

CAMEL (CENTER FOR ANCIENT MIDDLE EASTERN LANDSCAPES)

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The Center for Ancient Middle Eastern Landscapes (CAMEL), or the Center for the Archaeology of the Middle Eastern Landscape as it was then known, was founded by Tony Wilkinson in 1998. In speaking of its origins Tony always described the small facility as his own little Bletchley Park. Both were places where a great deal of information and a collection of trained analysts could be brought together in one place to decipher the supposedly undecipherable. But instead of having hundreds of workers toiling away at cracking unbreakable military codes during the dark days of World War II, CAMEL was always a bit smaller and was focused on reconstructing and illuminating the long vanished landscapes of the ancient Near East.

Located down in the basement of the Oriental Institute, CAMEL is comprised of three to four graduate students working on three computers integrating within geographical information system (GIS) software a wealth of maps, survey data, aerial photographs and satellite data pertaining to the Near East. However, its impact, much like Bletchley Park, extends well beyond its four walls as can be seen detailed in previous *Annual Reports*. Among its numerous achievements was the development of the “Chicago Protocol” for integrating Cold War era declassified spy satellite photography into studies of the archaeology of the ancient Near East. It also served as the fertile seedbed from which the pioneering Modeling Ancient Settlement Systems (MASS) simulation project grew and continues to develop in conjunction with Argonne National Laboratory. The impact of CAMEL’s existence has already been felt in a wide range of archaeological projects both here at the Oriental Institute and throughout the global research community.

In July of 2004 I was hired to oversee the continued development of CAMEL, and my first year in this position has seen a great deal of change. Among the more noticeable changes has been the transformation of the CAMEL facilities. Instead of a handful of computers the new CAMEL facility has grown to nine computers graciously housed in the lovely William M. Sumner Computer Laboratory on the second floor of the Oriental Institute (fig. 1). Each computer



Figure 1. New CAMEL facilities

computer is equipped with the latest GIS software from industry leaders ESRI and Leica/ERDAS as well as additional image processing and statistical software. Five scanners are available to users of the facility in order to scan in maps and other sources of data to be integrated within the GIS software. We have also begun negotiations with NSIT, the computer and information technology unit here on campus, to acquire an initial two terabytes of secure storage space to back up our existing holdings of digital data pertaining to the Near East as well as those that we will soon be acquiring.

The end result of these changes has been that CAMEL is much more publicly available to researchers in the Oriental Institute, and we have already seen these new facilities filled to capacity with those eager to use them in their own research projects.

Paralleling the expansion of the physical CAMEL facilities over this past year has been an expansion of CAMEL's vision. Yet our core dedication to applying innovative ways to explore Near Eastern landscapes and to making the variety of spatial data pertaining to these landscapes available to researchers remains the same. We are

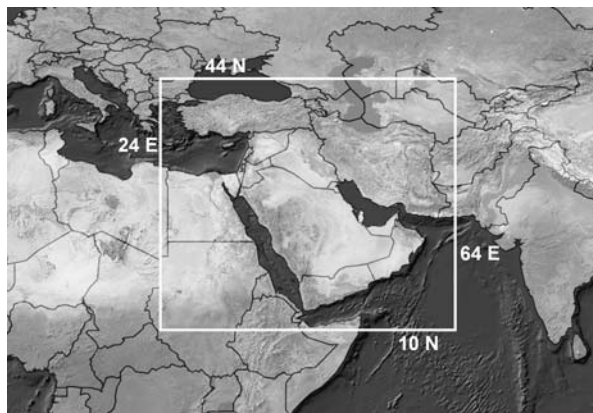


Figure 2. Area of CAMEL data collection

merely beginning to pursue these endeavors on an even larger scale, a scale that encompasses the entire Near East and all the Oriental Institute's projects (fig. 2). In doing this we will be better equipped to support the wide variety of research that the Oriental Institute undertakes and we will expand the global recognition that CAMEL enjoys while further enhancing the reputation of the Institute.

The collection and organization of various forms of spatial data are the backbone of CAMEL. We are well on our way to collecting and integrating within a single GIS framework a complete coverage of available spatial data from the Near East. This is not a little task by any means and will take a long-term focus and dedication to bring to fruition. But the Oriental Institute has always had a remarkable capacity to realize ambitious visions. The variety of data we are assembling and integrating includes: digital scans of maps and aerial photographs from the Institute's archives and collections, digital versions of additional maps and photographs available from other organizations and governments, spatial data collected over the years by Institute researchers during the course of their fieldwork, and data taken by satellites and manned space vehicles from the 1950s to the present.

One example of the sort of spatial data that we are acquiring is the CORONA images that have featured so prominently in prior work by CAMEL. These images, numbering in the hundreds of thousands, were taken from American spy satellites between 1959 and 1980 and were only declassified by President Clinton in 1996. In 1997 the Oriental Institute purchased its first of these declassified CORONA negatives, an image of Northern Syria taken in 1965, and Tony Wilkinson and I scanned it into a computer. As the digital version of the image appeared on the computer screen we were both amazed at the level of detail we could see as we zoomed in. There among the buildings, vehicles, and roadways in use on that day in 1965, were the mounded remains of ancient cities and villages as well as traces of ancient roadways and glimpses of the ancient landscape filling the areas between them (fig. 3). Many of these subtle traces of ancient features are no longer visible on the ground but have been destroyed by bulldozers and plows beneath sprawling cities, towns, and agricultural fields in the forty years since these images were taken. This ability to glimpse portions of the ancient landscape that no longer exist or which have been buried beneath modern sprawl make these CORONA images critical for reconstructing the full breadth of the ancient world.

Over the past eight years, since that day in 1997, the Oriental Institute and CAMEL have gone on to build up an impressive collection of some 290 CORONA images covering a large portion of the Nile Valley, Syria, Iraq and southeastern Turkey (fig. 4). This collection has al-

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Figure 3. Portion of first CORONA image acquired by the Oriental Institute

whole. Therefore we were very pleased this year, in the midst of the changes underway within CAMEL, that the Women's Board of the University of Chicago generously agreed to provide us with over \$20,000 to acquire and process an additional 300 CORONA images over the next two years. This acquisition will allow us to fill in significant portions of these so far excluded areas and will enable researchers to move virtually within the computer along a continuous landscape from the banks of the Nile to the peaks of the Taurus and Zagros Mountains and beyond (fig. 5). With smaller amounts of future funding CAMEL will also be well positioned to fill in the remaining gaps surrounding this significant core coverage of CORONA images in places such as the western desert of Egypt, the Persian Gulf, Turkey, and Iran.

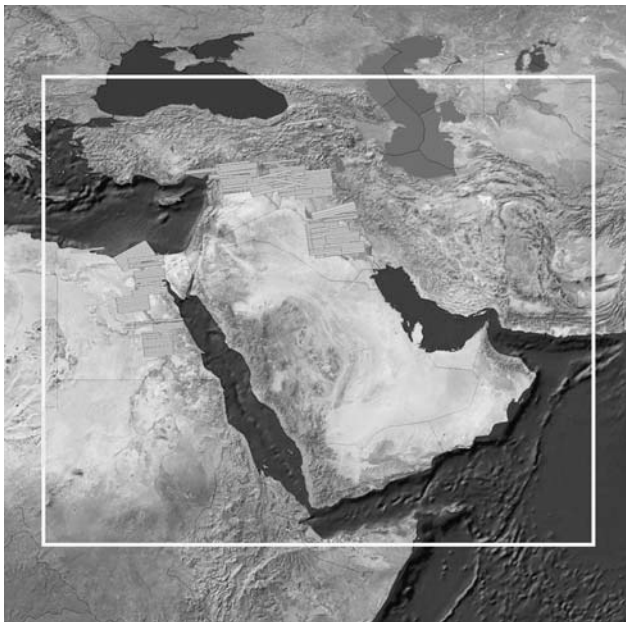


Figure 4. Current coverage of CORONA images

lowed numerous scholars and students to make use of these images in dozens of research projects and has encouraged researchers at other universities to use these images in their own research. The acquisition, processing, and use of these images has enhanced the reputation of the Oriental Institute in these fields and has placed it at the forefront of researchers working with this imagery for areas of the Middle East. Yet despite 290 images large portions of the Near East lie outside of our coverage including areas of the Levant, Arabia, Nubia, Iran, and Turkey. Each of these regions has seen past and present research by the Oriental Institute and each is critical to understanding the ancient Near East as a

whole. While the collection and storage of data such as this is an important function, CAMEL is more than just a data repository. CAMEL will continue to play an important role within the Oriental Institute in terms of both research and teaching. The broad scope of detailed data across the entire Near East, as well as the tools to analyze and visualize it, provide researchers and students the ability to grapple with numerous issues, particularly larger regional issues, in a manner that has never before been possible. To this end we have been active, even while expanding the physical facilities, in supporting the work of numerous projects and researchers located both here at the Oriental Institute and around the world. Some of these projects, such as McGuire Gibson's project mapping and monitor-

ing sites throughout Iraq, have provided funding to acquire new forms of contemporary high resolution data from the two major commercial satellite companies: Digital Globe and Space Imaging (fig. 6). We are very actively encouraging similar sorts of partnerships between CAMEL and its new and ongoing research projects.

At the same time CAMEL continues to be actively involved in teaching and training new generations of researchers. The CAMEL data and facilities play a major role two courses I teach each year, Ancient Landscapes I and II, and we hope to expand that support to other classes in the years ahead. This past year also saw the graduation of yet another doctoral student, Jason Ur, who was a part of CAMEL during his time here and whose dissertation incorporated the data and tools available through CAMEL. We wish Jason well as he is now off to Harvard in an Assistant Professor position that includes building a GIS laboratory and teaching a course focused on what he learned during his time at CAMEL.

As in years past, CAMEL could not have expanded or functioned without the assistance of several students and so far one volunteer. Carrie Hritz, who ran CAMEL between Tony's departure and my arrival, served most ably as Associate Director of CAMEL during this year. Robert Tate, a first year graduate student working with Donald Whitcomb, also played an instrumental role in the expansion of CAMEL alongside undergraduate work-study students Jessica Jarvinen and Alexandra Kelly. In addition we were most happy that Irv Diamond, a longtime Oriental Institute volunteer, provided us with numerous hours researching and developing ways to streamline the process of acquiring some new types of

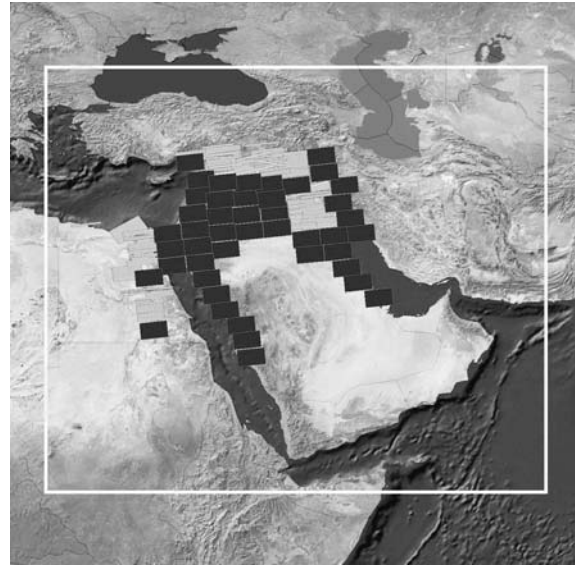


Figure 5. CORONA coverage with Women's Board grant

Nineveh Core Area



Figure 6. Digital globe image of Nineveh

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satellite data that we hope to expand into in the year ahead. I wish to thank them all for their hours of dedicated service to CAMEL. Without their help it would be impossible to have accomplished so much in so little time.
