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Celestial Find at Ancient Andes Site

The discovery in Peru of a 4,200-year-old temple and observatory pushes back estimates of the rise of an advanced culture in the Americas.

By Thomas H. Maugh II, Times Staff Writer
May 14, 2006

Archeologists working high in the Peruvian Andes have discovered the oldest known celestial observatory in the Americas — a 4,200-year-old structure marking the summer and winter solstices that is as old as the stone pillars of Stonehenge.

The observatory was built on the top of a 33-foot-tall pyramid with precise alignments and sightlines that provide an astronomical calendar for agriculture, archeologist Robert Benfer of the University of Missouri said.

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The people who built the observatory — three millenniums before the emergence of the Incas — are a mystery, but they achieved a level of art and science that archeologists say they did not know existed in the region until at least 800 years later.

Among the most impressive finds was a massive clay sculpture — an ancient version of the modern frowning "sad face" icon flanked by two animals. The disk, protected from looters beneath thousands of years of dirt and debris, marked the position of the winter solstice.

"It's really quite a shock to everyone ... to see sculptures of that sophistication coming out of a building of that time period," said archeologist Richard L. Burger of Yale University's Peabody Museum of Natural History, who was not involved in the discovery.

The find adds strong evidence to support the recent idea that a sophisticated civilization developed in South America in the pre-ceramic era, before the development of fired pottery sometime after 1500 BC.

Benfer's discovery "pushes the envelope of civilization farther south and inland from the coast, and adds the important dimension of astronomy to these ancient folks' way of life," said archeologist Michael Moseley of the University of Florida, a noted Peru expert.

The 20-acre site, called Buena Vista, is about 25 miles inland in the Rio Chillan Valley, just north of Lima. "It is on a totally barren, rock-covered hill looking down on a beautiful fertile valley," said Benfer, who presented the find last month in Puerto Rico at a meeting of the Society for American Archeology.

The site is remarkably well preserved, Benfer said, because it rains in the area only about once a year.

The name of the people who inhabited the region is unknown because writing did not emerge in the Americas for 2,000 more years. Some archeologists call them followers of the Kotosh religious tradition. Others call them late pre-ceramic cultures of the central coast. For brevity, most simply call them Andeans.

Benfer and archeologist Bernardino Ojeda of Peru's National Agrarian University have been working at Buena Vista for four years. The site contains ruins dating from 10,000 years ago to well into the ceramic era in the first millennium BC.

The large pyramid and a temple occupy about 2 acres near the center of the site. Radiocarbon dating of cotton and burned twigs found in the temple's offering pit place its use at about 2200 BC.



Gateway
(Robert Benfer / University of Missouri)
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Musician
(Robert Benfer / University of Missouri)
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That is about 400 years after the first pyramid was built in Egypt and about the same time that the peoples who would become the Greeks were settling into the Mediterranean region.

The temple is built of rock that was covered with plaster and painted, although most of the white and red paint has long since flaked off.

Benfer calls it the Temple of the Fox because a drawing of a fox is carved inside a painted picture of another animal, probably a llama, beside each doorway. According to Andean myth, the fox taught people how to cultivate and irrigate plants.

As the team mapped out the site, Benfer observed that a person standing in the doorway of the temple and gazing through a small, flap-covered window behind the altar is aligned with a small head carved onto a notch of a distant hill. The line had an orientation of 114 degrees from true north, pointing southeast.

Benfer does not normally deal with archaeoastronomy — the science of ancient astronomy — so he contacted a childhood friend, Larry Adkins of Tustin, and asked him what that angle signified.

Adkins, a physicist who is retired from Rockwell International and who now teaches astronomy at Cerritos College, told him 114 degrees pointed the way to sunrise on the Southern Hemisphere's summer solstice, Dec. 21, the longest day of the year.

"That really got the ball rolling," Adkins said.

The summer solstice marks planting time, as the Rio Chillón begins its annual flooding, fed by melting ice higher up in the Andes. The flooding deposits fresh soil on the land, fertilizing the crops and eliminating the need for manure from domestic animals.

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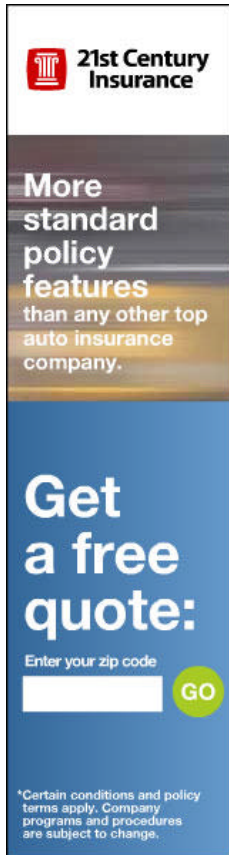
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