MAYA EXPLORATION CENTER

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ARCHAEOMAYA

The Newsletter of Maya Exploration Center

A Second Hieroglyphic Reference to 2012 Found

www.mayaexploration.org

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Unbelievably, a second reference to December 21, 2012 AD has been found in a Maya hieroglyphic inscription. The last and only other reference to 2012 was discovered over 50 years ago on Tortuguero Monument 6. What were the odds that this second reference would be found during the actual year of 2012? Nevertheless, there it is and unlike some of the other claims in recent news, such as the "Comalcalco Brick", this 2012 reference is clear and irrefutable.

It was found in April at the site of

La Corona in northern Guatemala, part of a very long inscription on a hieroglyphic stairway. The context is enlightening and important, but curiously gives us no addition information on what the ancient Maya thought might happen in 2012. The block upon which the 2012 reference occurs begins with a prestigious visit from Yuknoom Yich'aak K'ahk', the ruler of Calakmul in the year 696 AD. This is important because texts at Tikal state that they had captured this ruler just the year before and epigraphers have long considered him to have been sacrificed in that same episode. His recorded visit to La Corona clearly refutes that, and perhaps its purpose was to reassure their allies of Calakmul's continued survival and stability. A record of a royal visit like this is not uncommon, but what happens next is. The text projects 134 years into the future



The last four glyphs of Block 5 at La Corona, clearly 4 Ahaw, 3 Kank'in, 3 Bak'tuns (photo by David Stuart)

to the arrival of the 10th bak'tun in 830 AD. The referenced event is Yuknoom Yich'aak Kahk' overseeing the carving of the *k'an tu-un*, some kind of stone moment, but that took place back in 696, not 830 AD. He would have been almost 200 years old by then, so it seems unlikely the text refers to his plans as a living ruler. Perhaps it refers to a reincarnation or to his continued hand in La Corona's success as an ancestral spirit? Maya statements like this often leave us guessing.

Directly after the 10th bak'tun reference, the text calls Yuknoom Yich'aak Kahk' the "13 K'atun Lord." This seems simply explained by the fact that he was in reign during the 13th k'atun of the 9th bak'tun on 9.13.0.0.0 in 692 AD. Shortly after, the text ends with the three glyph blocks that refer to *This story continues on Page 7*

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Contact MEC

<u>United States</u> 3267 Bee Caves Rd Suite 107-161 Austin, Texas 78746 Phone: 512-350-3321 <u>Mexico</u> El Panchan Apartado Postal 142 Palenque, Chiapas 29960, Mexico

On the Web www.mayaexploration.org <u>Email</u> info@mayaexploration.org

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Letter from the Director



What a busy summer! I've barely been home in Austin long enough to sit down and write, hence the lateness of this newsletter. As

fate would have it, I'm glad we had to hold off because some exciting things to report happened only in the last few weeks. I've spent a good portion of the summer in Peru, exploring new territory for MEC courses and preparing for a video lecture series which you'll learn more about this fall.

This edition of ArchaeoMaya is full of exciting news and updates. Our lead article explains the details of the incredible discovery of a second reference to 2012 at La Corona. My personal thanks go out to Project Co-Director Marcello Canuto for sharing his find with us, despite his hesitance to fan the flames of the 2012 craze any further. We're also reporting on another important hieroglyphic discovery in Guatemala - the astronomical tables at Xultun. Our article is a bit long for a newsletter piece, but we are especially excited about it because it confirms theories that MEC's Christopher Powell forwarded over 15 years ago! Read the article to find out how.

We at MEC have been quite busy with documentaries this summer, more about 2012 of course. I myself will air this fall on Canadian television in a five part series called "Apocalypse When?" Christopher Powell just finished filming with the Fox Channel over summer solstice. Michael Grofe and I are also featured in an exceptional documentary called "2012: The Beginning." It was a big hit at the Cannes Film Festival and has recently been praised as the best of all the 2012 documentaries by the governments of Mexico, Guatemala, and Honduras. You'll find an ad for it in this ArchaeoMaya and there are links on our website to pre-order a DVD copy, releasing in September after its first public airing on European TV.

We've also had a busy course schedule this summer. As with last year, many of them were in Peru. Christopher Powell led Simpson College for a second time to volunteer at an orphanage in Cuzco. Professor Mark Freyberg's impressions of the experience are here in this edition. Michael Grofe led MEC's first course into the Amazon. For myself, I led a course to the Inti Raymi Festival in Cuzco and another to the Nazca plains along the coast of Peru.

MEC marches on into the future, but it's not all roses here. We, along with every non-profit in the nation, are struggling with our lowest donations income since we opened our doors in 2003. If it were not for our selfsustaining model of providing study abroad courses, we would have already gone bankrupt like countless other philanthropic organizations in the wake of global economic collapse. If you value what we do at MEC, there has never been a better time to show your support with a donation. We are blessed in that we love what we do, and our work has never been about the pay check, but we simply cannot continue to exist without increased support and program participation from you, our community. Please consider joining one of our educational tours or making a donation this summer or fall.

Yours Truly,

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Simpson College Volunteers and Explores in Peru

An account by organizing professor Mark Freyberg

The Simpson group of 17 was an unusual mix of freshmen-throughseniors, some of who had graduated the previous month. We hit the usual rough spots of travel abroad, but with MEC's Christopher Powell's warm support the group bonded quickly. We dined as a full group several times in Cuzco, and the day after we took-in the breathtaking spirit of Machu Picchu, every last one of us (with Chris anchoring) climbed Huayna Picchu, the peak that serves as backdrop to the city. The word "epic" was on the lips of many of my students.

For many of us the highlight of the trip, however, was our visits to

the set of orphanages run by Sister Rosa in and around Cuzco. The work Simpson students volunteering in Ticohuata, Peru they are doing with minute resources is astonishing, and we got a firsthand look at how globalization can narrow the options of poor children. It was heartwarming to see how easily US college students mingled and played with the Peruvian kids, and heartbreaking to leave the children at the end of the day. Our labor and modest donations were not nearly enough to honor these fine people- we'll do better in 2014.

In our second week we toured the Sacred Valley, including a gorgeous train ride, a hacienda buffet by the Urubamba River, and a visit to a weaving co-op where we fed alpacas and marveled at the skill of the indigenous weavers at their craft. By this time the students had developed a reverence for both Inca culture and modern Peru. Our last days were spent near the southern coast, sand-boarding at Huacachina Oasis, sailing out to visit the wildlife at the Ballestras Islands, and enjoying the unique Peruvian cuisine. After two travel courses in Peru with MEC, this trip has become rather legendary on my campus, and student journals confirm that the adventure was infused with academic value.



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Astronomical Calculations Found at Xultun

A very unique set of hieroglyphic texts has been found on the walls of a small building in the Classic Maya site of Xultun. Unlike the usual historical content of Classic period inscriptions, these texts are almost purely numerical and astronomical in content. Further, the astronomical content is arranged in formats that were previously only known from texts written hundreds of years later, in Post Classic codices.

Xultun is a little known site in Northeastern Guatemala, even many career archaeologists have never heard of it. But Xultun has not been so little studied because it's small and insignificant. Quite to the contrary, it's so large that only a massive project could even begin to understand it. Some reports say it rivals Tikal in size. Its location is extremely remote and only recently has a combination of improved political climate and technological advances made sustained field work at Xultun viable.

A team led by Boston University's Bill Saturno and funded by National Geographic was surveying the site in 2010 when they came upon the find. A modest building within a residential area had a large looter's trench dug through its middle. Crew member Maxwell Chamberlain looked inside and found the crumbling remains of wall murals depicting seated figures. These were finely painted, and a wonderful discovery in and of themselves, but it was the more roughly painted sets of numbers nearby that made this house a truly special find.

There were three separate areas of astronomical information scrawled on the walls – A) A lunar table, B) a ring number, and C) a set of four very large numbers. Here's a brief explanation of each:

A) The Lunar Tables

A set of 27 columns of numbers span across the wall, each topped by one of three repeating lunar glyphs. Those lunar glyphs repeat in a pattern – ABCABCABC... - across the entire top of the table and are the names of individual lunations. The Maya "lunar series" found on hundreds of stelae across the Maya world teaches us that the Maya group moon lunations (a complete moon phase cycle) into sets of 6 and further group 3 sets of 6 lunations into a total cycle of 18 lunations. That's what we have at Xultun, the set of 18 lunations repeating across the wall with each individual column representing a count of 6 lunations.

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Positions of texts with the structure (drawing by Heather Hurst)

The numbers of each column represent a cumulative count of days, increasing from left to right. Column 1 is a count of 177 days, or 6 Maya lunations of 29.5 days. Column 2 is 354 days, which is 177 + 177. Column 3 is 531 days, which is 177 + 177 + 177. This cumulative pattern continues, with an occasional column of 178 days, through all 27 columns until the final day count is 4784 days. Why sometimes 178 days? Because in a long table like this, only known elsewhere from the Dresden Codex, the occasional 178 day column helps increase the accuracy of the table's overall calculation for the average length of a single lunation.

If each column contained 177 days, then the calculated length for a single lunar cycle would be 29.5 days. That's a pretty good estimate for an ancient people, but the modern figure is 29.53059. The Xultun lunar table, with a few 178 day columns peppered in, produces a lunation mean length of 29.53086 days, only differing from our modern best at the fourth decimal point. Now that's accurate! The Dresden Codex lunar tables, which were written over 500 years later, were over twice as long (spanning 11,958 days), but were not quite as accurate. Their lunation mean length comes out to 29.52593.

B) The Ring Number

Just to the left of the lunar series, incised thinly over one of the painted mural figures, is a "ring number." A ring number is a count of days with the lowest number, the days or *kins* place, circled, like a ring around the number. Again, the only other place we've ever seen ring numbers is in the Dresden Codex. In the Dresden Codex, the ring around the kins place indicates that the number of days should be subtracted from the Maya start date of 13.0.0.0.0 4 Ahaw 8 Kumk'u, or August 11, 3114 BC. The number is 4.15.5.14, or 34,314 days. Above the ring number is the Tzolk'in date 10 Kimi. Back calculating from 13.0.0.0, we arrive at 12.15.4.12.6 10 Kimi 4 Kumk'u (September 25, 3207 BC). The 10 Kimi thus confirms that it's a ring number functioning as they do in the Dresden Codex.

But why put a ring number here? Interestingly, a perhaps a clue to the reason, is the fact that 34,314 days is almost perfectly 1162 lunations of 29.53086 days like the table next to it calculates (1162 lunations would actually be 29.53012 days). However, 34,315 days would have been even better, being 1162 lunations of 29.53098. Clearly, there is still more to discover about the nature and purpose of this ring number.

C) A Set of Four Very Large Numbers

Painted on the wall in red and black, four columns of numbers contain even multiples of the 52 year Maya calendar round (260x365days). Column A is 63 calendar rounds, Column B is 18, Column C is 129, and Column D is 93. But the calendar round multiples are just part of the many cycles that divide evenly into these four large numbers. In Saturno et al.'s article in Science this May, they noted that Column B's number - 341,640 days - is also even multiples of 584, the Maya calculation for the cycle of Venus. But in fact, it's much more than that. It's the "tun ending calendar round" discussed in Christopher Powell's thesis and also includes even multiples of Mercury and the tun (360 days) as well. It's also 1/4 of Lounsbury's "super number" from the Dresden Codex Venus Pages. Soon after the Science article came out, Hutch Kinsman pointed out that Column A was also evenly divisible the 819 Cycle, shown by Lounsbury in the 1970's to be related to the synodic periods of Jupiter

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and Saturn. Again, Christopher Powell's 1997 thesis had this same number, 1,195,740 days, hypothesized to exist as part of the Maya thinking process behind the creation of the 819 Cycle at Palen-



The four large numbers at Xutun (Drawing by David Stuart)

que in the 7th century AD. Now Xultun has finally shown that Powell's number was actually used by the Maya!

Columns C and D have not been as easy to figure out. Working together, Barbara MacLeod and Michael Grofe have been playing with lunar possibilities in Column C, noting that it equals 82,911 x 29.5307016 days. As for Column D, Barbara notes that it is almost perfectly even multiples of both Jupiter and Saturn. No doubt they contain more hidden multiples. The question remains, which ones?

Stepping back for a moment from the exciting hieroglyphic discoveries, we should also consider the building itself as a wonderful find. With the evidence at hand, it seems to have been the residence of an astronomer, or perhaps a group of them. Never has such a thing been found in the Maya world! All too often we are limited to saying general things like, "this is a temple" or "this is a house". In this example from Xultun we can tell who lived there and what they were doing.

In addition, the stucco upon which the astronomical tables are painted seems to be a final layer with many layers underneath. Is it an astronomer's blackboard, painted over and over again with new calculations? All other Classic period astronomical texts are carved into stone, the products of much fore-thought and pre-calculation. This residence at Xultun may be our first view of where and how those calculations were made. Over 1200 years ago, astronomers sat there, thinking about the moon and how to commensurate it with the other celestial cycles they were tracking and the long count calendar. An amazing discovery, and one that will make us at MEC never look at a simple house mound in the same way again.

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News From the Field

Early Temple Found at El Zotz

Ongoing fieldwork at the remote site of El Zotz in northern Guatemala has now excavated a temple covered in pristine carved stucco facades. Called the "Temple of the Night Sun", it sits just behind where a royal tomb was found last summer in the Diablo Pyramid. The Sun God is the primary subject of the façade, showing him in different phases as he moves from dawn to dusk, but Venus and other planets are also depicted. As much as the art of this temple is an important find, so are the dates of its construction - sometime between 350-400 AD. This was a time in which Teotihuacan was heavily influencing the Maya, with Tikal just to the south of El Zotz as a base of operations. The Temple of the Night Sun was abruptly abandoned around 400 AD, an indication that their fortune had changed, likely due to political changes orchestrated by Tikal and Teotihuacán. The excavations, co-directed by Steve Houston of Brown and Edwin Roman of the University of Texas at Austin, will continue in 2013.

Royal Tomb Discovered at Uxul

The tomb contained the body of a young man surrounded in ceramic vessels. Project co-director Nikolai Grube of the University of Bonn said, "There was a simple message on a cup in elegantly modeled hieroglyphics that read "the cup of the young man/prince", and a second modeled container also appears to mention young man/prince." One of the ceramics also provides a date in the year 711 AD, which places the tomb in an important time period when Uxul had finally broken free of centuries of domination by nearby super power Calakmul. A notable lack of jade in the tomb suggests that he was not a ruler, but more likely a prince of the court who died at a young age.



Join Dr. Ed Barnhart in Java for his last Chautauqua Course of 2012 as he continues his important research on the importance of zenith passage in ancient Southeast Asia. Will he and his team find strong evidence in the ancient temples of Borobudur and Prambanan as they did in Angkor last year? Join the adventure and find out.

For more details: www.ahautravel.com/2012/2012chautauqua_java.htm



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Second Reference... (cont. from Page 1)

2012 says simply "4 Ahaw 3 Kank'in 3 Bak'tuns." The calendar round date on December 21st is indeed 4 Ahaw 3 Kank'in and the 3 Bak'tuns block, though in an odd place for a distance number (they usually appear before the calendar round) logically brings us from the 10th bak'tun previously referenced to the 13th bak'tun in 2012.

And that's where the text ends. No statement of what will happen in 2012. If the text continued onto another stairway block, it was not there or has yet to be found. The excavations, codirected by Marcello Canuto of Tulane's Middle American Research Institute (MARI), continue and he and project epigrapher David Stuart will submit a full report to the Guatemalan government at the conclusion of the field season. For now, as to why La Corona made this reference to 2012, Canuto hypothesizes, "In times of crisis, the ancient Maya used their calendar to promote continuity and stability rather than predict apocalypse."

For more information about the new discoveries at La Corona, log on to: <u>http://mari.tulane.edu/PRALC</u>



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