



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

Scott Branting

Following its major reorganization, CAMEL entered its second year with a number of important tasks to complete. These included growing the collection of digital maps, aerial photos, and satellite images, finding ways to manage and quickly retrieve items from this rapidly expanding digital collection, continuing to support projects and teaching with data and expertise, and expanding the knowledge of what CAMEL is and what it offers. All four of these tasks were accomplished during the course of the year.

The new large format scanner and plotter that were acquired last summer as a part of the Provost's Program for Academic Technology Innovation (ATI) grant saw nearly constant use throughout the year. Volunteers and students spent countless hours toiling on the scanner in order to create digital versions of over half of the 3,700 maps held in the Research Archives collections (fig. 1). Many of these maps are extremely hard to find these days, and this important work will make them much more available. Having a large format scanner that can handle an entire map all at once is critical to processing them (fig. 2), though some of the older and more fragile maps still are done by hand, with small portions of the whole map scanned a bit at a time using a special scanner and then digitally pieced together (fig. 3). With over half of this important collection of maps now scanned,



Figure 1. A scan of the Research Archives copy of a British Survey of India map from 1918 showing portions of Persia south of the Caspian Sea

CAMEL



Figure 2. A student assistant in CAMEL scans a map from the Research Archive's map collection on the wide-format scanner (a Context Crystal XL 42")

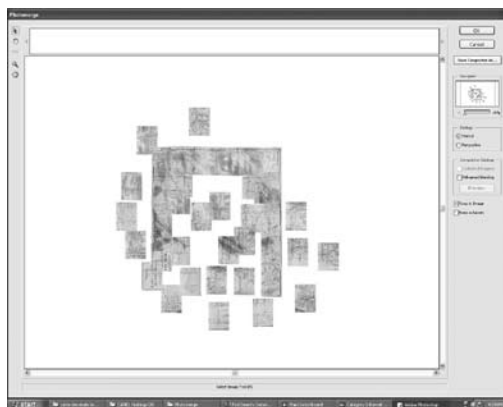


Figure 3. Some maps are too fragile to be fed through the wide-format scanner so they must be scanned piece by piece. The scanned pieces must then be sorted through like puzzle pieces and assembled back into the entire map

next year should see the completion of the scanning portion and the start of the georectification portion of this long-term project.

The large and invaluable collection of aerial photos and other types of spatial data in the Museum Archives is another treasure trove of spatial data acquired by the Institute over the years. Over 5,600 aerial photos collected from 1920 onward by various researchers in the Institute provide an unparalleled view of how the Middle East has changed over roughly a century (fig. 4). Thousands of ancient cities and villages that have been destroyed or covered over by the sprawl of modern cities or agricultural practices can still be seen in these photographs. This makes them an invaluable tool for researchers trying to find and understand the settlements that remain. CAMEL has begun to work with the Museum Archives to scan a number of these images and georectify them. Georectification is a process of digitally shifting these scanned images to their real-world position on the surface of the earth for use with various forms of mapping software. This will make these images much more accessible and useful to researchers around the world. It is hoped that most of this unparalleled collection of images will be digitized over the next two years.



Figure 4. This image, taken from the air by Erich Schmidt in May 1937, captures the complete terrace at Persepolis as it stood seventy years ago

A third important source of new data acquired this year were over seven hundred declassified U.S. Spy Satellite images purchased from the United States Geological Service (USGS). This imagery, much of it from the CORONA series of satellites, dates from the 1960s to the 1980s and greatly complements the Institute's important collection of in-house imagery showing how broad regions of the Middle East have changed over the decades (fig. 5). With a significant grant from the Women's Board of the University of Chicago, CAMEL's collection of this imagery increased this year to 1,111 images, one of the largest collections in the world. Work continues on the georectification of all of this imagery.

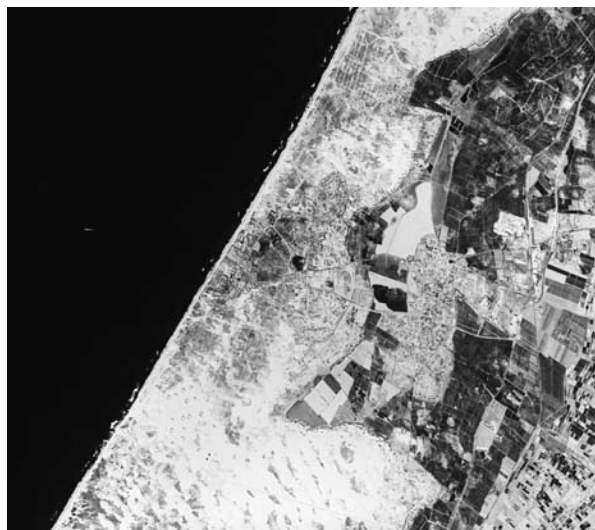


Figure 5. A declassified Corona image recently acquired from the USGS. Taken June 8, 1970, it shows the ancient tell of Ashkelon in Israel

Finally, data continued to be acquired from high-resolution, commercial satellites on behalf of numerous projects. This data, collected over the past eight years, provides a present-day look at the landscape of the Middle East that is very useful both for projects that will soon be in the field or for projects that cannot immediately travel to the place in the world in which they are interested. As with the image of Samarra last year, CAMEL once again had the opportunity to task Digital Globe's Quickbird satellite and direct it, this time to central Turkey, to acquire a real-time image of the area around Amasya for a researcher (fig. 6). Receiving imagery taken by the satellite only a few days before is always an exciting event and provides an unparalleled, current resource that can readily be coupled and compared with our georectified, historical archive.

With this influx of new imagery on top of considerable existing collections an additional investment of labor was needed by CAMEL staff to design a database to manage and support queries of this collection (fig. 7). The Oriental Institute's terabyte storage system, which was set up last year, continues to do an excellent job of providing huge amounts of reliable and secure storage space for all the digital collections of the Oriental Institute including CAMEL. However, finding a particular image for a researcher among the thousands — soon to be tens of thousands — in CAMEL's collections can be a daunting task. This new database will allow CAMEL to do just that smoothly and efficiently for years to come.

The numbers of requests that CAMEL receives has also increased markedly in the past year. Over fifty requests for data and expertise from over forty different researchers and individuals in North America, Europe, the Middle East, and Australia were received and completed during 2006/2007. The data requested came from



Figure 6. Part of the image taken by the CAMEL-tasked Digital Globe Quickbird 2 satellite on July 10, 2007. It shows an as-yet unexcavated site near Amasya in Turkey

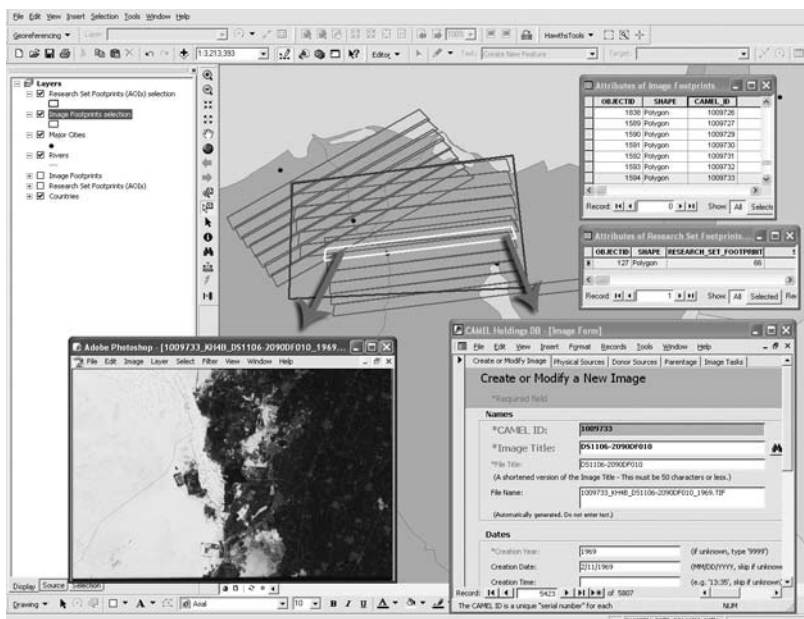


Figure 7. The CAMEL Holdings ArcGIS/Access database tracks the metadata of each of its archived images — where it came from, who created it, what distribution rights it has — and links this information to a geographical “footprint.” Using the ArcGIS interface, one can easily define an area of interest, find the footprints of images within it, and view the original satellite image or map

all corners of CAMEL’s collection area and even a bit beyond. These requests are on top of the dozens and dozens of people that each year make use of the CAMEL laboratory facilities within the Institute. With the installation of the large format plotter purchased by the ATI grant CAMEL was also able to expand its support abilities further this year. The plotter allows the printing of large-sized maps, posters, and plans in support of the Institute’s numerous research projects, education programs, and outreach opportunities.

CAMEL has also remained very active in the teaching and training of students and has contributed to two temporary exhibits in the museum. Several classes made use of the CAMEL facilities and expertise, and a number of masters and doctoral students made extensive use of them in their research, including two students awarded Master’s degrees within the Department of Near Eastern Languages and Civilizations. Aerial photos from the Museum Archives scanned by CAMEL also appeared in the temporary exhibit, *Daily Life Ornamented: The Medieval Persian City of Rayy*, and posters produced by CAMEL appeared in the *Through Young Eyes: Ancient Nubian Art Recreated* exhibit.

The past two years have been instrumental in undertaking the foundational work that allows CAMEL to acquire, manage, and effectively disseminate spatial data pertaining to the Middle East along with expertise in how to use that data. With an increasing number of researchers inside and outside of the Oriental Institute benefiting from these labors CAMEL can only continue to grow in the years ahead. Talks continue with NASA on formalizing a Space Act Agreement to expand the range of data at CAMEL’s disposal and partnerships are being formed with other institutions. These efforts will continue in the years ahead. The work of CAMEL is even starting to stir up interest in broader circles as was witnessed in the *Sun-Times* article on CAMEL in January 2007.

No project can exist without supporters and workers. I would like to personally thank all those who have donated data or financial means to CAMEL. I would also like to thank all those who

have donated their time and effort to CAMEL this year. Joshua Trampier continued to serve exceptionally well in his new role of Associate Director, while Robert Tate was promoted to the duties of Assistant Director. Elise MacArthur served as Senior Supervisor, while Caitlin Flanagan, Joseph Phillips, and Brian Brown all served as Student Assistants. Susan Penacho coordinated our wonderful volunteers for the year, who were Ronald Wideman, Alex Elwyn, Gaby Cohen, and Alex Muir. Thank you all for your excellent efforts.
