



Southwest Florida Archaeological Society (SWFAS)

OUR 46th YEAR

October 2026 Newsletter

<https://swflarchaeology.org/>

PRESIDENT'S CORNER *By John F. Furey M.A., RPA, jffurey@charter.net*



Sites continue to be found that push an early pre-Clovis entry into North America, and the similarities to tools found in Eastern Asia at these sites cement this early relationship. As these sites are found and published, we will continue to inform you of the available data. As this information continues to flow, change, and accumulate from many disciplines beside archaeology, these days of a much earlier date for the entry into North America is highly likely.

The most recent discovery at Chiquihuite Cave in Mexico (see below) pushes the timeline back to at least 26,500 years ago in Central Mexico and further indicates a much earlier entry into the Americas than has been found at other post Clovis sites.

Other sites in Peru, in Amazonia, and Tierra del Fuego seem to indicate a much, much earlier date is warranted. I feel that this date will continue to be pushed back over time to earlier than 60-70,000 years and beyond. Some see the timeline at 130,000 years. As one heads south, different ecosystems are encountered and new tool kits and cultural adaptations are required to survive and thrive in these new lands and these changes take time. The jungles of Central America, the lowlands of Amazonia and the highlands of Peru are extreme examples of the ecosystems that were encountered and time was required to adapt to them. These initial entries would have been small family/bands groupings that would have left a very small footprint, and we tend to locate sites with a larger datable footprint.

The long-lost Florida Spanish Mission San Carlos de Chacatos has finally been located beneath the Hard Labor Church in Chipley, Washington County, Florida. While searching for a Civil War Battlefield with a metal detector, Spanish artifacts were discovered by historian Dale Cox. The Mission was located here from 1674-75 but, after revolting against the friars and driving them off, a heavily armed detachment of Spanish troops was sent to quell the revolt. After the soldiers left, the mission was never reestablished. In 1680, a large number of the Catholic members of the Chacatos established a new village on a hilltop near Sneads, Florida in Jackson County until it was destroyed in 1693 by Creek slave raiders.

RECENT RESEARCH

USING HOSPITAL CT GRADE SCANNERS ON 2,300 YEAR OLD EGYPTIAN MUMMIES

The use of hospital grade photon-counting CT scanners on 2,300-year-old Egyptian mummies by the Hungarian National Museum has yielded new information and has called for a reexamination of these mummies. Using the scanners outside of normal clinical hours keeps costs down and keeps the mummies intact. The greater information generated by these scanners aids in age estimates, refines details like teeth and bones more clearly, and details any abnormalities. *Source: PhysOrg at https://phys.org/news/2026-04-generation-ct-scanner-reveal-year.html#google_vignette .*

BERGMANN'S RULE AND ALLEN'S RULE

Bergmann's Rule states that within a species, populations living in colder climates tend to have larger body sizes which reduces heat loss in cold environments. This applies to both human and most animal populations. This addresses overall body mass and volume in relation to temperature. Allen's Rule focuses on the shape and proportions of body extremities rather than overall size. It states that animals in colder climates tend to have shorter extremities i.e., arms and legs. Allen's Rule focuses on limb and extremity proportions for heat retention or dissipation. Together they illustrate how evolution and environment shape morphology to optimize survival

under different climatic conditions. *Source: Nature Communications at <https://www.nature.com/articles/s41467-023-36676-w>*

SHARK HIERARCHY BEHAVIOR OBSERVED IN NEW CALEDONIA

Researchers spent two weeks observing sharks feeding on a dead whale carcass off New Caledonia and have produced several new insights on shark behavior. When the whale carcass first appeared in the bay, it was the local bull sharks that fed on the carcass and drove off other local sharks from their perceived territory. As the scent of the dead whale drifted into the open ocean it was the large open water white sharks and tiger sharks that arrived and the local bull sharks were forced to leave the carcass. Watching these sharks feed it appears that size matters, and it is the larger female sharks that have precedence feeding and that the smaller male sharks are pushed out of the way by the larger sharks tail slapping them. It is via this non-lethal tail slapping behavior that they display dominance over another rather than through violence.

It is size that dictates the ranking hierarchy of sharks, and the Resource Dispersion Hypothesis was developed to explain this behavior. In the open ocean, food is scarce and sharks often go months without food. An encounter with another shark over food could cause an injury, and an injured shark will show up on someone's menu. Using non-lethal behavior such as tail slapping to display dominance makes sense and forces lesser size and lower ranked sharks to wait their turn. It has long been noted that smaller sharks leave when larger sharks appear. Sharks have social rules that they must live by and are not just mindless scavengers. Another behavior the researchers witnessed that proves that sharks can plan their depredation was bull sharks attacking a young whale that had become unable to find its way out of a narrow bay. The bull sharks bit off pieces from its tail and fins to prevent it swimming away and diving until it tired and died.

SWFAS DUES REMINDER 2026



SWFAS dues for 2026 are due. Thanks to everyone that has already renewed their 2026 tax deductible membership. Your support of archaeology, history, preservation, and education in Southwest Florida is critical. Our sole source of revenue is your dues and gifts as we strive to offer educational programming in the area of archaeology and history free to all members of the public. SWFAS is a 501(c)(3) registered non-profit organization. If you have not done so, we have two ways, you can renew online with a credit card at <https://swflarchaeology.org>. On the Home page, go to "Select Member Level" and then "Add to Cart." Or send a check to: Charlie Strader, SWFAS Treasurer, 27655 Kent Road, Bonita Springs, FL 34135. If you have question re membership status, you may call/text Charlie at 239-992-6133.

SWFAS PRESENTATION SCHEDULE 2026

Note that all SWFAS presentations are free to the public

JUNE – OCTOBER – NO LECTURES, NEWSLETTERS DISTRIBUTED EACH MONTH

NOVEMBER 18, 2026, 7:00 PM, BONITA SPRINGS FIRE STATION 24

(enter building in front by the flag poles. Parking is in front.)

Lecturer: Steven H. Koski

Presentation: Submerged Indigenous Archaeological Sites on Florida's West Coast: Sea Level Rise, Incidental Discoveries, Predictive Modeling, and Preservation Methodologies

DECEMBER 12, 2026, 10:00 AM Field Trip: Sanibel Historic Museum and Village

The visit is free and lunch is afterward. Reservations are required for both.

NOVEMBER PRESENTATION: WEDNESDAY, NOVEMBER 18, 2026, 7:00 PM BONITA SPRINGS, BONITA SPRINGS FIRE STATION 24

Topic: Submerged Indigenous Archaeological Sites On Florida's West Coast

Steve Koski, Lecturer



The Southwest Florida Archaeology Society invites you to join us at the Bonita Springs Fire House No. 24. Numerous Indigenous archaeological sites have been discovered, eroding from the shore along coastal, bay-front waters, and submerged in the nearshore and offshore waters throughout the world. The west coast of Florida is no exception. With its shallow coastal waters and bays, and gently sloping continental shelf, the preservation of these submerged sites is more likely to occur on this coast than in other locations. Study of these sites can provide important

information on the people who once lived along our shores in past centuries and millennia, as well as help us to gain an understanding of the processes which facilitate their preservation.

About the Lecturer

Steven H. Koski is the former Sarasota County Archaeologist for the Division of Historical Resources (July 2015-July 2024, retired). He received his BA in Anthropology/Archaeology from the University of Massachusetts, Boston, and completed graduate studies in an MA program at Arizona State University (1984-1986). His research interests include the early people of Florida, coastal adaptations, and early settlement and subsistence systems.

BONITA SPRINGS FIRE DEPARTMENT STATION 24 – To go there:



Located at 27701 Bonita Grande Dr, Bonita Springs, FL 34135. Turn off of I-75 at the Bonita Springs interstate Exit 116 (CR-865) to the East opposite the beaches. Go for 0.7 mi. Turn left onto Bonita Grande Dr at red-light (Publix and Racetrack). Go north for 0.3 mi. Turn East onto Snell Lane to the entrance. The parking lot is well lit. You may also access Bonita Grande Dr from West Terry St.

ARTICLES - PREVIEW

CONSERVATION OF THE TEMPLE OF ESNA

The Egyptian Ministry of Antiquities and the University of Tübingen (Germany) funded the conservation and restoration of the Temple of Khnum and have revealed the stunning original colors of the temple columns and ceiling. Together with the Temple of Hathor at Dendera, the Temple of Khnum in Esna are rare examples of a Greco-Roman temple incorporating a large astronomical ceiling. Recent cleaning by the conservationists of the ceiling and columns, revealed the brilliant colors hidden by layers of soot and bird droppings. They contain both known and unknown hieroglyphic inscriptions and hymns to the gods, especially the god Khnum and the intricate columns and the beautiful colors in the photos show the grandeur of this ancient Egyptian marvel. See below.

THE KUHIKUGU COMPLEX OF SITES IN THE AMAZON

Kuhikugu is an Amazonian archaeological complex of twenty towns and villages with an estimated population of about 50,000 people that was spread over an area of 7,700 square miles. It is estimated that it was inhabited from 1,500 years ago until about 400 years ago (1620). Located in the Amazon rain forest, the sites are noted by the long monuments that they built on the ground. Early conquistadors found much of the area depopulated, and it is believed that European diseases had spread throughout the region, spread through their trade contacts prior to their arrival. These people were farmers and some of these sites were fortified by palisades and defensive ditches. Their roads and trails connected the entire area. See below.

Editor's Note: For further reading about the conquest and decimation of the indigenous peoples of Brazil I recommend *Red Gold: The Conquest of the Brazilian Indians* by John Hemming, 1978 Harvard University Press, Cambridge, Massachusetts. This book documents the horrors of the European treatment of the Brazilian natives.

THE OLDEST EGYPTIAN DNA SEQUENCED

Scientists from the UK and Scotland were able to sequence a complete DNA set from an ancient Egyptian man. The man may have lived into his 60's and, based upon his skeletal markings hypothesized that he had been a potter. The DNA study revealed clues to population movements in Egypt between 2855 and 2570 B.C. and connections between North Africa and the Fertile Crescent. See below.

CHIQUEHUI TE CAVE CHANGES TIMELINE OF HUMANS IN NORTH AMERICA

Recent reports from archaeologist Ciprian Ardelean of the Autonomous University of Zacatecas, Mexico date their finding at Chiquehuite Cave at least 26,500 years ago. This pushes back the timeline of the entry of humans into the Americas ever further. We continue to see more sites dated long before Clovis being found and the timeline for the entry of humans into the Americas keeps being pushed further and further back. See below.

ARTICLES

CONSERVATION OF THE TEMPLE OF ESNA

By: Christian Leitz

From ARCE at <https://arce.org/project/conservation-of-the-temple-of-esna/>



The temple of Khnum in the town of Esna is located approximately 27 miles / 45 km south of Luxor. Since Antiquity, it has been famed for the beauty of its location and the magnificence of its architecture. It was dedicated to the ram god Khnum, his consorts Menhit and Nebtu, their son Heka, and the goddess Neith and it is one of the very last examples of ancient Egyptian temple architecture ever built. It was constructed using red sandstone and is well known for its prominent pronaos built from six rows of four columns, each adorned with a uniquely-styled lotus-leaf capital.

The pronaos was mostly decorated during the Roman period (1st to 3rd centuries) but it is only the front part of the original temple complex which dated to the Ptolemaic period. The Ptolemaic temple proper has mostly been destroyed, but the pronaos survived because it was used as an industrial storage facility for cotton during the nineteenth century. The surviving walls and columns are famous for the complex programs of hieroglyphs, associated scenes, and colorful iconography that adorns them. Serge Sauneron published the texts displayed in the Esna temple between 1963 and 1975 with the final volume released posthumously in 2009.

In 2018, the University of Tübingen launched, in co-operation with the Egyptian Ministry of Antiquities (MoA, now MoTA), a new documentation project in conjunction with the Documentation Center of the ministry under the direction of Hisham El-Leithy and financed in part by a generous grant from ARCE's Antiquities Endowment Fund, which ran from 2019 until 2021. The project's main objectives are twofold. The first objective is to continue the cleaning and conservation work started by the Department of Conservation under the direction of Gharib Sonbol, head of the Central Department of Restoration and Conservation of Antiquities some years ago. All of these activities are now carried out by a team of Egyptian conservators led by Ahmed Emam.

The second objective of the project is to compile a full photographic documentation set recording the current state of preservation of the architecture. The photographer responsible for carrying out this work is Ahmed Amin. In the long term we intend to publish plate volumes of all of the decoration in the pronaos in order to

provide a set of images that complements the text volumes of the temple inscriptions so meticulously edited by Sauneron, and thus complete the publication of this famous temple.

Together with the temple of Hathor at Dendera, the temple of Khnum in Esna is a rare example of a greco-roman temple incorporating a large astronomical ceiling in the pronaos. As at Dendara, the ceiling is subdivided into three segments (bands) north and south of the main axis, separated in the middle by a larger section decorated with a double row of no fewer than forty six vultures, twenty four representing Nekhbet of Elkab as a crowned goddess of Upper Egypt and twenty two representing Wadjet of Buto as the crowned goddess of Lower Egypt. Both goddesses bear different heads and crowns appropriate to their domains. Nekhbet has a white hedjet crown on her vulture head, while Wadjet wears a red deshret crown on her cobra head.

Apart from the capitals, all of the architraves carrying long astronomical texts are undergoing conservation treatment. The carved inscriptions are well known but it became clear that some parts were only painted on so that the conservation work revealed both the original colors and also new texts. The undersides of the architraves were almost entirely painted and were covered by such a thick layer of soot that Serge Sauneron was unable to read or integrate these texts in his famous edition.

The eighteen columns are also part of the conservation project. So far, fifteen of these columns are completely restored. Esna is the only surviving temple with long texts in the second register of its columns. In all of the other temples, they are only decorated by offering scenes. The only exception is the temple of Athribis near Sohag where fragments of a second register is preserved. The inscriptions include hymns to the gods of Esna, especially Khnum, and very detailed descriptions of the feasts held during the year.

The hieroglyphs there were created in three steps. The first step was drawing the texts in ink on the column, the second was carving the forms, and the final one was painting them. Sauneron's printed edition documented the second phase of the decoration but it sometimes happened that the carving was wrong and was corrected during the final phase by painting; something that Sauneron could not see. The conservation of all the columns will enable us to improve the edition of the Esna texts in this respect.

A considerable challenge for all the conservation work carried out on the columns and walls are the many birds that frequent the pronaos, most notably the pigeons. Only the ceiling and the lower sides of the architraves are protected against them. For this reason, the mission is installing metallic spikes on top of the capitals, a favourite nesting place for the pigeons.

The grand vision for the future is the complete conservation of the inner part of the pronaos. At present, the complete ceiling (including bands E and F) and all architraves including their lower sides are finished. Half of the columns are already protected against birds by metallic spikes fixed on their capitals. All in all, the outstanding work should require two or three years to complete, depending on the financial and human resources available.

KUHIKUGU

From Wikipedia at <https://en.wikipedia.org/wiki/Kuhikugu>



Kuhikugu is an archaeological site located in Brazil, at the headwaters of the Xingu River, in the Amazon rainforest. The area around Kuhikugu is located in part of the Xingu National Park today. Kuhikugu was first uncovered[when?] by anthropologist Michael Heckenberger, working alongside the local Kuikuro people, who are the likely descendants of the original inhabitants of Kuhikugu.[1]

Archaeological complex and history

In the broad sense, the name refers to an archaeological complex including twenty towns and villages, spread out over an area of around 7,700 square miles (20,000 km²), where close to

50,000 people may have once lived. Kuhikugu was likely inhabited from a period of time around 1,500 years ago to a time as recently as 400 years ago, when the people living there were likely killed by diseases brought over by Europeans. Although Europeans likely did not spread it to the inhabitants of Kuhikugu directly, they did directly spread diseases to trade partners from other areas. By the time Europeans did make it to this area, the civilization was already crumbling.[2] Early conquistadors that explored this area likely saw the last moments of these towns, and their records provide insight to what these locations would have looked like. And when Europeans returned some time later the towns and villages were already consumed by the rainforest. The indigenous people now lived in tribes away from the ruins, and the memory of that civilization was remembered through oral tradition.

What sets the people that would have inhabited Kuhikugu apart from other South American civilizations are their horizontal monuments. Unlike Aztec and Maya peoples who built pyramids, these people built long monuments on the ground for their gods. Presumably this is because it would be impossible to maintain a large pyramid in a rainforest, and it would be dwarfed by the surrounding trees. The engineering was sophisticated enough for bridges that crossed large sections of river and moats for defensive purposes. Furthermore, the black earth surrounding the area indicates large scale agricultural activity [1][3]

Settlement X11

Strictly speaking, Kuhikugu is settlement X11 of this complex, located near Porto dos Meinacos on the eastern shore of Lake Kuhikugu (now Lagoa Dourada) at 12° 33' 30" S 53° 6' 40" W. There, as well as at other former settlements of the Kuhikugu complex, satellite imagery reveals that even today the forest differs from surrounding pristine areas, and ground-based exploration reveals this to be an effect of the anthrosol (cf. terra preta), known to the Kuikuro as egepe. Directly to the north of the X11 site there is a Kuikuro village, the small size of which provides an interesting comparison to the large area of egepe which indicates the prehistoric settlement.[4]

Large defensive ditches and palisades were built around some of the communities at Kuhikugu.[1][4] Large plazas also exist at some of the towns throughout the region, some around 490 feet (150 m) across.[1][4] Many of the communities at Kuhikugu were linked, with roads which bridged some rivers along their paths, and with canoe canals running alongside some of the roads. Sites X35 and X34 are significant communities connected by two of these roads. Site X11 has a total of 4 suburbs that connect via river or road, all of which appear to have constant relation to one another.[4] Fields of mandioca (cassava) may have existed around the communities at Kuhikugu, suggesting that the people there were farmers.[4][5] Dams and ponds which appear to have been constructed in the area also suggest that the inhabitants of Kuhikugu may have been involved with fish farming, which is still practised by some of their modern-day Kuikuro descendants.

The Lost City of Z

There is a possibility that legends regarding Kuhikugu may have convinced the British explorer Lieutenant Colonel Percy Fawcett to go on his expedition for "City Z". Fawcett claimed to have discovered a large number of pottery shards in the Amazon while doing field work, and the Kuhikugu sites could have potentially had a large amount of pottery on the surface. There are over 20 sites that Kuhikugu encompasses, each of which could have supported over 5,000 people, and the sophisticated city planning and remaining structures could have been what Fawcett was looking for. Sites all follow a similar layout, meaning any of the sites could have influenced Fawcett to search for the Lost City of 'Z'. [3]

For notations, please see website identified above.

SCIENTISTS SEQUENCE FIRST GENOME FROM ANCIENT EGYPT, REVEALING 4,800-YEAR-OLD SECRETS

July 11, 2025

By The Francis Crick Institute

From SciTechDaily at <https://scitechdaily.com/scientists-sequence-first-genome-from-ancient-egypt-revealing-4800-year-old-secrets/>



Researchers at the Francis Crick Institute and Liverpool John Moores University (LJMU) have successfully extracted and sequenced the oldest known DNA from ancient Egypt. The genetic material came from an individual who lived between 4,500 and 4,800 years ago, during the era when the first pyramids were built. Their findings were published in *Nature*. This achievement comes four decades after Nobel laureate Svante Pääbo first attempted to retrieve DNA from ancient Egyptian remains. Thanks to advancements in genetic technology, scientists have now managed to sequence the first complete genome (the full set of an individual's DNA) from ancient Egypt. At that time in Egyptian history, archaeological evidence has pointed to ongoing trade

and cultural interactions with the Fertile Crescent, a region in West Asia that includes parts of modern-day Iraq, Iran, and Jordan. While scholars had long believed that writing systems, pottery, and other cultural elements were exchanged between these regions, the hot climate in Egypt has made DNA preservation difficult, limiting previous genetic research.

DNA from a 4,500-year-old tooth

For this study, scientists extracted DNA from a tooth belonging to an individual buried in the village of Nuwayrat, located about 265 kilometers south of Cairo. The genetic material was used to sequence the individual's entire genome. The remains were originally donated by the Egyptian Antiquities Service during British rule to an excavation team led by John Garstang. Initially stored at the Liverpool Institute of Archaeology (later part of the University of Liverpool), the remains were eventually moved to World Museum Liverpool. The individual lived during a transitional period in ancient Egypt that spanned the end of the Early Dynastic era and the beginning of the Old Kingdom. He was buried in a ceramic vessel placed in a hillside tomb. Because this burial occurred before artificial mummification became common, the natural conditions may have contributed to the preservation of his DNA.

Genetic ancestry linked to North Africa and Mesopotamia

By analyzing his genetic code, the researchers showed that most of his ancestry mapped to ancient individuals who lived in North Africa. The remaining 20% of his ancestry could be traced to ancient individuals who lived in the Fertile Crescent, particularly an area called Mesopotamia (roughly modern-day Iraq). This finding is genetic evidence that people moved into Egypt and mixed with local populations at this time, which was previously only visible in archaeological artefacts. However, the researchers caution that many more individual genome sequences would be needed to fully understand variation in ancestry in Egypt at the time.

By investigating chemical signals in his teeth relating to diet and environment, the researchers showed that the individual had likely grown up in Egypt. They then used evidence from his skeleton to estimate sex, age, height, and information on ancestry and lifestyle. These signs suggested he could have worked as a potter or in a trade requiring comparable movements, as his bones had muscle markings from sitting for long periods with outstretched limbs.

Multidisciplinary team reconstructs a personal history

Adeline Morez Jacobs, Visiting Research Fellow and former PhD student at Liverpool John Moores University, former postdoctoral researcher at the Crick and first author, said: "Piecing together all the clues from this individual's DNA, bones, and teeth has allowed us to build a comprehensive picture. We hope that future DNA samples from ancient Egypt can expand on when precisely this movement from West Asia started."

Linus Girdland Flink, Lecturer in Ancient Biomolecules at the University of Aberdeen, Visiting Researcher at LJMU and co-senior author, said: “This individual has been on an extraordinary journey. He lived and died during a critical period of change in ancient Egypt, and his skeleton was excavated in 1902 and donated to World Museum Liverpool, where it then survived bombings during the Blitz that destroyed most of the human remains in their collection. We’ve now been able to tell part of the individual’s story, finding that some of his ancestry came from the Fertile Crescent, highlighting mixture between groups at this time.”

Pontus Skoglund, Group Leader of the Ancient Genomics Laboratory at the Crick and co-senior author, said: “Forty years have passed since the early pioneering attempts to retrieve DNA from mummies without successful sequencing of an ancient Egyptian genome. Ancient Egypt is a place of extraordinary written history and archaeology, but challenging DNA preservation has meant that no genomic record of ancestry in early Egypt has been available for comparison. Building on this past research, new and powerful genetic techniques have allowed us to cross these technical boundaries and rule out contaminating DNA, providing the first genetic evidence for potential movements of people in Egypt at this time.”

Joel Irish, Professor of Anthropology and Archaeology at Liverpool John Moores University and second author, said: “The markings on the skeleton are clues to the individual’s life and lifestyle – his seat bones are expanded in size, his arms showed evidence of extensive movement back and forth, and there’s substantial arthritis in just the right foot. Though circumstantial, these clues point towards pottery, including the use of a pottery wheel, which arrived in Egypt around the same time. That said, his higher-class burial is not expected for a potter, who would not normally receive such treatment. Perhaps he was exceptionally skilled or successful to advance his social status.”

In future work, the research team hopes to build a bigger picture of migration and ancestry in collaboration with Egyptian researchers.

DISCOVERY IN MEXICAN CAVE MAY DRASTICALLY CHANGE THE KNOWN TIMELINE OF HUMANS’ ARRIVAL TO THE AMERICAS

By Brian Handwerk

July 22, 2020

From Smithsonian Magazine at <https://www.smithsonianmag.com/science-nature/when-did-humans-reach-america-mexican-mountain-cave-artifacts-raise-new-questions-180975385/>



Surprisingly old stone points found in a Mexican cave are the latest intriguing discovery among many to raise questions about when humans really arrived in the Americas. For most of the 20th century archaeologists generally agreed that humans who had crossed the Beringia land bridge from Siberia to North America only ventured further into the continent only when retreating ice sheets opened a migration corridor, about 13,000 years ago. But a few decades ago, researchers began discovering sites across the Americas that were older, pushing back the first Americans’ arrival by a few thousand years. Now, the authors of a new study at Mexico’s Chiquihuite cave suggest that human history in the

Americas may be twice that long. Put forth by Ciprian Ardelean, an archaeologist at the Autonomous University of Zacatecas (Mexico), and his colleagues, the new paper suggests people were living in central Mexico at least 26,500 years ago. Ardelean’s work was published in *Nature* and paired with another study that presented a broader look at 42 known early human sites across North America from the Bering Strait to Virginia. Data from those sites were used to model a much earlier peopling of the Americas, and help scientists reimagine not only when but how the first people reached and populated the New World. The model features a number of archaeological sites, including Chiquihuite cave, which are intriguing but controversial enough, as experts disagree whether the sites actually evidence human occupation.

Chiquihuite cave is perched high in the Astillero Mountains, 9000 feet above sea level and 3,280 feet higher than the valley below. Excavations there were launched when a 2012 test pit unearthed a few stone artifacts that

suggested a human presence dating back to the Last Glacial Maximum between 18,000 and 26,000 years ago. More extensive excavations detailed in the new study were carried out in 2016 and 2017, unearthing some 1,900 stone points or possible tools used for cutting, chopping, scraping, or as weapons. The artifacts were dated by 46 different radiocarbon samples of adjacent animal bones, charcoal, and sediment samples. To the team, they represent a previously unknown technological tradition of advanced flaking skills. More than 90 percent of the artifacts were of greenish or blackish stone, though those colors are less common locally, suggesting to the authors that they were singled out as desirable. The bulk of the material is from deposits dating to between 13,000 and 16,600 years ago, leading the scientists to hypothesize that the humans may have used the cave for more than 10,000 years.

Ardelean knows that Chiquihuite's very old dates will raise most archaeologists' eyebrows. "As soon as you cross the limit into the Last Glacial Maximum (LGM), that's when it gets tricky," he says. "We have a sort of mental blockage just thinking about getting into a new continent in the middle of a glaciation." Yet he suggests that if people were visiting this cave during the Last Glacial Maximum they likely entered America even earlier, more than 30,000 years ago, before glaciers blocked the way from Beringia. "It takes centuries, or millennia, for people to cross Beringia and arrive in the middle of Mexico," Ardelean says. "Even coastal arrivals wouldn't have been landing on the Mexican coast—it's just way too far. You need many years of previous presence to make them arrive there if they came by sea or by land."

Ardelean sees the site as one point on an emerging new timeline for humans in the Americas. "This site alone can't be considered a definitive conclusion," he admits. "But with other sites in North America like Gault (Texas), Bluefish Caves (Yukon), maybe Cactus Hill (Virginia)—it's strong enough to favor a valid hypothesis that there were humans here probably before and almost surely during the Last Glacial Maximum."

As would be expected, the site has drawn scrutiny from the archaeological community. In a Nature "News & Views" article accompanying the studies, Ruth Gruhn, professor emerita at the University of Alberta, said that since the idea of an American entry date more than 30,000 years ago is double the currently popular date of about 16,000 years ago it "will be very hard for most archaeologists specializing in early America to accept."

Southern Methodist University archaeologist David Meltzer questions why the stone tool traditions described at the site haven't been seen anywhere else in the region, and why their technology remained unchanged for so many thousands of years. Loren Davis, an Oregon State University archaeologist, says most of the artifacts appear to have been produced by a single blow or fracture. Might they actually be broken rocks, created by natural actions like rockfall from the ceiling? "Humans don't have a monopoly on the narrow band of physics required to break rocks," Davis says. "I'm open to being convinced. If I'm wrong about what I'm seeing in their reporting, I might change my mind." Davis also laments a lack of evidence for domestic life in the cave. "We usually see things like butchering animals and making food," he says. "They did find lots of animal bones but they say there is no evidence of butchering and that's really strange. There's also an absence of things like fire pits, or pits in the ground for storing things, or unusual distributions of objects."

Ardelean believes some of those features might lie tantalizingly close by, yet be difficult or impossible to uncover. The current excavation is taking place far inside the large cave. "Most activities like cooking and eating happened right at the entrance," he says. "And that entrance isn't accessible, it's buried under tons of debris that has fallen from the top of the mountain."

That cave's mountainous location, thousands of feet above the valley floor, has David Meltzer asking another question. "Why keep coming back to that same place on a relatively constant basis over such a long period of time?" he says. "I find that curious. Not many sites have that kind of long-term repeated occupation, unless there is something quite useful or available at the spot to attract people to it."

The study shed some light on environmental conditions that existed over many centuries at the cave—a shifting landscape of mixed forests and grasslands revealed by plant samples from 31 DNA extractions from the

surrounding soil materials. But while tests of cave sediments revealed lots of ancient plant and animal DNA, scientists recovered no unambiguous signal of ancient people. Ardelean says the lack of verifiable human DNA up to this point is a disappointment. “Until we would have DNA available, there’s nothing to tell us who these people were or where they came from,” he says.

In recent years archaeologists working on various New World sites have stacked up evidence to refute the once-ubiquitous theory that the Clovis People, with their distinctive points, were America’s oldest culture. Scientists estimated that they passed through a corridor between Canada’s great ice sheets some 13,000 years ago. At Paisley Caves in Oregon people made an entirely different type of projectile point and left behind fossilized poop at least 14,000 years ago. Butchered mastodon bones and stone tools in a sinkhole suggest humans had reached Florida by at least 14,500 years ago. Evidence suggests humans made tools and butchered animals at Cooper’s Ferry in Idaho 16,000 years ago and made it all the way to tip of South America at Monte Verde, Chile by 14,500 years ago.

Many of those sites are represented in the second study, co-authored by Lorena Becerra-Valdivia, an archaeological scientist at the University of Oxford and the University of New South Wales, and Thomas Higham, an archeological scientist at the University of Oxford. They compiled radiocarbon and luminescence dating data from 42 archaeological sites across America, creating a model that maps scenarios of human distribution across the continent in time and space, from the Bering Strait to Virginia. When the oldest pre-Clovis sites are plugged in, the model suggests that humans populated the Americas before and during the Last Glacial Maximum some 19,000 to 26,500 years ago. That would mean that humans not only arrived in the Americas earlier than is commonly believed, but that they somehow circumvented the era’s massive ice sheets.

A theory that these peoples migrated by travelling down the Pacific coastline 14,000 to 15,000, or even as long as 20,000 years ago, has been steadily gaining support as excavations turn over more evidence, though uncovering their tracks is complicated due to past changes in sea levels. Another possibility is simply that people entered the Americas by land before the glaciers blocked the route into the continent’s interior. The model also suggests that a second, more widespread peopling of the Americas unfolded during a period of sudden and dramatic warming about 12,900 to 14,700 years ago. Becerra-Valdivia says this is evidenced by a spike in archaeological sites and the emergence of stone tool traditions like Clovis. Genetic research, she adds, also “points to marked population growth between around 15 to 16 thousand years ago.”

If the Americas begin to look more heavily populated by distinct groups of people after these dates, Ardelean believes the earlier pre-Clovis sites, each with distinct types of technologies or artifacts, tell a different tale. “I think that the human presence during the Last Glacial Maximum was extremely diverse, and there were multiple arrivals from multiple directions,” he says. “I believe humans were culturally diverse and potentially genetically diverse. There was no such thing as a single arrival.”

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Check out our website at <http://swflarchaeology.org/>

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We encourage those interested in Florida archaeology to become members of The Florida Anthropological Society (FAS) and The Southwest Florida Archaeological Society (SWFAS). Annual dues are due in January and membership applications to both organizations are attached. Membership in the FAS provides you with four annual volumes of *The Florida Anthropologist* and occasional newsletters on anthropological events in Florida in addition to the annual statewide meeting. More information on FAS can be found online at: www.fasweb.org. Membership in SWFAS offers you a local series of talks on archaeological and anthropological subjects that you can attend. The SWFAS monthly newsletter keeps you up to date on local events as well as other important archaeological topics. We urge you to support both with your membership. The SWFAS Lecture Series is open to all members of the public at no charge.



JOIN US!

The Southwest Florida Archaeological Society

<http://swflarchaeology.org/>

The Southwest Florida Archaeological Society (SWFAS) was founded in 1980 as a not-for profit corporation to provide a meeting place for people interested in the area's past.

Our goals are to:

- Learn more of the area's history
- Create a place for sharing of this information
- Advocate for preservation of cultural resources

Its members include professional and amateur archaeologists and interested members of the general public. Members come from all walks of life and age groups. They share a lively curiosity, a respect for the people who preceded them here, and a feeling of responsibility for the conservation of the places and objects they left behind.

The Society holds monthly meetings between October and April, attracting speakers who are in the forefront of archaeological and historical research. Occasionally members join in trips to historical and archaeological sites.

A monthly newsletter, Facebook page, and website keep members abreast of our events and happenings.

The organization is a chapter of the Florida Anthropological Society, a statewide organization that publishes quarterly newsletters and a journal, *The Florida Anthropologist*, and holds an annual conference.

I want to help The Southwest Florida Archaeology Society preserve and interpret Florida's heritage!

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I hereby agree to abide by the rules and bylaws of the Southwest Archaeological Society. I further release from any and all liability due to accident and injury to myself, dependents and any property owners cooperating with the society.

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Membership in the Society is open to all interested individuals who are willing to abide by the Florida Anthropological Society Statement of Ethical Responsibilities, which can be found on our website fasweb.org. *Membership is for one year.* SELECT LEVEL BELOW.

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