



<http://oi.uchicago.edu/research/camel>

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Central to CAMEL's mission at the Oriental Institute is the support that we provide to researchers, both in the Institute and around the world, with interests in using geospatial data, such as maps or satellite images, in their research. We do this by acquiring and storing geospatial data sets that will be of use to researchers, adding value to some of the data sets through processes like digitization or georectification, and making them available as needed to support various avenues of research. In addition, CAMEL seeks to find new ways to engage interested individuals through outreach programs and to use our data to teach and train students at all levels of education, from sixth graders to university students and beyond. This past year at CAMEL, we touched on all of these various facets of the CAMEL mission.

As profiled in last year's annual report, researchers come to CAMEL in order to receive additional training and to make use of our expertise, resources, and collections. This past year we were very pleased to host Stephanie Rost, an advanced doctoral student in the Anthropology Department at Stony Brook University. Her Wenner-Gren Foundation-funded doctoral research project is examining irrigation management and state involvement in the Umma province of the Ur III state (ca. 2100–2004 B.C.), located in present-day Iraq. This work, which touches on several areas of expertise at the Oriental Institute, uses satellite and map data as a geospatial framework within which to analyze Ur III administrative records alongside more recent, historically attested irrigation systems in this area. Spatially situated models of labor input and administration of irrigation systems, derived from historical attestations overseen by both local and more regional powers, allow for a more nuanced reading of the Ur III records pertaining to irrigation administration. The results of Stephanie's work so far clearly demonstrate a correlation between the layout of irrigation systems and the historically situated social organization of its management. Particular spatial patterning of systems can be linked to labor inputs, strength of state oversight, and long-term sustainability. We all very much look forward to the completion of this research and the variety of contributions that it may make to water management in both the past and present.

Stephanie wasn't the only researcher making use of CAMEL during this past year. Well over one hundred requests were received and facilitated by CAMEL. This volume is in keeping with the past several years, and will hopefully dramatically increase even further in the years ahead as we strive to bring the wealth of our collections online within the framework of the Institute's online Integrated Database. We also received word from several scholars over the past year, including Stephen Moshier, who was highlighted last year in the *Annual*



Figure 1. This declassified US spy satellite image in the CAMEL collections was taken in 1969 and shows the town of Apamea in Syria, indicated by the arrow, an important city under the Seleucids and Romans. Reports from the field as well as modern satellite imagery have revealed recent widespread looting of this ancient city (cf. traffickingculture.org/data/looting-at-apamea-recorded-via-google-earth)

Report, of recent or impending publications that make use of CAMEL data or resources. It is always wonderful to see the fruits of research that CAMEL's work helped facilitate.

CAMEL received a number of new data sets during the year. Donations of data from individuals, research projects, and institutions are always welcome. The United States Geological Survey (USGS) provided us with a complete set of the 22,702 tiles of the ASTER satellite GDEM Version 2 digital elevation model data. This data set, which provides topographic information on the entire land surface of the globe between 83° N and 83° S (fig. 2), including the entire Middle East, was jointly released by the Ministry of Economy, Trade, and Industry (METI) of Japan and the United States National Aeronautics and Space Administration (NASA). Additional satellite data was donated to CAMEL by Stephen Moshier and our own Susan Penacho and Joshua Cannon. Some of these donations added to the impressive number of declassified US spy satellite images in our collections, a number that is currently at just over 2,300 and

CAMEL



Figure 2. A portion of one of the GDEM Version 2 tiles that CAMEL received from the USGS this year. It shows the topography of the area around the Dead Sea, including the area of the cities of Jerusalem and Amman. Digital Elevation Models are a very useful way to bring elevation information into Geographic Information Systems (GIS) software programs for generating viewsheds, least-cost paths, or 3-D models



Figure 3. The new Context HD Ultra i4250s large-format scanner in action within the CAMEL Laboratory



Figure 4. A portion of one of the Survey of Egypt Town Series maps that can be found in the CAMEL collections. It shows a neighborhood of Cairo in 1937. Although the names of certain streets and landmarks have changed, many of the features, such as mosques, are still present in the modern landscape

that is expected to increase markedly over the next year. Included in this number are images georectified by the CORONA Atlas of the Middle East project (corona.cast.uark.edu), which were provided to the project by CAMEL as part of a cooperative agreement. Our own work of georectifying declassified US spy satellite images by hand continued during this year with several hundred more images being georectified by CAMEL staff and volunteers.

CAMEL also received a brand-new Contex HD Ultra i4250s large-format scanner this year (fig. 3). The previous Contex large-format scanner, purchased in 2005 through a generous University of Chicago Provost's Program for Academic Technology Innovation (ATI) grant, finally ceased working after a long life of scanning thousands of maps, plans, and illustrations. The new scanner, funded by the Oriental Institute, will continue our mission of digitization. Already it has been put to good use scanning numerous large-format documents for the Diyala Project.

Finally, CAMEL continued to participate in outreach efforts this past year. The ACCESS sixth-grade program that we engaged in with the Chicago Public Schools the past several years has ended, but we expanded upon that outreach in January with a lecture to sixth-grade students at Coretta Scott King Magnet School in University Park, Illinois. In addition, not to neglect adults, a public lecture jointly sponsored by the Chicago Council on Science

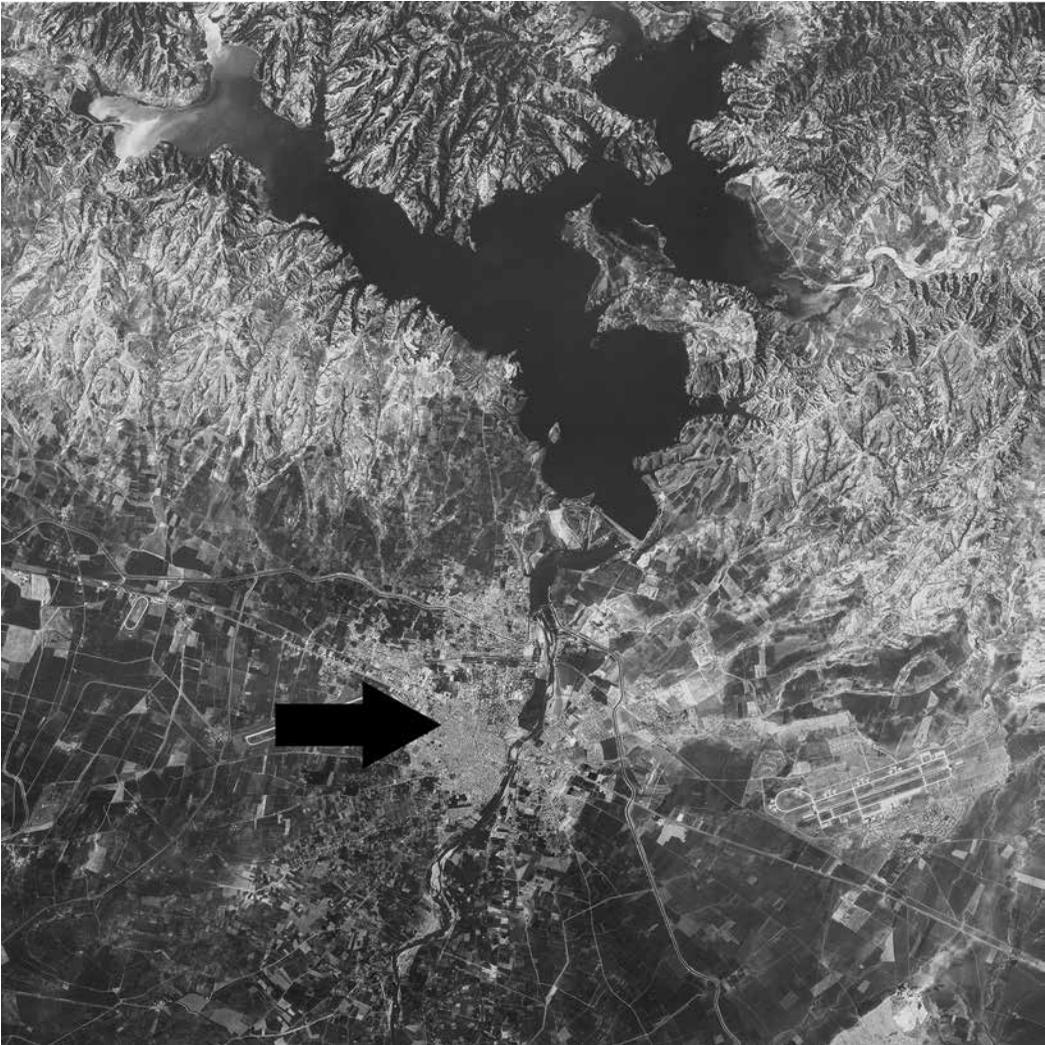


Figure 5. A portion of one of the declassified US spy satellite images in the CAMEL collection that was georectified by the CORONA Atlas of the Middle East project. It shows the city of Adana in Turkey, marked by the arrow, as well as the Seyhan Dam and reservoir to the north of the city as they appeared in 1969

& Technology (C²ST) and the Oriental Institute was presented in March. Titled “Spies, Satellites, and Archaeology: Mapping the Ancient Middle East,” this lecture showcased much of the data and technologies that CAMEL employs to further research and monitoring of cultural heritage across the Middle East.

CAMEL is dependent on its dedicated staff and volunteers to provide the effort necessary to undertake this work. Elise MacArthur and Susan Penacho served as associate directors of CAMEL again this year, while Aleksandr Altskan, Hannah Loftus, Sunameeka Panigrahy, Patrick Thevenow, and Catherine Yeager were student assistants. CAMEL volunteers for this year were Josh Cannon, Alexander Elwyn, Larry Lissak, Giulia De Nobili, and Paige Paulsen. Together with all those listed above who provided contributions of geospatial data and the financial support of the Oriental Institute, they are the driving force that allows the work of CAMEL to grow and flourish.