# Uncover Lost Maya Ruins from Space

NASA and university scientists are using space- and aircraft-based 'remote-sensing' technology to uncover remains of ancient Maya ruins in Central America, using the chemical signature of the civilization's ancient building materials.

"From the air, everything but the tops of very few surviving pyramids are hidden by the tree canopy," said NASA archaeologist Tom Sever. "On the ground, the 60- to 100-foot trees and dense undergrowth can obscure objects as close as 10 feet away."

Sever has explored the capacity of remote-sensing, the science of collecting information about the Earth's surface using aerial or space-based photography, to serve archaeology. He and scientist Dan Irwin provided archaeologist William Saturno with high-resolution commercial satellite images of the rainforest, and collected data from NASA's Airborne Synthetic Aperture Radar, an instrument flown aboard a high-altitude weather plane, capable of penetrating clouds, snow and forest canopies.

They discovered a correlation between the colour and reflectivity of the vegetation seen in the images -- their 'signature', which is captured by instruments measuring light in the visible and near-infrared spectrums -- and the location of known archaeological sites.

In 2004, the team ground-tested the data. Hiking deep into the jungle to locations guided by the satellite images, they uncovered a series of Maya settlements exactly where the technology had predicted they would be found. Integrating cutting-edge remote sensing technology as a vital research tool enabled the scientists to expand their study of the jungle.

Under a NASA Space Act Agreement with the University of New Hampshire, the science team will visit Guatemala annually through 2009, with the support of the Guatemalan Institute of Anthropology and History and the Department of Pre-Hispanic Monuments. The team will verify their research and continue refining their remote sensing tools to more easily lead explorers to other ancient ruins and conduct Earth science research in the region.

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