



IMS Explorer

Dr. Mary Glowacki,
at Cotocotuyoc, Peru

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Fruit from the Chocolate Tree II: From the Haab' to Precession

by **Dr. Michael Grofe**
American River College

Last month, I began to explain how I became interested in studying the ancient Maya through my interest in cacao. This led to a project in which I sculpted the Haab' calendar glyphs for the purposes of casting them into chocolate. In doing so, I became interested in their possible astronomical meanings, which in turn, led to my current research in Maya astronomy.

I noticed that some of the Haab' glyphs appear to correspond with known astronomical glyphs, such as the crossed bands (T552), which is present in the sequential winals known as Wo and Sip, as well as a recognizable element in iconographic representations of celestial sky-bands. The original names for these winals appear to have been Ik' K'at and Chak K'at, both attested in ethnographic records from Chol speakers.



T552

The variable element that appears with the crossed bands glyph in the names of these winals corresponds to the colors **IK'**, "black", and **CHAK**, "red". These colors are known to correspond to cardinal directions among the Maya, with black representing "west" and red representing "east", while several scholars have interpreted the crossed bands as a representation of one of the two sidereal positions of the crossing of the ecliptic with the Milky Way (see Milbrath 1999).

Working with the assumption that the original meanings



IK'-K'AT

CHAK-K'AT

of the Haab' months may have corresponded with seasonal positions, I first reasoned that the winals Ik' K'at and Chak K'at could represent the appearance of one of the celestial crossed bands, first in the west at sunset, then appearing in the east at sunrise in the following winal. Many years later, I now believe that these two names originally referenced the visible sidereal position of the full moon (against the background of stars), first to the west (left) of the Milky Way/ecliptic in Sagittarius, and then to the east (right) of this same sidereal position in the next winal.

Five of the Haab' months show **-w(a)** suffixes that (in Pop, Sek, and Mol) can include or be substituted by a skull, elsewhere read as **UH** (T1049). I believe these both indicate *uh*, meaning 'moon'. In addition, a full half of the Haab' winal names include a color glyph that may indicate a direction, such as Yaxk'in, with **YAX** as green/center and **K'IN** as sun, suggesting a solar zenith, when the sun is in the exact center of the sky at noon. Within many of the Haab' winal names, I have since found multiple correspondences that support my original working hypothesis that the Haab' winals originally represented a combination of seasonally specific lunar and solar sidereal positions, and I hope to finally publish the results of this study in the near future.

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IMS Presentation June 17:



Owl images, pieces of a Wari ceramic vessel from Cotocotuyoc.

"Piles of Stone and Places of the Dead – Uncovering a Wari Mortuary Complex in Cuzco, Peru"

with **Dr. Mary Glowacki**



Jim Reed,
Editor

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Research at the Institute of Maya Studies: Part III: Ongoing Project Update and Two New Projects!

by Joaquín J. Rodríguez III, PE, SECB, Director of Research

This is the follow-up of ongoing research at the IMS on the status of the **Maya Lintel Beams Investigation Project** (V.36-Is. 2 – Lintel Project for short). This study is now complete and has been recently updated with the latest discoveries at Palenque and corrected with new data from D'zibilchaltún. It has now been published and is available for purchase. (\$15; see ad below). A verbal report was presented at the February 2009 IMS Explorer meeting in Miami. In this presentation, we were able to show the interesting variations in technology and temporal span that have been found across geographical areas.

In our June 2007 IMS newsletter (Vol 36-Issue 6), we started a new project to investigate **Maya Lime Mortar Mix**. This project has actively begun with analysis of the first samples of mortar and plaster received.

In the meantime, two new projects have been initiated:

D'zibilchaltún Forensic Analysis: At Dr. Ed Kurjack's request, a complete analysis of primarily the Temple of the Seven Dolls is being conducted (past, present and future). This involves material testing, stress analysis and stability computations. Measurements and samples were obtained by Architect Rick Slazyk of Arcwerks Design,



Temple of the Seven Dolls, D'zibilchaltún.

yours truly, Dr. Kurjack and Dr. Ruben Maldonado. Drs. Kurjack and Maldonado have been involved in the investigation and restoration of D'zibilchaltún for a long time. Calculations will follow shortly.

Stability of Vaults: Similar to the Lintel Project, and utilizing some of the same raw data, the purpose of this project is to calculate and compare the mass stability and internal stresses of Maya vaults. Some of the a priori objectives are to learn about the actual stability of the so called "false arch" vs. real arching behavior. We will also take a look at the use – or need – of the so-called vault beams, that some experts believe were used to temporarily brace the vaults. (See Nov. Vol 37-Issue 11: Maya Vault "Poles.") Calculations are well advanced and we should have results in a few months.

You can follow progress reports at:
www.instituteofmayastudies.org

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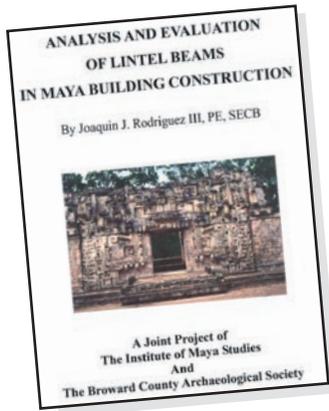
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Next month, read a new article by Joaquín entitled:

"Palenque Masonry Vaults"

Available now!

Announcing a new publication of the **Institute of Maya Studies**

Analysis and Evaluation of Lintel Beams in Maya Building Construction

by Joaquín J. Rodríguez III, PE, SECB

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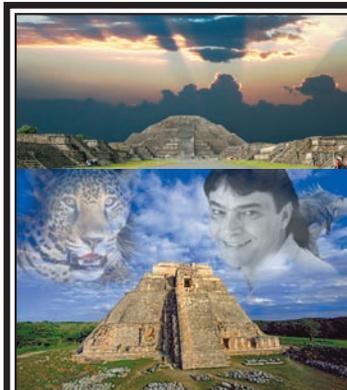


On the Cover:

Featured *IMS Explorer* image of the month: Dr. Mary Glowacki holding a Wari ceramic vessel

she discovered at Cotocotuyoc. See our *IMS June 17 program*

announcement on page 7.



2009 Maintenance Activities at Edzná, Campeche

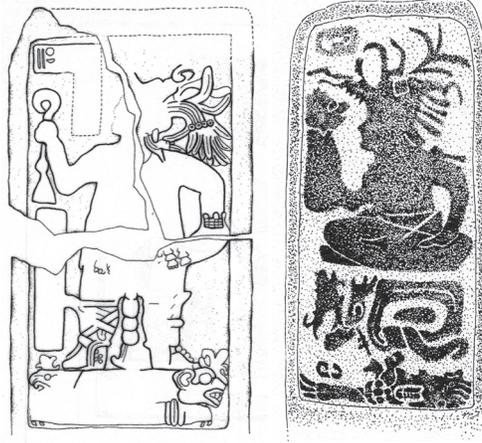
by Antonio Benavides C., INAH, Campeche

The months of March, April and May, 2009, witnessed different maintenance labors at Edzná, the most visited archaeological site in the Mexican state of Campeche. Funded by Mexico's National Institute of Anthropology & History (INAH), headed by Alfonso de María y Campos, activities at the field took place under the coordination and supervision of Antonio Benavides C.

Several structures of this ancient Maya city open to the public needed specific interventions to obtain a better conservation of their architecture. Some walls and stairways had loose stones or already collapsed ones; other sections had been affected by the roots of growing trees or by iguanas excavating their dens. Some buildings were explored and restored since the 1960s and 1970s and their mortar was already degraded by time and weather exposure (specially high solar incidence and humidity).

The first building intervened was the Platform of the Knives, an 80 meters long and 35 meters wide Puuc structure closing the principal plaza of the site on its northern side. It has vestiges of vaulted rooms on the east and west sides and only foundations for thatch and pole houses at the central section. It was restored by Roman Piña Chan during the 1970s and by Luis Millet and Heber Ojeda in the 1980s.

Just a few meters south of the previous building there is Causeway 1, crossing the plaza and linking the Big Acropolis with the southern side of the Nohochna or Big House. The stone and stucco paved road forms part of the



Two stelae from the South Acropolis.

Post-classic causeway system, created by the Maya to give internal cohesion during ceremonies and processions. Both sides of the causeway were fallen and partially covered by debris so the maintenance works removed rubble and restored the lateral blocks.

Similar operations took place at Sacbe 3, connecting the Small Acropolis with the South Temple. Causeway 1 is 117 meters long, 16 meters wide and has a 90 cm height average; Causeway 3 is 110 meters long, 15 meters wide and its average height is 50 cm.

West of the Knives' Platform we find the Ambassadors Patio, a 900 m² space surrounded by Terminal Classic buildings. Maintenance works there helped to discover a small ramp on the southern side of the patio. Rubble was removed and its block pieces were restored. This is the first ramp example at the site but they have been reported at several Puuc site like Xcalumk'in, Labná and Chacmultún, but also farther to the east: Yaxuná, Ek' Balam and Cobá. The Nohochná (Structure 424) closes Edzná's principal plaza on its western side. Inspection of this building showed several iguana burrows on the upper parts (walls and pilasters) that were



The Temple of Five Stories and the Solar Platform, dominate the Big Acropolis central plaza.

repaired. The extreme dimensions of this Petén building are an interesting thing: 135 meters long and 31 meters wide, with a very broad stairway at both long sides (112 meters wide with 15 steps). It can be compared with D'zibilchaltún's Structure 44 (that also faces a big plaza and has several rooms on the upper section). It has been proposed it served administrative purposes but also serving as a royal warehouse is a good possibility.

The Small Acropolis is a quadrangular Petén platform (70 meters square) sustaining four buildings with construction evidence of different periods, from Pre-classic to Post-classic. The first archaeological excavations took place there during the 1980s (under the supervision of Luis Millet) but consolidation was not completed. So, the 2009 project paid attention to the unfinished base sections of these two structures and repaired the damages caused by weather and growing vegetation.

During the Post-classic period, the Maya moved most of the Edzná stelae to stand in front of the western stairway of the Small Acropolis. This was documented by the first Mexican and American researchers that arrived at the place. To protect and better study those monuments, they were carried to the site's warehouse and to an exhibition room at the entrance of the archaeological zone. But two stelae still remained at the Small Acropolis and this was the occasion to remove them.

Stela 10 was found broken since its discovery. The base fragment was embedded on the third step and the other pieces were spread around. Now we have a better idea of its principal motive: a richly adorned figure

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Above: Nohochna, located on the western side of the main plaza and Causeway 1. Left: Final stages of consolidation of the Solar Platform.

Fruit from the Chocolate Tree II: From the Haab' to Precession

continued from page 1

The Maya certainly recognized the drifting of the Haab' from the sidereal and seasonal positions in the tropical year over long periods of time. Therefore, we naturally may ask whether they also would have noticed how seasonal star risings slowly drift forward in the tropical year by one day approximately every 71 years, due to precession.

Many have recently debated or dismissed this question, which has become a central element of John Major Jenkins' hypothesis about the approaching 13 B'ak'tun end date. But whether the Maya measured precession remains a valid and important question, independent of how we, or the Maya, may have interpreted the meaning of the approaching end date in 2012.

Where's the hard evidence?

One of the major problems with any effort to demonstrate that the Maya were aware of precession is that such arguments cannot rest exclusively on post hoc evidence. That is to say, simply because, according to modern astronomical calculations, we find certain sidereal positions of the sun coinciding with significant dates in the Long Count does not in itself support that these alignments were intentional.

Instead, following the scientific method, we need to accumulate hard evidence in the form of a number of associated dates that would conceivably place the sun in the same sidereal position over long periods of time. But, in doing so, we would need to show that Maya astronomers were consistently using their OWN constant value for the sidereal year, which returns the sun to the same position in the stars from the perspective of the earth. This would necessarily be slightly longer than their value for the tropical year.

To make matters more difficult, we must acknowledge that Maya astronomers may have arrived at different calculations of the sidereal year and the tropical year in different places and times, much as in the history of Western astronomy. Therefore, we need to approach the evidence on a site-by-site basis. Some may contend that it is not possible to demonstrate beyond the shadow of a doubt that the Maya calculated precession. However, I believe that it is important to strongly entertain the possibility, and to look for the supporting evidence. Indeed, hard mathematical evidence for precise precessional calculations among the



Maya has been lacking.

Let's try using distance numbers

Fortunately for us, Maya astronomers recorded many huge intervals of time in the form of distance numbers that reflect long-range calendrical and astronomical calculations. The reasoning for such precise, long-range calculations still requires adequate explanations, and precession may provide a highly productive answer. I decided to investigate a number of these calculations for my doctoral research at U.C. Davis, and this effort continues to bear fruit.

As I describe in my dissertation (Grofe 2007), it appears that the Serpent Series in the Dresden Codex contains an unusual introductory distance number of 5,482,135 days, covering more than 15,009 years. This interval is particularly interesting, in that it appears to utilize a precise, constant value for the sidereal year that is very close to the currently accepted astronomical value.

A 218-day shift in the picture

In other words, after one cycle of this enormous interval of time, the sun would theoretically be found in the very same sidereal position, while the position of the tropical year would change dramatically. Using the value for the Copán Tropical Year proposed by John Teeple (1931), elsewhere productive in the Serpent Series, this shift is 218 days, a highly significant interval. 218 days is the exact difference between the starting points for the upper and lower seasonal tables following the Serpent Series, as demonstrated by Victoria and Harvey Bricker* (1988).

Furthermore, 218 days is also the difference between the Era Base, hypothetically on August 13, and the vernal equinox. Several authors, such as Vincent Malmström (1973), have noted the important possible correspondence between August 13 as the Era Base, and the solar zenith at 14.8° N, the latitude of Izapa and Copán, at which the two solar zenith passages are exactly 260 days apart. Again looking at the Serpent Series, after this interval of 5,482,135 days, the sidereal position of the sun on the August 13 zenith passage becomes the position of the sun on the vernal equinox. Additionally, counting back 5,482,135 days before the Era Base on 4 Ajaw 8 Kumk'u, August 13, 3114 BCE, we find the

*Editor's Note: Victoria and Harvey Bricker will present a program entitled "Zodiacal Beasts of the Pre-Columbian Maya" at the IMS on July 15th.

Serpent Series Introductory
Distance Number.
Dresden Codex, pg. 69.
From Grofe (2007)

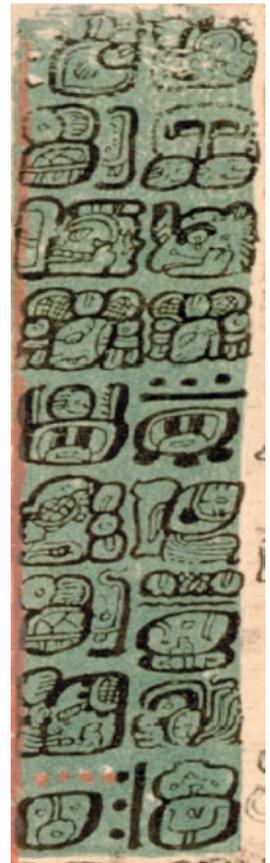
Haab' exactly 218 days prior to the New Year on 1 Pop, which occurs here on August 13, in the sidereal position that becomes the vernal equinox in 3114 BCE.

Hermann Beyer (1943) first found that the calculations in the Serpent Series utilize another base date 9 K'an 12 K'ayab (the Serpent Base), a little over double the interval of 15,009 years prior to the Long Count Era Base on 4 Ajaw

8 Kumk'u in 3114 BCE. The sidereal year calculation found within the introductory distance number is likewise corroborated in several other intervals found in the Serpent Series, including the interval between the Serpent Base date 9 K'an 12 K'ayab, and the terminal date for the Serpent Number 3a on 10.4.6.15.4, 3 Ix 7 Pax, a Post-classic date which corresponds to a lunar eclipse. Throughout the Serpent Numbers, I found that the nearest dates falling on 3 Ix also place the sun at a lunar node, an essential component of tracking the eclipse year over long periods of time. Therefore, I concluded that, like Hipparchus in ancient Greece, Maya astronomers were capable of tracking the sidereal position of eclipses in their calculations of precession and the sidereal year.

When we analyze the Serpent Base date 9 K'an 12 K'ayab', we find several interesting correspondences. First, again using the value of the Copán tropical year proposed by Teeple (1931), the Serpent Base places the sun precisely on what the Maya would have calculated to be a summer solstice in what would be the year 33,142 BCE by our reckoning. In addition, the sun would have been exactly at a lunar node on this date. Furthermore, the sidereal position of the sun on the Serpent Base appears in Libra, in a position corresponding to the last day on which the Pleiades appears on the horizon at sunset. This position of the sun is exactly

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Against all odds, Jay and Mary Lou discovered the where-abounds of the ancient Maya jade quarries.

In Memoriam: Jay Ridinger

Mary Lou and
Jay Ridinger,
La Antigua,
Guatemala.

Hello friends and family everywhere,

Jay Ridinger passed beyond early Tuesday morning, May 26, 2009, at our home in La Antigua, with no pain and suffering, with my arms around him, telling him I loved him. He wanted all to know that he had a wonderful life, done everything he dreamed of ... and was ready to head off for the great jade mine in the sky, where, of course, there will be a 24-hour continuous poker game. He was 75 years old. Our family was all here, including our youngest son Jake ... except for our two older daughters, who have now arrived to join in celebrating his life.

Love to all, Mary Lou Ridinger

**May your heart be speechless ... at the sight of truth ... of all belief had hoped.
Your heart breathless ... in the light and lightness ...
where each and everything ... is at last its true self.**

Excerpt from the poem: "For the Dying" by John Donohue, submitted by Mary Lou.



"Jay was an immensely important person and friend for me. The sense of heart and true friendship that radiate out from Jay and Mary Lou and the miracle they planted in Maya soil has defined ongoing visits to my beloved Antigua. He was larger than life to me and I am incredibly honored that I knew him. I fondly remember the conversations and moments of true connection we shared. I will miss him."

John Major Jenkins

2009 Maintenance Activities at Edzná

by Antonio Benavides C., INAH, Campeche

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(wearing headdress, bracelet, gaiters and decorated sandals) stands upon a bicephalic throne (with heads of a jaguar and an eagle). His right hand holds a kind of scepter with a hook. Minimum height is 2.20 meters and width is 1.18 meters.

On the other hand, Stela 17 is complete. The representation is very eroded but level light helps to see a seated dignitary on a throne with a large feather headdress. The throne resembles a half coiled-up rattlesnake and, beneath it, there is a reclining figure (an ancestor?). The upper left corner of the representation and both lateral sides have some glyphs. The stela is 1.40 meters long, 65 cm wide and 27 cm thick.

Those stelae and some others are still to be cleaned and restored. But today, at the entrance of the archaeological site, visitors can appreciate Edzná's best preserved stelae (enhanced with better lighting and recently painted blue walls).

The upper buildings of the Small Acropolis were also conserved in 2009. The patio they form was also cleaned of loose stones and blocks, allowing the Post-classic altars (including a broken Classic-period round altar) to be more visible. Western Structure 419-2 deserves special mention in that it has part of a stucco mask previously

covered by a thatch roof. To avoid more damage and to achieve a better state of preservation, it was covered with strained soil and protected with a masonry wall. The surrounding floor was also leveled and now visitors have a better idea of how that section looked in ancient Post-classic times.

The Big Acropolis also posed different conservation problems. The Puuc Patio, for example, consumed several labor weeks. This space (40 by 40 meters) is located on the northwestern section of the Acropolis. Many blocks of walls and benches were fallen down; iguana dens had to be closed and sealed; and several roots of big trees were also removed.

The North Temple, the House of the Moon, the Northwest and the Southwest Temples all enclose the Five Stories Building western patio and each one was also attended by masons and helpers placing blocks, closing holes or covering spaces with small plain stones. The Solar Platform, occupying the central part of that patio now has better finished stairways. All these constructions were not built at the same time but at the end of pre-Columbian occupation. They were covered by a dense jungle during several centuries and today they share a common history. They help us to understand the growth and

Conservation efforts
at the walls of rooms
from the Puuc Patio.



Restoration labors at the ramp on the Ambassadors Patio.

development of this section of the ancient city.

Reforestation and stonebeds were complementary activities. Some sections of the entrance to the site needed natural shadow and nothing better than planting local species as cedar (*k'uché* / *Cedrela mexicana*), hok'ab (*maculis* / *Tabebuia rosea*), pich (*Enterolobium cyclocarpum*), ox (*Brosimum alicastrum*), and homá (*h-was* / *Crescentia cujete*), among others. Stonebeds made of well-cut ancient blocks were also prepared around different trees. This action gives that material an order, keeps the surroundings clean and helps make it easy to find a desired block in future operations.

Fruit from the Chocolate Tree II: From the Haab' to Precession

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repeated in Serpent Number 3a, as mentioned above, including placing the sun at a lunar node.

The Pleiades as a sidereal marker

Therefore, it seems quite plausible that, just as the contemporary Maya use the rising and setting of the Pleiades to time the planting season, the ancient Maya were utilizing the Pleiades as an obvious sidereal marker to track precession.

The Serpent Series appears to represent a highly advanced system that extends the scope of the Long Count system, in that it seeks to commensurate the Haab', the tropical year, the sidereal year, and the eclipse year together. However, is it not possible that the originators of the Long Count were also calculating precession, again using the Pleiades to back-calculate the year of the Era Base in 3114 BCE?

We see how both the August 13 solar zenith and the vernal equinox are invoked in the introductory distance number from the Serpent Series. But what is most apparent about the sidereal position of the vernal equinox in 3114 BCE is that it occurs right next to the Pleiades, a highly visible cluster of stars close to the ecliptic, which appears very close to the celestial equator in 3114 BCE. It is tempting to suggest that, if the originators of the Long Count were calculating precession, they were using rising and setting dates of the Pleiades to place the Era Base in a year in which the Pleiades would have appeared on the celestial equator, rising and setting due East and West.

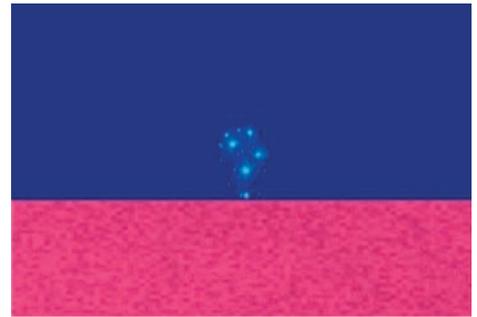
Indeed, during the time of the invention of the Long Count in the first centuries BCE, we find that the Pleiades appear exactly at the zenith at 14.8°N latitude – a very compelling piece of evidence. So the originators of the Long Count may have back-calculated the Era Base to the year when the Pleiades shifted back from the zenith to the celestial equator, and we see a similar calculation reflected in the Serpent Series introductory distance number.

Other examples of possible calculations of the sidereal year appear in the extensive mythological texts from Palenque. I am currently working on compiling the evidence from the back-calculated dates found at this site, and thus far, the results are promising.

There is much more work to be done in order to completely understand

how Maya astronomers
in many places and times

*Pleiades last
appear rising
on the horizon
at sunset.*



may have utilized their astronomical observations, and how they may have woven them together with mythological and cosmological concepts. There is so much more to be gleaned from the remaining hieroglyphic record. In the future, I hope to contribute to our collective conversation about these matters, and to our understanding and appreciation of the achievements of the Maya.

Certainly, the path that led me to studying the ancient Maya has been anything but direct, but it continues to be one of the most fulfilling journeys I have ever undertaken. Sometimes many paths converge in the most unexpected of ways, and asking one question can lead us somewhere we could have never imagined. Somehow, I chose to pick the fruit of the cacao tree, and, much to my surprise, it opened my eyes onto another world.

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Biography

A specialist in Maya hieroglyphic writing, archaeoastronomy, comparative mythology, and cacao, Dr. Michael Grofe is particularly interested in the confluence of mythological narrative and participatory science in Mesoamerica. In his doctoral research at the University of California at Davis, he explored a new astronomical interpretation of the Serpent Series within the Dresden Codex, and he is currently expanding this research to incorporate the theoretical astronomy found in the Palenque inscriptions. Dr. Grofe has taught numerous courses on the Popol Vuh and Native American literature, and he is currently teaching anthropology at American River College in Sacramento, California, and leading student trips to Latin America through the Maya Exploration Center (www.mayaexploration.org).

Institute of Maya Studies' Line-up of Presentations!

June 10: IMS Explorer Session (Classroom-style):



Kings at Palenque employed the sacred narrative of creation within their strategies of political legitimation.

Detail of K'inich Kan B'ahlam holding a K'awil effigy in the Temple of the Foliated Cross. Full view presented at right.

"Palenque Inscriptions"

with **A. Katherine Morales**

Palenque is a site with numerous hieroglyphic inscriptions that emphasize both history and mythology. This presentation will focus on mythology, particularly in respects to a correlation to the *Popol Vuh*. We will also explore how the ancient Maya elite at Palenque interwove mythology and historical records to display a relationship between them.



When the Temples of the Cross Group were dedicated in 690 AD, the moon was in conjunction with Mars, Jupiter, and Saturn, likely thought to represent the reuniting of First Mother and her sons, the three deities of the "Palenque triad" whose births are recorded here.

June 17: IMS Presentation (in the Museum Auditorium):

"Piles of Stone and Places of the Dead – Uncovering a Wari Mortuary Complex in Cuzco, Peru"

with **Dr. Mary Glowacki**



Double-headed Otter Pot, Wari Culture



View of Cotocotuyoc cemetery looking west. The foreground shows a slate-paved patio.

From approximately 500-1000 AD, imperial Wari society occupied much of ancient Peru, with the Southern Highlands its most intensively inhabited region. In the Huaró Valley, southeast of the city of Cuzco, the Wari established an early center made up of numerous sites. The largest of these sites is called Cotocotuyoc, "a place of many piles of stones."

On-going investigations of Cotocotuyoc, being conducted by the Huaró Valley Archaeological Project, indicate that the site functioned as a major cemetery complex and offer an unprecedented look at Wari funerary practices and beliefs. This talk will focus on

the mortuary aspects of Cotocotuyoc and how these data broaden our understanding of Wari culture and its societal views of death and the afterlife.



Mary at the site of Cotocotuyoc during the 2008-2009 excavations.

Dr. Mary Glowacki is the supervisor for the Florida Bureau of Archaeological Research, Public Lands Archaeology Program. She is also the Director of the Huaró Valley Archaeological Project, which conducts archaeological investigations in Cuzco, Peru, with emphasis on Wari culture.

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*Shell-carved bead of warrior
recovered from Cotocotuyoc.*

Upcoming Events at the IMS:

June 3: **IMS Board Meeting**

All IMS members are welcome to attend.

June 10: *IMS Explorer Session*

"Palenque Inscriptions" – Join IMS member **Katherine Morales** as she explores inscriptions at Palenque that are radically changing our view of ancient Maya mythology, especially the theme of world creation as depicted in the *Popol Vuh*. Interpretation of the texts show how historical rulers were very adept at linking their own lives and social standing to the narratives of creator gods and other cosmic entities.

June 17: *IMS Presentation (in the Auditorium)*

"Piles of Stones and Places of the Dead – Uncovering a Wari Mortuary Culture in Cuzco, Peru" – Ongoing investigations at Cotocotuyoc, being conducted by the Huaro Valley Archaeological Project, indicate that the site functioned as a major cemetery complex. Project Director **Dr. Mary Glowacki** will discuss the mortuary aspects of Cotocotuyoc and how these data broaden our understanding of Wari culture and its societal views of death and the afterlife.

Upcoming Events and Announcements:

June 4 – Dec. 31: *Museum Exhibit*

"Fragile Memories: Images of Archaeology and Community at Copán, 1891–1900" – A photo-essay featuring the best visual records of early Peabody expeditions chosen from their recently completed two-year project to digitize over 10,000 19th-century glass-plate negatives, especially from the museum's expeditions to Copán. Peabody Museum of Archaeology, Cambridge, MA. Get more info at: www.peabody.harvard.edu

June 11–12: *Conference*

"Creating Sustainability in American Southwest Archaeoastronomy Research" – Theme of the Conference on Archaeoastronomy of the American Southwest, to be held in Camp Verde, AZ. Get more info at: www.caasw.org

July 15: *IMS Presentation (in the Auditorium)*

"Zodiacal Beasts of the Pre-Columbian Maya" – **Harvey** and **Victoria Bricker** present the results of new research concerning previously controversial interpretations of a Maya

zodiac that appears in the Paris Codex, one of the few surviving hieroglyphic books of the Pre-Columbian Maya.

June 19–21: *Convention*

"The Tombs of the Sacred Lords and the Secrets of Jade" – Theme of the World Convention of Maya Archaeology. The event will present a series of lectures by world renowned experts in Maya archaeology and anthropology, such as Arthur Demarest, Federico Fahsen, Mary Louise Ridinger, Christa Schieber de Lavarreda, Miguel Orrego, Francisco Estrada Belí, Jaime Awe and Richard Hansen. In La Antigua, Guatemala. Get more info at: www.eventosantiguaguatemala.com

July 1–3: *Symposium*

"Ancient Maya Ritual and Religion in Belize" and "Archaeology in Belize: Current Research Investigations Results" – Themes of the Institute of Archaeology 2009 Belize Archaeology Symposium. Belize City, Belize. Get more info at: <http://sites.google.com/site/belizearchaeologysymposium>



IMS Explorer

Please note that all articles and news items for the *IMS Explorer* must be submitted to the Newsletter Editor by the second Wednesday of the month. E-mail news items and images to mayaman@bellsouth.net or forward by postal mail to: Jim Reed, 936 Greenwood Ave NE, Apt. 8, Atlanta, GA 30306