



# ARCHAEO MAYA

The Newsletter of Maya Exploration Center

[www.mayaexploration.org](http://www.mayaexploration.org)

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## Christopher Powell, Doctor of Philosophy

MEC Research Associate Christopher Powell has received his doctorate from The University of Texas at Austin, and more than polite congratulations are in order. We extend our wildest cheers and deepest praise. His dissertation on Maya geometry, "The Shapes of Sacred Space," represents the culmination of two decades of painstaking research and an outstanding contribution to the field of Maya studies. Over the years a few scholars have tried unsuccessfully to identify the geometric foundations of Mesoamerican art and architecture. Much of the mystery has now been resolved through Powell's brilliant work.

Dr. Powell's investigation of Maya geometry began as a hobby. His main interest was the Paleolithic cultures of the American Southwest and China. But little by little, he became obsessed with Maya mathematics. After discovering a simple set of geometric proportions in the architecture at Chichen Itza, he decided to pursue an academic career in Maya studies at UT. His Master's thesis on the 819-day calendar count was lauded as a seminal achievement. Then came years of archeological fieldwork, first at Copan, where he excavated the tomb of Yax Kuk Mo', and later at Palenque, where he helped unearth Temple XIX. All the while, Powell had polygons on his mind.

Although a dedicated dirt archaeologist, Powell's greatest insights came through his ethnographic work among the modern Maya of Yucatan and Guatemala where he participated in house-building ceremonies conducted by Maya shamans. These keepers of traditional knowledge relied on a simple measuring cord to determine the proper proportions for vernacular houses. As Powell learned from historical documents, the measuring cord was also used during the colonial period in rituals related to the laying out of the four cardinal directions. In fact, the practice went back earlier – back to the beginning of time. In the opening chapter of the *Popol Vuh*, the gods used a cord to measure out the cosmos.

The geometric proportions established at Creation are found repeatedly in Maya art and architecture, from the Classic temples at Palenque to Post-



Christopher Powell in the Maya ruins of Uxmal

Classic structures at Chichen Itza and in modern Maya dwellings. The basic constituents of the Maya geometric system – Pythagorean rectangles and the "Golden Mean" – produced the refined aesthetic that is so characteristic of Maya architecture, sculpture, and painted codices. According to Powell, the liminal beauty of Maya proportions derives from natural forms. As one Maya shaman expressed it, "The shapes of flowers are in our houses."

The relationship between geometry and the natural world serves to explain the use of these same proportions among the Egyptians and Greeks as well as New World civilizations. Yet the roots and evolution of the Maya system of planar geometry possessed its own unique symbolic significance, for it replicated Maya cosmology.

Perhaps the most profound aspect of Powell's research is the interrelationship he charts between geometry and astronomy. Time was a wheel, and observations of the sun on the horizon produced triangles and polygons that defined space as well as time.

Dr. Christopher Powell's dissertation lifts mathematics to the level of poetry and raises earth-bound, planar geometry to the realm of the sacred. Through his work we see the sublime unity of Maya thought.

Click this link - [PowellDissertation2010](#) - to download Christopher's 42mb dissertation from MEC's website or find it in our online Research Publications Section.



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#### *Director*

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#### Editors

Edwin L. Barnhart

Carol Karasik

### Contact MEC

#### United States

3267 Bee Caves Rd

Suite 107-161

Austin, Texas 78746

Phone: 512-350-3321

#### Mexico

El Panchan

Apartado Postal 142

Palenque, Chiapas 29960, Mexico

#### On the Web

[www.mayaexploration.org](http://www.mayaexploration.org)

#### Email

[info@mayaexploration.org](mailto:info@mayaexploration.org)

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## Letter from the Director



Many of you have written to ask why you haven't heard from us in a while. Well, the truth is that the economy finally caught up with MEC this last summer and we were compelled to scale way back for a few months. Between universities suspending travel budgets, continued bad press about Mexico's drug war, and a general lack of student spending money, almost every one of MEC's summer travel courses were suddenly cancelled. So, for the first time in our eight year history, we were looking at six months of no programs.

That was the bad news. The good news is that we did not accept that fate. Don Moises Morales of Palenque once paid me the compliment of saying that my strongest character trait was "persistence". We spent the summer looking for new programs to develop and reviving old contacts. As a result, we have new partnerships with Crow Canyon Archaeological Foundation, the Mathematical Association of America, and the Archaeological Institute of America. Our schedule is filling up again and 2011 is shaping up to be a good year for MEC.

Coming back around to the present, this issue of ArchaeoMaya has some exciting new research to share. As you read in our lead article, Christopher Powell's incredible dissertation is done and ready to change the way we think about Maya art and architecture. Our expedition to Angkor Wat is also explained in this edition, along with the surprising discoveries we made about

Cambodia's zenith passage. In our "News from the Field" section, you'll learn about new evidence of brutal warfare among the ancient Anasazi. We have also agreed to host the latest paper by John Major Jenkins in which he makes an analysis of the astronomy of Tortuguero's famous Monument 6. Links to his paper and the associated Facebook discussion page can be found within.

As usual, this edition is full of opportunities to work with and support MEC. Our 2011 Mayan Calendar wall calendar is ready to ship and a perfect Christmas gift. Those who join our Research Membership Program will not only enjoy JSTOR access throughout 2011, but a 2011 Mayan Calendar and 10% off any MEC tour or study abroad program. And as always, shopping at Amazon.com through our portal automatically donates 5% of all your purchases to MEC. If you choose to send us something by mail, please note our new address in the box to the left of the this letter.

Finally, on a personal note, I'm proud to announce the birth of my daughter, Alice Autumn Barnhart, born not just on my Gregorian birthday, but also on my Tzolk'in birthday. Time will tell if the stars have her fated to be a dream-chasing explorer like her dad.



From all of us at MEC, I want to wish you and yours a happy and relaxing holiday season.

Happy Thanksgiving!

## Apocalypse Island – Setting the Record Straight

*A commentary by Dr. Ed Barnhart*

Last December, I provided expert commentary for a History Channel documentary entitled *Apocalypse Island*. Perhaps due to its sensational claims, it was quite popular and has been rebroadcast many times over the last year. I've received so many questions about my thoughts on its content, I've decided to discuss it here in our newsletter.

First, let me state emphatically that I believe that outcrop on the South American Island of Juan Fernandez (renamed Robinson Crusoe Island to promote tourism) is just a rock, nothing more. I see no reason to believe it's even an Andean cultural monument, much less in any way Mayan. The documentary's star, Jim Turner, is in fact a talented Maya archaeoastronomer and I respect his work regarding the Dresden Codex Venus Pages. However, his identification of the island's outcrop as a Mayan sculpture has not a shred of supporting evidence from associated artifacts, Maya literature, or even a hint of eroded carving.

Jim hypothesizes that the outcrop was carved by Kan Balam of Palenque in the 8<sup>th</sup> century. Even if one were to consider this idea, looking at the amazing state of preservation of Kan Balam's temples at Palenque, who could believe that he travelled all the way to South America to build a monument heralding 2012 that would weather to a state beyond recognition today? Jim also states that this island was chosen because it has a unique view of the June 2012 transit of Venus at sunset. While it does indeed have a good view of the event at sunset, a look at the astronomical chart shown here demonstrates that there is in

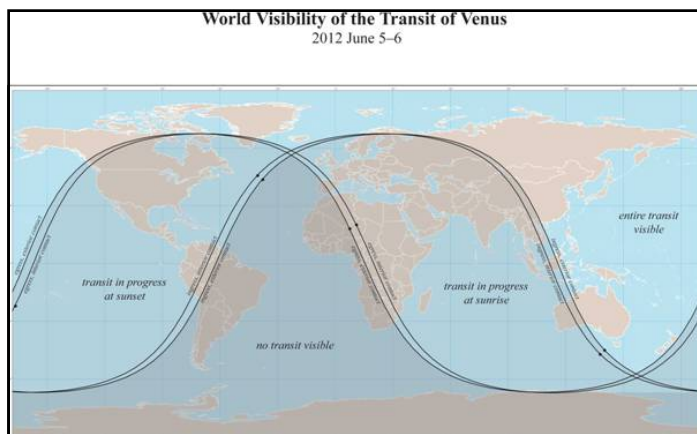
fact a wide area with the same view, and many locations much closer to Palenque.

Turner had contacted me about a year before the documentary's filming to ask me to accompany him to Robinson Crusoe Island to make a film of his big discovery. Upon reviewing his ideas and evidence (under a non-disclosure agreement), I respectfully declined and cautioned him to collect more compelling evidence, preferably through controlled excavations around the outcrop. Then in the fall of 2009, NFGTV invited me to speak on film about Palenque, the Maya, and 2012. I agreed, and travelled to New York City where I answered a series of questions on camera. At that time they did not have a title for the show. When it aired, I was amused to see I was in Turner's documentary after all! As it turned out, the NFGTV film crew was also bound by a non-disclosure agreement not to reveal the show's theme.



*Turner's photo of the outcrop*

When the History Channel's blog began filling with harsh criticism about the documentary, I called the folks at NFGTV to sympathize, but they surprised me by reporting that History Channel was thrilled by the big response, regardless of the negative comments. Oh brother! Well, the world is what it is. You can yell against the wind or laugh. I choose laughter. In the end, I remain grateful that I was given the chance to temper the show's sensational content with a bit of responsible information about the Maya. I'll end this commentary with once again stating my opinion - that's just a rock...



## Zenith Passage at Angkor, Cambodia

This last August, Ed Barnhart and Christopher Powell led a group of professors to Cambodia in search of evidence of an ancient recognition of zenith passage. In Mesoamerica, the proof that the ancients were observing zenith passage is well established through temple alignments, calendrical references, and a handful of zenith sighting tubes. The great Khmer city of Angkor developed in the same kind of tropical latitude environment, yet no studies of zenith passage have been conducted there. Was there evidence to be found? Barnhart and Powell planned their expedition around August 17<sup>th</sup>, zenith passage at Angkor Wat, to find out.

What would they search for as proof? Gnomons? Architectural alignments? Zenith sighting tubes? Sanskrit textual references? Depictions of zenith passage in Angkor's art? To their astonishment, they found all those elements, especially the ubiquitous presence of zenith sighting tubes. The fullness of their evidence will be presented in an upcoming paper, after the proper channels of respect have been followed. Cambodia's government agency APSARA, who protects and preserves Angkor, will be the first to receive the report and approve its content.

For now, we at MEC can share with our readers our photos of how Angkor's temples function as zenith sighting tubes. Dozens of coffee table books contain beautiful photos of the peaked temples at Angkor, romantically enveloped in jungle foliage, but few show how the insides of those temples are hollow all the way up to their rooftops. Why would photographers shoot the dark, hollow roof cavities, full of bats and robbed of their capstones by looters seeking the jewels often found fixed there? As it turns out, each of those capstones, some put back in place but most lying in nearby rubble piles, had a hollow tube running through their axis. From below, inside the temples, these capstone holes provided a viewing tube to the direct center, or zenith, of the sky. Only on August 17 and April 25, the sun at noon (actually 12:10pm in Angkor) would shine directly down through those tubes creating an intensely bright beam of light, illuminating everything within. In a temple of pristine condition, the effect would last for no more than five minutes. Today, most of Angkor's temple tops are broken open so that the effect lasts for two days and trains across the temple floor for more like 20 minutes. MEC and our team were able to catch these moments on film and some of our photos are shared here. These shots are just the tip of the zenith passage evidence iceberg, so stay tuned to our website for our publication to appear, hopefully sometime this winter.



*Zenith passage inside the main temple - Bakong, Roluos Group*



*Zenith passage inside the main temple - Bayon, Angkor Thom*

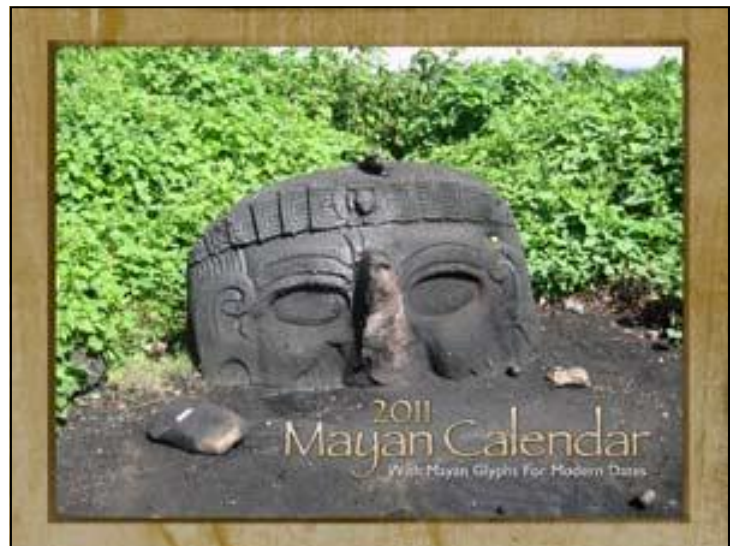
# Offerings from Maya Exploration Center

**Palenque to Tikal**  
 Pillars of the Classic Maya  
 February 4-12, 2011  
 a MEC tour led by  
 Dr. Christopher Powell





The Maya Calendar on your iPhone  
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The 2011 Mayan Calendar  
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*Proceeds go to support Maya Exploration Center, a 501(c)3 Corporation*

## News From the Field

### [Ancient Anasazi Aggression](#)

An ancient human massacre site found near Durango, Colorado is changing the way we think about the Anasazi. One of the major differences traditionally noted by archaeologists who compare the cultures of the American Southwest to their Mesoamerican neighbors to the south is the seeming lack of warfare and militarism. Anasazi art seems mainly religious, with few depictions of weapons or violence. Archaeological excavations, at least until recently, have rarely detected any evidence of warfare or malicious destruction.

The site of Sacred Ridge, dating to around AD 800, provides a chillingly different picture. Multiple lines of evidence all lead to the same conclusion - Sacred Ridge was a village of at least 22 pit house structures that was destroyed and whose entire population was brutally slaughtered. Fifteen thousand human bone fragments were found strewn across the site, including crushed leg bones and battered skulls. Men, women, and children alike were first tortured and then killed. Heads, hands, and feet were removed with stone knives from their bodies, perhaps as war trophies. Project archaeologist Jason Chuipka theorized, "The scale of the mutilations suggests that it was planned and organized in the preceding days or weeks, and that the violence took place in a relatively short period of time - a few days."

But what motivated this slaughter? John McClelland of the Arizona State Museum studied the Sacred Ridge remains, concluding that they were an ethnic group different from that of other nearby populations, leading the team to theorize that an ethnic cleansing had taken place. Chuipka was quoted saying, "Sacred Ridge is a case where social relations melted down and the solution chosen was absolute and shocking."

## MEC's New Facebook Discussion Forum

MEC honors the academic philosophy of our mentor, the late Dr. Linda Schele, who believed that everyone should be invited into the ancient Maya studies conversation. She created the Texas Maya Meetings as a way to get the general public involved and the hieroglyphic workshops so that anyone could learn and perhaps make a contribution to the field. Thanks to her passion and openness, Schele inspired thousands of non-academics to be productively involved in Maya studies.

In the now twelve years since her passing, the field of Maya studies has slowly become more conservative and closed. A small group university position holding Mayanists have become the self appointed, sole judges of legitimacy for new ideas and theories. Conferences have become places where only scholars talk to other scholars. Non-academics are discouraged, in some cases even shunned, from participation. MEC believes that Linda would have stood in opposition to these attitudes and we intend to do the same.

In an effort to bring back Schele's open academic philosophy, MEC announces the beginning of our Discussions Forum on Facebook. We intend this to be a place where everyone with a respectful attitude can share ideas and have a voice. Rather than by a small panel of anonymous experts, those ideas can then be critiqued by all and majority opinion can judge their worth. MEC believes in the process of peer review, but we hope through this new forum to broaden our definition of "peer."

To kick off our new forum, we have invited author **John Major Jenkins** to share his latest ideas regarding the Astronomy of Tortuguero Monument 6. Jenkins's theories are controversial and at times maligned. Academics tend to dismiss him and some of the more far out new age authors have used his theories to validate their own. For his most recent paper, John would like the opinion of our diverse MEC community. To read his short paper, entitled "Astronomy in the Tortuguero Inscriptions" you may download it from the [MEC website's Research Section](#) or from the Discussion Forum on our Facebook page.

## 2011 Chautauqua Program Course Offerings

From the University of Texas at Austin's Center for Science and Mathematics Education

### Journey to the Maya Pilgrimage of Volcano Tajumulco Highlands of Guatemala

June 27 - July 5, 2011

Participants will have the rare opportunity to travel with and learn from actual Maya Day Keeper priests who will conduct ceremonies in ancient Maya cities along the way towards attending a traditional Maya pilgrimage to Guatemala's tallest volcano, Volcano Tajumulco.

### Zenith Passage in the Ancient Khmer City of Angkor, Cambodia

August 10-20, 2011

Participants will spend ten days exploring the ruins of Angkor, learning about its great history, their scientific achievements, and how the city maintained a population of almost one million people by the 14th century AD. How did nearly every temple in the city function as a zenith passage sighting tube? Join the course and come see for yourself.

For more information about these courses and to pre-register, contact [Maya Exploration Center](#)



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