

Painted ancient Maya numbers reflect calendar reaching well beyond 2012 (w/ Video)

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Four long numbers on the north wall of the ruined house relate to the Maya calendar and computations about the moon, sun and possibly Venus and Mars; the dates stretch some 7,000 years into the future. These are the first calculations Maya archaeologists have found that seem to tabulate all of these cycles in this way. Although they all involve common multiples of key calendrical and astronomical cycles, the exact significance of these particular spans of time is not known. Illustration by William Saturno and David Stuart © 2012 National Geographic

A vast city built by the ancient Maya and discovered nearly a century ago is finally starting to yield its secrets.

Excavating for the first time in the sprawling complex of Xultún in Guatemala's Petén region, archaeologists have uncovered a structure that contains what appears to be a work space for the town's scribe, its walls adorned with unique paintings — one depicting a lineup of men in black uniforms — and hundreds of scrawled numbers. Many are calculations relating to the Maya [calendar](#).

One wall of the structure, thought to be a house, is covered with tiny, millimeter-thick, red and black glyphs unlike any seen before at other Maya sites. Some appear to represent the various calendrical cycles charted by the Maya — the 260-day ceremonial calendar, the 365-day solar calendar, the 584-day cycle of the planet Venus and the 780-day cycle of Mars, reports archaeologist William Saturno of Boston University, who led the exploration and excavation.

“For the first time we get to see what may be actual records kept by a scribe, whose job was to be official record keeper of a Maya community,” Saturno said. “It’s like an episode of TV’s ‘Big Bang Theory,’ a geek math problem and they’re painting it on the wall. They seem to be using it like a blackboard.”

The discovery is reported in the June issue of National Geographic magazine and in the May 11 issue of the journal *Science*.

The project scientists say that despite popular belief, there is no sign that the Maya calendar — or the world — was to end in the year 2012, just one of its calendar cycles. “It’s like the odometer of a car, with the Maya

calendar rolling over from the 120,000s to 130,000,” said Anthony Aveni, professor of astronomy and anthropology at Colgate University, a coauthor of the Science paper. “The car gets a step closer to the junkyard as the numbers turn over; the Maya just start over.”

The mural represents the first Maya art to be found on the walls of a house. “There are tiny glyphs all over the wall, bars and dots representing columns of numbers. It’s the kind of thing that only appears in one place — the Dresden Codex, which the Maya wrote many centuries later. We’ve never seen anything like it,” said David Stuart, Schele Professor of Mesoamerican Art and Writing at the University of Texas-Austin, who deciphered the glyphs.

The vegetation-covered structure was first spotted in 2010 by Saturno’s student Max Chamberlain, who was following looters’ trenches to explore the site of Xultún, hidden in the remote rain forest of the Petén. Then, supported by a series of grants from the National Geographic Society, Saturno and his team launched an organized exploration and excavation of the house, working urgently to beat the region’s rainy seasons, which threatened to erase what time had so far preserved.

Xultún, a 12-square-mile site where tens of thousands once lived, was first discovered about 100 years ago by a Guatemalan worker and roughly mapped in the 1920s by Sylvanus Morley, who named the site “Xultún” — “end stone.” Scientists from Harvard University mapped more of the site in the 1970s. The house discovered by Saturno’s team was numbered 54 of 56 structures counted and mapped at that time. Thousands at Xultún remain uncounted.

The team’s excavations reveal that monumental construction at Xultún began in the first centuries B.C. The site thrived until the end of the Classic Maya period; the site’s last carved monument dates to around 890 A.D. Xultún stood only about five miles from San Bartolo, where in

2001 Saturno found rare, extensive murals painted on the walls of a ritual structure by the [ancient Maya](#).

“It’s weird that the Xultún finds exist at all,” Saturno said. “Such writings and artwork on walls don’t preserve well in the Maya lowlands, especially in a house buried only a meter below the surface.”

The Writing on the Walls

The house contains three intact walls, each telling its own story to researchers — and posing its own mysteries:

The north wall lies straight ahead as one enters the room. An off-center niche in the wall features a painting of a seated king, wearing blue feathers. A long rod made of bone mounted on the wall allowed a curtain to be pulled across the king’s portrait, hiding it and revealing a well-preserved painting of a man whose image is wrapped around the wall; he is depicted in vibrant orange and holds a pen. Maya glyphs near his face call him “Younger Brother Obsidian,” a curious title seldom seen in Maya text. Based on other Maya sites, Saturno theorizes he could be the son or younger brother of the king and possibly the artist-scribe who lived in the house. “The portrait of the king implies a relationship between whoever lived in this space and the royal family,” Saturno said.

Four long numbers on the wall representing one-third of a million to 2.5 million days likely bring together all of the astronomical cycles — such as those of Mars, Venus and the lunar eclipses — that the Maya thought important, dates that stretch some 7,000 years into the future. This is the first place Maya archaeologists have found that seems to tabulate all of these cycles in this way. Another number scratched into the plaster surface likely records the date — 813 A.D., a time when the Maya world had begun to collapse.

The west wall: Three male figures loom on this wall, all of them seated and painted in black, wearing only white loincloths, medallions around their necks and identical single-feathered, miter-style head dresses. “We haven’t seen uniform head dresses like that anywhere before,” Saturno said. “It’s clearly a costume of some kind.” One of the figures is particularly burly, “like a sumo wrestler,” and he is labeled “Older Brother Obsidian.” Another is labeled as a youth.

The east wall: Although badly eroded, another black-painted human figure and remnants of others can be seen. But the wall is dominated by numerical figures, including columns of numbers representing counting and calendrical calculations. Some of the numbers track the phases of the moon; others try to reconcile lunar periods with the solar calendar. “Skywatching like this was a tool for predicting eclipses,” Saturno said. One well-preserved section contains numerical notes painted in red that appear to be corrections to more formal calculations appearing alongside them.

“The most exciting point is that we now see that the Maya were making such computations hundreds of years — and in places other than books — before they recorded them in the Codices,” Aveni said.

The scientists say the symbols reflect a certain world view. “The ancient Maya predicted the world would continue, that 7,000 years from now, things would be exactly like this,” Saturno said. “We keep looking for endings. The Maya were looking for a guarantee that nothing would change. It’s an entirely different mindset.”

More information: "Ancient Maya Astronomical Tables from Xultun, Guatemala," by W.A. Saturno; F. Rossi at Boston University in Boston, MA; D. Stuart at University of Texas, Austin in Austin, TX; A.F. Aveni at Colgate University in Hamilton, NY.

Provided by National Geographic Society

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