

BELIEFS

To decorate the ancient, cameras get innovative

USC researchers are producing crisp images of early Near East artifacts and making them available online.

DUKE HELFAND

Four thousand years ago, a government bureaucrat in Mesopotamia jotted down a tally of slave laborers on a clay tablet.

The bureaucrat left behind the count in wedge-shaped symbols that proved hard to fully decipher with the naked eye.

Until now, researchers at USC's West Semitic Research Project have helped uncover its hidden narrative with the aid of lighting and imaging techniques that are credited with revolutionizing the study of ancient texts.

Over the last three decades,

the USC project has produced thousands of crisp images of inscriptions and other artifacts from biblical Israel and other Near Eastern locales, making the pictures available to the public in an online archive, InscriptiFact.com.

Among the items shown in the online collection is a Dead Sea Scroll dating to the 1st century that discusses a buried treasure in modern-day Israel. (It's impossible to pinpoint the precise location because landmarks mentioned in the text no longer exist.)

The database also features an Aramaic inscription on a sheet of papyrus written by a group of Jews in Egypt five centuries before the birth of Jesus. In the text — whose image is so sharp it reveals the grain of the papyrus — Jews petition distant Persian rulers for permission to rebuild a temple.

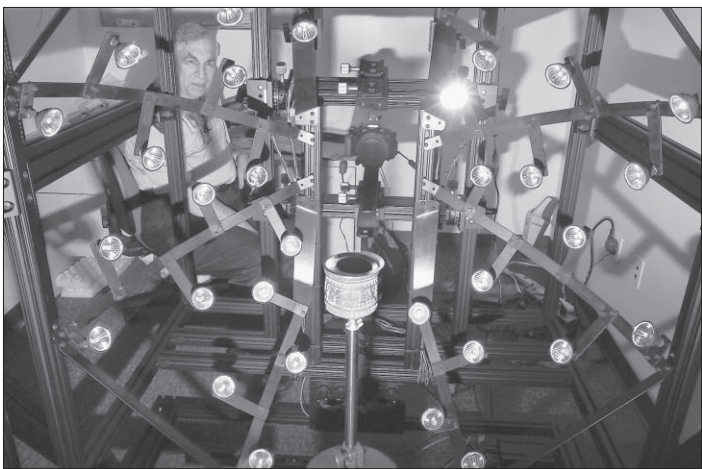
"A picture is worth a thousand words," said Bruce Zuckerman, USC religion professor who founded the research project in the early 1980s. "Sometimes big issues in history can turn on the interpretation of a single letter."

Zuckerman's foray into the world of photography and ancient texts grew out of his frustration over the poor quality of archaeological photos.

Museum photographers, he recalled, often missed important details because they lacked scholarly expertise.

Biblical researchers, meanwhile, typically did not have enough experience with photography to produce compelling images.

Zuckerman wanted to bridge the gap. He turned to his older brother, Ken, a self-taught photographer and former Caltech engineer.



'THE GIZMO': Ken Zuckerman shows the experimental Multi-View Apparatus, which takes pictures of an artifact lighted from multiple angles. A computer composite then lets researchers adjust the light and shadows to reveal details.



PROFESSOR: Bruce Zuckerman points out lettering on a Dead Sea Scroll. He founded the research project to combine museum-quality photography with scholarly expertise.

Together, the Zuckermans began taking — and distributing — photos of ancient inscriptions.

The brothers combined large-format cameras and multiple sources of light that revealed an object's otherwise hidden details. Digital cameras and computers, introduced into the process about a decade ago, provided more precise images.

The Zuckermans brought their new techniques to museums throughout the U.S., Middle East and Europe, transforming an otherwise staid service into a captivating enterprise — one they intended to open to the public despite objections from some museum curators and scholars who feared losing control over rare objects, leading experts said.

"What West Semitic Research Project did was creating a collection of photos of inscriptions that were unlike anything that had been done before," said Wayne Pitard, a religion professor at the University of Illinois at Urbana-Champaign, who has collaborated with the

Among the items shown in the online collection is a Dead Sea Scroll dating to the 1st century that discusses a buried treasure in modern-day Israel.

holding it in your hands," Bruce Zuckerman said.

Another office holds the Light Dome. It resembles a round submerge net and contains 32 lightbulbs, plus space for an artifact.

A camera peers inside and takes pictures, each shot from a different angle. Using that information, a computer program produces a composite that "allows you to create combinations of light and shadow that show you different details of the objects," said Marilyn Lundberg, the project's associate curator.

Yet another room holds a larger version of the dome that looks like a giant black tarantula with lights affixed to its outstretched arms.

The Multi-View Apparatus — or Gizmo, as it's called — is experimental. But the Zuckermans and others who know them say it's only a matter of time before they integrate the large piece of equipment into their repertoire.

"They are cutting-edge," said Andrew Vaughn, executive director of the American Schools of Oriental Research at Boston University. "They want to create a resource to pass on to generations, and that is so vital for what the scholarly society needs."

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Lottery results

For Saturday, Oct. 31, 2009

Mega number is Bold

6-10-15-28-23—**Mega 22**

Jackpot: \$12 million

Winners per category:

	No. of winners	Amount of prizes
5 + Mega	0	0
5	7	\$9,400
4 + Mega	25	\$1,316
4	702	\$78
3 + Mega	1,042	\$17
3	27,586	\$8
2 + Mega	12,573	\$10
1 + Mega	58,462	\$2
Mega only	89,843	\$1

Make Me a Millionaire

Rosemarie Kratz, Apple Valley, \$50,000; Roberto Chavez, Whittier, \$15,000.

For Sunday, Nov. 1, 2009

Fantasy Five: 7-9-10-11-18

Daily Four: 5-2-9-0

Daily Three (midday): 9-7-0

Daily Three (evening): 3-0-9

Daily Derby:
 (10) Scott Gaid
 (7) Eureka
 (1) Money Bags
 Race time: 1:44.66

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Toll road operators to forgive fines

To settle a suit alleging excessive penalties, two O.C. agencies will forgo \$40 million and pay out \$1.4 million.

DAN WEIKEL

In a pending court settlement that could affect thousands of motorists, two Orange County toll road agencies have agreed to forgive more than \$40 million in fines and pay \$1.4 million to a group of drivers who alleged that they were charged excessive penalties for unpaid tolls.

The proposed settlement involves the Orange County Transportation Authority, which owns the 91 Express Lanes on the 91 Freeway, and the Irvine-based Transportation Corridor Agencies, the operator of a 51-mile network of tollways comprising the Eastern, the Foothill and the San Joaquin Hills.

According to court records, both agencies also agreed to pay the motorists' legal fees of \$1.5 million and overhaul their enforcement procedures, including better notification of violations, more time to contest violations and caps on penal-

ties. Attorneys for both sides and their clients declined to comment on the settlement, which was filed in Orange County Superior Court in October. Instead, they prepared a statement to be released when the agreement is finalized in Orange County Superior Court early next year. In a copy of the remarks, the agencies denied that their past enforcement practices were illegal.

If approved, the agreement will end a three-year court battle that started in January 2007 when 16 motorists sued the agencies. The group alleged that the agencies illegally fined them almost \$334,000 for failing to pay about \$2,500 in tolls. Toll road users brought other lawsuits in May 2007 and March 2008.

Among the motorists is Rosemarie Sepeda of Riverside County, who alleged that OCTA fined her almost \$133,000 for \$1,195 in unpaid tolls. Brian and Stephanie Young, also of Riverside County, faced \$61,580 in fines for failing to pay \$635 in tolls to OCTA.

The lawsuits accused the agencies of violating constitutional protections against excessive fines.

The motorists further alleged that the agencies mis-

TABLET: The 4,000-year-old unicorniform is much easier to see in the West Semitic Research Project's photographs.

handled their requests to correct mistakes, denied them adequate opportunities to contest penalties and imposed stiff fines for unintentional violations, even when tolls were eventually paid.

Both agencies countered that their enforcement practices were fair and complied with state law, including the California Vehicle Code.

They said that motorists were notified repeatedly about unpaid tolls and had ample opportunity to clear their debts or contest violations before serious penalties were imposed.

The three cases were consolidated into a class action for tollway users who have been fined since Jan. 1, 2003, by TCA and since May 31, 2003, by OCTA. Although there are 16 named plaintiffs, court records state that the settlement could apply to tens of thousands of motorists.

Under the settlement, the OCTA will forgive about \$32 million in uncollected fines; the TCA will waive about \$9 million in penalties.

Both agencies plan to waive or pay back all the fines imposed on the 16 original plaintiffs as long as they have paid their tolls. Some will receive additional payments of \$5,000.

Other motorists who have been fined since early 2003 are

eligible to share in a \$1.4-million restitution payment. The agencies will forgive 20% of their fines and provide additional hearings so drivers can argue for further reductions in their penalties.

According to the settlement, the agencies have agreed to contact motorists about a toll violation within 10 days instead of 21 days to prevent a cascade of violations until the notices are received.

The length of time to contest a violation will be increased, and motorists will be given a one-time administrative review if they miss deadlines to challenge violations.

When assessing penalties, the agencies will consider honest efforts to clear unpaid tolls and innocent mistakes, such as canceled credit cards and closed bank accounts that had been used to pay tolls under the agencies' automated billing and payment system.

The settlement requires the maximum fine per toll violation to drop from \$80 to \$180 while the total fine imposed on a motorist cannot exceed 20 times the amount of the unpaid tolls. Total penalties have gone as high as 52 times the amount of the unpaid tolls, according to court records.

Other motorists who have been fined since early 2003 are

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