The Maya Calendar Correlation Debate Revisited, or, Here We Go Again
John Major Jenkins. October 25, 2010

A response to "End of the Earth Postponed?" by Stephanie Pappas (http://www.msnbc.msn.com/id/39746543/from/toolbar), and the press release by UC Santa Barbara on Gerardo Aldana’s critique of the correlation question (reproduced below at the end of this critique).

I am familiar with Gerardo Aldana’s work from his book The Apotheosis of Janaab Pakal. He applies a useful approach to identifying subtext intentions in the Maya inscriptions, similar to the approach I used to analyze the astronomical content of Tortuguero Monument 6, as I reported in my Society for American Archaeology presentation in April of 2010. I have now read Aldana's essay in the Oxbow book and for many years have understood the critiques of Lounsbury's correlation work. For now, some general comments.

I am thoroughly versed in the correlation debate and the work of Floyd Lounsbury, having dealt with it in my 1992 book called Tzolkin: Visionary Perspectives and Calendar Studies (BSRF, Garberville, CA). I also examined Lounsbury’s later arguments in an essay which was added to a revised edition of that book; the essay has been posted on my Alignment2012.com website since 1995 (at http://www.alignment2012.com/fap9.html). All of these earlier findings are summarized in my recent book The 2012 Story: The Myths, Fallacies, and Truth Behind the Most Intriguing Date in History (Tarcher / Penguin Books, 2009).
See: http://www.the2012story.com

On October 5, 2010, the University of California Santa Barbara released an announcement about Gerardo Aldana’s article, appearing in the new book Calendars and Years II: Astronomy and Time in the Ancient and Medieval World (Oxbow Books, 2010). By October 20 the item had been duplicated and reported in a wide variety of locations under a variety of titles, many of which implied or stated that Aldana’s work cancelled or delayed an expected “2012 doomsday prophecy.” This is a typically skewed and inaccurate assessment that the 2012 media reporters are addicted to. Aldana’s article does not address whether or not a doomsday is slated for 2012; his work addresses the correlation of the Maya and Gregorian calendars which determines the placement of the end of a 13-Baktun period in the Maya Long Count system. The framing of these reports as Aldana providing a corrective to the doomsday hype is a false framing, since (as I’ve been saying for twenty years), there is no evidence that the Maya thought about 13-Baktun cycle endings as signaling apocalyptic events. In addition, science reporters for “Live Science,” MSNBC, and FOX News misleadingly summarized Aldana’s points, so it is best to refer to the UC Santa Barbara press release (at http://www.ia.ucsb.edu/pa/display.aspx?pkey=2317) for the best reporting on what Aldana’s work is about, in lieu of the article itself.

The press release reports on the work of Maya scholar Gerardo Aldana, which purports to show why “the GMT” correlation is incorrect, or at least not well supported. Throughout the piece, no meaningful distinction is ultimately made between the finalized GMT
correlation which Maya scholar J. Eric S. Thompson supported in 1950 and Floyd Lounsbury’s attempt, in 1983, to revive an earlier version of this which placed the correlation two days later. Thus, we have a smearing between the two correlations as “the GMT”, which is misleading because while it is true that Lounsbury’s work is flawed (as I showed in my 1992 book previously mentioned), the GMT supported by Thompson in 1950 (which results in the December 21, 2012 date) was rooted in an interdisciplinary argument which included historical, ethnographic, calendrical, Carbon-14, and astronomical considerations.

(I am highlighting the above paragraph in blue, because it comprises a thumbnail summary of one of the primary reasons why Aldana’s position is problematic. Reviewers and readers take note: all you need to do is cut and paste the above into your summary and avoid slicing and dicing my words. Other key points below will be highlighted in blue.)

Aldana states that “there are really so few scholars who know the astronomy, the epigraphy, and the archeology … Because there are so few people who are working on that, you get people who don’t see the full scope of the problem.” This is precisely the issue I discovered when I applied a multidisciplinary approach to studying the origins of the Long Count system within the pre-Classic Izapan civilization (in my 1998 book Maya Cosmogenesis 2012). It is good that Aldana is emphasizing this problem. Numerous examples of the absurdities that it leads to can be found in statements by scholars on the Aztlan email list which occurred during many email exchanges I have instigated since 1996. This also involves the problem of specialists tending to reject a proposal even though they aren’t willing or able to integrate evidence from other fields. Then you have a situation in which consensus trumps evidence. I wrote about this extensively, especially in regard to Maya studies, in my 2009 book The 2012 Story.

It becomes apparent in the rest of the press release that Aldana believes that the work of Floyd Lounsbury serves as a support for the earlier GMT correlation confirmed by Thompson, which makes the period ending fall on December 21, 2012. This is where I believe a serious problem occurs. The GMT was not later bolstered by Lounsbury — the December 21, 2012 GMT settled on by Thompson was challenged and revised by Lounsbury. His modification to it, based on the Venus Table in the Dresden, was flawed, as I reported in my 1992 book (Tzolkin), my conclusions being partially supported by the assessments of Maya archaeoastronomer John B. Carlson and Maya translator and ethnographer Dennis Tedlock (see Tedlock’s essay in The Sky in Mayan Literature, ed. Aveni, 1992).

The discrediting of Lounsbury’s correlation is very old news. The uncritical repetition of Lounsbury’s work in popular books by scholars such as Linda Schele and Michael Coe largely explains its continued presence, an unfortunate and irrational circumstance that I’ve railed against for years, as it obscures the fact that Lounsbury’s correlation proposal has been discredited. However, and most importantly, in dispensing with Lounsbury we do not annihilate the GMT which gives us December 21, 2012. This GMT stands upon a larger set of interdisciplinary criteria, one of which is the ethnographic evidence for the
placement of the surviving 260-day calendar today in highland Guatemala. This criterion of calendrical continuity was an important factor in the establishment of the 1950 correlation, making the 13-Baktun period fall on December 21, 2012. In my book *The 2012 Story* I described the entire process by which the Long Count calendar was rediscovered in the 19th century and the correlation was reconstructed in the 20th century, including a detailed examination of the motivations, assumptions, and breakthroughs of Förstemann, Goodman, Thompson, Knorosov, Proskouriakoff, Morley, and Lounsbury.

As I’ve stated, reported, written, documented, and argued dozens of times in many interviews, articles, academic discussion boards, emails to scholars, and books since 1991, any proposed correlation must acknowledge and accommodate the contemporary placement of the 260-day calendar such that it coordinates 4 Ajaw with the 13.0.0.0.0 date in the Long Count. Lounsbury’s correlation does not account for it, which is one reason why his work is flawed. The recent Wells-Fuls correlation does not account for it (I exchanged emails with Ful in the summer of 2010, and he wouldn’t acknowledge the relevance of the ethnographic evidence). The Kelley correlation does not accounted for it (I exchanged letters with Kelley in 1997). Neither does the Vollamaere correlation (see our Aztlan exchange in 1999) nor dozens of others which mathematicians have spun out from computer programs without regard for the larger context of interdisciplinary evidence necessary to make a rational judgment of the problem. Only the December 21, 2012 GMT correlation fulfills this important ethnographic criterion, as well as all the other criteria. (See my essay: [http://www.thecenterfor2012studies.com/2012center-note18.pdf](http://www.thecenterfor2012studies.com/2012center-note18.pdf)).

In reading the report on Aldana’s work one gets the feeling that no meaningful distinction is being made between the Thompson-verified GMT that gives us December 21, 2012 and the Lounsbury correlation that falls two days later. Lounsbury’s specific arguments for his 2-day adjustment are indeed flawed, but then --- in Aldana’s loose view --- this apparently leads to a fallacious rejection of Thompson based on a confusion of categories. Here is an analogy that may help us understand this confusion. Let us observe two men wearing blue shirts. This is like the two GMT correlations under consideration (one confirmed by Thompson and one revived and bolstered by Lounsbury). Next, one of the men commits murder. This is like one of the correlations (Lounsbury’s) being proven wrong. Is it correct then to say that both men are murderers because they both wear blue shirts? No, of course not. But this is precisely the implied argument, like saying that Thompson (the 12-21-2012 correlation) is wrong because Lounsbury’s* totally separate and fallacious* arguments (for the 12-23-2012 correlation) were proven wrong.

The Thompson GMT of 1950 fits all the criteria. Thus, we should instead accentuate how this correlation — the one that makes 13.0.0.0.0 fall on December 21, 2012 (4 Ajaw in the surviving 260-day count) — accommodates all of the criteria by which any proposed correlation should be judged. Aldana addresses the question of continuity of the 260-day count, and cleverly invokes the anomalous post-Conquest Mixe day-count — which indeed had slipped — as proof that the day-count was not universally preserved. This is, however, selective and ignores the specific context of the Mixe culture in the post-Conquest. The effects of the Conquest were devastating. The Yucatecan Maya also had
their day-count placement dislocated (by the effects of the Conquest), but it is in the remote traditional areas of Highland Guatemala where the tradition has survived. Aldana did not cite Barbara Tedlock on the issue, whose ethnographic work among the Quiché Maya should be respected as a sound judgment on the continuity question. Aldana also did not mention or cite the work of Munro Edmonson (The Book of the Year, University of Utah Press, 1988) which explains how the 365-day haab, zero counting, and Year Bearer systems were shifted by various Maya groups without affecting the underlying continuity of the 260-day count. Although Aldana does briefly address the fact of these periodic shifts, he questions why the Maya should shift these and not the sacred 260-day count. The answer to this is clear to ethnographers who have worked with modern daykeepers: the 260-day calendar is the sacred underlying substrate that is inviolable.

Here, I'd like to share some citations and information from a letter I wrote to Brian Wells in 1996, which was included in the revised 2000 edition of my 1992 book Tzolkin:

I feel, as do Dennis Tedlock and Munro Edmonson, that ethnographic data contributes a valuable factor in determining the correct correlation. Tedlock writes:

“There are 57 highland Guatemala communities, speaking four different Mayan languages belonging to two separate groups (Quichean and Mamean) that keep the tzolkin today (Miles, 1952; B. Tedlock, 1982). Their calendars, which are in synchrony with one another, point unanimously to the same figure, 584283. If the higher figure [the 584285] were to be correct, there would have to be a time in the past when some of the Maya, rather than making occasional adjustments to astronomical tables after the manner actually documented in the Dresden Codex, instead found it useful to move the foundation upon which all the tables were built, which is to say the tzolkin. None of the partisans of the higher correlation figure has even raised this awkward problem, to say nothing of offering a solution” (page 269, D. Tedlock, in “Myth, Math, and Correlation in Mayan Books” in The Sky in Mayan Literature, Oxford, 1992.)

Tedlock was referring primarily to the 2-day shift suggested by Lounsbury, but his statement applies equally well to other proposed correlations that are not different from 584283 by a multiple of 260.

David Kelley invokes Caso’s proposed reform “in the Mixtec and Zapotec areas”— sometime around 934 A.D. If this were true, then Central Mexican Conquest period evidence cited by Edmonson (1988)—which I’ll get to in a minute—must be explained. Most importantly, Kelley writes (page 199) that this 934 A.D. shift is supported by the Maya evidence, writing “at this date a repeating 104-year table, which had been allowed to get far out of step with reality, was ‘reset’” (199). The problem here is that this “shift is not in the tzolkin-count itself, but in the predictive framework of Venus risings. The Venus table of expected rising dates—an abstract framework laid over the unmoving tzolkin foundation—was frequently shifted to account for discrepancies between the table and actual Venus risings. I explore this misconception, and Lounsbury’s 1983 paper on the 934 AD date, in my book Tzolkin: Visionary Perspectives and Calendar Studies (Borderlands,
The point is that Kelley does not address the necessary shift implied in his support of a non-584283 (or 260-unit multiple) correlation.

The ethno-historical evidence for the 584283 among the Aztec at the time of the Conquest, is found in Edmonson (1988: 62-63):

“1521, 13th of August (Julian) = 1 Chicchan 3 Uo (T):

And when the shields were laid down,
When we fell,
It was the year count
3 House (Aztec)
And in the day count
It was 1 Serpent (Sahagun 1975: 12:122)”

And:

“Cuauhtemoc and his captains
were taken on the thirteenth
of August at the hour of
vespers on the day of the lord
San Hipolito in the year 1521… (Díaz 1904: 2:129)”

Here, Edmonson combines the historical documents of Diaz and Sahagun [and Cortés] to come up with the correlation figure 1 Serpent = August 13th, 1521 (Julian). This supports the 584283 correlation for Central Mexico. In the Yucatan, there is the 11.16.0.0.0 de Landa figure, corrected 1 day for his neglecting to count a leap day in his memoirs, which also supports the 584283. In the Highlands of Guatemala, modern daykeepers still follow the 584283. Projecting back to the period of the Conquest, the Conquest-era Highland Maya were also following the 584283, as verified by other historical dates cited by Edmonson. Basically, then, we do have ethno-historical/ethnographical evidence that the three major regions of Mesoamerica were all following the 584283 correlation at the time of the Conquest. —end (Jenkins 1992/2000; p.c. 1996).

The 260-day count thus does embody a high premium on inviolability, as the congruence of the widely separated Aztec and Maya day-counts at the time of the Conquest demonstrates. Also, Edmonson states that his work definitively supports the 584283 correlation (which gives us December 21, 2012). It seems a serious oversight that Edmonson and Barbara Tedlock were not discussed by Aldana. As with many scholars engaged in more abstract and theoretical treatments of Maya cosmology, the ethnographic data was not treated as seriously as it deserves, and thus the entire continuity question was passed over superficially. Yet this is the area that provides the key litmus test for any proposed correlation, which Thompson understood, but Aldana characterizes Thompson’s respect for the ethnographic data as a “falling back” — sort of like grasping at straws — when the historical Yucatecan de Landa documents (and the
Books of Chilam Balam) proved problematic. I believe this interpretation of Thompson’s motivations is unwarranted and reveals an interpretive bias skewed toward minimizing the evidence for, and importance of, continuity. Furthermore, the alleged shifting of the underlying tzolkin foundation is often confused with the demonstrable shifts applied to predictive frameworks.

Aldana does cite the congruence of the Conquest-era Aztec and Maya day-counts, but he marginalizes this fact as powerful evidence for pan-Mesoamerican cultures placing a high premium on preserving the continuity of the 260-day count. As with other critics of continuity, no mechanism is offered that can explain how day-count shifts in the tzolkin might have been coordinated and accomplished prior to the Conquest such that, by the time of the Conquest, three widely separated regions of Mesoamerica shared the same 260-day calendar placement. A reasonable explanation for this congruence is that the three regions continued to partake of a more-or-less universal tradition (irregardless of the noted post-Conquest distortions) that had spread throughout Mesoamerica in ancient times. For the same placement of the 260-day count to spread widely and survive through the millennia up to the Conquest suggests --- no, proves --- that inviolability was held in high regard.

Aldana’s assessments are weighted toward conceptual grey areas asserted by other scholars such as Cline (largely arising from incomplete understanding) and the citation of academic disputation-meisters (polemics) who don’t fully understand the interdisciplinary integration of evidence that is necessary for an accurate treatment of the correlation question. These are the very scholars identified by Aldana as those who “don’t see the full scope of the problem.” So, who does see the full scope of the problem? Well, ironically, I could respond to and correct these misleading assessments of the correlation question by taking a page of quotes and citations directly from my recent book The 2012 Story — or material from my 1998 book Maya Cosmogenesis 2012, or even go way back to my 1992 book Tzolkin. It would be interesting to see if such a fact-based corrective would also be posted on multiple “science” websites in the same way that coverage of Aldana’s paper has enjoyed a widespread distribution.

Nevertheless, Aldana’s hard questioning is worthwhile and we should be open to special instances in which the 260-day count was dislocated as indigenous traditions were strangled by the Conquest, or were perhaps shifted for rhetorical, calculational, or experimental purposes (although no evidence is currently known to argue for such shifts). Something along these lines may have occurred, according to Maya scholar Michael Grofe, in a localized way at Copan (but the range of the solar zenith-passage does not resolve a 2-day discrepancy).

In conclusion, it is unfortunate that various “science reporters” are committing many misleading guffaws in their reporting of Aldana’s work. For example, Live Science Senior Writer Stephanie Pappas wrote, “The doomsday worries are based on the fact that the Mayan calendar ends in 2012” (at: http://www.livescience.com/culture/mayan-apocalypse-miscalculated-calendar-101018.html). The FACT? If the 2012 correlation is under question and possibly incorrect, which is the entire premise of her piece, how can
the 2012 correlation be referred to as a FACT? It appears that so little critical examination of the piece was expected, and the simple dramatic punch of the headline would suffice, that ironic and absurd insults to the intelligence of any person exercising critical thinking would simply get a pass. This, unfortunately, is diagnostic of the irrationalism that pollutes the 2012 discussion in the media.

Now, if we can get beyond these distractions, we might be interested in what the ancient Maya actually believed about the 13th Baktun period ending, which does indeed occur — if you are a rationalist interested in accurately assessing all the evidence — on December 21, 2012. This information is already on the table, and is being supported by new astronomical analyses of Tortuguero Monument 6 engaged by more than one researcher. The first published occurrence of these new findings is found in Chapter 7 of my book *The 2012 Story*, later elaborated in my paper presented at *The Society for American Archaeology* in St Louis, April 2010, and summarized in the anthology called *2012: Decoding the Counterculture Apocalypse* (ed., Joseph Gelfer, Equinox, Ltd, December 2011). The astronomical patterns and parallels associated with the thirteen dates on Tortuguero Monument 6 provide confirmation for the December 21, 2012 correlation; this should be big news. However, it doesn’t bleed so it doesn’t lead in the salacious news media of our day. Aldana has not, after all, provided a definitive proof against the GMT family of correlations; but for a scholar to assert that the 2012 date is wrong makes the media vampires go “ka-ching!”

UC Santa Barbara press release reproduced below:
PRESS RELEASE

Research by UCSB Scholar Questions Accuracy of Maya Calendar Correlation, 2012 Prophecy, and Other Historical Dates

October 5, 2010

(Santa Barbara, Calif.) — For nearly half a century, Maya scholars have relied on a fixed numerical value called the GMT constant as a means of correlating the dates on the ancient Maya calendar with those on the Gregorian — or modern — calendar.

Now, however, research conducted by Gerardo Aldana, associate professor of Chicana and Chicano Studies at UC Santa Barbara, suggests that the GMT constant — which has never actually been proved conclusively — could be inaccurate by 50 to 100 years, or more. Aldana's findings challenge the accepted Gregorian dates of all Classic Mayan historical events, as well as the end-of-the-world-as-we-know-it 2012 prophecies. His research is included in "Calendars and Years II: Astronomy and Time in the Ancient and Medieval World" (Oxbow Books, 2010), the second in a series edited by John Steele, associate professor of Egyptology and Ancient West Asian Studies at Brown University.

Aldana's research, in general, focuses on reconstructing Mayan astronomical practices, which for the most part can be recovered from their applications. Most of the data found in the archeological record amount to ritual events timed by astronomical phenomena; architecture oriented to observable astronomical events; or numerology tying together science, history, and religion with hieroglyphic inscriptions carved in stone.

"One of the principal complications is that there are really so few scholars who know the astronomy, the epigraphy, and the archeology," said Aldana. "Because there are so few people who are working on that, you get people who don't see the full scope of the problem. And because they don't see the full scope, they buy things they otherwise wouldn't. It's a fun problem."

For this article, however, Aldana turned the lens away from just the archaeological record to include a critical attention to the methods used by modern scholars to access the astronomical events viewed by ancient astronomers.

The GMT constant, which is based in part on astronomical events, is named for early Mayanists Joseph Goodman, Juan Martinez-Hernandez, and J. Eric S. Thompson. Each contributed to its calculation. "Goodman worked at the turn of the 20th century, and Martinez shortly thereafter," said Aldana. "Neither of them found much of a following because at the time, the work of Sylvanus Morley and Herbert Spinden was considered the strongest."

According to Aldana, the early work of Goodman, Martinez, Morley, and Spinden put heavy emphasis on the dates recovered from colonial documents written in Mayan languages and recorded in the Latin alphabet. "Thompson did a much more thorough job of addressing as much data as possible," Aldana said.

Aldana's article centers, for the most part, on the work of Floyd Lounsbury, an American linguist, anthropologist, and Mayanist scholar and epigrapher. Lounsbury examined the problem of the GMT constant by focusing on the data in the Dresden Codex Venus Table, a combination calendar and...
"Astronomy had been considered in the past, but none had put the emphasis on the Venus Table as much as Lounsbury did," explained Aldana. "As I demonstrate in the article, he took the position that his work removed the last obstacle to fully accepting the GMT constant. Others took his work even further, suggesting that he had proven the GMT constant to be correct. Because of its convenience for specific types of research, et cetera, the acceptance of the GMT in scholarly circles today is very close to unanimous."

However, Aldana's review of Lounsbury's conclusions demonstrates that they are far from irrefutable. "This may not seem to be much, but what it does is destabilize the entire argument," he said. "If the Venus Table cannot be used to prove the GMT as Lounsbury suggests, its acceptance depends on the reliability of the corroborating data. The rest of the article historically unpacks each element of corroborating data to show that they are even less stable and/or persuasive than the Venus data. And the overall argument behind the GMT constant falls like a stack of cards."

Although he identifies the problems of the GMT constant, Aldana, who is not the first to question the calendar correlation, offers neither a solution nor a replacement. In line with the volume, his goal is simply to study the soundness of the arguments presented in support of — and in opposition to — the GMT constant and attempts others have made at identifying a solution. "A few scholars have stood up and said, 'No, the GMT is wrong,'" said Aldana. "But in my opinion, what they've done is try to provide alternatives without looking at why the GMT is wrong in the first place."

A sound demonstration of the incorrectness of the GMT is a necessary first step in deriving a sound replacement, he said.

"End of the Earth Postponed?"
At: http://www.msnbc.msn.com/id/39746543/from/toolbar
By Stephanie Pappas

It's a good news/bad news situation for believers in the 2012 Mayan apocalypse. The good news is that the Mayan "Long Count" calendar may not end on Dec. 21, 2012 (and, by extension, the world may not end along with it). The bad news for prophecy believers? If the calendar doesn't end in December 2012, no one knows when it actually will — or if it has already.

A new critique, published as a chapter in the new textbook "Calendars and Years II: Astronomy and Time in the Ancient and Medieval World" (Oxbow Books, 2010), argues that the accepted conversions of dates from Mayan to the modern calendar may be off by as much as 50 or 100 years.

That would throw the supposed and overhyped 2012 apocalypse off by decades and cast into doubt the dates of historical Mayan events. (The doomsday worries are based on the fact that the Mayan calendar ends in 2012, much as our year ends on Dec. 31.)

The Mayan calendar was converted to today's Gregorian calendar using a calculation called the GMT constant, named for the last initials of three early Mayanist researchers. Much of the work emphasized dates recovered from colonial documents that were written in the Mayan language in the Latin alphabet, according to the chapter's author, Gerardo Aldana, University of California, Santa Barbara professor of Chicana and Chicano Studies.
Later, the GMT constant was bolstered by American linguist and anthropologist Floyd Lounsbury, who used data in the Dresden Codex Venus Table, a Mayan calendar and almanac that charts dates relative to the movements of Venus.

"He took the position that his work removed the last obstacle to fully accepting the GMT constant," Aldana said in a statement. "Others took his work even further, suggesting that he had proven the GMT constant to be correct."

But according to Aldana, Lounsbury's evidence is far from irrefutable.

"If the Venus Table cannot be used to prove the FMT as Lounsbury suggests, its acceptance depends on the reliability of the corroborating data," he said. That historical data, he said, is less reliable than the Table itself, causing the argument for the GMT constant to fall "like a stack of cards."

Aldana doesn't have any answers as to what the correct calendar conversion might be, preferring to focus on why the current interpretation may be wrong. Looks like end-of-the-world theorists may need to find another ancient calendar on which to pin their apocalyptic hopes.

Addendum:

I sent this to Aldana and he responded in a very prickly way, accusing me of not understanding what he was saying. I responded by emphasizing that he had not adequately dealt with the evidence for continuity, which in turn specifically supports the 584283 correlation. He responded again with an amplified bristling, and I could see that, as with many scholars, he was not going to address the FACTS I was placing before him. At this time, the MEC-FACEBOOK Discussion was getting underway, which was a very demanding process, and I set aside our exchange. I then invited some 30+ scholars, including Aldana, to participate in the discussion, which was sponsored by Dr. Ed Barnhart and the scholars at the Maya Exploration Center. He then responded directly to me and presumptuously accused me of cutting off our exchange because I had made so much money in my exploitation of 2012 and the Maya that I was jaded with engaging debates. (He also asserted that the GMT family was “wrong,” revealing of his emotional convictions which would explain his attempts to mitigate me in the ensuing debate.) His accusations were extremely odd and disturbing, because I was in the process of engaging a huge debate with multiple critics over a 3-week period. And, unbeknownst to him, I've averaged much less than poverty level annual income in my 20-year career as a writer and conference speaker. The MEC-FACEBOOK discussion resulted in a 206-page transcription which was then posted on the Maya Exploration Center website and The Center for 2012 Studies website. Aldana’s clever attempt to mitigate my arguments about Tortuguero astronomy were easily exposed, as can be read in the above document (see pages 204-205).

– JMJ, 6-8-2012.