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Institute takes a futuristic look at past

(http://www.suntimes.com/technology/guy/213451,CST-FIN-eCol17.article)

January 17, 2007

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The University of Chicago's Oriental Institute, known for antiquities scholarship, is using mapping software and spy-satellite photos to unravel the mysteries of how people lived, traveled and built civilizations.

The results could reveal findings as diverse as an ancient Egyptian settlement flooded by a dam, the routes explorers took to settle in Chicago's Beverly neighborhood, and why Iraq is considered the cradle of civilization.

"It's important to know what happened many years ago to understand the context of what's happening today," said project director Scott Branting, who counts among his alma maters Wheaton College and the University of Chicago.

The project is more than an academic exercise. Branting intends for the Oriental Institute to become a data center for NASA, to partner with satellite companies to get the latest aerial images, and to create a pedestrian simulator to figure out how people traveled through ancient lands.

The project, called the Center for Ancient Middle Eastern Landscapes or CAMEL, uses geographical information systems (GIS), the same mapping technology as Google Earth, to pinpoint details of ancient sites and even date their origins. That's possible because GIS encompasses data and trends analysis, and the ability to look at the results on two- and three-dimensional maps.

Branting and his research team at the Oriental Institute, 1155 E. 58th St., are scanning into GIS formats the images from newly declassified 1960s-era spy satellites and its own aerial photos dating as far back as the 1920s. Branting works in the institute's lab with students and with assistant director Robert Tate and associate director Joshua Trampier to overlay the aerial images onto the GIS mapping system.

James Henry Brested, the institute's founder, was among early explorers who took photos from airplanes over sites in Egypt in 1920. In that era, cameras were also strapped onto kites and balloons to take aerial shots.

"We can break apart the landscape, decade by decade," Branting said. "We can see things that have disappeared, sites bulldozed, ancient roadways on which modern roads have been built, and how urban sprawl grew around Baghdad."

The project is unique in archeology because it aims to keep ancient sites intact, rather than to disturb them by excavation. Its scope is unusual, too, because it covers Chicago's South Side as well as a Near Eastern area ranging from Greece on the west to Afghanistan on the east, and from the Black Sea on the north to the Horn of Africa on the south.

The project also stacks data in layers, so a site's hydrology, economics, politics and languages are explored along with the geography.

"It's like a layered chocolate cake," said Ezra Zubrow, an anthropology professor at the University of Buffalo in New York and a pioneer in GIS technology development. "The project is creating new analyses and new information by combining those diverse sets of data."

The analysis enables researchers to track changes going on in real time, such as the Iraq War's destruction of ancient relics and museums, and predict what could happen in the future.

Researchers can create a probability map of crime, down to the time of day an event probably would occur, Zubrow said.

Anyone intrigued by the work can log on to *http://oi.uchicago.edu/OI/PROJ/CAMEL/Main.html* to learn about information ranging from how civilization developed in the Middle East to the pathways people traveled to expand their horizons.

Zubrow said CAMEL's use of technology and its ability to do a great deal of work with a small staff serve as a model of a modern geographic study center.