


# AN UNDERGROUND TEMPLE REVEALED





## OU archaeologists pinpoint an ancient temple beneath a World Heritage Site in Mexico without lifting a shovel.

BY CHIP MINTY

The ancient city of Monte Albán still has secrets to uncover.

**W**hen Scott Hammerstedt saw the anomaly pop up on the computer screen, his first instinct was to keep quiet. There was no sense getting the others excited if it were a false alarm.

The Oklahoma archaeologist needed to run more data before he could confidently share the discovery of a lifetime. So, as other team members milled around the house after another long day of field work, Hammerstedt sat quietly tapping on his laptop and biting his tongue.

Within a half hour, he had what he needed. “Come look at this!” he finally exclaimed. And that is when the party started.

“I think we had a few cocktails that night,” Hammerstedt says. “Everyone was super excited.”

Hammerstedt, a senior researcher at the Oklahoma Archeological Survey, was part of a team of University of Oklahoma scientists who discovered what appears to be the remains of a buried religious temple, which could further explain the origins of the 2,500-year-old city of Monte Albán, home to one of North America’s oldest civilizations.

OU archaeology professor Marc Levine led the 2017 expedition to the site in the southern Mexican state of Oaxaca, where they used geophysical technology to explore what lies beneath an 11-acre expanse known as Monte Albán’s Main Plaza. Archaeologists have been studying the ancient site for nearly a century, but Levine and his crew were the first to survey the Main Plaza with the modern technological wonders of magnetic gradiometry, ground penetrating radar and electrical resistance. Results of their findings were published earlier this year in the journal, *Latin American Antiquity*.

Using those three tools, Levine, Hammerstedt, Oklahoma Archeological Survey Director Amanda Regnier and a cadre of other specialists spent a summer month at Monte Albán, sweeping the plaza for clues to the city’s mysterious past. They had been working for three weeks, running across several interesting images, but had made no startling discoveries until the final week of their stay. That’s when images from what appeared to be the remains of three buildings in the center of the plaza area appeared on Hammerstedt’s computer screen.

“We were pretty excited, and all of our instruments confirmed the discovery,” Levine says. “The irony is that we were not even going to look in that area, so this was unbelievable. We feel very fortunate that we found something we could hang our hat on. It fulfilled all of our expectations and more for this project.”

Levine, who also serves as an associate curator at OU’s Sam Noble Oklahoma Museum of Natural History, says the buildings’ foundations are buried just a foot below ground. The walls were likely dismantled in antiquity and the materials, like stone blocks, reutilized for later constructions. *continued*

Each of the three imaging technologies used to locate the hidden structures works differently, with unique strengths and weaknesses, Hammerstedt says. By sweeping the plaza with all three instruments, the overlapping technologies compensated for limitations of each and provided more accurate images.

Through those images, the OU team could recognize structural attributes similar to later temples that had been excavated at Monte Albán. Levine says the close comparisons strengthen the argument that their discovery is a temple that was built during Monte Albán's early history, sometime between A.D. 200 and 500 B.C.

The main building is square, with walls that are 59 feet long on a side, ranging from five to more than six feet thick, possibly to support heavy, stone block superstructures. The main building appears to have had columns on one end, a staircase and an entrance facing east.

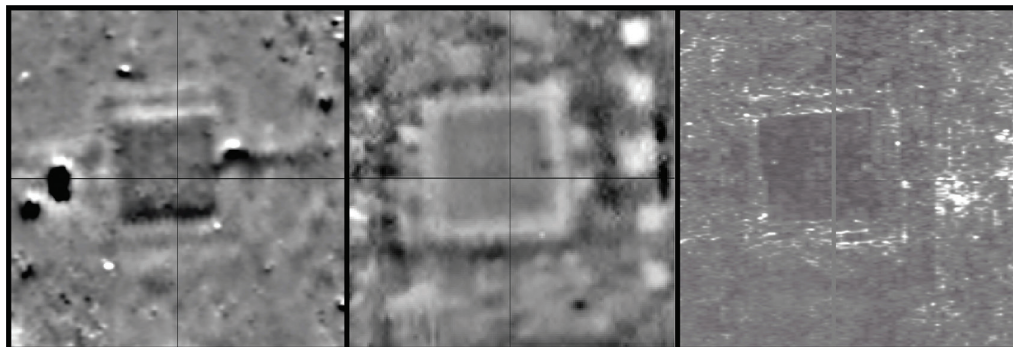
As with all science, one discovery can lead to many more questions, and Monte Albán is no exception. While Levine thinks the remains were from a temple, he admits there are other possibilities and other questions, such as precisely when the buildings were built, who used them and when they were torn down and buried.

The answers will require excavation, which is complicated by Monte Albán's status as a UNESCO World Heritage site, where excavation applications are heavily scrutinized.

Nonetheless, Levine is moving forward, hoping to obtain a permit to study the site further, even if only to excavate a small area to recover material, such as charcoal, that can be carbon dated to determine when the structures were built. The information could significantly advance understanding of the city's historical development.

For generations, the ancient capital has been an international tourist attraction with hundreds of thousands of visitors each year. Inhabited from about 500 B.C. to A.D. 1,200, Monte Albán is built on a mountain and comprises terraces, artificial mounds, dams, canals and pyramids, along with magnificent temples, ball courts, tombs and carvings with hieroglyphic inscriptions.

Levine says an estimated 15,000 to 30,000 people populated the capital at its peak, with hundreds of thousands more living in adjacent communities that formed what amounted to an ancient metropolis with an interconnected system of gov-



Geophysical prospection below the Main Plaza revealed three views of the same buried structure, believed to be the remains of a temple. From left, images from the gradiometer, electrical resistance and ground-penetrating radar.



Scott Hammerstedt uses electrical resistance to survey beneath Monte Albán's Main Plaza.

ernment and markets.

"Monte Albán is one of the earliest urban societies in Mesoamerica," Levine says. "Imagine it on a global map as one of the flickering lights where people were doing unusual things like building politically complex centers that were home to thousands of people."

Just as in other parts of the world at that time, stratification



Overhead photo of the Main Plaza, with line drawings indicating the location of buried features discovered—including the remains of what may be a temple.

within society began to develop with elites, commoners and a servant class, Levine says. Leaders would sponsor trade expeditions, sending parties hundreds of miles, where they would exchange goods as well as ideas.

“Monte Albán is one of the first urban societies in Mesoamerica,” Levine says. “So, it has long been considered a place to test and investigate ideas about the origins and development of complex urban societies. We want to know why these cities arose in Mesoamerica the same way we ask why they were established in Mesopotamia or in Egypt or China.

“America is another one of those areas in the world where we can examine the initial development of social inequality with powerful leaders, powerful states. There was a constellation of early cities that were doing similar things at the same time.”

But Levine says Monte Albán became a regional capital, conquering nearby neighbors and ultimately controlling a large area.

“So, Monte Albán and places like it represent real milestones in world history. It is important for us to understand the history of how we got to where we are today. In many ways, we can relate to Monte Albán’s urban society because it’s somewhat like our own,” Levine says.

People can relate to a social system where there is a capital city and outlying developments, similar to modern-day urban and suburban communities, he says.

“In many ways, this is easier than relating to a hunter-gatherer group that moves across the Rocky Mountains, traveling dozens of miles hunting elk,” he says. “That’s very different from our experience, but Monte Albán represents a pivotal

point in history when people began living in cities, where trade and commerce became more important than ever before, and social differences emerged between the haves and the have-nots.

“We talk about ‘the 99%’ today. This is the beginning of sharp social distinctions between commoners and elites, so Monte Albán is an important place to study early inequality and we need to understand its history.”

Levine says there is scientific debate over what drove the growth of Monte Albán. How did the city attract tens of thousands of people to live in the region and why was its culture prosperous and successful for so long?

Some argue religion was the glue that held society together through powerful religious leaders and ideas. Others believe Monte Albán was founded on militarism with strong commanders who provided protection in an uncertain social environment filled with conflict and conquest.

Levine says the discovery he and his team made in 2017 could play a significant role in answering questions about Monte Albán’s origins, growth and long prosperity.


“If we found a temple at Monte Albán that dates to the earliest period, if we can verify it is a temple, then that may support the idea Monte Albán, early on, was a kind of religious mecca that attracted people to come live there, and religion was the social glue and engine that ran the place,” Levine says.

“So, the significance of our discovery is that it can transform our understanding of what Monte Albán really was,” Levine adds. “And, in a broader sense, it can weigh in on these kinds of meta-arguments and clarify what early Mesoamerican civilization was all about, showing us the most important catalyst for the development of complex societies in the New World.”

Oklahoma Archeological Survey researcher Hammerstedt credits geophysical technology for revolutionizing archaeology by allowing scientists to cover every inch of open space within an excavation site. Because of such technology, he says, archaeologists are returning to large plaza areas like the one they explored at Monte Albán to look for answers long hidden.

“On the day we made our discovery, I knew we had found some interesting stuff,” Hammerstedt says. “But I didn’t know at the time we had something that interesting. I can say I have only been to Mexico once in my life, but while I was there, I dropped the mic.”

As their discovery celebration wound down in 2017, Levine wondered what he would tell the local media, and he finally concluded it would be a simple story that any archaeologist would love to share.

“I told them that I found a buried temple,” he says. 

*Chip Minty is a Norman-based writer and the principal of Minty Communications, LLC.*