple XIV of 340,465,290 days (932,163 tropical years) also includes a whole multiple of this lunar cycle, demonstrating at least one recognizable factor within this intentional calculation. This text includes another reference to Bolon Yokte' K'uh, as well as the other example of 9-ipnaj that John mentioned. But where we lack external evidence for sidereal and tropical year values, it is nearly impossible to evaluate these kinds of extremely long distance numbers that exceed hundreds of thousands of years, as the slightest differences in the values used will dramatically alter the outcome when multiplied so many times. Conversely, shorter intervals of only several hundreds to several thousands of years may provide a more reliable test for intentionality.

In my analysis of the comparatively shorter intervals found in the related Palenque Cross Group, I've found some productive values that I have used in this analysis, but I won't get into all of that here, suffice to say that Teeple first deduced the possible 365.2422 TY value from the interval the Haab had drifted 180º between the Era Base to the year of the birth of the Palenque Triad. This was 754 Haabs, exactly half of 1508 Haabs, which is equivalent to 1507 TY of 365.2422 days.

The February Solar Nadir in Copán:

One of the most significant patterns I have found when comparing multiple deep time intervals is the repeated use of a very similar date in the tropical year as a base (which remains consistent even if we are correlation free). This date also happens to fall on or near February 8 using the GMT, the date of the solar nadir at the latitude of Copán, 14.8º N. February 8 is also recognizable in the ethnographic record as the beginning of the Ch'orti agricultural New Year—the ritual importance of which has been described by Raphael Girard, and in Matthew Looper's "Lightning Warrior". Barbara Tedlock also describes the importance of the solar nadirs for the K'iche, as this is when the full moon reaches the zenith. Architectural alignments to this date, and its corresponding linear opposite August 13, are likewise uniquely found throughout Mesoamerica, and certainly here is where the arguments for the Era Base of the Long Count jump out as potentially significant—a discussion for another time. Both Susan Milbrath and multiple scholars at MEC have examined the significance of both local solar zenith and nadir events, as well as the idealized significance of the dates that correspond to the nadir and zenith in Copán, though the local zenith and nadir dates are quite different north of the latitude of Copán.

Curiously, we find that the previously mentioned accession dates of both Ruler 12 in Copán (along with his 24 TY anniversary), and Bahlam Ajaw in Tortuguero fell on or very close to the same date—here, the February solar nadir at the latitude of Copán, and there are multiple other accessions or historical events that appear to be timed closely with this date (here are a few examples using corresponding Gregorian dates with the

hypothetical 584283 GMT correlation constant):

Arrival of YKM at Ox Witik in Copan, 8.19.11.00.13, Feb 7, 427
Accession of Ruler 12 in Copán, 9.09.14.17.05, Feb. 6, 628
Accession of Bahlam Ajaw in Tortuguero, 9.10.11.03.10, Feb. 7, 644
Anniversary of Ruler 12's accession, 9.10.19.05.10, Feb. 5-6, 652 (non standard CR date)
Accession of Itzamnaah K'awiil, Naranjo, 9.17.16.03.08, Feb. 6, 787
Accession of Ukit Took' in Copan, 9.19.11.14.5, Feb. 8, 822

Note that if the '85 GMT constant is used, which likewise places the Era Base on August 13, most of these dates would match Feb.8 even more closely. But that is an argument not worth making here, though it is worth perking up the antennae and keeping it in mind. It is sufficient to notice the closely repeating parallel dates, correlation free, as well as their possible relationship to the February solar nadir in Copán. Many more historical dates throughout the inscriptions cluster around this date, apparently on the local nadir in other sites, as well as near to it. I have found a whole complex of iconographic and text references that follow this particular tropical year position, particularly the deity of the underworld night sun, the 7-Centipede Solar Bird.

While this date is recorded in the above accession events, it was also apparently utilized as an astronomical anchoring date. It appears as both the base date of the Dresden Venus Table on 9.09.09.16.00, as well as on the South panel of the West door of Copán Temple 11, on 9.17.00.00.16. This latter date, which I recognize that Gerardo has analyzed as related to the Dresden Venus stations, is also explicitly involved with Venus and lunar astronomy. Using the '83 GMT, the CPN Temple 11 date corresponds to not only a full moon that crosses the zenith, but it is totally eclipsed after midnight on that same night. This precisely suggests the utility of the solar nadir, as I explained in a previous post. What I noticed is that both of these dates on the Dresden Venus Table and Copán Temple 11 text are in identical positions in the tropical year, using a correlation free analysis, while they are also both on the February solar nadir in Copán using the '83 GMT in Gregorian:

Base date of the Dresden Venus Table, 9.09.09.16.00, Feb. 7, 623
Copan Temple 11, Venus station, Lunar eclipse, 9.17.00.00.16, Feb. 7, 771

What makes this all the more interesting to me is the fact that we find that several deep time intervals count back very close to this same February Copán solar nadir position when we use the current value of the tropical year (365.2422 days). Of course, if the Maya were using a slightly different value, they may have attempted to target this specific date using their own value for the tropical year. Here are two examples:

Deep Time date from Naranjo Altar 1, 7.02.04.05.14, Feb. 6, 310 BC
Deep Time date from Copan Stela C, Pre Era 10.19.14.17.0, Feb. 9, 3907 BC

Naranjo Altar 1:

Naranjo Altar 1 is an interesting example of a largely secure, shorter deep time interval that clearly links to the historical period, while it also contains a much larger, and less secure distance number that links to the far distant past. The text mentions several mythological and historical figures, including the Square Nosed Beast, mentioned in other deep time intervals in Palenque and Copán. The text also mentions the 3-11 Pik title, which Barb and I both independently suggested as a formula related to the tracking of precession.

On NAR Altar 1, we find the date 7 Kaban 5 Kayab, which should correspond to 9.04.10.08.17, or February 19, 525 AD (2/17 Julian) using the 584283 GMT. This date is fairly secure, given that it counts forward 19.10.07 in G10-E11 to the date 9.05.10.01.03, 7 Akb'al 11 Sotz', on which the skulls are piled an blood is pooled just prior to the mentioning in H5-H6 of the K'atun completion on 9.06.00.00.00, 9 Ajaw 3 Wayeb, which then begins the K'atun count up to the future 9.10.00.00.00, as we discussed.

Going back to the date 9.04.10.08.17, 7 Kaban 5 Kayab, we see that immediately preceding this date is a long DN from C9-D10 that reads 2.02.06.03.03. If we subtract this DN from the above date, we reach a date 13 Ix 12 Xul, which is given precisely in B11-C1. Here is the math:

9.04.10.08.17, 7 Kaban 5 Kayab, February 17, 525 AD (2/15Julian)
– 2.02.06.03.03
7.02.04.05.14, 13 Ix 12 Xul, February 6, 310 BC (2/11 Julian)

What I found is that this DN amounts to 304,623 days, and it takes us back to the date February 6, 310 BC (2/11 Julian), which happens to be remarkable for several reasons:

1) The tropical year and the proximity to the Copán solar Nadir in February: 304,623 days is nearly a whole multiple of our current measurement of the tropical year (365.2422 days), with a remainder of exactly 11 days.

2) The Sidereal Year and Precession: The DN interval of 304,623 days is also almost exactly a whole multiple of our current measurement for the sidereal year (just 0.8 day longer), placing the sun on 7.02.04.05.14, February 6, 310 BC (2/11 J) in precisely the same position on which it appeared in the later date 9.4.10.8.17, 7 Kaban 5 Kayab. However, as you can see above, the time of year has shifted by 11 days of precession. This appears to be a very clear implication about the calculation of precession and the sidereal year in deep time intervals.

3) The Heliacal Rise of Venus: On the date 7.02.04.05.14, February 6, 310 BC (2/11 Julian), Venus is actually heliacally rising, and it would have been first visible about two days earlier. This again appears to relate to the association between this date in the tropical year and the movements of Venus in the Dresden Venus Table, and in Copán Temple 11.

4) The Lunar Node: On this earlier date, the sun is precisely at a lunar node, indicating that an eclipse close to the Copán zenith would have been immanent, much like in the historical example from CPN Temple 11.

Unfortunately (Murphy's Law of Epigraphy), the much larger deep time interval on this monument is missing a TUN coefficient, and the CR date appears to be in error. However, I have potentially reconstructed this date using one of the only workable DNs, which would require that the error only be in the month, with Ch'en instead of K'ank'in. The resulting large DN would be: 2.13.13.11.17.4, leading to the date 13 Ok 18 Ch'en. The nice possibility with this DN is that it is nearly a whole multiple of the sidereal year used in the first, smaller DN above, where 304,623 days = a whole multiple of their sidereal year value. This works out to 365.2553957 days, close enough to our own current measurement of 365.256363 days to provide a similar result over 834 years. However, over much longer intervals, like this initial mega number, these small differences become *greatly* amplified. My intention here is not to compare these long measurements with actual theoretical astronomical values, but to see if we can establish what constant values were being used by the Maya. In doing this here, I admit that the degrees of security and certainly are far less, while the potential criticism that I am searching for a "good fit" is certainly valid. But I think this result is nonetheless worthy of consideration as the most parsimonious result, given the apparent use of the sidereal year in the shorter of the two intervals.

Sidereal Year: This larger DN = 7,729,904 days. Using the above sidereal year value of 365.2553957 days, we find that 7,729,904 days = 21163 (365.2553957 days) + 4 days remainder. If a whole multiple of their sidereal year was intended, it would work out to be 365.2555867 days, which still provides the same result within a day for the smaller DN above, and it suggests the interval 365.255555..., which would arise from the simple addition of 23 days to every 90 Haabs of 365 days, also providing both results above.

Tropical Year: Using the value for the tropical year in the smaller DN that apparently targeted the February solar nadir, this works out to be 834 years = (304,623 days – 11 days) = 365.2422062 days (remarkably similar to our own value). Therefore, using this value, the tropical year position in 7,729,904 days would be 21163 years + 283 days, placing the date 283 days earlier than February 6, exactly on April 29, which interestingly is close to the day of the first solar zenith in Copán, at 14.8º N latitude.

What is most interesting to me about this date is that, in the year 310 BC, which would have been around the time period when the Long Count was first developing, the April 30-May 1 zenith occurs on the day of the first reappearance of the Pleiades after conjunction with the sun. As I noted elsewhere, the Pleiades are on the exact same line of latitude as the sun for about 200 years during this time, and they cross the zenith exactly at this time at 14.8º N latitude. Here, it looks like the Naranjo astronomers may have been calculating the time in the past when the position of the sun on the February nadir in Aquarius was once the day of the late April zenith, an ancient time when the ancestral

Square Nosed Beast was said to have first been seated as king.

CPN Stela C:

The CPN Stela C example relates to one of my prior posts which discuss John's observation that Stela C places the sun in conjunction with the Milky Way on 9.14.0.0.0, and I noted that this same tropical and sidereal year position is repeated on CPN Stela A and Stela H, one metonic cycle later, with full moons on both days (incidentally, the upcoming winter solstice full moon will repeat this arrangement, along with a total lunar eclipse, to boot! Enjoy, stargazers…). The use of such astronomical intervals relating to Stela C is significant when we consider that the base of the first deep time interval calculates back from 9.14.0.0.0 to using a DN of 1,686,620 days to a date before the Era Base that essentially appears to also target the February nadir.

The sidereal position of this early base date is also interesting, in that the number of days of precession in this interval of time is precisely equivalent to the number of days between 9.14.0.0.0 on December 3 and the February nadir—67-68 days. This is difficult to describe without illustrations! But despite the fact that this DN is nowhere near a whole multiple of the sidereal year, we can observe possible intentionality in the result that involves a defined relationship between the February solar nadir as the tropical year position of the base date, and the amount of precession that effectively places the sun on December 3 in 3907 BC in the exact position of the future February nadir in 711 AD. I have found that several deep time intervals suggest this other type of sidereal switcheroo.

On Stela C, an additional, even larger DN counts back exactly 13 kalabtuns from the Era Base on 4 Ajaw 8 Kumk'u to a far distant deep time base date on 4 Ajaw 18 Wo, while yet another pair of unanchored CR dates separated by 13 kalabtuns are given on the monument. I won't attempt to evaluate such large numbers here, since the margin of error for using even slightly different values is so great, while the exact sidereal and tropical year value is difficult to ascertain without recourse to other evidence. However, the precision of the shorter DN might imply that they intended a precise result within this much larger interval.

I have been working on a number of deep time intervals using similar approaches, and I hope to be able to publish this work in the near future. Given what I have found elsewhere, I think the use of the sidereal year was an integral part of the contrived calculations into deep, mythological time. This hypothesis can be tested in other, similar deep time intervals, and that is precisely what I am doing (hits and misses alike).

Thanks for the discussion, and best of luck to you revising your paper, John.
I hope this was productive for all involved, and that regardless of what the truth might be about astronomy within the TRT6 text, the larger issue of astronomical cycles and mythology within the inscriptions is a worthwhile and fascinating topic to explore. Like many of us, I see all of this fuss about 2012 as a potential opportunity to bring some

much deserved awareness to the achievements of the Maya, and a chance to reconnect students with the pleasures of stargazing, storytelling, and celebrating our shared human legacy.

Best of luck in the future, and happy holidays to all.

Cheers,
Michael

Stanley Paul Guenter
Barb,

I will try to keep this as brief as possible. It has not escaped my attention this time either that, though given the opportunity, you once again completely ignored the questions I have posed repeatedly to you. You plead "constraints on your time", apparently as justification for not answering, but then launch into a long post that must have taken at least the better part of an hour to compose. You have had plenty of time to post on this discussion board. You have simply chosen to ignore my questions. I find it hard not to take offense at that, especially after you lectured me yesterday about "propriety in the interests of productive dialogue". Frankly, I feel you have abused my conciliatory tone and attempt to move the discussion forward. It is more than apparent that you are not willing to budge an inch towards even acknowledging my arguments, let alone discussing them.

You claim that you prefer to proceed from knowns to unknowns, but I don't see that at all. Not regarding Tortuguero Monument 6. As I have repeatedly pointed out, the basic argument that you are following here is that the Maya may have encoded sidereal year calculations in the intervals between dates on this monument. So let's look at the "knowns" here. We know that the Maya had a system of connecting dates and events they thought were significant: DNs. Yet we find no astronomical significance in any of the explicit DNs that the Maya actually provided us with. Have you or John acknowledged this? No. You studiously avoid addressing this glaring discrepancy in your argument.

I already pointed out that there are more than 700 possible intervals between the 13 dates on Tortuguero Monument 6. Chance alone dictates that at least two of those dates are going to fall within a day of a solar/sidereal year. But in your search for possible astronomy encoded in the patterns of these dates you guys don’t stop with just this one monument. You are looking at the other Tortuguero monuments, as well as the ones from Quirigua, Copan and pretty much every site out there. And your methodology doesn’t stop at looking at just the intervals between dates on a single monument, but between dates that are found on different monuments at the same site. This greatly expands the chance of having false positives show up that; in fact, it all but guarantees it, given how many possible intervals there are. And as you guys aren’t actually restricting your search to just sidereal or tropical year calculations, the chances of finding something “significant” in random intervals is raised yet further. Now, you may protest that here you

are only looking at one monument, and a couple of intervals on that one monument, but given that you had no reason to believe there were any specific astronomical calculations hidden in this text in the first place, it is abundantly clear that you were open to many different calculations here. And yes, Barb, I recognize that you didn't do this background searching yourself, but since you have jumped into the fray started by John and Michael, and accepted their dates as at least a starting point for discussion, your position is as much dependent on this unstated methodology as theirs.

So, since this methodology is pretty much 100% guaranteed to find a whole bunch of false positives, including apparent sidereal year calculations, in the set of dates that form the Maya corpus, why should we not consider the calculations that you, John and Michael are looking at as just that; meaningless coincidence? We absolutely must have a way of testing these claims, don't you think? Furthermore, as I've pointed out, the Maya were very kind to give us a pattern of linked dates through their DNs, that tell us precisely which events and dates they saw as most significantly connected. But your astronomical hypothesis is not supported by any of these explicit DNs. That absolutely must be considered significant, unless you want to toss out the last half century of epigraphic decipherment. We know that the Maya could and did include explicit references to astronomical events in their monuments. We have good reason to suspect there may be astronomy encoded in the explicit deep-time DNs of the Quirigua stelae. What reason do we have to believe this was the case with the Tortuguero monument in question? We have no explicit references to astronomy and none of the explicit DNs mention it. All you guys have provided are a couple of intervals that connect random dates that you have had to contrive yourselves. That is exactly what we would expect if this was just mere coincidence and unintentional.

Now, I don't expect you to go through every one of the 700 plus intervals on this monument, Barb, but I do expect you to at least acknowledge them. I think it is also necessary for this to be a truly scientific endeavour, for you to acknowledge that the true methodology being used here, simply looking for any pattern in any monument, is indeed going to lead to false positives. No, we are not going to find apparent sidereal year calculations in every monument. Not even in most. But in some of them, yeah, chance alone dictates that. So Tortuguero Monument 6 happens to be one of the few that actually does have one. And not just one, but two. But the two aren't identical, and one interval, by John's own admission, is 4+ days off of what would be expected if this truly were intentional. Surely that has to be taken into account when we are trying to figure out whether intentionality or coincidence is at work here. And when we notice that one of these intervals merely connects a historical event through a contrived DN with a mere base date.

Incidentally, in going over your paper with Sven again, I see that you don't believe that this is a mere base date. I have to disagree strongly with this proposal of yours and Sven's. That date 11 is a base date is clear, especially given the little snake above the 4 Ahau date, and base dates are not otherwise significant dates in the narrative of texts. I think it was Nikolai who came up with the idea that that little snake signified "after", and as far as I remember, it never shows up except in base date constructions, explicitly with

a DN from a non-PE date to the closest PE that locks you into the Long Count. You read it as meaning simply "on" but I can't see it having such a broad interpretation, given its restricted use on the Ahau part of a PE which follows a later non-PE date by a short DN.

Date 10 is clearly highlighted as the most important date in the inscription by the fact that of the surviving dates on the monument it is the only CR to include a G#. Furthermore, both dates 12 and 13 are connected to it by explicit DNs. Neither of these dates connect to date 11. Since date 11 is nothing more than a base date, all of the text that you have being associated with it, other than the wi' ho-tuun of 667, should be considered part and parcel of date 10.

And this of course brings up my point about the interval between dates 12 and 11 being inexplicable, especially when none of the explicit DNs gives us any reason to suspect astronomical calculations going on. And no, Grofe's evidence is not relevant to this case as nothing he can present from other monuments can explain why the scribes of Tortuguero would have ignored astronomy for all of the explicit DNs that must be given priority in our own attempts to understand what the Maya were trying to communicate through this monument. Nor would his evidence explain why the Tortuguero scribes would encode a sidereal year calculation in a pair of dates that are not tied to related events, or explicitly related through a DN.

As for the other supposed calculation, you admit you can't come up with any explanation for why these events would be related. And you think you know what all of these events are! It undoubtedly won't surprise you to know that I am not convinced by all of your readings, and I am rather skeptical of your alliance reading, for one. As for mythology, you bet the ancient Maya viewed their natural world as incorporating spiritual beings. However, we know that they saw a difference between humans and deities, and the events on Tortuguero Monument 6 are all historical events that involve the actions of historical actors. Sure there is some description of supernatural deities, especially in columns K and L, but I don't see any evidence that these guys were acting on these historical dates.

Anyway, this post is far too long already, and I would like to reply to John before this discussion board closes. I will not pretend I haven't found this conversation frustrating, but I wish you a happy holidays and perhaps we could find more productive discussion in the future on either the non-astronomical interpretations you have of Tortuguero Monument 6 or those deep-time DNs at Quirigua. Cheers,
Stan

From Ce Akatl (Gerardo)
I guess if I were to make anything resembling final remarks on this discussion, they would be to emphasize two things:
i. much/most of the argument/evidence discussed in this thread regarding Tortuguero Monument 6 goes away if the GMT is recognized to be inaccurate by more than the generally accepted two to three days;

ii. the next wave of advance in Mayan astronomy will be to recover the methods underlying the astronomical patterns we claim to see rather than focusing on the patterns themselves or what they might "mean."

To the first point, I have no interest in re-articulating my argument on the history of the calendar correlation here, but I will quickly address the misrepresentation that seems to crop up even in this discussion: the ethnographic material doesn't support the GMT anywhere near as strongly as it is being suggested. In particular, John and others suggest a strict continuity between the highland Guatemala 260-Day Count and the Long Count. In doing so, however, they ignore the facts that the 260-Day Counts among the different communities in Guatemala don't all mesh, and if you take into account the 365-day year that they keep, continuity is strongly argued against. (Why aren't we respecting their calendric integrity?) Also, you only get continuity between the ethnographic data and the Long Count by going through Landa's equation, which itself is highly problematic, and so on, and so on.

To the second, I see a natural tension even in my own work that I think speaks to the larger field: we want to address the historical idiosyncrasies that make any given text a unique expression by an individual with agency (could B'ahlam Ajaw have integrated sidereal years into an historical narrative even out of whim or esoteric interest?), but at the same time, we are looking at how anthropologically that individual's idiosyncrasies were shaped and tempered by the pressures of cultural, social, and religious organization (how would that expression fit into a representation that would be meaningful to B'ahlam Ajaw's colleagues, and what factors/knowledges would he have drawn upon to create it?). I readily accept that this makes the work very challenging, especially when the data is underconstrained and there is a huge potential for false positives. On the other hand, this is also what I find both fascinating and rewarding about the endeavor since we need to be open-minded about what we may find and very skeptical about potential patterns, mediating these extremes by the rigor of our methods.

Thanks to the MEC for hosting this discussion, even if it did morph into something a bit different from what was planned.

Stanley Paul Guenter
John,

Yours was a long post and I don't know how much I can respond to. It is not that I hold Maya texts to a higher, unrealistic standard. It is that I want to avoid making mistakes of considering false positives to be significant when they are merely coincidental. This has been my entire problem with archaeoastronomy in general. It isn't that I don't believe the ancients were interested in astronomy, it is that the majority of arguments for archaeoastronomical significance of either dates or alignments simply cannot be confirmed, and in many cases, can't even be separated out from the "noise". You mention Milbrath, Coggins, Schele, Kelley etc. as examples of "brilliant scholars" who have been following your methodology for decades. I'm not denying that your methodology has a

long pedigree – heck, I don't think what you are doing is much different at all from what the early 20th century Mayanists were doing; this doesn't mean that this methodology isn't fundamentally flawed.

You chide me and state that if I am going to do truly scientific work, I need to "empty [my] mind of the many assumptions [I] clearly have as [I] approach the TRT Mon 6 text". Essentially, you want me to open my mind to all possibilities, or at least to the one you are advocating. I definitely encourage free thinking and open-mindedness, but as the saying goes, if you don't stand for something, you'll fall for anything. I stand for science, and science has to be rigorous because there are far more logical possibilities than there are actual possibilities. It is logically possible that there is a teapot floating in orbit between Mars and Jupiter; it is not rational to believe this, though. We must be able to distinguish between truly significant and intended astronomical intervals being encoded in ancient Maya texts and merely coincidental ones. I don't see any rigor in your methodology to eliminate these false positives. I see a lot of work going in to interpreting any and all apparently significant dates and intervals, but not much into making sure you aren't just dealing with false positives.

You bring up the analogy of a crime scene investigator, and accuse me of "expecting the dead person to tell [me] who the murderer is". No, John, I don't expect the Maya to rise from the dead and explain their arrangement of Tortuguero Monument 6. However, I do want to make certain we aren't going to construct an entire narrative of how the crime went down without making certain the evidence we are looking at is relevant to the case. It is as if the body was found on a shooting range, with bullet cases all around. I see you as the investigator who wants to immediately conclude that the victim was shot to death, and constructing a whole scenario about who did it based on the type of shell-casings and who the victim knew that had guns. What I am doing is pointing out that there is no evidence whatsoever that the victim was shot in the first place. Maybe he just had a heart attack, or maybe he was killed, but some other way, at some other place, and the murderer just dumped the body at the shooting range to throw off investigators.

This is why I emphasize that there are real DNs on these monuments, and there are contrived DNs. The real DNs were obviously important to the ancient Maya. Contrived DNs may have significance, but they may not, and if there is no astronomical significance in the real DNs, why should we believe the contrived ones encode this information? As I pointed out above in my post to Barb, your methodology (and I am referring to you guys in common here) didn't merely involve looking at Tortuguero Monument 6 to see whether there were any sidereal or tropical year calculations here, and wonder of wonders, you found some. No, you guys are going around to many different monuments, and looking not just for sidereal year calculations, but anything that could possibly be significant astronomically. As I pointed out, this means that there are going to be literally thousands of possible, contrived DNs between all these dates. There are, after all, more than 700 on Tortuguero Monument 6 alone. So we should expect to find quite a number of false positives, not necessarily of each type of astronomical period on every monument. But taken as a whole, the fact that a few coincidental and random intervals will appear to correspond with sidereal year calculations is to be expected through pure

chance. I don't see that any of you have progressed the case beyond this point.

You object to my use of the term "contrived DN". However, that is exactly what they are. DNs were originally described from the explicit intervals that the Maya themselves wrote down in their texts. I understand your reason for objection; "contrived" does indeed suggest a value judgment. Rightfully so. We must take into account the actual Maya text, and not simply read into it whatever we wish. Unless you want to argue that the Maya intentionally arranged absolutely every date on this monument in relation to absolutely every other date (an utter absurdity), then we have to admit up front that many of these intervals will be insignificant to the intention of the original scribes. Real DNs tell us which dates the Maya scribes most wanted us to see as significantly connected. When you can't find any astronomical significance in those, your arguments that contrived DNs were significant are going to have a much higher hill to climb.

Now, I do thank you for actually taking on my questions I posed to both you and Barb. Now, in terms of implications, you state that one of these is that Tortuguero Mt. 6 implies that the Maya had calculated the sidereal year and thus knew about precession. Actually, and I don't mean to be pedantic, but this is simply the evidence under debate here. Does this help us interpret other monuments? Do we have similar sidereal year calculations in other texts; not ones that are just close to this one, but exactly the same one to suggest real shared knowledge and not just a bunch of coincidences? Does this help us better understand the events that these contrived DNs connect?

Now, your arguments about what I have termed "identity astronomy" are the best implications I have seen anyone present so far. However, as you know, I am a skeptic. I pointed out that the only common part of the various astronomical events that you see going towards making up these kings' identity was the dark rift itself. Which you admit doesn't make sense as part of the king's identity. Sometimes the king is identified with the sun in the dark rift, sometimes it is Jupiter in the dark rift. Sometimes the identity is formed by the astronomy on his birth, other times on his accession, and on others, on his death. I don't see any consistency here, and it appears that you are simply interpreting as significant whatever happens in relation to the dark rift on whatever date you can find. You argue that because an accession is dictated by the death of the preceding king that the timing of the accession to correspond with astronomy may not have been possible. However, we know that there are many different interregnal lengths, some extending to years. We don't know exactly what dictated these lengths, or the actual choice of accession date, but it is apparent that the kings could delay their accessions by considerable periods if they so chose. That gives plenty of time for something astronomically significant to pop up, if this was a concern of theirs. And I will grant you, that I too think that their accession dates were probably every bit as contrived with astronomy and chronomancy in mind as those of ancient India and China. Figuring out what these concerns were is not going to be easy, however.

More problematic for me, however, is that the identities you see are not consistently formed. For Bahlam Ajaw you see it as formed by his birth date, while for Ahkul Mo' Nahb I you see it as being formed by his death date. The commonality here is that both

dates tie to the dark rift, the object of special focus of your own studies. What evidence do we have for these identities, other than these dates? For Ahkul Mo' Nahb I, I know of nothing. For Bahlam Ajaw, you suggest some other dates, but the one you pointed to in your last post, his 7 tun anniversary, took place during the solstice. However, this isn't the king's accession date (which doesn't have much astronomical significance, apparently), but merely a 7 tun anniversary. Are you arguing that he may have timed his accession with this 7 tun anniversary in mind? Highly unlikely, especially as you admit that this date is actually 10 days off of the actual solstice.

Now, if you are going to give yourself ten days latitude on either side of a given astronomical event, and there are 4 solstices and equinoxes in total in a year, that means that you have 84 days out of 365 on which you would argue for an astronomical connection. That is just over 1 in 4, meaning that almost every fourth random date you would interpret as possibly being significant. But that doesn't take into account the fact that you also see as important and significant conjunctions or oppositions of planets, eclipses, etc. Now, I can't figure out the statistics at the moment, but it is clear that there is hardly a day of the year where something astronomically "significant" isn't happening, especially with the ten day latitude you give yourself. So, chance alone is going to indicate that a lot of these astronomical connections are going to be merely coincidental. Now, you admit that this specific instance of Bahlam Ajaw's 7 tun anniversary in power is speculation, but I think it highlights your methodology and the problem of false positives it has. By opening up a king's astronomical identity to dates other than his birth or accession, and to pretty much any celestial object and its patterns, you also open up the possibility that the patterns you are seeing are just in your own head, and were never seen that way by the ancient Maya. Your choice seems arbitrary, or merely reflecting your own personal biases. How do you make certain this is not the case, and that the patterns you are interpreting really are significant and were meant to be seen that way by the ancient Maya themselves? You state that "We need to figure out the various ways one or the other [of these astronomical complexes] were preferred or rejected by different kings". I think you are getting ahead of the game, as first we need to confirm that these events and dates were being staged with astronomy in mind to begin with. Only after we have that established, should we move on to figuring out which astronomical events were being followed in this way.

So, in summary, John, my main problem with your interpretation of Tortuguero Monument 6 is that it doesn't take into account the high likelihood that the patterns are coincidental. Your methodology is all but guaranteed to come up with false positives, and I do not see that you have taken any moves to take this into account let alone ferret these out and remove them from consideration. The Maya were interested in astronomical phenomena, I completely agree. However, you and I are also in agreement that since the Maya apparently saw separate phases and intervals of given celestial bodies as separate deities, it is going to be exceedingly difficult to figure this all out. I think we have to admit that given the large gulf of time and culture that separates us from the Classic Maya we are not going to be able to decipher or properly interpret all that they did. We have to accept this, and while this harsh fact should not be one to cause us to stop open-minded inquiry, it should make us more hesitant about presuming to know what the Maya

had in mind from our limited understanding. Especially when the statistics tell us to be on the lookout for a good number of false positives.

All best and happy holidays,
Stan

Stanley Paul Guenter
Michael,

We haven't had much time to discuss things here, which is unfortunate as your ideas are the basis for so much of the current debate. You state that you have been able to fine-tune your investigation by looking just for tropical year calculations, but as I've pointed out to Barb and John, I don't think you went into your investigation of Tortuguero Monument 6 with tropical year calculations in mind. Certainly you had no reason to expect such. Rather, the search is for anything significant popping up in the intervals. This is the exact same problem with the Bible Codes, as I have pointed out before as well. So we have to acknowledge all of the monuments and all of the different astronomical events and periods and intervals. As such, we should not only not be surprised to find false positives, we absolutely must expect them. Just because we find an astronomical pattern that is statistically unlikely to show up in one monument, doesn't mean that it is statistically unlikely to show up in the corpus at large.

Now, you ask the million dollar question: "Supposing some astronomical information is contained in a series of dates, how might we identify it, and what might qualify as a falsification of the null hypothesis that there is no astronomical information in these dates?". You acknowledge Gerardo's suggestion of text references and architecture. I have pointed out that your basic premise absolutely begs us to consider first and foremost the actual DNs carved on the monument in question. If we can't find anything astronomical in those intervals, or with those dates, then we will have to have a much better argument to propose that contrived DNs encode this information. When these supposedly astronomically significant intervals are ones that merely connect historical events with base dates in the text, I think the hypothesis is really best interpreted as what should be an expectable false positive.

Now, as I told Barb, I agree that deep-time intervals and especially explicit DNs are excellent places to look for these kinds of calculations. I understand the attraction of the dates of the birth of Bahlam Ajaw and the 2012 date, and the interval between them, but these aren't connected by an explicit DN and I have pointed out that the 4 Ahau date in common between 2012 and the 667 PE that was the last that fell before this monument was carved, could explain the choice of the 2012 date being included in this text. Could astronomy have played a part here? Yes, but again, we have no confirmation of this, nor is there anything in the text to suggest that the lunar eclipse falling 3 days before the first war event was part of the consideration for this date. It could easily be just coincidental. Did the Maya pay attention to eclipses? Absolutely. Did they stage their wars by astronomical events? This is an old idea that has now been thoroughly discredited. The

only explict “astronomy” in these star-wars events is the star in the glyph itself, which we now know to be a metaphor for war, and not an actual reference to astronomy. While the Maya could have staged attacks to correspond to phases of Venus or other heavenly bodies, no clear pattern has emerged. As I pointed out to John, the more latitude you give yourself in having Maya events fall within days of a given astronomical event, the more you increase the chances of getting false positives.

I don’t think you are paying enough attention to the possibility of false positives here. Let’s look at your argument about Quirigua Zoomporph P. Is there anything in the text itself to suggest an astronomical pattern here, let alone a sidereal year count? No. Do we have a similarity in terms of the Long Count position, where we have in the DN not only a whole multiple of sidereal years but of tuns or even katuns as well? No. Are these the only two dates on the monument, or actually linked by a direct DN? No. Now, obviously the 426 accession event wasn’t staged with the 795 PE in mind, but was the 795 PE staged with the 426 accession in mind because of the astronomical connection? No, almost certainly not. The best argument you can come up with is that the scribes in 795 chose to refer to this accession event because of the similarity in sidereal year position between the two. This position, I emphasize, assumes a priori that the Maya knew about precession, as well as assuming that they patterned historical events with precession in mind. This is still an open question. Could you be on to something here? Perhaps, but there is no evidence to discount pure coincidence going on here. We do have those huge DNs that Barb was talking about, one of which may encode some astronomical calculations. However, the west side of Stela C bears a contemporary date and another, much earlier event, and there is no connection in terms of the astronomy here. Stela C also references the 3114 BC start date of the Long Count cycle, and while both the 455 and 3114 BC events fall in August, they are not close enough to suggest sidereal year calculations. So I’m afraid taking Zoomorph P in context, chance again appears to be the most likely explanation for this pattern you’ve stumbled upon.

OK, I will leave my discussion there. I think it might be worthwhile to discuss your Copan data at some point in the future. All best,
Stan

From Stanley Paul Guenter:
Geoff, I do not have time to go into the reasons why there is no evidence for a 13 baktun cycle, but you will see my arguments to this effect in the preceding pages of this discussion. While 13 was an important and sacred number to the ancient Maya, the 13 baktuns marking the higher orders in the Long Count are best interpreted as symbolic numbers, and Mark Van Stone has a good discussion about this. The pictun is 20 baktuns long and there is no evidence for a 13 baktun cycle, just as there is no evidence for a 13 katun cycle in the Classic period. The 13 katun cycle, the may, is found in Colonial period accounts, and appears to have originated out of the Postclassic period, and probably did so from a continuation of the katuns, after the baktun and the Long Count in general had been abandoned. There were 20 katuns in a baktun and these were named after their concluding Ahau date. Since there are only 13 possible Ahau numbers, this

meant that when the Maya dropped the baktuns and the Long Count automatically there only came to be 13 possible named katuns. While the Classic Maya were certainly aware of this, and followed it closely, there is no evidence they ever formalized an independent 13 katun cycle.

All best,
Stan

From Carlos Barrera Atuesta
Michael wrote:

"Following Floyd Lounsbury, Gerardo has proposed a helpful model for determining intentionality in deep time contrived dates, particularly using the 819-day count in Palenque. Along with various planetary cycles, it is also possible to use the 819-day count and its to calculate multiple astronomical intervals..."

Now, I would like to bring back here those intervals and cycles that I published in 2008 by using a similar approach.

According to Probability Theory it is almost impossible that the values obtained are coincidence.

I.

I.A. The Events

9.13.9.13.16, 1 Kib 19 Mak = 12th anniversary of K'an Bahlam' rites' 819-day station
1.18.5.4.0, 1 Ahaw 13 Mak = GII's Birth

I.B. The Interval

[9.13.9.13.16 – 1.18.5.4.0] = 7.15.4.9.16 = 1,117,636 days

I.C. The Cycles

[1,117,636 days] / [2,956 cycles] = 378.09 days per cycle (Saturn)
[1,117,636 days] / [1,433 cycles] = 779.93 days per cycle (Mars)
[1,117,636 days] / [3,060 cycles] = 365.2405 days per cycle (Solar Year)
[1,117,636 days] / [1,914 cycles] = 583.93 days per cycle (Venus)
[1,117,636 days] / [9,645 cycles] = 115.8772 days per cycle (Mercury)
[1,117,636 days] / [2,802 cycles] = 398.87 days per cycle (Jupiter)

II.

II.A. The Events

9.10.15.16.0, 1 Ajaw 8 Sak = Terminal Date of the Master Structure
9.10.15.3.0, 1 Ajaw 13 Pax = First Solution for the 1.5.5.0 Interval
12.19.13.16.0, 1 Ajaw 8 K'ayab = Ring Number Solution, Page 24, Dresden Codex
12.19.13.3.0, 1 Ajaw 18 Sotz' = First Mother's Birth's 819-day Station
12.19.11.13.0, 1 Ajaw 8 Muwan = Primordial GI's Birth

II.B. [84 x 16,380] day-Interval Analogies

12.19.13.3.0, 1 Ajaw 18 Sotz' + [84 x 16,380 days] = 9.10.15.3.0, 1 Ajaw 13 Pax
12.19.13.16.0, 1 Ajaw 8 K'ayab + [84 x 16,380 days] = 9.10.15.16.0, 1 Ajaw 8 Sak

12.19.11.13.0, 1 Ajaw 8 Muwan + [84 x 16,380 days] = X
X = 9.10.13.13.0, 1 Ajaw 18 Mol

II.C. The Interval

[9.10.13.13.0 – 12.19.13.16.0] = 9.10.19.15.0
9.10.19.15.0 = [84 x 16,380 days] – 780 days
[84 x 16,380 days] – 780 days = 1,375,140 days

II.D. The Cycles

[1,375,140 days] / [11,867 cycles] = 115.8793 days per cycle (Mercury)
[1,375,140 days] / [2,355 cycles] = 583.9236 days per cycle (Venus)
[1,375,140 days] / [3,765 cycles] = 365.2430 days per cycle (Solar Year)
[1,375,140 days] / [1,763 cycles] = 780 days per cycle (Canonic Mars)
[1,375,140 days] / [3,447 ½ cycles] = 398.8803 days per cycle (Jupiter)
[1,375,140 days] / [3,637 cycles] = 378.0973 days per cycle (Saturn)
[1,375,140 days] / [46,566 ½ cycless] = 29.530671 days per cycle (Moon)
[1,375,140 days] / [7,934 ½ cycles] = 173.3115 days per cycle (Nodes)

All Best,
Carlos

From Stanley Paul Guenter
A quick note. I have noticed that a number of you refer to the Palenque king K'an Bahlam. I think you are confusing the names of the brothers K'inich Kan Bahlam II and K'inich K'an Joy Chitam II. There should be no glottal in the Kan of K'inich Kan Bahlam's name.

Now, Carlos, you wrote "According to Probability Theory it is almost impossible that the values obtained are coincidence." Can you provide this documentation? It is, after all, the point that is most fundamentally under debate here.
Stan

Carlos Barrera Atuesta
Thanks Stan,

I believe your right about the clarification on K'an and Kan. I will keep that in mind.

Regarding Probability Theory, that's a complex analysis that involve the number of hits (6 in first example, 8 in second), some factorials numbers (those with an exclamation mark, for instance: 5! = 5 x 4 x 3 x 2 x 1 = 120) and some considerations about estochastic processes (this is the hard part).

Perhaps if you could take what I wrote to a Faculty of Mathematics, they can explain this better to you. But believe me, the expression "one in a million" falls short when compared agains these two probabilities.

Please allow me to check with my "second" father who is Magister Scientiae in Mathematics (my "first" father is a Doctor, 69 yo, and still works in a Hospital more than 24 hours straight!) how I can lay down this to you so that it is understantable, OK?
Carlos

From Barb:
Gerardo,

I have been hoping to reply to some of your points for several days, and to especially thank you for your capacity to referee the more contentious aspects of this discussion and to bring it back repeatedly to a measure of common ground and common goals. I regret that I have been drawn into—and willingly entered—an argumentative back-eddy in defense of others' work which distracted me from exploring productive steps forward in this forum. Not that all of that was unproductive.

I am especially pleased that we are all prepared to acknowledge that the Maya could have made sidereal observations. It's not yet clear to me how we have all reached that acknowledgment; Michael's views have been most accessible to me, and those, in turn, have inspired John. I'd be interested to know what gives you confidence. Others in the discussion who do western or Vedic astrology would certainly be predisposed. That the data is underconstrained is an understatement, and the shortage of constraints is not only the result of still-unrefined methodology and competing interpretations, but due also to the total loss of the codical source material of the Classic which would have filled in so many of the blanks.

I appreciate the intuitive response you have to the apparent sidereal intervals between (1) dates 1 and 13 and (2) dates 7 and 12 in using the term 'provocative'. That's a good word, and I concur that, having been provoked, we now have the gnarly task of determining whether this is legitimate data. I regret that my repeated acknowledgment of

the gnarliness has been lost in the heat of argument, so let me make clear in neutral ground that I fully acknowledge the likelihood of false positives in any body of random intervals. But the likelihood drops concomitantly with the increase in complexity of the factors being sought. The factors of concern in your book—260, 364, 365, 399, 378, 584—etc. are far more likely (as Stan also notes) to turn up coincidentally than is 365.25636 or 365.24219. But if the data sample is large enough, of course even those could turn up; it's still not as unlikely as chimpanzees on computers coming up with sequential lines of Shakespeare.

My introduction to these questions was also via Floyd Lounsbury, whom I met in the late seventies, and whose work on contrived numbers was a part of my early calendric education. As I suppose we all do, I zealously took it off the deep end soon after with a paper on the 819-Day Count full of some off-the-wall ideas. It remains a topic I am keenly interested in.

So now you raise the question of whether the idiosyncratic literary style or personal chutzpah of an individual king might defy the norms we have come to expect. You said:

"we want to address the historical idiosyncrasies that make any given text a unique expression by an individual with agency (could B'ahlam Ajaw have integrated sidereal years into an historical narrative even out of whim or esoteric interest?), but at the same time, we are looking at how anthropologically that individual's idiosyncrasies were shaped and tempered by the pressures of cultural, social, and religious organization (how would that expression fit into a representation that would be meaningful to B'ahlam Ajaw's colleagues, and what factors/knowledges would he have drawn upon to create it?)."

There is a temptation to look at Tortuguero 6 as idiosyncratic. I consider it to be a pinnacle of linguistic elegance and a fascinating tapestry of human and supernatural relations. It just happens to have garnered world attention, and I look forward to the time when the dust settles. As for whim or esoteric interest spurring the insertion of sidereal intervals—well, yes, I can suspend disbelief and spin a yarn, especially when the tactic is supported as valid. I joined this discussion only to critique a couple of items in John's paper, and to contribute a motivated interpretation of one of these events. Since then, I have not even responded further to John, which I hope to do before time's up.

If we do agree that the Maya made sidereal observations, might the problem of discrepancies between different sites be mitigated not only by—as Michael suggests—conversion of observational data into exact counts of whole days, but via recognition of a set of observational units at certain sites in the spirit of, say, NIST, which sets our clocks and standardizes our units of measurement? Then a formula— one which commensurates the solar sidereal year with the Long Count—could be easily exported to other sites; these in turn might employ it as-is or use it to calibrate local observations. One assumes there would have been some system of standardization—but then, does Michael's data on sidereal intervals support it? I'm not so sure of this. It would be easier to first tackle the tropical year.

The item I find most provocative (which does not prove its intentionality) is what looks for all the world to be a neat LC/sidereal year reconciliation in the form of 6.19.0.0 or 50040 days. This could be multiplied by 20, yielding 6.19.0.0.0, and so on. A way to explore this as intentional would be—in contrast with testing 7000 or seven million possibilities—to see if any Distance Numbers in the corpus have this form or multiples of it. That these will turn up would be expected in a large enough sample; the task would then be to find evidence of purposefulness, and to somehow create consensus on what that evidence might look like.

It really does come down to, as you said early on, “enough”.
As I said early on, I feel we are just starting to ask the right questions.

From Barb:
John,

I just want to take a few minutes to thank you for setting up this dialogue. It's an interesting model and I hope that MEC will do it again. I do agree with Michael that it would strengthen your paper to leave out the Jupiter data and concentrate on the solar/crossroads alignments, and to be as conservative as you can in your interpretations. I feel that even if within the prospect that the upcoming 13.0.0.0.0 date might not have been intentional, there is much to be said for the prospect that the Maya of Tortuguero had sufficient awareness of precession to anticipate that a solar/Dark Rift alignment coincided with the winter solstice on that date. The intervals are intriguing, and you're in an ideal position to stir up lots of interest on this planet.

You have been thoughtful and articulate in response to the many posts here, and I trust you will carry forth with eloquence and objectivity in your synthesis.
Barb

Michael Grofe
Carlos,

I'd like to take some more time to look into your proposals, which you had sent to me earlier, but I'm sorry that I haven't had time to do this here. When I have some more time, I'd be happy to go over some of these things with you off list.

Stan,
Thanks for your reply. I do understand your important challenges to archaeoastronomy, and I appreciate your efforts to keep the science as honest as possible. Your point about QRG Zoomorph P and historical intervals is well taken, though I maintain that the case becomes stronger when we find repeating patterns. For instance, CPN Stela J also counts back hundreds of years to a much earlier date that corresponds to a heliacal rise of Venus on 1 Ajaw at this same sidereal position of YKM's accession mentioned on Altar Q and

Zoomorph P, and Stela J explicitly mentions YKM. Stela J is astronomically interesting for multiple reasons, and I'd be happy to discuss this further in the future.

We agree that deep time DNs are our most likely candidates for contrived astronomical cycles. In testing the entirety of these intervals, I do interrogate the data looking specifically for tropical year and sidereal year intervals, and that was the case with the future deep time date on TRT6. I have cause to do this after first finding consistent patterns in them, and I think this is a reasonable line of questioning. At the same time, I think it is very important to include the "misses" in these tests that differ from our expectations or predictions.

As for looking specifically at explicitly stated DNs, I think it is an assumption (a valid one, perhaps) that we should only test these, and not the intervals between dates that do not have direct DNs between them. Many CR dates are stated with implied DNs, while DNs themselves may serve to connect a narrative, using an anchoring date, as you say. I see no reason why the intervals not directly connected through stated DNs should not be tested, since it is quite possible that we are only seeing the end result of calculations, and not the calculations themselves. For example, there is no DN given between the accession date of CPN Ruler 12 and the TY anniversary of this date. The two dates are also not found on the same monument, but they are found in association on Ruler 12's monuments, which include solar and sidereal astronomy. Likewise, we don't find explicitly stated DNs between the multiple metonic intervals in these monuments, nor in the metonic cycle between Stela C and Stela H/A. However, these monuments are found in close association.

Please do consider that the pre-era date on CPN Stela C does indeed contain a TY calculation to the solar nadir, and that Stela C already involves a TY calculation of the metonic cycle with Stela H/A. I would also be happy to discuss these monuments in more detail.

As for your critique of the 13 bak'tun cycle, I'm not sure I follow this entirely, and whether you are referring to the current cycle or the previous one. Clearly, from CPN Stela 23 onward, the previous era is said to have completed 13 bak'tuns on the Era Base 4 Ajaw 8 Kumk'u, yes? Indeed, pre-Era LC dates in Palenque and elsewhere (La Corona) indicate that the bak'tun prior to the Era Base count was set at 12, and before that at 11. Thompson makes a good case for the positions of the larger cycles in his calculations of the deep time intervals from QRG Stela F, etc. Relevant to the discussion of testing only stated DNs, these early deep time CR dates from QRG also do not contain any explicitly stated DNs, so we can't be exactly sure how to anchor them to the Long Count without some important assumptions about the positions of larger cycles, which we should also consider.

Please do go over the data I sent regarding the February Nadir as a consistent anchor in astronomical deep time and historical dates. Also, take a look at the NAR Altar 1 data. There are actually a limited number of deep time counts that can be tested, and among these, I have found consistent patterns that support the intentionality of TY and SY

calculations which likewise corroborate the evidence I found in the Serpent Series.

Just briefly, in Tikal Stela 10, the large DN utilizes the exact same sidereal year value that I found in the Serpent Series, along with repeated placement of the sun in the same sidereal position repeated in the Serpent Series base date, and in Serpent Number 3a. These kinds of consistent values are worth considering.

All the best,
Michael

Slightly after the discussion close at midnight:

From Michael Grofe:
Gerardo,

If I might squeeze this in here. Thanks for all of your feedback and analysis here. I would like to send you my feedback about your correlation article when I have a chance.

If you haven't already checked it out, I would encourage you to read "Maya Daykeeping: Three calendars from highland Guatemala" by John Weeks, Frauke Sachse and Christian Prager:
http://www.scribd.com/doc/34491243/John-M-Weeks-Frauke-Sachse-Christian-M-Prager-MAYA-DAYKEEPING-Three-Calendars-from-Highland-Guatemala-2009

There is a very important analysis in here regarding evidence for the continuity of the Calendar Round in the highlands, which you did not include in your analysis. I propose to put this on the table, and I would be very interested to hear what you think about it when you have a chance to go over it. It is worth buying online as a PDF here on Scribd.

I look forward to continuing our very productive dialogue, and I greatly respect the work that you are doing in this field.

All the best,
Michael

From Ce Akatl (Gerardo)
Michael,
well, I thought I had posted my last, but I'll make this quick.

I actually addressed this data in a direct response to John when he first contacted me about my article. As I noted to him, this data is consistent with the ethnographic data collected by Thompson from his colleagues. As such, relative to the calendar correlation problem, it is like looking at different events within the Venus Table... once you have the anchor, the rest comes along for the ride and cannot be considered independent data.

So the first point is that this data doesn't add anything new to the problem as far as Lounsbury "solved" it. (I actually did come across this book in my research, but it didn't address it because it doesn't add anything to the argument.)

The second point is that the authors have already accepted the basic assumption underlying Lounsbury's work: continuity. I will not argue with anyone that IF you accept continuity on the level of assumption, then the GMT is better than any other given the data we have available. But continuity is a HUGE assumption, and I personally don't think it's warranted. I do go over this in the article, and I'm more than happy to continue the conversation directly via e-mail.

Best,
Gerardo

From the Maya Exploration Center (December 18):
Thanks to everyone who posted to our discussion of John Major Jenkins' paper on the astronomy of Tortuguero Monument 6. The discussion is officially closed here on this board, though it seems likely it will continue by email and in other venues.

For the sake of encapsulating the discussion as it currently stands, all other posts (save John's opportunity to provide a closing response to the feedback he's received) will be deleted. And for the sake of clarity, let us state that one post from Ms. Wolak and the post-banning posts of Mr. Mardyks were the only ones deleted from the discussion board. All other comments appear in their full and unedited form. [Note: In preparing the PDF, some typo editing and spelling corrections have occurred.]

How to keep things on target and respectful without deleting any posts will be one subjects discussed within MEC over the holiday break. Since these discussion boards do not have the ability to freeze their content for future reviewing, we will eventually copy it into a transcript form to be posted on our website. It will remain here for viewing until at least the end of December.

Any suggestions on how we can improve the management of this board and/or suggestions for new topics to discuss can be posted on our Facebook message board. Among the topics already being considered for discussion are; Carlos Barrera's work on the Dresden Codex Venus Pages, Dolores Clark Urquidi's work on the Popol Vuh, the correlation debate, evidence of Jupiter in the Maya inscriptions, and of course, 2012.

Concluding this discussion with over 170 posts, some of great length, we at MEC want to extend our deepest appreciation to those who posted and especially to John who tirelessly responded to each and every question directed to him. We consider this first experiment in using Facebook to promote publicly open dialog a success. Look for more of this from

MEC in 2011.

On behalf of everyone at MEC - Happy Holidays!

Ed Barnhart

* * * *

Closing Remarks from John Major Jenkins:

Hello everyone,

I wanted to breathe for a day, and then reread the entire exchange. This proved rather time consuming, since we collectively produced a volume of some 92,000 words. Consequently, I decided to let the exchange stand for itself and allow this to be a summary and conclusion. I want to provide an online page as a resource for ongoing information, because this exchange should impact upcoming events in 2011, including my Institute of Maya Studies presentation in Miami on January 19, and the 2012 section of the Maya Meetings in Austin in March, led by Mark Van Stone with presentations by Anthony Aveni and John Hoopes. It was a little surprising that none directly connected with that upcoming "2012" event contributed to this discussion. That online resource page will begin by providing a link to the email exchange between myself and Ed, from July 2010. It is here: http://www.Alignment2012.com/SAA-MEC-2010.html.

Much to my surprise, I just learned (on 12-19-2010) that the conference Barb and Michael are speaking at in Peru next month is the prestigious Oxford Archaeoastronomy Symposium, and their session is themed on 2012 with the title "The 2012 phenomenon: Maya calendar, astronomy, and apocalypticism in the worlds of scholarship and global popular culture." (See program at http://www1.archaeoastronomy.org/index.php?option=com_content&view=article&id=69&Itemid=60&lang=en .) I hope they have a great time. Chaired by John B Carlson and Mark Van Stone, there will also be a presentation by John Hoopes and Carl Callaway. All of these scholars were invited to contribute to our MEC discussion, and it will be very interesting to assess their presentations afterward. Some of the presentation titles are provocative. Strangely, John B. Carlson's "eternal return" of the "Lord of Maya Creations" to preside over the "2012 transformation" recalls the core ideological construct I identified long ago at Izapa (sacrifice, transformation, renewal). I'm not quite sure what to make of that (maybe it's a Christmas miracle!).

I want to thank everyone who participated in this discussion. I know it was demanding and challenging in terms of time commitment and focus, especially at this time of the year. It was Ed Barnhart who, back in July after our email exchange, suggested that my SAA paper be posted on the Maya Exploration Center website. It took me several months before I got around to converting it into a PDF with the images, after which the proposal was approved by the MEC board. In that interim I rewrote and expanded the original paper, for a peer-review anthology that I was invited to contribute to by Dr. Robert

Benfer. I'd like to thank Dr Benfer for the invitation to present at SAA, which arrived in my email box as a most welcome surprise. I must mention that Dr Benfer's archaeological findings and deductions about the so-called "Fox" dark-cloud constellation of an ancient Andean culture, in relation to the iconography and astronomical solstice orientation he found in the Temple of the Fox in the Chillon Valley in Peru (see http://www.physorg.com/print65114355.html), is the same methodology that I employed in my Izapa research, depicted in my SAA paper as Diagram 4. Bottom line: the ballcourt at Izapa is oriented to the December solstice sunrise horizon, and the ballcourt monuments portray solar rebirth in relation to iconography suggestive of the Crossroads (throne/center) and the dark rift (goal ring / maw / birth canal). All of that is on the throne monuments on the west end of the court (see http://www.alignment2012.com/ballcourt-schematic-and-description.html). I insisted on including my early work on 2012 as background to my paper because the ideological and astronomical interpretations I offered some fifteen years ago find support in the ideological and astronomical content of Tortuguero Monument 6.

My expanded paper will certainly benefit from the many comments and critiques that were offered here. I wasn't expecting a Facebook discussion and I knew that it would entail extending my neck below the guillotine of Extreme Skepticism, but I immediately welcomed Ed's proposal because I feel that new perspectives usually cannot arrive at the door of status quo protectionism via quaint introductions and Victorian niceties, but require a more Trojan Horse approach, if not simply kicking down the door. I apologize if this "ungentlemanly way" (as was said of Spinden) was bothersome to some, but in any case the end result is a revealing and productive discussion in which the primary threads of dissent and concurrence have been vetted. We should do this more, preferably with beer and barbeque involved, or perhaps wine and caviar.

Eventually, Maya Studies may have to acknowledge my work as pioneering and unprecedented, and disregard the inaccurate conflations of me with other areas of the 2012 mess. In any case this will all move beyond any vindication of my work. Even if that should be forthcoming, I'm sure it will be mitigated by caveats, continuing misconceptions despite my best efforts, and I'll be relegated to unsubstantiated rumor and innuendo placed in footnotes. The larger concern of progress in Maya Studies is the necessary, and long overdue, integration of astronomy and epigraphy. Maya studies has suffered from a pendulum swing between these two areas with concomitant related polarizing between history and mythology, etic versus emic approaches, and so on. We are, I believe, awaiting the final phase in Hegel's thesis-antithesis-synthesis process. Let's not feel we need to take sides in this perennial dualist debate, but let's integrate the equally valid concerns of both sides. Perhaps this discussion served to catalyze a step forward in this much needed integration, moving things away from one-sided views and toward a truer reflection of how the Maya themselves actually viewed their world.

As we acknowledge and accept the full complexity of Maya thought, a more complex approach is necessary, one that does not take safe harbor in cookie-cutting new proposals through narrow filters but, instead, acknowledges the full spectrum of data and evidence that can and should factor into any honest theory, model, or reconstruction. A scholar

who I think embodies this requirement of Maya Studies in the new millennium is Michael Grofe. I really appreciate that he dove into this unusual (and unexpected) opportunity and shared so many in-depth things about his ongoing research, much of which is as yet unpublished. Again, I suggest we read and reread his comments. There are few who can juggle all the calendrical, mythological, astronomical, and epigraphic considerations with such facility, understanding, and insight. He tactfully listens to the critical voices and succeeds in honoring and responding to their objections. The sheer acumen of his arguments, his grasp of the perspectives of naked-eye astronomers, his epigraphic skill, and his application of analytical rigor, should alter the convictions of the most stalwart critic.

I am surprised that this little paper I wrote garnered so much attention, although I did believe its contents deserved to be put on the table. It's easy to see how the issues it touched upon jangled some nerves. Barb MacLeod's and Sven Gronemeyer's exhaustive treatment of the epigraphic and mythological content of TRT Mon 6 should be the focus of another discussion. I remember meeting Barb at Linda's house after the Maya Meetings in 1995, and am grateful that we have corresponded and are exchanging ideas here.

A general critique of my paper is that it could be improved by eliminating what appear to be extraneous arguments, beyond the primary framework of the four sun-Crossroads alignments in 510, 612, 647, and 2012 AD. This would indeed reduce the amount of confusing information and subsequent criticisms and make the paper into a simple, tight presentation. It was perhaps not a good idea to retain many of these references in the brief SAA. I considered this approach but decided to retain the larger set of interlocking astronomical, calendrical, and astronumerological circumstances, including the pattern of structural symmetry I discovered, in Diagram 10, because the integration of data from different (but related) areas allows us to get a handle on what the Maya scribes were up to. My SAA paper serves as an outline of the various areas that should be pursued in a larger treatment of Monument 6 as well as other Tortuguero monuments.

I want to briefly address the critiques offered by the two main detractors. Gerardo Aldana offered an experiment intended to show that astronomical patterns and parallels can be found in any random selection of dates. However, his experiment and its results were suspiciously skewed and can be disqualified because of the incredibly unlikely non-randomness of the astronomy he identified. It may be that his was a sort of tongue-in-cheek exercise [or "satire," as he said] but it still contained within it the critique that I was projecting my own wishes into my reading of the astronomy associated with the dates. His is a common critique, and my identification of the flaw in his argument was clear. Rarely do scholars agree with me on anything, so thank you to Michael for agreeing on my pointing out of the flaw in Gerardo's experiment. Bottom line: his experimental method provided skewed results, and is therefore unreliable.

I must also offer the following disclaimer. Aldana believes that the "GMT family" is not only questionable due to his analysis of the prevailing conclusions and assumptions, but that it is, as he said in an email to me, wrong. Therefore, the complex net of astronomical

patterns and sidereal positions identified in my SAA piece, which only work in the GMT, present a threat. Since he expressed a conviction about the wrongness of the GMT, then admitting to even a shadow of possibility that the Tortuguero astronomy is not completely coincidental would require a revision of his conviction. The stakes are thus quite high, and he may have a vested interested in casting great doubt on my methods or conclusions.

Unyielding criticism came from Stanley Guenter. In the debate process several very interesting things were revealed about Stanley's methodology and stance toward my paper. Stan's very narrow filter of allowing only explicit and tangible evidence results in his oft-repeated mantra "there is no evidence." But with that same filter you can mitigate a large proportion of the amazing work done by many Mayanists and ethnographers reconstructing indigenous knowledge systems. He himself claims that these other Mayanists are "wrong, demonstrably so." Stan admits his bias against archaeoastronomy, and constantly rejected my deductions. Why? Because deductions are based on indirect evidence, or different types of evidence which he doesn't class as "real" evidence, and cannot be allowed through his filter. I then quoted Stan himself indulging in deductive reasoning in a passage from his Palenque essay, revealing a double standard in the application of his rule. Oddly, through cleverly caveat-wrapped linguistics he also rejected actual facts that were presented in my paper, such as the astronomy connected with December 21, 2012 (it's a solstice.) This underscores what should be considered a rather large problem in Stan's treatment of my paper.

Another problem with Stan's comments can be identified in his past treatment of my work, which may in fact fuel the circular persistence of his critiques. He, demonstrably so, comes into the discussion with a prejudicial bias against me as a "2012er," one of "those guys" who he believes engage in "pseudoscience." It is thus not surprising that he would have a vested interest in "debunking" my paper and would be reticent about accepting the possibility of my arguments for astronomy in Tortuguero Monument 6. Instead, he always defaults back to a null-set hypothesis and the narrow filter of explicit evidence, combined with digging through my writing archives for bits and pieces of what he thinks will be polemically compromising. This is not the practice of rational science, as anyone who has studied the psychology of debunkers knows, who are adamantly fixated on proving an opposite. Here's the necessary disclaimer or Catch-22, or conflict of interest, that fundamentally calls into question Stan's assessments:

Stan has produced and used in his classroom a Power Point presentation that David Freidel also has used, which he sent to me in May 2009. In it, almost every single point of reference to me and my work was factually incorrect. I immediately sent my comments and corrections back to Freidel and Stan, expecting a reply, but there was none. (It is here: http://www.update2012.com/response-to-freidelMay.html.) Just a few days ago I asked Stan if he had incorporated my factual corrections into his presentation, and he said he had made some changes. I invite him to send me his revised Power Point presentation so I can check it again for continuing errors. Bottom line: the many definitive declarations in Stan's critique should be regarded as highly suspect due to his demonstrable misrepresentation of my work in the past. In addition to that, many of his

critiques simply assert a need for explicit evidence, and don't engage the full content of information presented. I responded clearly to his critiques, which can be found in the discussion.

Overall, I do appreciate the time Stan and Gerardo took out of their busy schedules to register their critiques, objections, and advice. I also appreciate the time everyone else invested and their thoughtful participation in this MEC "public discussion" experiment. I hope everyone got something out of this challenging and lively exchange of ideas.

The larger issues at stake here, including the correlation question, the influence of inadequate and biased approaches to critical evaluation, and the true scope of ancient Maya astronomical knowledge, are ongoing. This link will try to track subsequent developments: http://www.Alignment2012.com/SAA-MEC-2010.html.

Thanks again to the Maya Exploration Center for making this happen!

Merry solstice and Happy New Year. Cheers,

John Major Jenkins
December 19, 2010
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IX. Postscript

The study of the life of Bahlam Ajaw and the larger context of all the surviving Tortuguero monuments is ongoing and should bear new fruit in the years to come. Astronomy will have to factor into the analysis. A few helpful resources:

Society for American Archaeology http://www.saa.org
Maya Exploration Center http://www.mayaexplorationcenter/
Michael Grofe on God L: "The Name of God L: B'olon Yokte' K'uh?"
Gronemeyer and MacLeod's essay on the Tortuguero Monument 6 inscription
Institute of Maya Studies http://www.instituteofmayastudies.org/
The Center for 2012 Studies http://thecenterfor2012studies.com
Izapa archaeoastronomy and iconography
Alignment2012.com http://alignment2012.com
The Maya Conservancy http://themayaconservancy.org

Ongoing follow-up: http://www.Alignment2012.com/SAA-MEC-2010.html

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