

THE ORIENTAL INSTITUTE
ANNUAL REPORT 16|17



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Published 2017. Printed in the United States of America.

The Oriental Institute, Chicago

ISBN: 978-1-61491-040-4

Editor: Christopher Woods

Production facilitated and cover design by Charissa Johnson, Editor, Publications Office



Cover and overleaf illustration: *Frieze of Striding Lions. Persepolis, Iran. Achaemenid period, 522–465 BC. Persian Collection. A24068 (D. 16925)*

The pages that divide the sections of this year's report feature images from *Highlights of the Collections of the Oriental Institute Museum*. Published by The Oriental Institute of the University of Chicago, 2017.

Printed by King Printing Company, Inc., Lowell, Massachusetts, USA

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INTRODUCTION

Christopher Woods

I am merely the guest editor of this year's Annual Report for 2016–2017, which covers the period from July 2016 through June 2017, the last year of Gil Stein's tenure — three consecutive terms, spanning fifteen years — as Director of the Oriental Institute, a truly remarkable accomplishment and one matched only by the Institute's founder, James Henry Breasted himself. I would like to take this opportunity to thank Gil, on behalf of the entire Oriental Institute (OI) community, for his years of service, which have transformed and fundamentally shaped the OI for decades to come. For my part, it is difficult to communicate what an honor, and how humbling, it is to succeed Gil as Director. Gil and I came to the University and the OI as new faculty at opposite ends of the institutional spectrum — Gil, recruited from Northwestern to assume the OI's Directorship, and I, a newly minted PhD joining the faculty as an Assistant Professor. Throughout our years together at the OI, I have relied on Gil's support, generosity, and, moreover, friendship. Certainly, I anticipate relying on Gil's advice and wisdom in the years to come.

The pages of this Annual Report represent in many ways the legacy of Gil's term as Director, which saw the expansion of both our field and text-based projects, the former despite the conflict that continues to roil in the Middle East and poses enormous threats to its cultural heritage. In 2016–2017 the OI conducted excavations and research in Egypt, Iraqi Kurdistan, Israel, Jordan, and Turkey, investigating periods that span from the Chalcolithic (fifth millennium BCE) through the Middle Byzantine (early second millennium CE) periods. In Egypt, Nadine Moeller's and Grégory Marouard's continued excavations at the sister sites of Tell Edfu and Dendara in Upper Egypt present a unique opportunity to understand, from a comparative perspective, the development of urbanism in the third millennium BCE, while in Lower Egypt the Giza Plateau Mapping Project, under the direction of Mark Lehner, marked a return to research begun years ago into the origins of the Sphinx and its relationship to the local geology. In Turkey, we maintain a dynamic and extensive research program, with excavations at Zincirli (David Schloen), Kerkene Dağ (Scott Branting), and Çadir Höyük (Gregory McMahon). In Kurdistan, northern Iraq, Gil Stein and Abbas Alizadeh completed their fourth field season at Surezha. The development of urbanization has long been the topic of intensive study in southern Mesopotamia, but investigating the urban evolution in northern Mesopotamia has been a comparatively recent pursuit. The Surezha excavation promises to critically advance our knowledge of the distinctive urban evolution in the north, while shedding light on the cultural and economic links that connected the Erbil plain with the neighboring regions of Anatolia, Iran, and southern Mesopotamia. Yorke Rowan and Morag Kersel continued work on the two major archaeological projects in Israel and Jordan, respectively, under their direction. The Galilee Prehistory Project traces the dramatic changes that took place in the Galilee between the fifth and the early fourth millennia, while the Eastern Badia Archaeological Project, which involves both survey and excavation in the Black Desert of Jordan, aims to record and analyze architecture, landscape, artifacts, and paleo-climatic data in order to understand the diachronic use and occupation of this little-known region. In northern Israel, David Schloen

engaged in a new excavation at the Canaanite and Phoenician city of Tell Keisan (first millennium BCE).

Our text-oriented projects also made major strides this year. Ray Johnson and his team completed the 93rd season of the Epigraphic Survey at Chicago House in Luxor, Egypt. Beyond the primary objective of documenting the reliefs of Luxor Temple and Medinet Habu — and doing so by continuing to implement state-of-the-art digital methods — the portfolio of projects increasingly includes architectural restoration, conservation, and training programs. The efforts of the Chicago Hittite Dictionary, led by Theo van den Hout and Petra Goedegebuure, were directed at completing the final fascicles of the letter Š, and, particularly, preparing for the 10th International Congress of Hittitology, which was held in Chicago with great success at the end of August. The Chicago Demotic Dictionary, edited by Janet Johnson and Brian Muhs, having completed its original hard-copy mission, has taken aim at its next, longer-term goal, namely, of producing an interactive and flexible web-based dictionary. Finally, the Persepolis Fortification Archive project, under the direction of Matthew Stolper, made important and surprising discoveries in the course of its continuing efforts to record and study these critically important Iranian artifacts in the Oriental Institute's custody.

The preservation of cultural heritage has long been one of Gil's passions and priorities (and I note that Gil currently serves as the Provost's Advisor for Cultural Heritage). During Gil's tenure, the OI has taken an increasingly active role in this area. For instance, one of the primary foci of the OI's CAMEL (Center for Ancient Middle Eastern Landscapes) lab this year has been "The Afghan Heritage Mapping Partnership," an outgrowth of Gil's Oriental Institute-National Museum of Afghanistan Partnership program, which likewise has been funded by the State Department since 2012. The Afghan Heritage Mapping Partnership employs satellite imagery to identify and map the archaeological sites across Afghanistan. In total, the Afghan cultural heritage projects have received to date nearly 8 million dollars of funding from the US Department of State. Another OI cultural heritage endeavor, reported upon in these pages, is the Modeling the Antiquities Trade in Iraq and Syria (MANTIS) project, which endeavors to combine excavation data with art market observations to predict market values of Near Eastern artifacts for various archaeological sites.

The OI Museum, led by Chief Curator Jean Evans, continued to make excellent progress with its Gallery Enhancements Project — a large-scale project, funded by an anonymous donor, to update many of our galleries and enhance visitor experience by replacing many of the original free-standing cases, improving lighting, and updating the displays and text. The Museum staff was also occupied this year with preparing for our special exhibit, *The Book of the Dead: Becoming God in Ancient Egypt*, curated by Foy Scalf, which opened in October 2017 and will be reported upon in next year's annual report. Our Education department — despite the major transition brought on by the departure of two of its members, Carol Ng-he and Leila Makdisi — expanded its efforts to offer hybrid adult education courses, which can be taken either on-site at the OI or remotely, online. A new initiative in the department this year is the Community Scholars Program, which partners OI scholars with metropolitan Chicago organizations; since its inception, OI researchers have lectured before approximately 1,800 individuals across 24 organizations. The OI's Integrated Database (IDB) Project, which will connect all the OI's major archives of objects, images, and data records into a single searchable and publicly accessible digital resource, reached a milestone this year with the completion of Phase III, which included the migration of nearly 100,000 records from the CAMEL lab and Museum archives; currently, there are more than 1 million records in the IDB. Additionally,

Donald Whitcomb and Tasha Vorderstrasse, representing our Islamic Archaeology program, have undertaken a comprehensive catalog of the Islamic holdings in the Oriental Institute Museum, which include Chinese ceramics, book bindings, and nineteenth-century photographs.

A highlight of our year was the celebration on December 4 of the 50th Anniversary of our Volunteer Program in which over 200 people attended the festivities to honor the enormous contributions of our volunteers over the past half century. Carlotta Maher and Jim Sopranos, who were members of the inaugural volunteer class in 1966, remain ardent supporters and active participants in the OI's intellectual life.

We are saddened to report the loss of two of the most passionate members of our community this year — Peggy Grant, who joined the volunteer program in 1971 and served as the Volunteer Manager, and Jane Hildebrand, who was a Suq volunteer and docent for thirty years. Both Peggy and Jane, who gave so much of themselves to the OI, will be deeply missed.

The OI welcomed an impressive cohort of new staff members to its ranks in the 2016–2017 academic year, including Stephanie Black (Assistant Curator for the Gallery Enhancement Project), Vick Cruz (Visitor Services and Security Manager), Charissa Johnson (Editor), and Calgary Haines-Trautman (Youth and Family Programs Manager). This year also saw the retirement of John Larson after a remarkable tenure of thirty-six years as the OI's Museum Archivist and the departure of our long-time Head Preparator, Erik Lindahl. Anne Flannery replaced John as Museum archivist, and Robert Bain joined the OI as Head Preparator. Finally, Ilona Zsolnay was appointed to a two-year term as the OI's most recent Post-doctoral Fellow. In March, Ilona organized a highly successful two-day conference, *Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts*, which brought together an international panel of experts of early writing systems to discuss the various means by which these systems express meaning beyond the representation of spoken language.

This is only a vignette of the extraordinary scope of our research projects and programs, which are detailed in these pages — a testament to the dedication of our talented faculty, researchers, and staff to advancing the OI's core mission. We are ever mindful, however, that none of this would be possible without the generous support of our members, donors, and Council — and for this all of us at the Oriental Institute are profoundly grateful.



RESEARCH



Overleaf: Relief with King Assurnasirpal II. Kalhu, Iraq. Neo-Assyrian period, 883–859 BC. Mesopotamian Collection. A34979 (D. 15966)

ÇADIR HÖYÜK

Gregory McMahon

The Çadir Höyük site is located in the Yozgat Province of central Turkey. We are three weeks into the 2017 season, following up on the exciting discoveries made in the 2016 season. Both seasons have benefitted from the presence of University of Chicago graduate students and alumni. With us in 2016 were: Josh Cannon, finishing his field research on Hittite pottery for his doctoral dissertation; Sarah Adcock, finishing her archaeofaunal work on second millennium materials for her dissertation; and Tony Lauricella, who is a Senior Field Supervisor. Also with us was Stephanie Selover, now in a tenure track position at the University of Washington, a proud Oriental Institute graduate. In our 2016 season we were also fortunate to have Roland Long with us, who graduated from the Oriental Institute this past June and is set to start graduate school at the University of Pennsylvania this fall.

JUNE THROUGH AUGUST 2016

Hasan Şenyurt remains the Director of the Yozgat Museum, the regional museum which oversees our work. He has been a wonderful help to us over the years, and we are happy that he remains at the Yozgat Museum. In the 2016 season we benefitted from the guidance of our government representative, Adem Bedir. We had a nearly eight week season, extending from mid-June until early August. During the season we partially or fully opened a total of eighteen 10 × 10 m trenches, hosted thirty-five researchers, and employed thirty-six workers at the site. Trenches spanned the Late Chalcolithic (mid-late fourth millennium BCE) to the final century of the Byzantine occupation in the early centuries of the second millennium CE. The trenches featuring the prehistoric periods are on the southern slope of the mound. Here we have seven trenches offering Late Chalcolithic (ca. 3800–3100 BCE) architectural remains. Two of these, USS 9 and USS 10, are supervised by Stephanie Selover (fig. 1). Stephanie's trenches are quite important because they are helping us to understand how the fourth millennium residents used the mound. She has spent the last several seasons defining the transition from the Late Chalcolithic to the Early Bronze Age, when there were some quite substantial changes to the prehistoric occupation of Çadir Höyük. Her work has defined the very complicated stratigraphy that shows us that in the Early Bronze Age, residents who had abandoned the lower town moved up the mound and built a large perimeter wall. In the 2015



Figure 1. USS 9 and USS 10 trenches, supervised by Stephanie Selover



Figure 2. Bronze Age perimeter wall and fourth millennium warren of rooms

season, and then in 2016 (fig. 2) and now continuing into the current 2017 season, Stephanie has shown that at the end of the fourth millennium residents were in the process of moving up the mound, building a literal warren of rooms in which to conduct mostly industrial activities. However, just a few decades or a century before (which she is now excavating in 2017), residents inhabited larger and more spacious spaces, built with better architecture. The types of changes that occurred in the lower town, reported on before in these reports and in other publications, are mirrored in Stephanie's trenches, evident due to her exceedingly careful work.

In our lower town, in trenches SES 1–2 and LSS 3–5, we continue to define the agglutinated architectural phase reported on last year. This occupation dates to the first half of the fourth millennium. The western area of these trenches is not yet at this earliest agglutinated phase. Burcu Yıldırım, from the American Research Institute in Turkey, is carefully removing the next latest phase, which included a kiln and ceramic working area that were likely installed by the later “Omphalos Building” occupants (dating to the second half of the fourth millennium and reported on in many publications). We hope that by the end of the 2017 campaign all five of the southernmost trenches will be in phase, bringing together Burcu’s trenches and those excavated by our other area supervisor, Laurel Hackley, revealing what we believe to

be two agglutinated phase architectural units separated by a street (fig. 3). This compound perhaps housed a cooperative group of people who may have been kin-related.

The eastern side of the mound features our main second millennium occupation. In the 2016 season we spent a great deal of time exposing the eastern end of a very substantial

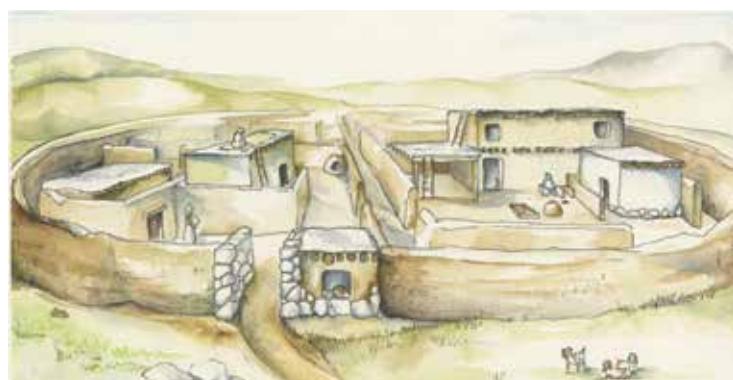


Figure 3. An illustration of what the team believes the site will look like by the end of 2017



Figure 4. Occupation on the eastern side of the mound featuring two courtyards

building foundation consisting of stones, clay, and what once were wooden posts running through the foundations. This building was fronted by two courtyards (fig. 4). Next to the wall of one of these courtyards was an infant burial, and what appears to have been the dedication of a three-footed stone vessel holding organic remains (fig. 5). Unfortunately, the majority of this building is inside the mound, under meters of later overburden, and it is unlikely that we will be able to uncover it any time soon. Instead, in the present 2017 season, we have chosen to expand northward from this area, in hopes of revealing other areas inside the large Hittite period casemate walls that have been reported on here in past seasons.



Figure 5. Three-footed stone vessel



Figure 6. Two of the three newly opened trenches

We opened six 10×10 m trenches on the mound summit, all offering mainly Byzantine remains. Tony Lauricella is the area supervisor on the summit and is also directly in charge of two trenches. It is in one of these trenches that one of our most important discoveries of the season was made. First, however, a brief description of our 2016 Byzantine excavations are in order. The main goal in the 2016 season was to further define the architecture associated with the tenth–eleventh century defensive wall that rings the mound. We opened three new trenches, two of which exposed more of the major wall and its interior architecture (fig. 6 shows one of these trenches). As has been discovered in previous seasons, in trenches mainly excavated by Tony, we discovered small rooms, roughly 3×3 m in size, ringing the interior of the wall. These rooms appear to be utilitarian rather than domestic. There is no evidence of household activities in these rooms. Rather, in the contexts excavated in 2016 we discovered some materials that appear to have a military usage, including arrowhead points, part of a Byzantine helmet, and one small piece of chain mail. A number of crosses were also recovered (fig. 7). In addition to these, some tools that may have been for agricultural use were recovered. These rooms seem to have been related to activities associated with the defensive wall, and also perhaps for storage purposes.



Figure 8. Trench SMT 9, under Tony Lauricella's supervision



Figure 7. Small recovered cross



Figure 9. Recovered cat-faced metal artifact



Figure 10. Sarah Adcock



Figure 11. Josh Cannon

One of these new trenches, SMT 9, was under Tony's direct supervision (fig. 8). As was the case in other summit trenches, he found a number of walls extending inward from the Byzantine defensive wall. These walls were slightly different from the others, however, in that they had been topped with mudbrick that appears to go over the defensive wall, suggesting that they were built very late in the Çadır sequence. The remarkable discovery by Tony was not just this architecture, but the artifacts found inside one of these rooms. Several metal objects were recovered. One depicts the face of a cat, possibly a leopard, on a curved metal piece that might have been a handle (fig. 9). The fine work on this piece is likely Seljuk in origin, suggesting that Çadır was occupied during or after the Battle of Manzikert (1071 CE), the date that we had previously believed identified the abandonment of the settlement. Tony's work has largely demonstrated that occupation extended beyond this into the twelfth or even thirteenth century. This is also demonstrated by some of our recent ceramic analysis. Therefore, as of the 2016 season we can extend the occupation of Çadır by several centuries.

Everyday after fieldwork we have busy lab hours with both the field supervisors and the various experts toiling until dinnertime. In 2016 one of these experts was Sarah Adcock (Chicago Anthropology Department) who is at the present moment finishing her work on her doctoral dissertation treating our Late Bronze Age/Iron Age faunal materials (fig. 10). Also working on second millennium materials, in this case ceramics, is the Josh Cannon (fig. 11) who was in the field completing his own dissertation fieldwork at the Oriental Institute. Both of these scholars are home working during our present 2017 season and are heartily missed.

At the close of the 2016 season the hard work of all the Chicago students as well as our other fine team members resulted in incredible progress in our understanding of the site, and excitement about returning in 2017. Thus far our work in all the periods mentioned above has continued, and we are continuing to acquire very interesting data, including further evidence of potential Seljuk presence. We look forward to reporting on our 2017 season next year.

THE CENTER FOR ANCIENT MIDDLE EASTERN LANDSCAPES (CAMEL)

Emily Hammer

The Center for Ancient Middle Eastern Landscapes (CAMEL) is a GIS laboratory that carries out landscape archaeology, historical geography, and cultural heritage research projects. CAMEL's research aims to collaboratively develop innovative methods and approaches within the field of Near Eastern landscape archaeology. Through work-study positions, research assistantships, and courses, CAMEL trains students to answer questions about diachronic change and spatial patterns in modern and historical cultural and environmental phenomena and provides them with technical skills that are useful for both academic and professional careers in a variety of disciplines. In 2016–2017, CAMEL staff advanced a number of ongoing research projects, including three highlighted below: the Afghan Heritage Mapping Project, the Desert Kites of Eastern Jordan and Egypt Project, and the Anatolian Atlas Project. Additionally, CAMEL served the Oriental Institute (OI) and the broader academic community by making a significant portion of its data archives available for public search and download and by making new fieldwork equipment available to OI projects.

The Afghan Heritage Mapping Partnership

The satellite imagery analysis methods used in landscape research are an important way to continue archaeological research and to monitor cultural heritage preservation in conflict zones across the Middle East and Central Asia. Since 2015, CAMEL has devoted most of its research efforts toward cultural heritage projects concerning the sites and monuments of Afghanistan. This work is generously funded by an institutional grant from the US Department of State to the Oriental Institute (2015–2018), titled “The Afghan Heritage Mapping Partnership” (AHMP). The first two years’ award for this grant, received last year, was just under one million dollars. The Partnership draws on satellite imagery and other geospatial datasets to build a comprehensive GIS database of identifiable archaeological sites across Afghanistan. The goals in creating this database are to inventory and map known and previously unknown archaeological heritage sites, especially in areas threatened by future mining development, urban expansion, and looting; to document the current state of archaeological site preservation and analyze spatial and temporal patterns in looting; to create a planning tool that will allow heritage protection to be incorporated into mining, economic, and urban development projects; and to train a cohort of Afghan information technology specialists and heritage professionals in the use of GIS technology for cultural heritage management.

Database Development

The backbone of the AHMP database development has been the visual confirmation, correction, and enrichment of metadata for sites listed in the 1982 *Archaeological Gazetteer of Afghanistan* (authored by Ball and Gardin). From 2014–2016, we had built a GIS database of the 1284 sites in that *Gazetteer*. The spatial data published in the *Gazetteer* was produced before



Figure 1. Afghan Heritage Mapping Project staff with Warwick Ball, author of the original 1982 Archaeological Gazetteer of Afghanistan. Ball visited CAMEL in October 2016 to share information concerning sites discovered since 1982 and to seek CAMEL's help with preparing maps for an updated version of the Gazetteer

From left to right: Rebecca Seifried, Anthony Lauricella, Warwick Ball, Emily Hammer, and Kathryn Franklin

precisely locate and map these new sites using satellite imagery and to produce new maps for the forthcoming volume. This will aid Ball in publishing the new gazetteer and also assists CAMEL in expanding its own database (fig. 1).

The original *Gazetteer* only included a selection of the most important sites known at that time in Afghanistan, but archaeological surveys have recorded many more. Further, for the sake of expediency, the *Gazetteer* frequently listed multiple sites that are located close to one another under a single name. For the purposes of our cultural heritage analyses and mapping, it is important to include the full results of archaeological surveys, with all known sites listed and individual sites or site components listed individually. For this reason, we have returned to the original publication of East Bactria Survey, completed by a French team in the 1970s. Jean Claude Gardin contributed a selection of these sites to the *Gazetteer* that he co-authored with Warwick Ball, but the original survey publication is allowing CAMEL to incorporate all of the mapped sites into its database.

In collaboration with Mitchell Allen, an archaeologist who is in charge of publishing the results of William Trousdale's Helmand-Sistan survey from the 1970s, CAMEL worked to digitize and geo-reference large numbers of hand-drawn maps, aerial photos, lists of surveyed sites, and information from field notebooks. This archival data is allowing us to help Allen reconstruct the survey data within GIS, which in the future will assist him with publication of the survey results and allow for spatial analysis of the survey data. The sites newly studied by the Helmand-Sistan Survey that were not already included in the 1982 *Gazetteer* will now be incorporated into the AHMP's site database (fig. 2).

Another group of scholars, David Thomas and Fiona Kidd, have also generously shared the results of their 2004 satellite imagery survey of a part of the Registan Desert with CAMEL. This data has also expanded our AHMP site database, as have the results of several other "remote surveys" undertaken by CAMEL, all discussed in greater detail below.

civilian use of GPS for mapping and has long been known to be inaccurate. Each of the *Gazetteer* sites' coordinates was located in modern DigitalGlobe satellite imagery and more precisely mapped using both points and polygons to represent the sites' center points and areal extent. In 2016–2017, we expanded the database beyond the original *Gazetteer* to include other survey datasets generated by our own project and others'.

In collaboration with Warwick Ball, the author of the original gazetteer, CAMEL has worked to include major sites discovered since 1982 into its AHMP database. Ball is in the process of preparing an expanded, updated version of the *Archaeological Gazetteer of Afghanistan* for publication by Oxford University Press and has generously provided CAMEL with lists and descriptions of new sites. CAMEL staff are working to

CAMEL also added to the AHMP database by inventorying sites marked on 1:50,000 Soviet topography maps dating to the early 1980s, which record the location of standing archaeological mounds, ruin fields, and pastoral nomadic campsites. This inventory work would take a long time to achieve for the entirety of Afghanistan, as the Soviet topography series is composed of 1,644 maps in total. To begin, CAMEL has added sites to our database from Soviet maps covering the Dusar Sha'ida study area discussed below as well as from maps covering areas that have been affected by urban expansion in Afghanistan's ten largest cities (Kabul, Kandahar, Herat, Mazar-i Sharif, Kunduz, Jalalabad, Ghazni, Balkh, Baghlan, and Farah) (fig. 3).



Figure 2. Mitchell Allen (right), an archaeologist involved in the Helman-Sistan Survey in southwest Afghanistan in the 1970s, collaborates with CAMEL to digitize and reconstruct unpublished data from his original fieldwork. In May 2017 he worked with Afghan Heritage Mapping Project staff members Anthony Lauricella (center) and Rebecca Seifried (left)

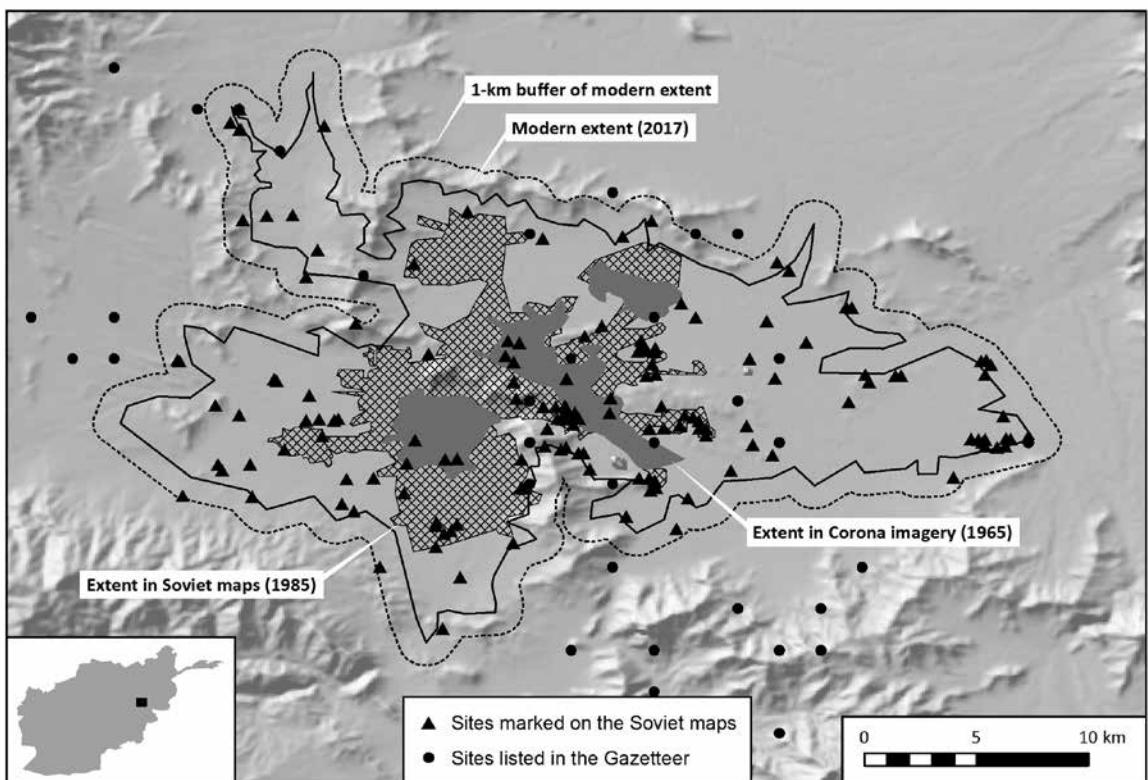


Figure 3. Urban growth in Kabul, Afghanistan, as documented in 1960s CORONA imagery, 1985 Soviet topography maps, and 2017 DigitalGlobe imagery. This urban growth has engulfed a variety of archaeological sites catalogued from the 1982 Gazetteer and 1985 Soviet maps. Future growth of the city (modeled with a 1 km buffer around the current extent) could imminently threaten additional sites. (image: Rebecca Seifried and AHMP staff)

Remote Site Discovery

The second component of our database development and grant research identifies previously unmapped archaeological sites using both maps and satellite imagery. We pursued site discovery in several different areas of the country including in the Dusar Sha'ida mining area of Herat Province, the area around Herat City itself, the Balkh Oasis, the area around Kandahar City, and the area around Spin Boldak at the southeastern corner of the Registan Desert. These areas were chosen for remote survey on the basis of their potential to yield important previously unmapped sites and on the basis of information suggesting sites in those locales have been/will be threatened by looting, urban growth, intensive agriculture, and/or mining. Our methods of “remote survey” involved placing a 1×1 km grid over high-resolution satellite imagery captured by the DigitalGlobe Corporation. CAMEL staff members examined the landscape square by square, marking all visible archaeological sites and recording their general type (e.g., mound, standing architecture, fortification). These results were then checked and streamlined by a senior member of the project.

Future mining activities may threaten archaeological sites on a broad scale in Afghanistan. It is for this reason that CAMEL targeted an area identified as high priority for future mining by the USGS for one of our first site discovery projects. The Dusar Sha'ida Copper and Tin Region in Herat Province was “remote surveyed” last year. The results of this survey were presented in a synthetic article about ongoing and potential future damage to archaeological sites (E. Hammer, R. Seifried, K. Franklin, and A. Lauricella. 2018, in press. “Remote Assessments of the Archaeological Heritage Situation in Afghanistan.” *Journal of Cultural Heritage*) and incorporated into the AHMP site database.

Urbanization and other forms of development threaten archaeological sites much more immediately and on a larger scale than potential future mining activities. In order to investigate the effects of urbanization on site preservation, we focused

on a 60 sq km area centered on the city of Herat. All archaeological sites and features in this zone were recorded in order to quantify the potential impact of urbanization on the heritage landscape. An analysis of these sites was the topic of a successful MA thesis by a Center for Middle Eastern Studies student and CAMEL staff member, Gwendolyn Kristy (G. Kristy 2017. *The Impact of Urbanization on Cultural Heritage in Herat, Afghanistan: A GIS Analysis*. MA thesis, The University of Chicago Center for Middle Eastern Studies). Gwendolyn also presented the results of this study in a poster at the American Schools of Oriental Research (ASOR) and



Figure 4. CAMEL staff member Gwendolyn Kristy (left) and Associate Professor Donald Whitcomb (right) discuss Gwendolyn's MA thesis research, which examined the effect that unplanned urban growth has had on cultural heritage sites in the vicinity of the city of Herat, Afghanistan, at a student research poster fair held on campus in March 2017. Gwendolyn presented a similar version of this poster at the ASOR Annual Meeting in November 2016 and the SAA Annual Meeting in April 2017.

Society for American Archaeology (SAA) Annual Meetings (November 2016 and April 2017, respectively) (fig. 4).

Military activity is another type of activity that affects many archaeological sites in Afghanistan. CAMEL documented the effects of military activity on sites surrounding Kandahar City in southeast Afghanistan and this dataset was the subject of a successful Bachelor's honors thesis by an Anthropology student and CAMEL staff member, Emily Boak (E. Boak 2017. *Militarized Landscapes and Cultural Heritage in Kandahar, Afghanistan, 2001–2014*. BA thesis. University of Chicago, Departments of Anthropology and Geography).

Two other “remote surveys” CAMEL conducted last year in the Spin Boldak region of southeastern Afghanistan and in the Balkh oasis in northern Afghanistan were analyzed and prepared for final publication this year. Kathryn Franklin and Emily Hammer submitted a publication on “remote survey” methodology, drawing on the results of CAMEL’s work in the Spin Boldak region (K. Franklin and E. Hammer. 2018, in press. “Untangling Palimpsest Landscapes Using Remotely Sensed Techniques in Spin Boldak, SE Afghanistan.” *Journal of Field Archaeology* 43/3). Archival map data, dated satellite imagery, and the AHMP’s site database provided ways of resolving issues of chronology that typically plague such “remote surveys.” In particular, the article discusses methods for dating three types of sites found in Spin Boldak: fortified enclosures, caravanserai, and pastoral campsites. The Spin Boldak dataset was also presented at the ASOR Annual Meeting (November 2016). Anthony Lauricella and Emily Hammer submitted a publication on fortification and settlement patterns in the Balkh oasis of northern Afghanistan (E. Hammer and A. Lauricella. [submitted]. “The Land of a Thousand Cities: Fortified Mounds of the Balkhab River Valley [Northern Afghanistan].” *Antiquity*). Data on over 2,000 sites mapped in the Balkh area using satellite imagery were presented at the Oriental Institute’s “Limits of Empire in Ancient Afghanistan” conference (October 2016) and the ASOR Annual Meeting (November 2016).

Monitoring Destruction of Sites

The third component of the project aims to diachronically document destruction of archaeological sites through looting, development, and other processes. We used time-series of DigitalGlobe imagery, made available to us through State Department-provided access to an online repository, to record types and severity of destruction at over 1,000 significant sites from the 1982 *Gazetteer* (fig. 5). A publication was prepared on the results of the damage assessment: “Remote Assessments of the Archaeological Heritage Situation in Afghanistan” (E. Hammer, R. Seifried, K. Franklin, and A. Lauricella. 2018, in press. *Journal of Cultural Heritage*). In this publication, we argue that systematic looting of archaeological sites in Afghanistan already occurred before Taliban related conflicts, that there has been little increase in systematic looting in Taliban controlled areas post-2001, that the greatest increases in looting have occurred in Afghanistan’s northern oases in areas that are not Taliban strongholds, and that the most pressing threats to Afghanistan’s heritage sites come from development activities, including agricultural expansion, urban growth, and future mining. The focus of cultural heritage groups and media reports on both looting and destruction events by the Taliban thus does not address the most urgent cultural heritage concerns for Afghanistan. The data from this study was also presented at several conferences: the ASOR Annual Meeting (November 2016) and the Neubauer Collegium’s “Past for Sale: Antiquities as Global Contraband” Symposium (May 2017).



Figure 5. Examples of different types of damage to archaeological sites in Afghanistan as seen in DigitalGlobe imagery (images: DigitalGlobe; Rebecca Seifried and AHMP staff)

- a) Looting at Abu Huraira in Balkh Province
- b) Military activity at Gur Tepe in Kunduz Province
- c) Development-related damage at Lashkari Bazar in Helmand Province
- d) Agricultural-related damage at Kafir Qal'a in Kunduz Province

Graduate students Anthony Lauricella and Joshua Cannon, former CAMEL director Scott Branting, and current CAMEL director Emily Hammer had an article accepted to the journal *Antiquity* that details a new method to automatically detect looters' pits on the surfaces of sites in Afghanistan and its application to the site of Ai Khanoum (Alexandria-on-the-Oxus, Takhar Province in northeastern Afghanistan) (Lauricella, A., J. Cannon, S. Branting, and E. Hammer. 2017. "Semi-Automated Detection of Looting in Afghanistan Using Multispectral Imagery and Principal Component Analysis." *Antiquity* 91/359: 1344-1355).

GIS Training for Afghan Professionals

The State Department grant also funds a GIS training program for archaeologists and cultural heritage specialists in Afghanistan. In July 2016, Emily Hammer, Gil Stein, and Steve Camp traveled to Kabul to arrange the details of this training program, which has been carried out in collaboration with the GIS faculty of Kabul Polytechnic University (KPU). The training program commenced in October 2016 under the direction of Jessica Giraud with a "teacher training" for KPU faculty, who are experts in GIS and Geodesy but needed information on how these methodologies are applied in the fields of archaeology and cultural heritage (fig. 7). The training program continued in January–February 2017 under the direction of Jessica Giraud

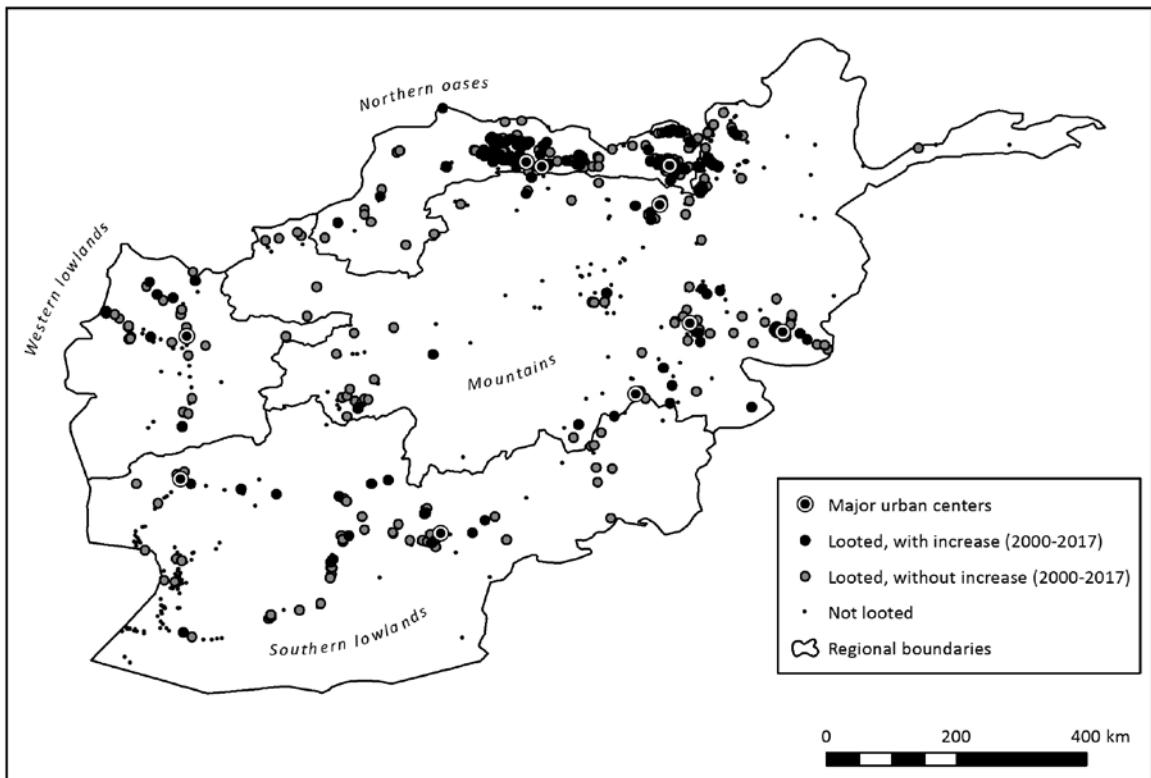


Figure 6. Distribution of the 474 looted sites across Afghanistan studied by CAMEL, 173 of which showed an increase in looting 2000-2017, in relationship to four major geographical zones. Note the major concentration of looted sites in the northern oases. 1,002 sites total were analyzed (image: Rebecca Seifried and AHMP staff)



Figure 7. Jessica Giraud carries out the "Applications of GIS for Archaeology and Cultural Heritage" training for faculty at Kabul Polytechnic University in October 2016 (photo: Alejandro Gallego)

and the KPU faculty. Twenty-two professionals and students from the Afghan Institute of Archaeology, the Ministry of Monuments, Kabul University, and KPU received seven weeks of GIS instruction. CAMEL director Emily Hammer worked with Giraud on the development of course syllabi and activities throughout both of the training periods.

Mapping Desert Kites

Outside of Afghanistan, CAMEL's research efforts were devoted to regional archaeology projects investigating the distribution, form, and environmental context of mass-kill hunting traps found in eastern Jordan, southern Egypt, and other parts of the Near East and Central Asia. Aerial mapping of these traps has been central to their study because many are too large and/or faint to be seen from the ground. CAMEL's projects were designed to draw on new sources of historical aerial imagery.

Kites in Eastern Jordan

The black basalt desert of eastern Jordan (*harra*) preserves an astonishing density of archaeological features that represent massive long-term human investment in what is now an inhospitable landscape. The most intensively studied of these features are large hunting traps called "desert kites" due to their shape — an irregular polygon enclosure with long tails. While a number of influential studies were able to map limited numbers of kites throughout the 1970–80s, the availability of free high-resolution satellite imagery through Google Earth in the last decade has enabled systematic mapping of kites and led to an explosion in the number of kite studies. Over the past two years, CAMEL students and staff have been using new sources

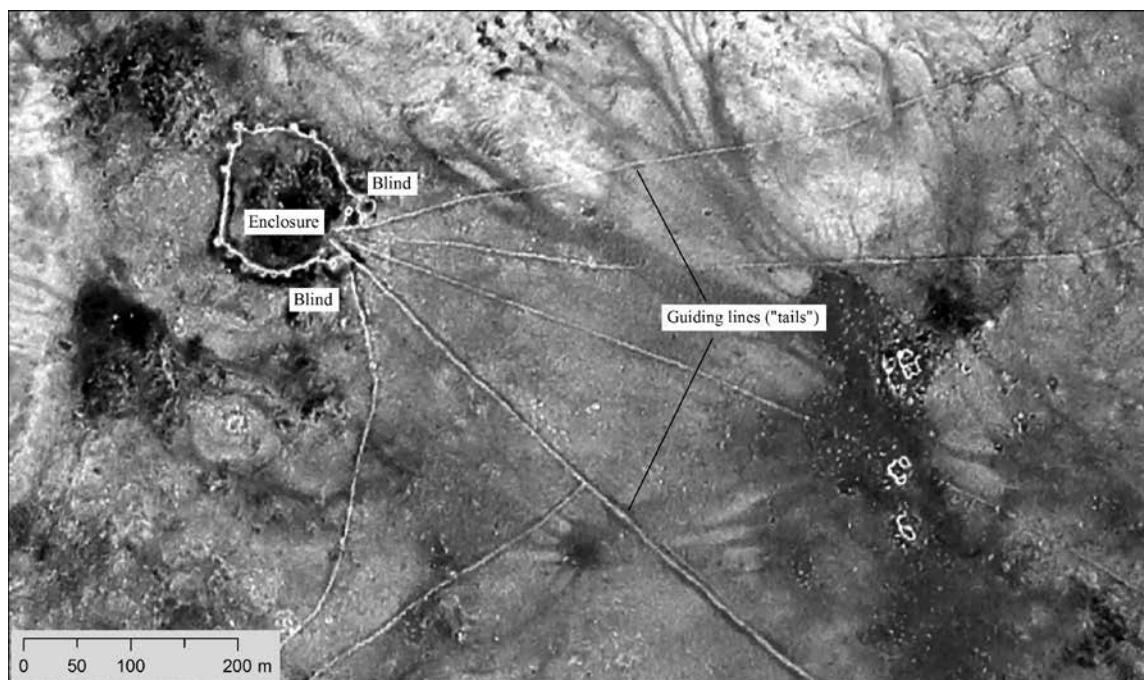


Figure 8. Major components of a desert kite in Eastern Jordan, U2, January 1960 (image: Emily Hammer and Anthony Lauricella)

of high-resolution declassified military intelligence imagery to systematically map kites and their surrounding features. U2 planes captured high-resolution aerial photos in which kites and other stone features appear very clearly. This historical view can therefore provide information on structures that have been destroyed in the last decades with agricultural expansion, development projects like roads, and bulldozing for oil prospection.

We systematically mapped kites and all other archaeological features by laying a 1×1 km grid and examining U2 imagery from January 1960 and modern imagery square by square. Thus far, we have mapped a total of over 13,500 features in systematically surveyed squares. The majority of these mapped features are corrals, campsites, and “wheel” features of unknown function. Only 546 are kites (another 344 kites have been mapped in targeted areas).

Our systematic mapping allows us to examine the scale of the desert kite phenomenon in Jordan and to assess spatial patterns. Several different estimates exist for the total number of kites in the Jordanian *harra*, ranging from around 500 to over 1,000. Through both systematic and targeted mapping, we have already identified 890 kites across the Jordanian *harra*, and our study is not yet complete. This indicates that the higher estimates for the total number are more likely to be reflective of the actual total. A number of kites we have identified do not appear in the most recent distribution maps of other projects like Global Kites (<http://www.globalkites.fr/>). Because of recent destruction, we expect that our use of historical imagery will result in the identification of a larger number of kites than that identified by projects using only modern imagery.

Scholars have long observed that the majority of kites in the *harra* form linear chains that can stretch for tens of kilometers. Individual kite enclosures in these chains are connected by long guiding lines, and mapping these guiding lines has allowed previous surveys to define kite chains and even propose relative dating for different components of these chains. Following our systematic mapping, we used kernel density estimates to examine clusters of kites and how these relate to chains. These statistics highlight the fact that the vast majority of the large number of kites in the Jordanian *harra* are part of much larger, regional-scale structures (91%). A small but significant minority of kites (9%) were probably constructed for use on their own.

As the project moves forward, we plan to employ environmental GIS analyses to better understand the positioning of these traps and settlements in relationship to the landscape. The preliminary conclusions of our work, including more data on the arguments explained above, have recently been published: E. Hammer and A. Lauricella, “Historical Imagery of Desert Kites in Eastern Jordan.” *Near Eastern Archaeology* (2017) 80 (2, Repopulating the Badia): 74–83.

Kites in Egypt and the Sudan (contributed by Émilie Sarrazin)

Desert kites are also found in other parts of the Middle East. In Egypt, they are particularly prominent in the Western Desert between southern Egypt and northern Sudan. Such structures have been recorded following extensive surveys and/or analysis of satellite imagery of the Aswan-Kubbaniya and el-Hosh regions in Upper Egypt, the region between the First and Second Cataract in Lower Nubia, the Third Cataract region of Upper Nubia, and the Kurgur and Dungul oases. Some have even been observed far away from the Nile Valley and oases, in the dunes of the Great Sand Sea of the Western Desert. These features have been published with an inconsistent degree of detail and accuracy, and have never been studied as a coherent ensemble. The first phase of this project, now completed, consisted of mapping the published kites in GIS, in order to both regroup this scattered dataset and also provide updated

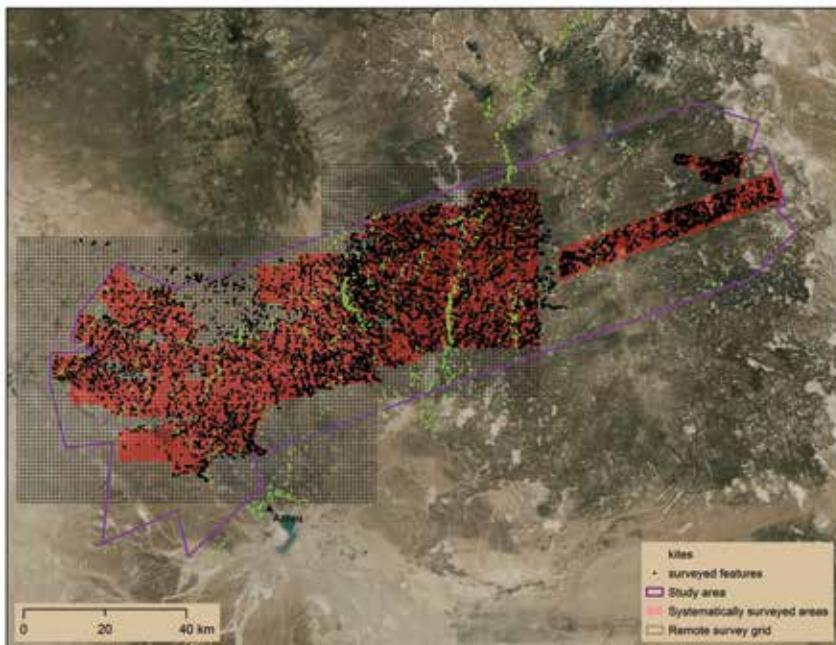


Figure 9. Extent of CAMEL's systematic mapping in Eastern Jordan with the locations of features and kites (image: Emily Hammer and Anthony Lauricella)

georeferenced drawings of these structures. The second phase of this project, currently in progress, consists of expanding the study of satellite imagery beyond these surveyed areas, in order to obtain complete coverage of the region. Such a comprehensive survey, based on a grid system, is essential in order to properly study the spread of these game traps and their relationship with the surrounding landscape. If possible, the positioning of ancient remains such as circular camps and cairns will also be taken into account. Once such a systematic examination has been performed, Digital Elevation Model (DEM) and Difference Vegetation Index (NDVI) maps will be used to study how slope, elevation, the presence of wadis and soil humidity have influenced the location of these features. The end goal of this project is to further contribute to the discussion concerning the use and the spatial and chronological distribution of these puzzling structures.

GIS and Historical Geography: The Anatolian Atlas Project (contributed by Joshua Cannon)

GIS has useful but underutilized applications in the field of historical geography. Graduate student Joshua Cannon and undergraduate researcher Rolland Long are creating a website that displays geographic and bibliographic data on central Anatolian archaeological sites together in order to highlight and re-assess debates in historical geography literature for the Hittite period. In 2016–2017 they digitized the locations, chronology, characteristics, and sources of information for 400 sites, mostly dating to the second millennium BCE. They also have generated digital maps of the route taken during the celebration of the Hittite AN.TAH.ŠUM festival, drawing on Hittite texts describing the festival, the locations of sites documented by archaeological surveys, and freely available topography data. The festival route is mapped out day by day with pathways that were identified through GIS modeling and with archaeological sites that are likely matches for the historical cities visited during this

festival. Each archaeological site is accompanied by metadata that details the argument for why that site has been associated with a textually attested city. The interactive online version of the Anatolian Atlas, along with a comprehensive bibliography for Hittite archaeology and geography, are now available to the public via the CAMEL website: <https://oi.uchicago.edu/research/camel/anatolian-atlas>. Joshua and Rolland presented the preliminary results of their digital mapping of the Hittite AN.TAH.ŠUM festival at the ASOR Annual Meeting (November 2016).

Online Repository of Maps and Geospatial Data

Over the last two decades, CAMEL has greatly benefitted from its ever-expanding database, which now contains around 20,000 georeferenced maps, satellite images, and other spatial datasets relevant to the archaeology and history of the Middle East. Since 2014, we have been working to make this data available to the whole OI and to the public by transitioning towards use of the Oriental Institute's Integrated Database (IDB). In September 2016, a significant subset of CAMEL's holdings (over 9,000 datasets) became available for online public search and download via the IDB for the first time. The major strengths of our online collection are digitized and georeferenced versions of historical maps held by the Oriental Institute, historical aerial photographs of particular archaeological sites and landscapes, and georeferenced historical satellite imagery covering large swaths of the Middle East, primarily from the Cold War-era Corona spy satellite program.

To use CAMEL's online repository, look for the "CAMEL" option under the "Search All" dropdown box at <http://oi-idb.uchicago.edu/>. Once you have located a georeferenced dataset of interest using keywords and other filters, an interactive map with up-to-date satellite imagery embedded in the dataset's page allows you to see the spatial coverage of the dataset. CAMEL Assistant Director Anthony Lauricella and IDB project manager Anne Flannery presented on this new resource at the Chicago Colloquium on Digital Humanities and Computer Science (November 2016).



Figure 10. A UAV camera (drone) enabled Emily Hammer to collect aerial photography over the site of Ur in southern Iraq in April 2017; the camera captured photos in the hours following a rare spring rainstorm, and the differential absorption of moisture in the soil shows buried mudbrick architecture

New Equipment For Fieldwork

In the past several years, CAMEL has earned a significant amount of income from grants and from contract work. These funds enabled the purchase of new fieldwork equipment for Oriental Institute projects, including a Bartington Grad601-2 magnetic gradiometer (for subsurface mapping), a Leica TS06+ total station (for excavation and survey), and a DJI Phantom 4 UAV camera (for aerial photography). The Phantom 4 had its first use during a new survey that Emily Hammer began at the southern Mesopotamian city of Ur in April 2017, a project detailed further in her individual research report (fig. 10).

Acknowledgments

Many staff members made our research and grant work possible, and we thank them for their commitment and energy throughout the year. Our student staff for general laboratory projects included Anthony Lauricella (Assistant Director), Thomas Chiodini, Sarah Mace, and Justin Reeve. Émilie Sarrazin carried out research on the desert kites of Egypt and Nubia. Joshua Cannon and Rolland Long carried out all work on the Anatolian Atlas project. Anthony Lauricella (Assistant Director) took primary responsibility for developing and testing the web interface of the Integrated Database project alongside IDB project managers Foy Scalf and Anne Flannery. The efforts of Kathryn Franklin and Rebecca Seifried (Heritage Analysts) as well as those of Anthony Lauricella (Assistant Director) were essential to all of our Afghan grant-related database-building and research projects. Our other Afghanistan grant staff included Emily Boak, Shaheen Chaudry, Emily Hansen, Michael Johnson, Gwendolyn Kristy, Jim Meierhoff, Madeline McCann, and Oren Siegel.

CHICAGO DEMOTIC DICTIONARY (CDD)

**Brian Muhs and Janet H. Johnson
with the assistance of Jonathan Winerman,
Ariel Singer, and Theresa Tiliakos**

The Chicago Demotic Dictionary has continued to work towards its short-term goal of publishing updated PDFs on the Oriental Institute Publications website and a hard-copy version for libraries based on those PDFs. Conveniently, the current work is also necessary for the long-term goal of creating a web-based dictionary in database format. This current work consists of extracting and labeling the Demotic image files from the old Word documents, recovering corrupted image files from PDF copies, and converting the text files to Unicode fonts.

The Demotic image files need to be extracted from the old Word documents and labeled because the Publications Office will prepare the updated PDFs and hardcopy of the CDD using a program called InDesign, which uses linked rather than embedded images. Embedded images are unsuitable because in recent versions of Word they are compressed and lose sharpness. Linked images are not compressed, but the links require them to have unique names, so that the program can find them in the computer. We had originally estimated that there were about 40,000 images of scans and hard copies in the dictionary files, but we now know that there are probably “only” 38,000 images. Of these, over 31,000 have now been extracted and labeled. Almost 1,500 of these extracted images have been corrupted as a result of having been compressed, however, and it will be necessary to find uncorrupted copies in earlier versions of the files.

The text files also need to be converted to Unicode fonts. Tom Urban, the head of the Publications Office, is designing a Unicode font that will have all the letters and diacritics we need (plus Coptic, Greek, various Northwest Semitic languages, Akkadian in transliteration, even Egyptian hieroglyphs, and Meroitic) within the one font. He is intending to include everything that they ever use in the Publications Office so that they can always use the same font and can make the font available on the OI Website. Sandy Schloen and Miller Prosser of OCHRE Data Service are assisting with our conversion of the text files to Unicode fonts. We thank all of the above, as well as Knut Boehmer, the OI’s fine IT guru, and Leslie Schramer, who resigned this year after many years working in the Publications Office with Tom Urban. We miss Leslie but know she is enjoying her time with her infant son.

Once all the images have been extracted and labeled and all the texts have been converted to Unicode fonts, hopefully by the coming fall, we will begin to transfer the texts to InDesign and to link the images to their appropriate places in the texts in the course of the coming year. These InDesign files will be used to make new PDFs to replace the (sometimes rather old) ones currently on the OI Publications website. They will also serve as the basis for the upcoming hard copy publications of the dictionary, aimed at universities, museums, and other institutions but available to individual purchasers as well. The same labeled image files and the Unicode text files will also eventually be uploaded to an online database to form a web-based version of the dictionary.

Our staff this year has consisted of Jan Johnson as Editor, Brian Muhs as Associate Editor, and Jonathan Winnerman and Ariel Singer as Student Stalwarts. In anticipation of both Jonathan's and Ariel's departure for Chicago House in Luxor next year, and Jonathan's anticipated completion of his dissertation next year as well, we hired a young student, Theresa Tiliakos, whom they are training in image preservation, etc. She just finished her MA in Egyptology from the University of Chicago and has been admitted into our PhD program to work on Women's Studies, mostly in the New Kingdom. We are glad to have her as part of the team. We hope to hire one or two more students in the coming fall, when Jonathan and Ariel head to Egypt and while we are making our push converting to InDesign.

Jan was invited to give a lecture in the training sessions for new OI Museum docents. She talked on writing (especially as it relates to the museum), and the CDD, trying to give both new docents and several returning docents who come to the training sessions an understanding not only of the importance of Demotic to our understanding of ancient Egypt, but to also convey the actual process we have followed as we used developing electronic technology to study and collect the data for the dictionary.

CHICAGO HITTITE DICTIONARY AND ELECTRONIC HITTITE DICTIONARY (CHD AND eCHD)

Theo van den Hout

The two main areas of activity this past year were the final fascicle of the letter Š of our dictionary and the preparations for the big 10th International Congress of Hittitology that we will be hosting at the end of August 2017. We, the CHD team, Richard Beal, Petra Goedegebuure, Oğuz Soysal, and Theo van den Hout, have now sent off the final batch of words starting with šu- to our outside consultants, Professors Gary Beckman (Ann Arbor), Craig Melchert (Chapel Hill), and Gernot Wilhelm (Mainz, Germany). Once their feedback is in and incorporated we can start the final phase of putting the volume together and sending the manuscript to our Publications Office. Meanwhile, Goedegebuure, Beal, and Soysal continued work on revising and updating the letter “L,” the first one of the CHD that came out in 1980. This means looking for newly found or newly published references, new studies on the works we have already cited, adding new or differently understood meanings, adding dates to texts not previously dated, and rearranging the articles in accordance with the way we have been doing things in later volumes. In addition, Soysal worked on transliterating further unpublished material (Bo 6087–6434) from the earliest German excavations at Boğazköy, the site of the former Hittite capital Hattusa, as well as the most recent textual finds from the site of Kayalıpınar/Samuha.

A lot of time was spent on preparing for the upcoming conference. We originally hoped for about 80 participants, but as I am writing this report we already have 100 people registered! The organizing committee consists of the CHD staff including: James Osborne and Oya Topçuoğlu, with the invaluable assistance of Brittany Mullins and Kiran Webster from the OI’s Development Office, and our dedicated students Antonio Cruz Uribe, Thalia Lysen, Robert Marineau, Ryan Schnell, and Emily Smith. Petra developed our website (ich10.uchicago.edu) and made sure that registration for the conference and lodgings proceeded smoothly. In cooperation with the OI designer, Emily has been busy with posters and a banner while Oya and Rich worked on two exhibits in connection with the conference. With the invaluable assistance of Helen McDonald, Laura D’Alessandro, and Alison Whyte, Oya has been preparing an extra display case in the Syro-Anatolian Gallery featuring objects from the Oriental Institute Museum, not normally on display. All objects were selected for having a link with entries in our dictionary, showing the link between philology and archaeology. After the conference, some of the objects picked by Oya will be added to the permanent display in the large Alişar case. The other show will be a history of Anatolian-Hittite studies at the University of Chicago from its beginnings in 1892 up to the present day. With the assistance of Anne Flannery, the OI’s Archivist, Rich and Oya have uncovered numerous documents and photos telling the fascinating story of Chicago’s involvement in the area. Since they uncovered so much material, Rich will devote a separate presentation to this history during the conference. Thalia is organizing specific events for student participants that will also be open to the wider UChicago student body.

I should also mention with gratitude the enthusiastic willingness of Jean Evans, our Chief Curator, and her staff to completely re-install the permanent Syro-Anatolian Galleries in our museum for the benefit of our participants. In many meetings we all poured over the text panels, labels, and maps, establishing information that we hope will be as accessible and updated as much as possible to all future visitors. A final, and very special exhibit, will be that of two very large canvases by Audrius Plioplys. They were the result of his visit to several Hittite sites in Turkey and will be exhibited in Breasted Hall during the week of the conference.

Amid all this work for the conference, the usual dictionary activities continued. Barbara Jillson, our volunteer, spent many hours behind the computer expanding our bibliographic database. And under the watchful eye and dedicated support of Oya, students Antonio Cruz Uribe, Thalia Lysen, Robert Marineau, Katherine McFarlin, and Ryan Schnell helped in making a push to bring our dictionary files more up-to-date. This added work force was made possible by the generous support of Mr. Philip Elenko, our now long-time donor.

DENDARA SETTLEMENT SITE

Grégory Marouard and Nadine Moeller

The third season of the Oriental Institute (OI) archaeological program on the settlement site at Dendara took place twice this last year: from November 19 to December 18, 2016, for the main excavation program; and from January 7 to January 27, 2017, for a study season. Fieldwork operations have been conducted under the direction of Grégory Marouard, Research Associate in Egyptian archaeology at the OI. The team consisted of Nadine Moeller (Professor of Egyptian Archaeology at the OI/NELC, University of Chicago), Valérie Le Provost (Ceramicist, Research Associate at the IFAO), Claire Newton (Archaeobotanist, University of Quebec at Rimouski), Aude Simony (Ceramicist, University of Poitiers), Sasha Rohret, Emilie Sarrazin, and Oren Siegel (PhD students, NELC department). The work was conducted under the supervision of Rais Yasser Mohamed Hassan with Egyptian archaeologists from Gurna and local workers from the Dendara area. The Ministry of Antiquities (MoA) was represented by inspectors Abdallah Ahmed Osman Hassan and Mohamed Abdel-Rahil Mohamed Atitu.

Since 2014, the Oriental Institute has investigated the evolution of the settlement site at Dendara, particularly for the period between the mid-fourth to the late third millennium BCE, until the early Middle Kingdom (ca. 2000 BCE). Focusing on urban archaeology, this project is welcomed on the eighty year old archaeological concession of the French Archaeological Institute in Cairo (IFAO), which allowed the OI to work on the settlement remains situated inside and outside of the main sanctuary enclosure wall. The cemetery area, located south, is also under investigation by a team of the Macquarie University, Sydney.

The specific focus of the OI team lies on the extensive study of the urban vestiges from the origins of the settlement to the early Christian period and the interconnections between the civic and administrative spaces with the religious structures. This research is combined with the excavations conducted by the Oriental Institute under the direction of Nadine Moeller (see Tell Edfu report) of another provincial capital of Upper Egypt at Tell Edfu, the “sister site” of Dendara. In this regard, the current project is an exceptional occasion to examine on a deeply comparative level the archaeological data from two major settlements with the aim to better characterize the multiple facets and long-term development of the urban phenomenon in addition to the dynamics and resilience of Upper Egyptian agglomerations over more than 3,000 years.

Work on the Extramural Settlement Area (Zone 4)

This season, as part of our ongoing questions about the evolution of the ancient town during the third millennium BCE, an extensive excavation was undertaken in the extramural urban area (Zone 4) focusing on a large residential neighborhood. Identifiable over an area measuring 450 m in length and covering nearly 80,000 sq m, Zone 4 is located about 330 m outside of the Hathor sanctuary enclosure wall (figs. 1–2) and it is mostly characterized by domestic installations which date back to the First Intermediate Period (ca. 2200–2050 BCE),



Figure 1. Location of the OI work inside (Zone 1) and outside (Zone 4) of the precinct of Hathor and Isis sanctuaries in 2016 and 2017 (photo: ©Google Earth 2016)



Figure 2. Aerial view of the settlement area (Zone 4) excavated by the OI team at the end of the 2016 campaign, now protected by a new mudbrick wall along the modern road (photo: G. Marouard)



Figure 3. Orthophotography by UAV of Zone 4 area, showing the OI excavation in red and the French-polish excavation in yellow (photo: G. Marouard)



Figure 4. Corridor, stairs and central room of an early Middle Kingdom domestic unit, from the East (photo: G. Marouard)

most probably from the second part of this period, until the very beginning of the Middle Kingdom (ca. 2050–1950 BCE).

This sector has been very little investigated by archaeologists before, only between 2001 and 2004 by a French-Polish team of the IFAO directed by François Leclère. The attention of this previous fieldwork focused on a single domestic unit located in the southeastern part of Zone 4. In order to get an encompassing vision of this part of the settlement, the Oriental Institute project has opened an extensive area which measures about 60 m north-south to 50 m east-west, ca. 3,000 sq. m (fig. 3). In several locations, the destruction made by the seb-bakhin activities in the early years of the twentieth century reached the natural sand levels on which the settlement was originally established.

Several new houses have been excavated. Most of them are founded directly on a thick layer of natural sand, indicating an ex-nihilo installation and an expansion of the late Old Kingdom and First Intermediate Period settlement towards the east into an area previously occupied only by light installations and gardens. In the actual state of the work, about ten new domestic installations or groups of installations (house and adjacent courtyard) have been identified. The main part of the remains investigated this season corresponds to late First Intermediate Period and early Middle Kingdom (late Eleventh and early Twelfth Dynasties, ca. 2000 BCE) constructions and reoccupations.

The northern limit of the 2016 area revealed a set of four symmetrical installations located on the southern side of the Nord-South Street. Each one measures about 13 m in length and 5 m in width and shows an alignment of five to six rooms with a simple straight staircase in the central part, probably used for access to the roof (fig. 4). For each, the plan is marked by a larger room located in the center of the house. Those installations are the latest constructions found in Zone 4 so far with a date that can be estimated around the second part of the Eleventh Dynasty.

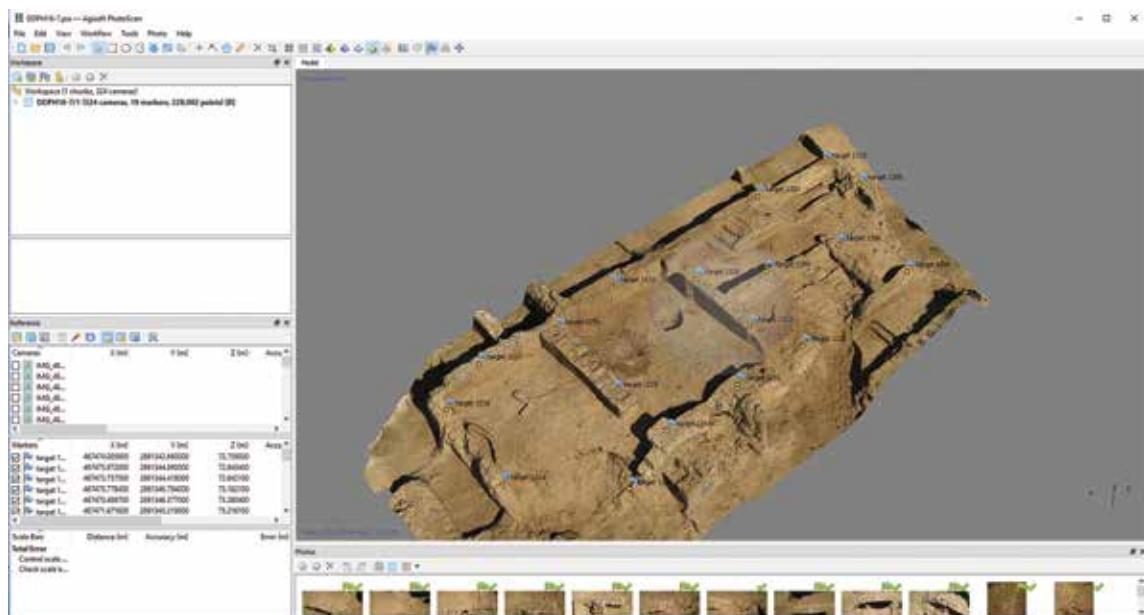


Figure 5. 3D reconstruction of the early Middle Kingdom domestic unit 3 made with Agisoft PhotoScan Pro (image: G. Marouard)

Almost two to four larger installations similar to the domestic unit excavated by the IFAO in the early 2000s have been identified on the north and the east side of the 2016 excavations. Earlier (ca. mid- to late First Intermediate Period), their plans seem to be still influenced by the tradition of the Old Kingdom; four rooms as a central core unit with courtyard and peripheral outbuildings sometimes encroached on public/collective spaces such as the street.

Most of the archaeological remains have been recorded with the traditional use of a total station Leica TS06, but the OI mission has also used new innovative technologies, thanks to the support from the Fund for Innovative Research in Egypt (FIRE). This season it was possible to operate an Unmanned Aerial Vehicle (UAV) DJI Phantom 4 in order to model and precisely map the urban remains newly exposed with unparalleled accuracy. The use of UAV (so-called drone) is strictly controlled in Egypt. However, the OI team at Dendara received permission in 2015 to use this type of aircraft in the field, an exceptionally rare authorization received by very few archaeological missions in Egypt to date.

In conjunction with the photogrammetry software Agisoft Photoscan Pro, it was possible to model the mudbrick remains in a short time and to produce 3D views (fig. 5) and orthophotography, which is a geometrically rectified image without perspective that corresponds to a planar photography (fig. 3).

The pottery study of this area has been conducted by Valérie Le Provost who underlined four main phases. Phase 1 is the oldest phase and can be dated to the First Intermediate Period with some traditional characteristics that belong to the late Old Kingdom and end of the Sixth Dynasty. The main characteristics of Phase 2 are the cylindrical bread molds with a flat base coated on the inner surface, cups with red painted rims and irregular scraped bases, large carinated bowls with lines on the external rim, bottles or small jars, some of which are blackened on the outer surface. Phase 3, still presents the First Intermediate Period features, but some changes clearly appear. The bread molds are still those of the First Intermediate



Figure 6. Large abandonment layer with complete pottery vessels (Phase 3) on floor Fl. 2050 (photo: G. Marouard)

Period, but some have a smaller and less flat base. Most of the same open ceramic forms are found (cups, bowls) but the vessel walls are thinner, the surfaces are less irregular, and the large bowls with flat bases and two incised lines beneath the rim are now less frequent. Some decorations, mainly the so-called “wavy lines,” appear on large carinated bowls. The quality seems to increase a little, surfaces are less rough, and the scraping on the bases is less deeply marked. This phase, at the current point of study, dates from the end of the First Intermediate Period to the mid-Eleventh Dynasty.

Phase 4, is visibly different from the previous phases. Hemispherical cups appear along with very characteristic tubular bread molds. These two specific features of the Middle Kingdom pottery allow assigning Phase 4 to the beginning of the Middle Kingdom and the transition between the late Eleventh and the early Twelfth Dynasty. In all four phases the many pottery types are made with so-called Marl clay “Qena Ware” and include open vessels as well as jars and bottles. This repertoire offers a new perspective for the Marl A pottery production found in the settlement of Dendara.

Several objects of the daily life have been discovered in the abandonment and/or occupation layers directly excavated on the domestic floor layers. It should be mentioned that several sealings with scarab-seal impressions from the early Middle Kingdom (US 4059), a small donkey figurine in unfired clay (US 4023), a private cylinder seal in faience (US 4049, fig. 7), game pieces in limestone (US 4046) and a complete cosmetic palette in gray-blue shale (US



Figure 7. Private cylinder seal in turquoise faience discovered on the entrance floor of a First Intermediate Period domestic unit (photo: G. Marouard)

4057) have been excavated. The last four objects have been transferred for study to the MoA's magazine in Quft.

Work Inside the Hathor and Isis Sanctuaries Area (Zone 1)

In order to complete the investigations of the substructures from the Naqada II period discovered during the 2015 season, the excavations on the southern and eastern side (Trenches 1 and 2) of the Isis temple have been slightly extended to January 2017 (fig. 8).

The area formed by Trenches 1 and 2 in 2015 was assembled in a much larger area of about 17.00 m and 15.50 m in



Figure 8. Areas cleaned this season next to the Isis and Hathor temples and the Middle Kingdom enclosure wall (photo: G. Marouard)

length and 5.00 m wide, surrounding the east and the south sides of the eastern entrance terrace of the Ptolemaic phase of the Isis temple. This terrace, entirely cleared last season, has revealed the existence of an earlier building, made of thick mudbricks walls and limestone blocks, which is now well-dated to the early Middle Kingdom (end of Eleventh Dynasty–early Twelfth Dynasty, ca. 2000 BCE). This monument was built directly on the top of much earlier levels of occupation. Several layers can be found here and two successive phases were clearly exposed during our study season, corresponding to the Naqada/Predynastic period.

The most recent of the two sequences is marked by several muddy surfaces corresponding to three successive floors (US 1061, 1064, and 1066). The floors have fireplaces, ash concentrations, numerous flakes of flint (not necessarily connected to debitage residues of production but to sharpening operations of large blades), and significant traces of brewery activities — as evidenced by the discovery of several big fragments of fire-bars, so-called “fire-dogs,” which are long retaining elements made with coarse fired clay and placed all around the cooking vats used for beer production (fig. 9).

Despite some fine ware ceramic fragments such as Black-topped Ware, Red-polished Ware and marl clay open forms (fig. 10a), the pottery is widely dominated by a large quantity of Rough Ware vessels (fig. 10b), large containers and big parts of vats with burned coarse mud mortar attached to their outer face. Those pottery assemblages clearly emphasize a date from the Naqada IIIC-D period (ca. 3600–3350 BCE), most likely from the end of this period.

Those remains associated with important assemblages of pottery clearly indicate the presence of contexts in relation to a domestic occupation and, in no case, can these contexts be regarded as funerary in nature. Those early phases at Dendara also offer a link and a continuity to the later Naqada IIIC-D/Early Dynastic (ca. 3100–2685 BCE) levels discovered in 2014 and 2015 by the OI team under the Middle Kingdom enclosure wall, and they help us to identify



Figure 9. Surface of the Naqada IIIC-D occupation US 1061 with detail of the fire-bars found *in situ* concentrated in a small pit (photo: G. Marouard)



Figure 10a-b. Selection of Naqada II C-D pottery vessels from Trench 2: Black-topped and Red-polished Wares (left); Rough Ware open and closed forms (right) (photo: G. Marouard)



Figure 11. Aerial view of the early Nagada occupation discovered east of the Isis temple, with the earliest phase ever discovered in the foreground (photo: G. Marouard)

the heart of the oldest occupation of the settlement site to the southeast of the Hathor and Isis complexes.

The continuation of the excavations in Trench 2 also led to the discovery of a much older occupation, deeply sealed under a 60 cm thick layer initially formed with coarse wadi gravel and sand covered by windblown sand, a deposit that precedes the Naqada IIC-D levels. This occupation phase is characterized by a series of circular piles made of medium and large limestone pebbles (fig. 11). They could correspond to the reinforcement of postholes, since they are arranged in a regular alignment, or more likely they belong to destroyed hearths, although the larger pebbles do not show any visible signs of exposure to fire. Several concentrations of ashes and charcoals can be observed, with the occasional faunal and fish remains. The lithic pieces are mostly composed of coarse size flints and flakes, with no bifacial or sickle blades, and the ceramic material is very fragmented and eroded with a predominance of very coarse Rough Ware. Only briefly investigated at this point, this phase, which is the oldest one unearthed on the site so far, presents in aspect and stratification many points of comparison to the seasonal Badarian occupation (ca. 4400–4000 BCE) discovered at Mahgar Dendara 2, about 5 km west of the main site at Dendara.

Trench 3. Botanical Samples in Predynastic and Early Dynastic Contexts (Claire Newton)

On the western side of the early Middle Kingdom enclosure wall, two archaeological layers excavated during the 2015 season have been re-opened in order to take several botanical samples. The stratigraphic Unit US 1055, well-dated since last season to the Naqada IID period, was partially re-excavated in order to collect carbonized remains of wood charcoals and grains. Those samples have been sieved, sorted with a binocular lens by Claire Newton, and collected for further analysis (fig. 12). Floor Fl 125 of the pig-pen from the Second or Third Dynasty, previously discovered in 2015, was also partially cleared of its protective backfill in order to obtain two samples on the floor and inside the feeder, with the aim to look for the possible remains of phytoliths.

Bulk soil samples were taken from Predynastic (Trenches 2 and 3) and the Old Kingdom (Trench 4) contexts. Most samples were sieved through a column of mesh sizes from 0.5 mm to 6.0 mm. The sieve refuse was sorted on site with the naked eye and under a low power microscope. Charcoal was sorted only from the largest fractions (over 4 mm) and sorted separately for further investigation. A total of 66 liters of soil from six Predynastic and three Old Kingdom contexts were processed in this way, yielding over 6,000 plant remains other than charcoal. Additionally, soil from contexts 1055 and 1059 (Predynastic, sondage 2), was sieved with a large mesh in order to retrieve only large fragments for charcoal analysis.

The density of material is highly variable, between 5 and almost 1,000 identifiable items per liter of soil. The most abundant plant remains are cereal processing products (grains) and by-products (straw and chaff). For both periods, hulled barley and emmer wheat are well represented, as they are in general present on all Predynastic and pharaonic sites. Flax/linseed is the third annual crop represented in the form of seeds and capsule fragments, representing flax processing residues for the production of linen textiles. Lentil may be present in Predynastic contexts, and cucumber/melon in Old Kingdom contexts.

A range of field weeds is associated with these cereal processing remains. Fruits are not very well represented, except in one deposit where the sycamore is present in the form of fruits and leaves. Other tree remains include: Nile acacia seeds, pods, flower bases, leaf fragments and spiny twigs, and a few tamarisks remains in the form of young leafy twigs and bark fragments. All three were used as fuel for the activities represented in the contexts concerned.

An additional source of fuel was ovicaprid dung (sheep and/or goat), but it always appears secondary to fuelwood.



Figure 12. Archaeobotanist Claire Newton (University of Quebec at Rimouski) sorting plant remains and grains with a binocular lens (photo: G. Marouard)

Trench 4. Completion of the Profile East of the Middle Kingdom Enclosure Wall

Already started in 2015, an extensive stratigraphic profile of about 25 m in length has been completed during the January 2017 study season with the excavation of multiple layers of floors and trash deposits dating back the Fourth and Fifth Dynasties (fig. 13). Located under the enclosure wall of the early Middle Kingdom, this area has preserved in situ the first archaeological evidence for an Old Kingdom occupation and underlines the existence here of an administrative area since the early Fourth Dynasty.

All the pottery from the contexts excavated last season and most of the Old Kingdom contexts of this season have been studied and counted. About eighteen stratigraphic layers and 120 fragments of pottery have been drawn by Aude Simony. The study of some important layers of the dump from the Old Kingdom (US 1041, 1063, and 1065) continues next season.

Study Operations on the Middle Kingdom Enclosure Wall

Several operations related to the site's enclosure walls were conducted in four distinct areas during the main campaign of November–December 2016, under the supervision by Oren Siegel. In the first of these areas, cleaning was continued along the eastern face of the early Middle Kingdom enclosure wall that stands to the east of the Hathor temple. Just to the south of the foundation trench excavated during the previous season, the cleaning revealed intact



Figure 13. Profile on the Old Kingdom level in Trench 4 at the end of the study season in January 2017 (photo: G. Marouard)

stratigraphy below the wall itself in addition to several small walls. A second operation was conducted farther to the north, along the eastern face of the Middle Kingdom wall. Here, the clearing of sebak debris behind the modern outpost of Dendara's guardians exposed the foundations of the Middle Kingdom wall as well as its external face on a length of about 5 m. Judging from the excavations in the two areas mentioned above, it is clear that the foundation of the Middle Kingdom wall follows the irregular and convex surface of the Old Kingdom tell itself and is thus much lower in this area than it is farther to the south. The so-called "Shabaqa Wall" was built directly on top of the remnants of this Middle Kingdom wall, but with a slightly different altitude and following a more accurate north-south orientation.

In a third trench made during the cleaning near this Late Period wall (to the north of the Old Kingdom enclosure wall discovered during the 2015 season) it was possible to get a glimpse of the internal (western) face of the Middle Kingdom enclosure wall. The most complex portions of the Middle Kingdom and Late Period walls in these three areas were mapped using the photogrammetry technique.

Support to the Geomorphological Initiative

Between December 7 and December 12, a geomorphological program conducted by the Macquarie University, Sydney, investigated the geological formations and sediment deposits under and near the settlement area. Geologist Tim Ralph (Senior Lecturer at the Environment and Geography Department at the Macquarie University) conducted a survey and drilled several soundings in order to reconstruct with a long-term perspective the ancient landscape across the Dendara territory and to track the capricious developments of the Nile River and its branches and canals along the lower desert zone.

The OI team provides the workforce during all those geomorphological operations and several drilling spots on its archaeological areas. Tim Ralph mostly focused his work on Zone 4 and drilled three soundings about 6 m in depth directly inside the settlement area, on the border of the small road that delineates Zone 4 and in the surrounding fields (fig. 14a-b). Another drilling about 3.3 m in depth was conducted near the remains of the Naqada II period discovered in 2015 in order to investigate the formation of thick sand and gravel deposits and the possible existence of slight Nile flood deposits under the actual surface.

With the support of the CAMEL Lab, the OI team also contributed to this joint project by providing sev-



Figure 14a-b. Geologist Tim Ralph (Macquarie University) conducting drillings on the settlement area (Zone 4) and in the surrounding fields (photos: G. Marouard)

eral maps, older aerial and satellite views of Dendara (declassified Corona images from the US Geological Survey), and we bought a high resolution and georectified WorldView 2 image (DigitalGlobe's QuickBird) of the wider Dendara region, which was made available to Tim Ralph in order to be used in a future geomorphological GIS project.

Support to Conservation, Site Protection, and Site Management

In order to protect the extra-mural archaeological area at Zone 4, a low mudbrick wall was erected on the eastern and northern sides of the excavated area, about 120 m in length along the modern road (fig. 2). This totally reversible fence, built with local materials and the help of local workers, constitutes a visible limit and an effective protection in order to avoid the daily circulation and above all the occasional dumping of trash deposits on the newly exposed settlement remains (at the beginning of the 2016 season, we had to remove nearly 2 m of modern trash in some parts of Zone 4 before starting our excavation).

Inside the Hathor and Isis complex on the north side of Trench 3, extensive cleaning of the western face of the Early Middle Kingdom (possibly rebuilt during the reign of king Shabaka, Twenty-fifth Dynasty) has been conducted in order to remove the modern garbage, the sebbakhin dumps, and the remains of the guardian house that had been dismantled in this area in 2013 (fig. 15). Two solid supportive pillars made with mudbricks have been con-



Figure 15. View of the western face of the early Middle Kingdom enclosure wall after cleaning (photo: G. Marouard)

structed in order to consolidate a section of the enclosure wall that had become unstable due to gradual degradation of its foundation, which was exposed about a century ago by the sebbakhin activities.

In collaboration with the MoA and the IFAO, all the blocks preserved in the northern and southern chapels of the Roman mammisi have been removed under the supervision of the OI team during the study season of January 2017. This operation was funded by the IFAO and conducted by the Rais Abdallah Khalil (fig. 16a–b). Most of the small pieces of blocks were relocated

in the mammisi of Nectanebo. The main pieces, mostly fragments of statues, have been placed on the new benches built for that purpose by the IFAO in December 2016.

On one of the benches that was still entirely empty at the end of this operation, the OI team decided with the agreement of the local MoA inspectorate, to move several other inscribed blocks of significant interest in addition to some architectural blocks such as sculpted capitals that had been stored on the ground outside of the Roman mammisi. A group of Middle Kingdom blocks in red granite and fine limestone which date back to the reign of king Amenemhat I, first ruler of the Twelfth Dynasty, have been removed considering their historical interest for the site and their esthetic value for the visitors (fig. 17a). The red granite blocks, a lintel broken into two parts, and a fragment of doorjamb (fig. 17b), belong to a significant



Figure 16a–b. Northern chapel of the roman mammisi before and after the removal of the blocks (photos: G. Marouard)



Figure 17a–b. One of the Amenemhat I's blocks during its moving (left), and the mastaba which now receives the granite pieces from the monument of Amenemhat I (right), with other Ramesside blocks and Roman capitals (photos: G. Marouard)



Figure 18. The colossal statue of Mutemwiya from the mid-Eighteenth Dynasty pulled out of the muddy and wet location where she had been resting for too many years (photo: G. Marouard)

Middle Kingdom building at Dendara and were left for decades lying directly on the ground. All these blocks were discovered on the floor of the Hypostyle Hall of the Hathor temple during its clearance at the end of the nineteenth century and were only succinctly published by A. Mariette in 1880. Another important piece found in the early twentieth century at the southeast corner of the Hathor temple was a fragmentary but very elegant colossal statue of Mutemwiya, mother of Amenhotep III, from the mid-Eighteenth Dynasty. It was pulled out of a muddy and wet location and placed in a more suitable position in order to avoid imminent risks of cracks (fig. 18).

The OI team also renewed all the white gravel around the benches built by the IFAO in order to limit the risk of rising moisture and to better highlight the new open-air museum (fig. 19). At the end of the study season, we also conducted a full cleaning operation of the external entrance of the temple area, on the eastern side of the gate of Hathor.

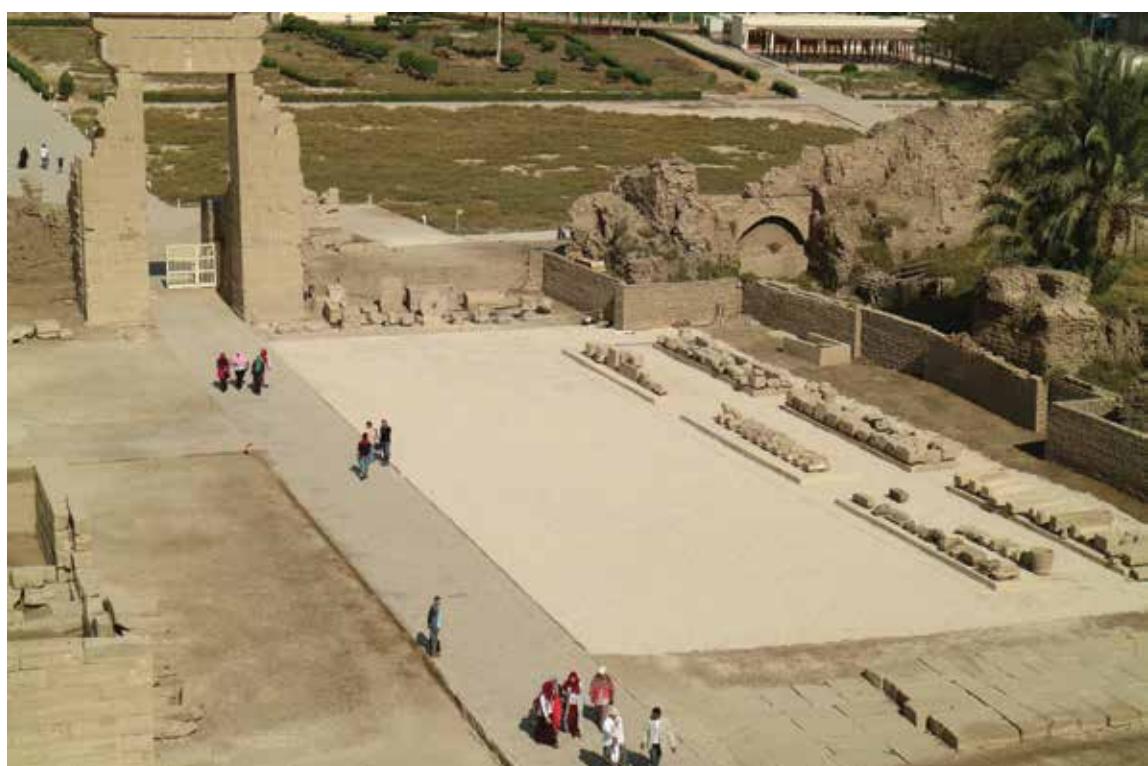


Figure 19. The new open-air museum in January 2017 with new gravel (photo: G. Marouard)

Support to the MoA and IFAO Training Programs

For about two weeks in December 2016 the Oriental Institute team took care of the training program of two MoA inspectors from the Qena inspectorate, Abdelrahman Said Abu el-Hassan and Heba Hassan Kamel (fig. 20a). The mission also received the two MoA inspectors, Ahmed Helmy Zeyada and Ahmed Masoud, who participated in the fieldwork training program organized by the IFAO (fig. 20b).

During the three weeks of the study season in January 2017, the OI project welcomed Said Abu el-Hassan and Mohamed Samah Mohamed from the Dendara inspectorate. They were trained in the drawing of ceramics, pottery restoration, and clay fabric analysis by Aude Simony. They particularly focused their work on the study of a well-preserved assemblage of early Byzantine pottery discovered in 2016 inside the silo Si 112. We also organized at the end of the study season an introduction to the use of photogrammetry and the application of the Agisoft PhotoScan Pro software in order to reconstruct 3D views of inscribed blocks from the blockyard.

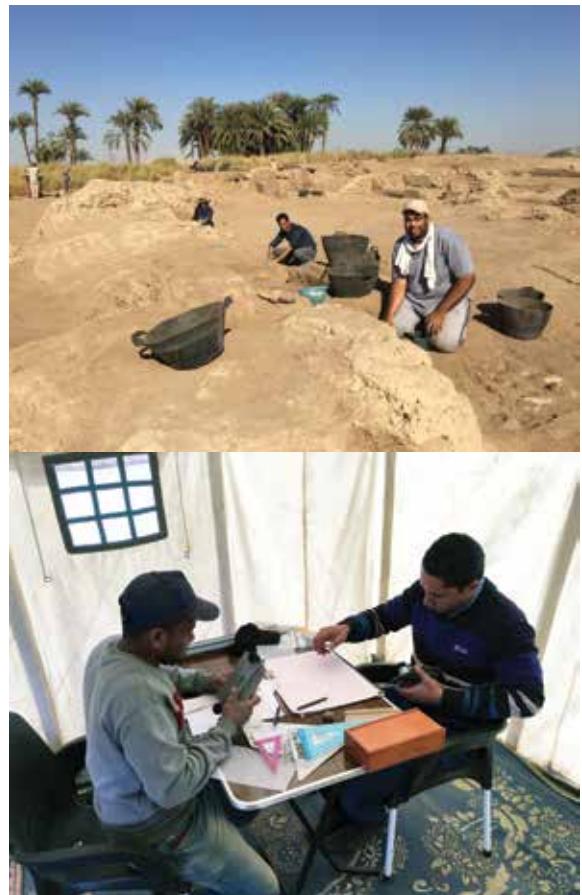


Figure 20a-b. MoA inspectors trained in December on the fieldwork excavation (top, Abdelrahman, Heba, and Ahmed) and on the techniques of pottery drawing (bottom, Ahmed Helmy and Ahmed Masoud) (photos: G. Marouard)

Acknowledgments

We would like to thank the Director of the French Institute (IFAO), Laurent Bavay; the former Director of the Oriental Institute, Gil Stein; the Director of the IFAO Mission at Dendara, Pierre Zignani (CNRS); and all the local representatives of the Egyptian MoA, particularly M. Ashraf, Akhim, Mohamed, Abdallah, and Ahmed. We gratefully acknowledge the funding support of the Oriental Institute, the Fund for Innovative Research in Egypt (FIRE) and all the generous supporters of Egyptian archaeology at the OI.

EASTERN BADIA ARCHAEOLOGICAL PROJECT (EBAP)

Yorke M. Rowan

The Eastern Badia Archaeological Project includes both survey and excavation in an area of the northeastern badia, or Black Desert, of Jordan that transects a variety of ecological zones along the edge of the basaltic areas. Our objectives are to record and analyze architecture, landscape, artifacts, and paleoclimatic information in order to achieve a fresh perspective on the diachronic use and occupation of the understudied region. Our efforts focus on two areas: Wisad Pools and Wadi al-Qattafi. During the 2016 campaign we concentrated on two primary goals: the completion of excavation of a Late Neolithic structure (South Slope 1, SS1), which was sectioned and partially excavated in 2015, and detailed aerial mapping of the structures and mesas along Wadi al-Qattafi. Despite some setbacks, both aims were achieved over the course of two seasons of fieldwork in 2016.



Figure 1. Mesas along Wadi al-Qattafi with Maitland's Mesa (M4) in foreground, with structures on slopes and on top; looking north (photo: A. C. Hill)

Our first season was a two-week period dedicated to the aerial survey using Unpiloted Aerial Vehicles (UAVs), or drones. Our goal was to map the large number of structures, many of them probably dating to the Late Neolithic (ca. 6500–5000 BC) period, that are visible on the landscape clustered on the slopes and atop the basalt mesas along the Wadi al-Qattafi (fig. 1). UAV survey is particularly useful for mapping prehistoric structures that are too small (typically a few meters in diameter) for accurate identification using satellite data, and especially useful in an environment where structures are visible on the surface, with few obstructions impeding flights. By flying lower than manned airplanes and satellites, cameras on UAVs can be used to produce geo-referenced orthophotographs – undistorted, spatially accurate and geo-referenced images – and Digital Elevation Models (DEMs), more quickly and efficiently.

Since 2012 we have been using drones constructed and flown by Oriental Institute research associate Austin “Chad” Hill in order to record features in the Black Desert as part of EBAP. They do bring challenges, of course, and the remote location of Wadi al-Qattafi exacerbates those difficulties. In a remote, dusty and rocky desert environment, conditions are harsh for aircraft, cameras, and on-board electronics. The possibility of crashes or necessity to repair equipment requires many redundancies and spare parts, and a generator is necessary to constantly recharge batteries for computers, drones, flight controllers, and other electronics. Although we had two fixed wing drones (the most efficient system) and one multi-rotor drone, one fixed wing drone was held at the airport. Unfortunately, in the first of our two survey trips we had a catastrophic failure of the fixed wing aircraft (fig. 2), and with our backup system unavailable, we continued with the multi-rotor. Incredibly, Hill restored the fragments of the broken fixed wing and it flew again for our second survey trip during the regular, excavation season.

During the two data collection seasons we recorded approximately 20,000 images from the drones, and fixed both the wing plane and the multi-rotor DJI Phantom. Processing and analysis of this data is ongoing, but examples of orthophotographs demonstrate the utility and high quality data produced via the drone imagery collection. For example, Figure 3 shows an orthophotograph of Mesa 7, on which we highlight the various structures dotting the slopes and on top of the mesa.



Figure 2. Fixed wing drone immediately after crash (photo: Y. Rowan)



Figure 3. Mesa 7, orthophotograph with structures outlined (orthophoto: A. C. Hill)

In addition to documenting the hundreds of smaller structures, we identified numerous so-called “desert kites,” the animal traps created by low walls leading to enclosures. One of the most interesting anthropogenic features around Wadi al Qattafi, and indeed, the desert in general, is the phenomena of the desert kites. These long, low rock lines (calling them “walls” is perhaps an exaggeration!), which sometimes stretch for kilometers, are often barely visible at ground level, blending in with the surrounding rocky landscape. These lead to enclosures where herd animals were trapped and killed. Difficult to interpret from the ground, an elevated perspective makes them easily recognizable, and local topography was frequently employed to enhance the functional effectiveness to trap animals such as gazelle, and perhaps onager (wild donkey). The ability to record kites with low elevation drone imagery and produce three dimensional GIS data allowed us to recognize previously unknown kites at Qattafi, and to recognize the topographic features incorporated into the construction of the kites. For example, a kite between Mesas 11 and 12 utilizes the bowl formed by rim of the mesas, with the walls running along the side of the mesas’ slopes, leading the animals into the bowl below the mesas (fig. 4). Another variation is found at “Tell A” (M2), where three kites were discovered built along, and on top of the mesa (fig. 5). On the northern and southern extent of the mesa, kite walls lead to the enclosures built tightly into the steep sloping sides. The largest kite, however, has guiding walls that lead to the top of the mesa from the east. Small cells are built along the walls, presumably where hunters hid (although these may be deeper pits that trapped animals). The very large enclosure also has cells, typical of most kites, and runs along the western edge of the mesa.

To our surprise, previously unrecognized kites were discovered during the aerial survey. Although these are only preliminary results that require ground truthing, the aerial survey demonstrates the efficacy of using drones for the collection of high resolution data at minimal cost. In our initial article about this research (Hill and Rowan 2017), we suggest that many of the kites in the Wadi al-Qattafi survey area connected through meandering walls and the mesas themselves. By using the steep mesas as natural obstacles, and filling in between them with walls and kites, there seems to be a connected system similar to other documented kite chains in the Black Desert (e.g., Helms and Betts 1987; Kempe and al-Malabeh 2013; Hammer and Lauricella 2017).

South Slope Excavations, Mesa 7

After the excavation of the Neolithic structure on the southern slope of Maitland’s Mesa revealed a domestic building (rather than a burial structure), we realized that many more collapsed structures could be found along Wadi al-Qattafi. One of the highest densities of construction was on the slopes and at the base of M-7, approximately one kilometer north of Maitland’s Mesa, where approximately 300 buildings cluster on the slopes (fig. 6). In addition to the bewildering number of structures, some architectural variability was apparent, with buildings erected using corbeling techniques and others characterized by walls of vertical basalt slabs. Of particular interest was one structure that appeared to include both construction techniques. This building (SS-1, for “South Slope-1”) was selected for excavation due to its unique structural character as well as its potential for demonstrating architectural renovation over time.

As noted in the *Annual Report* (2015–2016), the structure on the slope of Mesa 7 was sectioned in half. The northwestern half of the circular structure was excavated during the

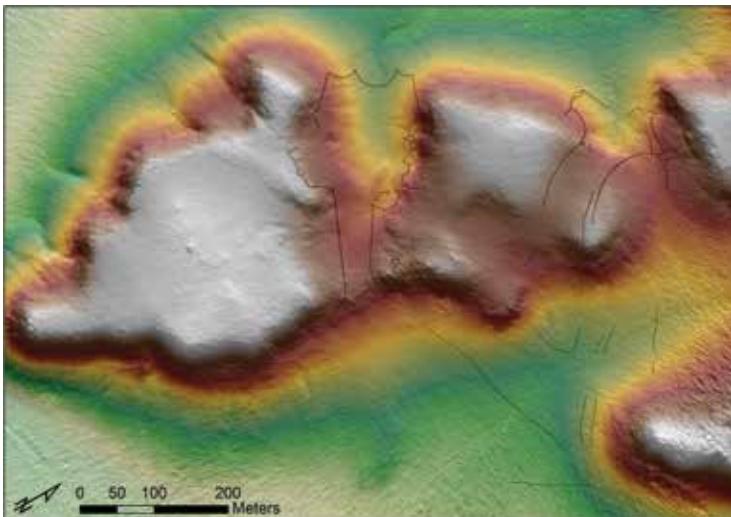


Figure 4 (top). Kite between M11 and M12, DEM (figure: A. C. Hill)

Figure 5 (middle). Tell A (M2) with three kites outlined on orthophotograph (figure: A. C. Hill)

Figure 6 (bottom). Photo of M7, with SS-1 indicated (photo: A. C. Hill)



Figure 7. Orthophoto of SS-1 with line drawing (photo: Y. Rowan; drawing: M. Kersel)



Figure 9. Hearth (061) (photo: Y. Rowan)

Figure 8. Entrance to SS-1 (photo: Y. Rowan)



Figure 10. Plaster lined pit, before and after excavation (photo: Y. Rowan)

2015 season, and the remainder was completed during the 2016 season. Over these two seasons the roughly circular building was found to be similar in size to SS-11, excavated on the southern slope of Maitland's Mesa (see *Annual Report 2012–2013*, pp. 32–39). Externally, the building was approximately 6.3×5.4 m, with interior dimensions of 4.0×4.6 m. Although we initially believed the building was corbeled in similar fashion to SS-11 at Maitlands, based on our findings we now doubt that this was the case. The southwestern half of the interior may have been open to the elements.

With the completed excavation, we have a better sense of the construction of this building (fig. 7), although questions remain. After leveling an area on the relatively steep slope by carving into the soft limestone bedrock, a thick wall (up to 1 m in places) was constructed, sometimes in vertical layers. In similar fashion to SS-11, extremely large blocks were placed on the upslope, exterior side, perhaps to protect the structure from slope wash. The wall was not built in a consistent manner for the entire circumference, instead using both upright and horizontally laid slabs. Supporting pillars of basalt, including one in the center of the building (CSS) and others built into the walls (SSS ?, NSS ?, fig. 7), must have supported some type of roof. Yet, these pillars are set low and establish a height just over 1 m. This seems an unlikely low ceiling, particularly given the other features of the interior space.

During our most recent excavations, an entrance to the building was uncovered, but this is an extremely narrow space (fig. 8) that was possibly created later during a reconfiguration. Just inside this entrance a well-built hearth (061) was constructed along the interior wall and should provide additional radiocarbon dates (fig. 9). Slightly south of the large shallow plaster-lined basin (036) uncovered during the 2015 excavations, a plaster-lined pit (072) was built into the floor near the central pillar (fig. 10). We also focused our excavations on the exterior of the building, where some paving seemed likely to have existed. In addition, substantial construction on the northeastern building exterior (058) seemed built in order to reinforce and protect the opening. To the south of this area, another large ash feature was also a built hearth.

A greater number of finds were recovered from this building compared with the assemblage excavated at SS-11, perhaps suggesting a greater intensity of use and duration. Beads of carnelian, Dabba marble (a local stone), shell (*Conus*, cowrie, dentalium), other unidentified rock types, stone bracelet fragments, a shaft straightener, and an incised conical limestone fragment (fig. 11) represent a much



Figure 11. Incised conical limestone item (photo: G. Rollefson)

richer material culture assemblage than at the SS-11 structure. Ground stone items were also more numerous, primarily consisting of grinding slabs and smaller handstone or pestles. Only two arrowheads were found during excavations at SS-11, whereas at SS-1, nearly seventy arrowheads were recovered. The diverse array of arrowheads includes Nizzanim, Haparsa, Herzliya, Byblos, and “Badia” points (fig. 12). Only two transverse arrowheads were found, a striking contrast to the hundreds of transverse arrowheads recovered from the roughly contemporaneous but much larger structure W-80 at Wisad Pools (see *Annual Report 2013–2014*, pp. 37–46). The much higher frequency of transverse arrowheads at Wisad Pools probably reflects the much greater emphasis on hunting of small game and fowl in contrast to the Wadi al-Qattafi sites where there is less water to attract animals. Likewise, the absence of large heavier Badia points at Wisad Pools seems significant.

Analysis of the flint tools and debitage is ongoing, but some observations are possible. Many other tool types are also represented in the chipped stone assemblage, including burins, scrapers, notches, denticulates, borers, and drills, and a variety of knives. Particularly notable is the high relative frequency of burins in the assemblage, which constitute approximately one-quarter of the formal tools. Also significant are the substantial numbers of borers and drills, the latter made from both bladelets and burin spalls (fig. 13), particularly well-suited for manufacturing beads.

Radiocarbon dates indicate that SS-1 is earlier than SS-11 at Maitland’s Mesa. Dates based on four samples from within the structure of SS-1 range from approximately 6490–6236 cal BC, roughly a millennium earlier than SS-11. This overlaps with the dates from structures at Wisad Pools and underscores that any differences in assemblages probably reflect functional and environmental conditions rather than chronological differences. These dates also indicate a long lifespan for these sites in the eastern Badia.

Although small and incremental, our increasing quantity of archaeological and environmental data from the study area is dramatically altering our understanding of the Black

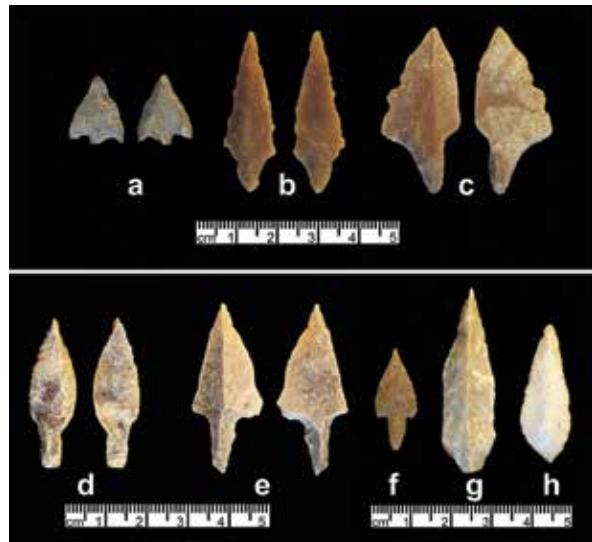


Figure 12. Arrowheads (photo: G. Rollefson)



Figure 13. Drills: on burin spalls (upper row); on bladelets (lower row) (photo: G. Rollefson)

Desert, particularly during late prehistory. The significant investment in building substantial structures in both areas attests to longer stays in the desert than we would expect of pastoralists, and the evidence for hunting underscores the different environmental conditions supported by the plant remains. Rather than the virtually empty desert we see today, small hamlets of extended families capable of organizing some large building projects apparently spent a large part of the year in the region. Many questions remain, however, including whether the Wadi al-Qattafi community and those at Wisad Pools are a single community of hunter-herders stretched out across the badia, or whether different groups of migrant pastoralists from the west can be distinguished from those living farther east. All these lingering research questions demonstrate the necessity of further investigations in this important and neglected desert area.

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EPIGRAPHIC SURVEY

W. Raymond Johnson and J. Brett McClain

We are happy to report that the Epigraphic Survey finished a productive and successful 2016–2017 archaeological field season in Luxor on April 15 in collaboration with the Egyptian Ministry of Antiquities (MoA). Chicago House’s projects during this ninety-third season focused on the sites of Luxor Temple, Medinet Habu, and TT 107, the tomb of the noble Neferekheru, and included epigraphic documentation, conservation, restoration, and training programs. What follows is a report of the work that took place during the six months from October 15 to April 15.

LUXOR TEMPLE

At Luxor Temple we launched a new documentation initiative in the blockyard open-air museum and storage areas supervised by blockyard site manager Jay Heidel. Because most of the Luxor Temple blockyard material — about 50,000 blocks and fragments — have never been documented in any form, photographer Hilary McDonald, assisted by Owen Murray, worked with Jay to develop a program that utilizes digital photography and Agisoft Photo-scan software to create photogrammetric “maps” of stacked block rows for reference, as well as individual block faces. This technique allows precise photography of the blocks without dismantling the rows, and saves a tremendous amount of time. We have started with the Akhenaten Karnak talatat holdings — brought to the Luxor Temple settlement in the Middle Ages for house construction — because they will be among the first groups to be transferred back to Karnak from whence they came.



Figure 1. Medinet Habu conservation team group shot, March 24, 2017 (photo: Frank Helmholz)

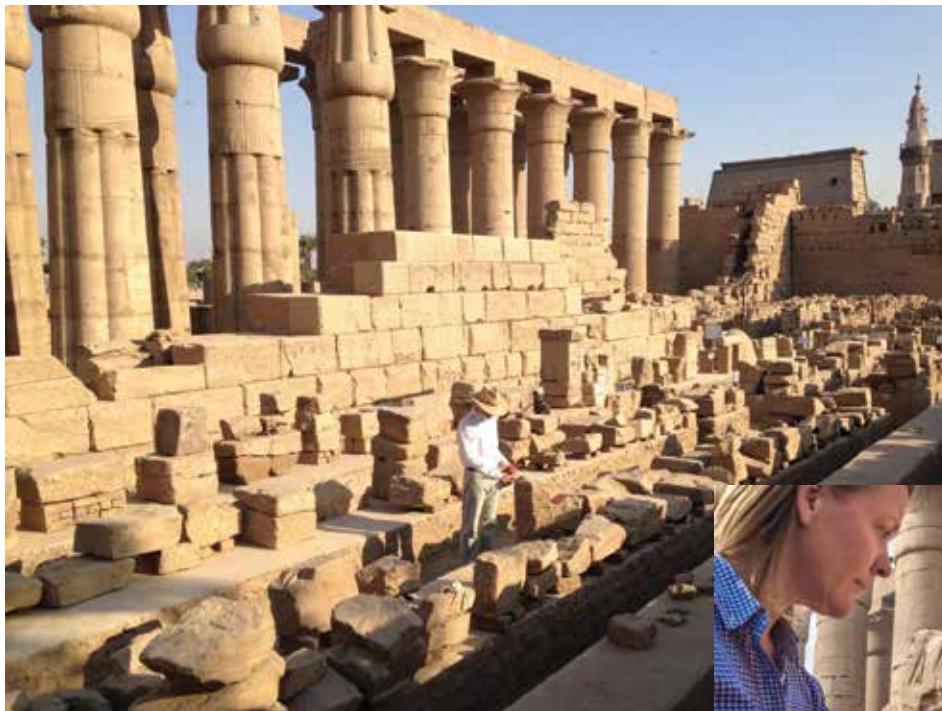


Figure 2. Jay Heidel working on blockyard database entries, March 2017 (photo: Ray Johnson)

Once the talatat are fully documented, we will systematically record all the rest of the blockyard holdings, section by section. Hilary did most of the on-site digital photography and was assisted by Gina Salama and Ellie Smith, who helped tag the blocks with numbers and place small targets on each block for squareness. The end result is a TIFF image that can be used for Jay's blockyard database, archiving, drawing, and publication. This season, 2,600 Akhenaten Karnak talatat blocks were recorded using this new process, and, since some are decorated on more than one face, 2,720 inscribed surfaces were registered. The digital archive will be invaluable for referencing the data within and outside of Egypt and will be augmented by film photography as groups of blocks and fragments are analyzed and joined. Jay continued to develop the blockyard database and update the records for fragments, including photos and location data from our records at Chicago House; so far he has created 3,742 records in the database, excluding talatat. In the blockyard itself, his work consists of verifying the location of each fragment based on the



Figure 3. Hilary McDonald putting photographic targets on Karnak talatat, January 2017 (photo: Sue Lezon)



Figure 4. Hilary and Gina photographing at Luxor Temple, February 1, 2017 (photo: Ray Johnson)

recorded data, locating fragments whose data has been lost, figuring out the numbers assigned to fragments we have studied in the past whose numbers have fallen off or become illegible, and adding new fragments to the database based on what is found, especially, at the moment, the Akhenaten Karnak talatat. He has also been systematically tagging all of the blocks with numbered aluminum tags for identification; this season he and Gina glued 1,533 tags making

a total of 2,592 tagged blocks. The process of checking in the field proceeds mastaba by mastaba and will continue until all 50,000 relevant fragments have been accounted for and all new relevant fragments have been added to the database. This season, 1,064 fragments were field checked and verified and 2,602 have been entered with confirmed location data.

Conservator Hiroko Kariya rejoined the team in January and condition-surveyed the blockyard holdings and did necessary cleaning and repairs on selected fragments and blocks in the open-air museum display and storage areas. She is utilizing the new blockyard database to record necessary conservation treatment, pending or accomplished, in coordination with Jay. During the month of February, Chicago House lent Jay to the Italian Mission from Florence working at Sheikh Abada/Antinopolis headed by Rosario Pintaudi, where Jay and the team uncovered major



Figure 5. Hiroko Kariya condition-monitoring blockyard fragments (photo: Ray Johnson)



Figure 6. Moving Sety I blocks, March 15, 2017 (photo: Ray Johnson)

new material from the Osiris Antinous temple complex built by the Emperor Hadrian in the second century AD.

After his return, Jay coordinated the move of 124 Colonnade Hall block fragments from the Sphinx road area to the main blockyard east of the Amenhotep III court. These fragments were quarried from the Colonnade Hall third register, west side, south end, an area whose carving, started by Tutankhamun and finished by Sety I, depicted a very large Great Ennead offering scene. Jay also worked on the penciling and inking the Bentresh/Ptolemy I corpus of fragments. Out of 103 fragments, 39 have been inked, 46 have been penciled, and 18 await penciling next season.

In the Luxor Temple King's Chamber/Roman Imperial Cult Chamber, Egyptologist/artist Krisztián Vértes continued his precise digital drawings of the Diocletianic frescos on the southern and eastern walls. He has been greatly assisted by, Owen who provided the digital images stitched together with Agisoft Photoscan software for the photographic "layer" of Krisztián's drawings. He also produced the background digital photography for the sample digital drawing of a scene in the same chamber, showing a kneeling Amenhotep III blessed by an enthroned Amun that Krisztián will be presenting in all stages of photography, drawing, and collation for the updated *Digital Epigraphy* ebook. The second edition of this invaluable reference work will be available for free download from the Oriental Institute Publications webpage very soon.

Structural engineer Conor Power returned in February to review the structural stability of Luxor Temple and found that the temple is stable and secure, with no signs of change. This is totally the result of the successful dewatering initiative for Karnak and Luxor temples that was sponsored by USAID and activated in 2007. Our work in Luxor Temple was supervised by MoA inspectors Miss Dalia Mohammed Bahaa, Miss Fatma Sayed, Mr. Hadir Abd el-Magged Aly

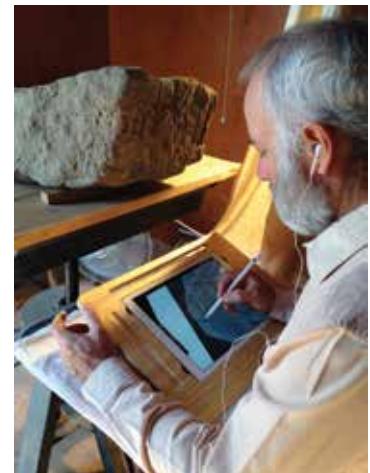


Figure 7. Jay Heidel drawing Bentresh blocks, March 28, 2017 (photo: Ray Johnson)



Figure 8. Krisztián with laptop at the wall, January 2017 (photo: Sue Lezon)

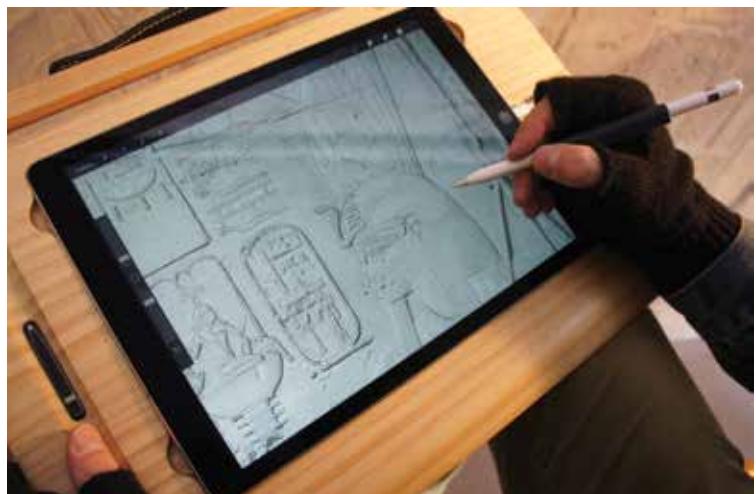


Figure 9. Krisztián digitally pencilizing Amenhotep III reliefs at Luxor Temple (photo: Ray Johnson)



Figure 10. Brickmaking, Medinet Habu, December 16, 2016 (photo: Ray Johnson)

Mohamed, Miss Moushira Ahmed Abd el-Wahab, Miss Marwa Nabil Rasheed Mohammed, Miss Lamia Gahlan Hussein, and Miss Esraa Ahmed el-Taher.

MEDINET HABU

The Medinet Habu documentation, conservation, and restoration programs were funded by grants from USAID Egypt and the Rockefeller Brothers Fund (RBF), for which we are very grateful. These grants have allowed us to continue and expand our development of the southern and western sectors of the complex around the Ramesses III mortuary temple (USAID),

to continue the Ramesses III southern well restoration project (RBF), to hire more workmen and conservators for both sets of projects, and to inaugurate training programs for Egyptian conservation students and Egyptian epigraphic artists.

There are several primary areas of focus for the USAID grant, the first being the sandstone pavement of Ramesses III bordered by a mudbrick enclosure wall that runs along the exterior southern wall of the mortuary temple. The restoration of this walkway is one of our immediate goals, since it will allow visitor access to the western sector of the complex, also part of the program. The mudbrick wall that



Figure 11. Lotfi and Medinet Habu conservation students, November 15, 2016 (photo: Frank Helmholz)



Figure 12. USAID-funded restoration work on southern area M., February 22, 2017 (photo: Ray Johnson)

ran parallel to the walkway is being restored up to a certain level to contain the sandstone paving slabs, to direct visitors to parts west and to keep them from straying off the path into fragile, unrestored areas. This important restoration work is by necessity a collaboration of our conservation and restoration teams, headed by senior conservator Lotfi Hassan and master stone mason Frank Helmholz respectively, who together have synchronized truly



Figure 13. Laying new paving at Medinet Habu, March 29, 2017 (photo: Ray Johnson)



Figure 14. Brick wall restoration going up, Medinet Habu (photo: Ray Johnson)

beautiful work. This season Frank and the stone team laid over 60 m of interlocking sandstone pavement along the southern side (213 large paving stones 12 cm thick, totaling 150 m) in the irregular style of Ramesses III's stone masons.

Next season that area will be finished and the western side at the back of the temple will be started. We are creating our own mudbricks for the restoration, stamping them with a "U" and "C" (for the University of Chicago). Lotfi is also carefully matching the size of the new bricks to those of the period of wall being capped. For instance, Ramesses III bricks are considerably larger than the bricks used in later Twenty-Fifth Dynasty walls that intrude in places, and our new mudbricks match the dimensions of the originals exactly. Sincerest thanks to ARCE Luxor Director John Shearman for the donation of



Figure 15. Stone paving and brickwork finished, April 2017 (photo: Ray Johnson)



Figure 16. Butehamun House restoration work (photo: Ray Johnson)



Figure 17. Butehamun House restoration finished, April 2017 (photo: Ray Johnson)



Figure 18. Medinet Habu Western High Gate Panorama (photo: Hilary McDonald)

mudbrick material from ARCE's cleanup work in Dira Abu el-Naga, which has greatly speeded our mudbrick restoration work.

The second focus of the USAID grant is the "House of Butehamun" in the southwestern back corner of Medinet Habu. Its four white-plastered pillars from a central hall stand in stark contrast to the brown enclosure walls behind them and are clearly visible across the site. This complex – part house, part office, and part chapel – was cleared by archaeologist Uvo Hölscher for the Oriental Institute in 1930 and 1931, but the extent of his excavations is not known. Oriental Institute archaeologist Grégoire Marouard's test excavations at the site last season determined that Hölscher had indeed completely excavated, cleaned out, and refilled the brick casemate platform upon which the hall columns were erected, and this new knowledge has allowed us to proceed with our restoration work. This season, Lotfi's conservation team has carefully consolidated and remapped the area and has capped mudbrick walls from the original structure, as well as walls partly restored by Hölscher, clearly differentiating one phase from the other. Next season we will construct a walkway around the structure for public viewing, accompanied by educational signage.

The third focus of the USAID grant, at the back center of the complex, is the destroyed western High Gate. This fortified stone and brick entryway served as the main administrative and supply entryway to Medinet Habu, and, while similar to the intact eastern High Gate that fronts the Medinet Habu precinct, it was considerably bigger and constructed mostly of mudbrick faced with stone blocks. Unlike its mate on the east, the western High Gate was completely destroyed at the end of the Twentieth Dynasty during a period of civil war. Like the eastern tower, it was inscribed with battle-related scenes on the exterior and domestic scenes on the interior, and like the eastern tower it appears to have been used as a royal residence. The blocks from the crenelated tower were thrown down in two phases: the top two stories of the tower in the first phase, and the rest of it in a second, final destruction phase. The passage was eventually completely bricked up, and the great sandstone blocks from the main body of the tower were quarried for reuse; some are to be seen in a Ptolemaic side gate leading to

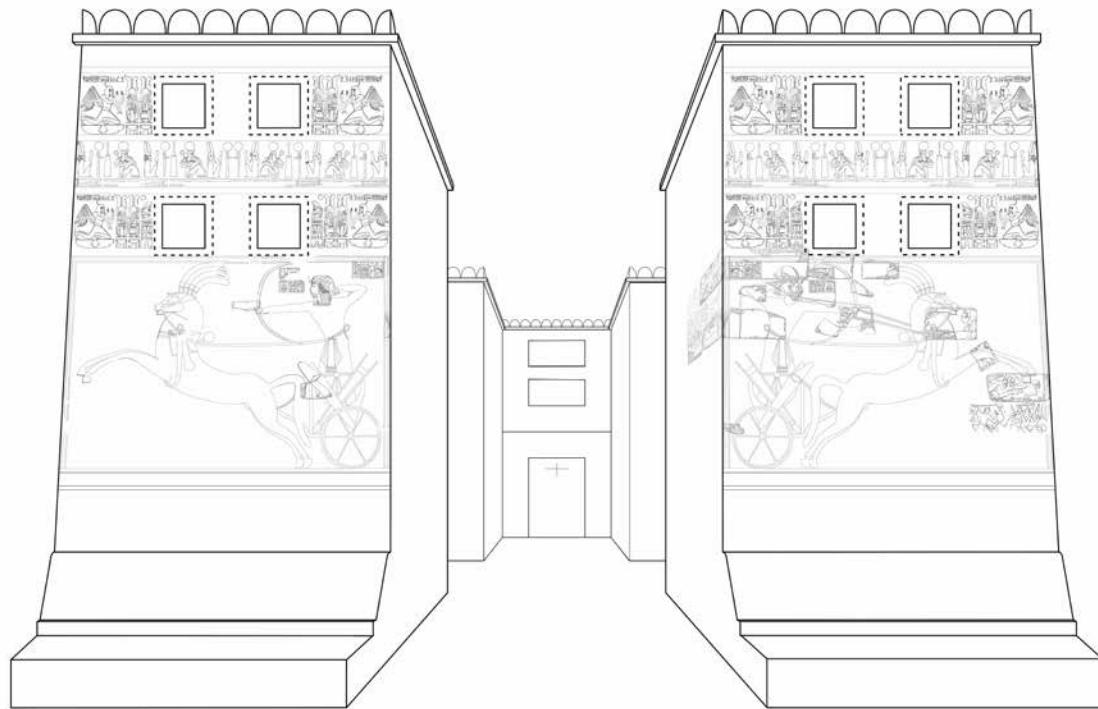


Figure 19. Medinet Habu western High Gate digital reconstruction (image: Keli Alberts)

the small Amun temple. Project supervisor Egyptologist Jen Kimpton is directing the team working on the documentation, analysis, and database entry of the blocks and fragments that remain, and to date they have recorded 1,068 total. Jen is assisted by Anait Helmholz with the processing of the data and by Keli Alberts, who is drawing the inscribed material. Keli finished penciling seventy-eight blocks this spring from the main exterior tower scenes, the exterior rebus frieze, and selected interior scenes; collation by Jen and Brett began on the forty-six block drawings Keli inked during the previous summer. Keli has also produced a preliminary drawing of the completed gate with blocks floated into place.

Anait was able to finalize isometric renderings of seven blocks begun last year and finished the preliminary recording for seventeen additional isometric drawings that Jen will process this summer using Adobe Illustrator; isometric drawings greatly assist in the joining and presentation of joined block groups. Staff photographer Yarko Kobylecky photographed in large-format film and digital format 373 inscribed blocks and fragments this season, making a total of 715 photographed so far in the project, with the goal of documenting them all. As we clean and organize the area, more fragments are



Figure 20. Owen Murray surveying at Medinet Habu 2017 (photo: Ray Johnson)



Figure 21. Medinet Habu Domitian Gate stone and conservation teams, January 13, 2017 (photo: Frank Helmholz)

constantly turning up. This season, Jen organized the various types of blocks and fragments into ordered rows, making processing easier and more efficient. Photographer Owen has supervised the creation of a photogrammetric map of the entire area using Agisoft Photoscan software to stitch together thousands of digital images, taken by hand and with an aerial camera. To access our 3D models on Sketchfab, check out this link: <https://sketchfab.com/search?q=epigraphic+surey>. He is also keying the 3D plans into a topographic plan initially created by archaeologist Uvo Hölscher, with the help of topographers from ARCE and the Franco-Egyptian Center (sincerest thanks to John Shearman and Christophe Thiers for the “loans”!).

This season saw the completion of the Domitian Gate restoration project, with the final restoration floor blocks laid in place by Frank and Assistant Stone Mason Johannes Weninger (who cut and shaped most of the sandstone floor blocks), and with the infilling with mortar between the courses finished by the conservation team, supervised by Lotfi. Frank and Lotfi are now designing a small open-air museum around the gate, with displays on platforms of some of the completely salt-decayed lower-course blocks and educational signage that will explain the history of the site and the reasons for the project. We may decide to do some more work on the monument itself, initially put together by Georges Daressy in the nineteenth century from blocks he found reused in buildings of the Christian city of Djeme on the site, but for now the basic reassembly and restoration is finished. Mabruk to the stone and conservation teams for a magnificent collaboration, and a job well done!

While he was with us in February, structural engineer Conor Power studied the structural stability of the Twenty-Fifth and Twenty-Sixth Dynasties God’s Wives Chapels at Medinet Habu. He left specific instructions on how to repair some loose blocks at the

back end of the Amenirdis chapel, which we will finish next winter, but otherwise reported that the God's Wives Chapels and all other structures at Medinet Habu were stable, thanks to the USAID-funded west bank dewatering project, which is doing exactly what it was intended to do.

The epigraphic documentation work in the small Amun temple, coordinated by senior epigrapher J. Brett McClain, primarily focussed on the drawings of Medinet Habu Volumes XI and XII. Brett also worked with photo archivist Sue Lezon this winter finalizing the photography for Medinet Habu Volume X, whose drawings are completely finished and awaiting publication production back in Chicago. This season we have had the pleasure of training two new epigraphic team members: student epigrapher Jonathan Winnerman and artist Dominique Navarro. We were joined in the training program by two Antiquities Ministry inspectors, Nadia Ahmed Abd El-Latef from Luxor Temple and Al-Shimaa Mohamed Mahmoud Mohamed from Karnak. The ministry is encouraging the inclusion of interested inspectors in training programs sponsored by the archaeological missions, and we were very happy to include Nadia and Shimaa in ours. Lotfi continued a student conservation training program at Medinet Habu this season as well, and Ministry Conservator Radwa Ibrahim Naeem from Karnak joined the conservators for that.



Figure 24. Epigraphy training program, Chicago House, December 10, 2016; Margaret, Sue, Dominique, Shimaa, Nadia, and Jonathan (photo: Ray Johnson)

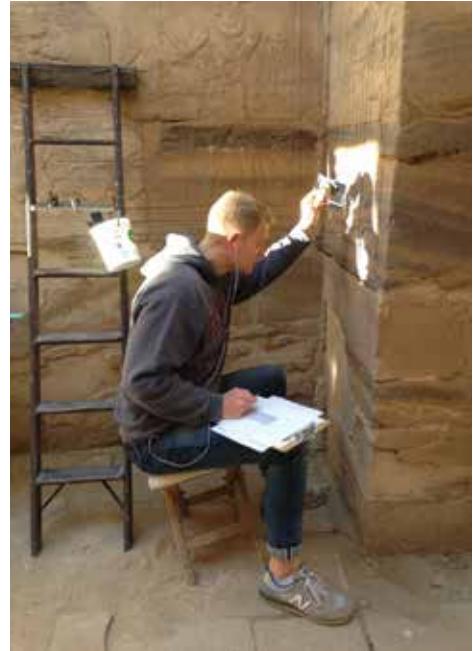


Figure 22. Jonathan Winnerman collating in the small Amun temple, Medinet Habu, February 14, 2017 (photo: Ray Johnson)



Figure 23. Dominique, Sue, and Nadia at the wall, Medinet Habu small Amun temple, December 16, 2016 (photo: Ray Johnson)



Figure 25. Aleksandra Hallmann working in the Amenirdis Chapel, April 5, 2017 (photo: Ray Johnson)

spectors Mr. Mohammed Ahmed Salim, Miss Fatma Ahmed Salim, Mr. Wagdy Ismail Mohammed Ismail, Mr. Mahmoud Hosny Mahmoud Abdallah, Mr. Yousri Mahmoud Abd el-Basset Ali, Mrs. Sabah Mahmoud Abd el-Galil, and Mrs. Shereen Montasser Hassan Ali.

TT 107

Debris clearance work in the portico of Theban Tomb 107 (TT 107), belonging to the Steward of the palace of “Nebmaatre-is-the-Dazzling-Sun-Disk,” the noble Nefersekheru, was resumed by Boyo Ockinga and Susanne Binder on January 19, 2017, for Chicago House, and was finished on January 30. More decorated limestone fragments from the inscribed wall and several large fragments of inscribed doorjambs (completely broken away) were recovered from the debris, including another patchstone. Some of these substantial fragments were found broken into several pieces and were consolidated/rejoined by conservator Hiroko on site. Once that was accomplished, Yarko photographed each piece in both large-format film and digital format during the first week of March for integration with the wall-relief photography and drawing. When the blocked doorway is cleared next season for the installation of a steel gate, we expect to recover more fragments that washed into the tomb entryway during repeated flooding of the sunken court over the millennia. Once the cleaning was finished for this season, Brett

Tina Di Cerbo, assisted during the first two weeks of January by husband Richard Jasnow, continued her painstaking documentation of Demotic and Christian graffiti in the north Ptolemaic annex of the small Amun temple, focusing on the west interior wall. Using the software program ImageJ with the filter DStretch, which allows almost invisible ink traces to become visible, she has detected at least four distinct layers of text and images on the wall, including at least two Christian phases. This is true detective work, and it is critical that it be done now, with increasing humidity in the air causing much of this data to fade to invisibility. This season we were also pleased to host visiting epigrapher Aleksandra Hallmann, 2016–2017 ARCE fellow and the next OI postdoctoral scholar, working on the decorative programs in the tomb chapels of the divine wives of Amun from the Twenty-Fifth and Twenty-Sixth Dynasties.

The breakdown of drawings and collation accomplished during the 2016–2017 season at Medinet Habu (including the western High Gate) is: penciling completed: 81 drawings; inking completed: 44 drawings; transfer checked: 6 drawings. Our work at Medinet Habu this winter was supervised by MoA In-



Figure 26. TT 107 team 2017 (photo: Boyo Ockinga)

and Ray returned to the site in February to continue the collation of the beautiful wall relief drawings done by Sue Osgood and Margaret De Jong. Ray finished the second collation of the inscribed faceted column of the façade, and, after meeting with first epigrapher Brett, director's-checked it with artist Sue Osgood at the wall (eight enlargements); all corrections were added before Sue departed for home at the end of February. Our work at TT 107 this season was supervised by MoA inspector Eman Haggag Yousef.

CHICAGO HOUSE

After the Chicago House staff departs for home in April and before we return in October, Tina and the workmen do maintenance and construction work throughout the Chicago House complex. This fall they raised the southern enclosure wall another 2 m in response to increasing Luxor City activity in the vacant lot to the south of Chicago House. Just before our arrival in October, a new solar water-heating system was installed at Healey House, the Photo Lab, and the library wing, replacing energy-draining electric water heaters. These improvements were laboriously effected by Tina and our workmen while it was still quite hot (bless them), and were funded in part by a gift from our "Friend of Chicago House" Shafik Gabr, to whom we extend our sincerest thanks.

The Marjorie M. Fisher Chicago House Library opened on October 21, 2016, and closed for the season on April 7, 2017. We now have a new head librarian; Anait Helmholz took on the position this fall after the



Figure 27. TT 107 Brett and Sue collating pillar, February 3, 2017 (photo: Ray Johnson)



Figure 28. Chicago House southern wall raising (photo: Tina Di Cerbo)

library. Acquisitions this season totaled 164 titles (59 journals and periodicals and 105 books) of which 57 were gifts.

The Tom and Linda Heagy Photo Archives has been filled with digital photographers downloading and processing images, as well as photo archivist Sue Lezon, registrar Ellie Smith, Tina, Alain, and Emmanuelle Arnaudiès (in March). In addition to the registering and housing of our own film images and the processing/organizing of our archives, they have been working on the scanning, organizing, and archival housing of our colleague Ted Brock's photographic archives, partly funded by an Institute of Museum and Library Services (IMLS) Museums for America grant to the Oriental Institute for digitizing records for inclusion into the University's Integrated DataBase (IDB). IT and photo archives consultants Emmanuelle and Alain Arnaudiès joined us in March and helped us formulate a plan for data management of our digital photographic archives — a major step forward. The Photo Archives is the heart and soul of our operation, and its importance is growing. In July, Sue joined Brett and Jen in the Epigraphic Survey office at the OI and finished the photographic plates for *Medinet Habu Volume X: The Eighteenth Dynasty Temple Part II. The Façade, Pillars, and Architrave Inscriptions*



Figure 29. Chicago House Librarian Anait Helmholz, April 3, 2017 (photo: Ray Johnson)

retirement of former librarian Marie Bryan. Anait has had years of experience as assistant librarian and now has her own assistants: Gina Salama and Martina Roshdy Maher. They are a very dynamic trio, cheerfully and enthusiastically serving patrons, shelf-reading, repairing books, ordering new books, creating a digital catalog of the library holdings (700 titles added so far), and reorganizing the librarian's office. They have brought some very good energy to the li-



Figure 30. Emmanuelle and Alain Arnaudiès, Chicago House Photo Archives, March 30, 2017 (photo: Ray Johnson)

of the *Thutmoside Peripteros*. This monumental publication of the peripteros of the Eighteenth Dynasty temple will be submitted to the OI Publications Department at the end of the summer for review, the first step in our publication process. We are almost there!

Tourism noticeably increased during the winter and was quite brisk in Luxor. We have had an amazing array of friends, colleagues, and visitors passing through, including the Oriental Institute November and March tours to Egypt led by former Chicago House Director Lanny Bell and OI Development Director Brittany Mullins; US Ambassador Stephen Beecroft; USAID Mission Director Sherry Carlin; Marnie Pillsbury, Ana Heeren, and Stephen Heintz of the Rockefeller Brothers Fund (RBF); David and Susan Rockefeller, Jr. and friends; Margie Fisher; Wafaa El-Seddk; and a host of others. We were pleased to participate in the four-day “Sekhmet Omnipresent” Conference in Luxor from March 23 to 26, during which seventeen colleagues along with Ray spoke about the powerful lion-headed goddess so beloved of Amenhotep III, an event organized by colleagues Betsy Bryan and Hourig Sourouzian.

Before closing, it should be mentioned that Chicago House participated in the filming of two documentaries this fall. One was for the University of Chicago and featured all aspects of our work, as well as the archaeological work of Nadine Moeller and Grégory Marouard, a preview of which was shown at the OI Gala in May, now accessible here: <https://www.youtube.com/watch?v=b-X0sZwce6E>.

We also took part in the filming of a BBC documentary on the career of the photographer Harry Burton, best known for his extraordinary photography of Tutankhamun’s tomb and its contents. Both Sue Lezon, who is an authority on Burton and early photography, and Yarko were interviewed and filmed, and our on-site work was featured, since we still shoot large-format film as well as digital photography. The documentary aired on Wednesday, March 8, 2017, and is available for viewing here: <https://www.youtube.com/watch?v=Q4spSKJ9mc8>.

Finally, Ray was pleased to give an OI Members’ Lecture on June 7 in Breasted Hall about the current work of Chicago House and new technologies that are assisting the team in the field. This lecture is now available for viewing online: <https://youtu.be/T-pDr7hGUKg>.

The Epigraphic Survey professional staff this season, besides the director, Ray Johnson, consisted of J. Brett McClain as senior epigrapher, Jen Kimpton and Christina Di Cerbo as epigraphers; Jonathan Winnerman as student epigrapher; Boyo Ockinga and Susanne Binder as archaeologist/epigraphers; Margaret De Jong and Susan Osgood as senior artists; Krisztián Vértes and Keli Alberts as artists; Dominique Navarro as artist-in-training; Julia Schmied as blockyard supervisor; Jay Heidel as architect/artist/data manager; Yarko Kobylecky as chief staff photographer; Owen Murray and Hilary McDonald as photographers; Susan Lezon as photo archivist and photographer; Elinor Smith as photo archives registrar and photography assistant; Carlotta Maher as assistant to the director; Essam El Sayed as senior accountant; Samir Guindy as administrator; Samwell Maher as administrative assistant; Anait Helmholz as head librarian and Medinet Habu blockyard assistant; Gina Salama as librarian assistant and Luxor Temple assistant; Martina Roshdy Maher as librarian assistant; Frank Helmholz as master mason; Johannes Weninger as mason; Lotfi K. Hassan as Medinet Habu conservation supervisor; Hany Diab, Al Azab Ahmed, Nehad Badry, Skina Oraby, Safaa Nuby, Anhar Hassan, Fatma Ahmed, Neema Ahmed as Medinet Habu conservators; and Hiroko Kariya as Luxor Temple conservator. Alain and Emmanuelle Arnaudiès worked on the Chicago House Digital Archives database. Special thanks must go to Nadine Moeller and Grégory Marouard for their wisdom and assistance with our archaeological work. And special thanks must go to our forty year-round Egyptian workmen, the core of the house and temple staff, our family in Luxor.



Figure 31. Chicago House 2016-2017 Professional Staff Photo by Sue Lezon

Back Row: Jen Kimpton, Brett McClain, Jonathan Winnerman, Hilary McDonald, Krisztián Vértes, Hany Diab

3rd Row: Fatma Ahmed, Doaa Sadek, Johannes Weninger, Samwell Maher, Martina Roshdy, Anait and Frank Helmholz, Boyo Ockinga, Susanne Binder, Keli Alberts

2nd Row: Samar Ibrahim, Doaa Adbel Aty, Manar Hagag, Lotfi Hassan, Gina Salama, Jay Heidel, Ray Johnson, Marjorie Fisher, Yarko Kobylecky, Essam el Sayed, Alazab Ahmed

Front Row: Nema Ahmed, Anhar Hassaan, Safaa El Nuby, Dominique Navarro, Hiroko Kariya, Sue Osgood, Ellie Smith, Sami and Samir Guindy, Owen Murray

ACKNOWLEDGMENTS

Sincerest thanks to the Egyptian Ministry of Antiquities and the Supreme Council of Antiquities (SCA), Minister of Antiquities Dr. Khaled el-Enany, and all of our friends and colleagues in Egypt for another productive collaboration this season. Sincerest thanks as well to the many friends of the Oriental Institute whose generous support allows Chicago House to maintain its documentation, conservation, and restoration programs in Luxor, especially to USAID Egypt for a new four-year grant that now supports a major new restoration and site development effort at Medinet Habu. Sincerest thanks must also go the Rockefeller Brothers Fund (RBF) for the Ramesses III southern well conservation project. Thanks to the Honorable US Ambassador to Egypt R. Stephen Beecroft; to former US Ambassador to Egypt the Honorable Anne Patterson; former US Ambassador to Egypt the Honorable Margaret Scobey; former US Embassy Cultural Attaché Mark L. Wenig; US Embassy Counselor for Public Affairs Adnan Siddiqi; to Sherry Carlin, mission director of the United States Agency for International Development in Egypt; former USAID Egypt directors Mary Ott, Walter North, Jim Bever, Hilda (Bambi) Arellano, Ken Ellis, and Bill Pearson; Anne Patterson, Bill Patterson, and Sylvia Atalla, USAID Egypt; Curt Ferguson and Coca Cola Egypt (Atlantic Industries); to David Rockefeller, Sr.† and Marnie

Pillsbury; to Ward and Diane Zumsteg for launching our new endowment campaign; Marjorie M. Fisher; David and Carlotta Maher; O. J. and Angie Sopranos; Misty and Lewis Gruber; Nassef Sawiris; Mark Rudkin; Kitty Picken; Daniel Lindley and Lucia Woods Lindley; David and Allison Harley; Eric and Andrea Colombel; Piers and Jenny Litherland; Fred Giles; Tom Van Eynde; Marjorie B. Kiewit; Nancy N. Lassalle; Tom and Linda Heagy; Shafik Gabr, ARTOC Group, Cairo; Judge and Mrs. Warren Siegel; Barbara Breasted Whitesides and George Whitesides; Miriam Reitz Baer; Andrea Dudek; Beth Noujaim; James Lichtenstein; Jack Josephson and Magda Saleh; Priscilla (Peppy) Bath; Charlie Secchia; Emily Fine; Nan Ray; Anna White; Janet and Karim Mostafa; Waheeb and Christine Kamil; Caroline Lynch; Polly Kelly; Louise Grunwald; Lowri Lee Sprung; Andrew Nourse and Patty Hardy; Kate Pitcairn; Dr. Lorna Straus; Dr. William Kelly Simpons†; Ben Harer; Roxie Walker; Tony and Lawrie Dean; Charles L. Michod, Jr; Gerry Scott, Kathleen Scott, Mary Sadek, Amira Khattab, and Jane Smythe of the American Research Center in Egypt; Michael Jones; and all of our friends and colleagues at the Oriental Institute. I must also express our special gratitude to British Petroleum, the Getty Grant Program of the J. Paul Getty Trust, LaSalle National Bank, Mobil Oil, Vodafone Egypt, and the World Monuments Fund for their past support of our work. Sincerest thanks to you all!



Figure 32. Medinet Habu conservator Fatma Ahmed working on the small Amun temple north exterior wall (photo: Ray Johnson)

ADDRESSES OF THE EPIGRAPHIC SURVEY

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EXCAVATIONS AT SUREZHA (ERBIL PLAIN, KURDISTAN REGION, IRAQ)

Gil J. Stein and Abbas Alizadeh

Project Focus: The Origins of Towns and Social Complexity in Northern Mesopotamia in the Chalcolithic Period 5300–3500 BC

The Chalcolithic period, from 5300 to 3100 BC, is the time when the world's first urban civilization developed in Mesopotamia. These developments are best known through the Ubaid and Uruk periods and their associated material cultural styles in southern Mesopotamia, at sites such as Eridu, Ur, and Uruk/Warka. However, we still know very little about the development of towns and cities in northern Mesopotamia and especially in Iraqi Kurdistan, because, until recently, so few scientific excavations have been done in these regions. The last twenty years of excavations in north Syria and southeast Turkey have made it clear that these areas had distinctive local cultures which interacted closely with southern Mesopotamia in the Ubaid and Uruk periods but still retained their own material culture styles and traditions. Most notably, we can see that there was a period from 4500 to 3700 BC (after the Ubaid, and before the Middle Uruk period), when there was very limited interaction between southern and northern Mesopotamia.

The Surezha excavations investigate the key phases in the origins of towns and later cities in northern Mesopotamia during the Chalcolithic period. Surezha is an ideal site to define the Chalcolithic chronology and developmental sequence of the Erbil plain because the high mound at the site is largely prehistoric, with only limited later occupation from the Middle Assyrian period and the Iron Age.

In the 2013, 2014, and 2016 field seasons, our plan has been to define the chronology and cultural developments in northern Mesopotamia, especially on the fertile and strategically located Erbil plain during the Ubaid 3–4 (5300–4500? BC), Late Chalcolithic 1 or LC1 (4500?–4200 BC), Late Chalcolithic 2 or LC2 (4200–3850 BC), and Middle Uruk (= LC3–4 periods ca 3850–3400 BC) periods. The LC 1–5 sequence is used for northern or upper Mesopotamia in order to recognize the fact that cultural developments were not identical between the northern and southern parts of Mesopotamia (see table 1).

The Oriental Institute's third field season of excavations at Surezha was carried out from August 10 to September 8, 2016. The project was co-directed by Gil J. Stein and Abbas Alizadeh. Project staff consisted of Loghman Ahmadzadeh (Susa Archaeological Unit, Iran), John Alden (University of Michigan), Hosein Azizi (National Museum of Iran), Fred Eskra (Oriental Institute at the University of Chicago), Michael Fisher (Oriental Institute at the University of Chicago), Mehdi Omidfar (Susa Archaeological Unit, Iran), Max Price (Massachusetts Institute of Technology at MIT), Lucas Proctor (University of Connecticut), and Atefeh Razmjoo (University of Mazandaran). Field excavations were carried out by fifteen workers from the Erbil Museum and from the village of Surezha. Our government representatives from the Kurdistan Regional Government (KRG) Directorate of Antiquities for the Erbil Governorate were Sabir

Dates	South Mesopotamia	North Mesopotamia
3400–3100 BCE	Late Uruk	Late Chalcolithic 5 (LC-5)
3700–3400 BCE	Middle Uruk	Late Chalcolithic 4 (LC-4)
3850–3700 BCE	Middle Uruk (first cities in south)	Late Chalcolithic 3 (LC-3) (first cities in north)
4200–3850 BCE	Early Uruk	Late Chalcolithic 2 (LC-2)
4500–4200 BCE	Terminal Ubaid?	Late Chalcolithic 1 (LC-1) (begins ca. 4800 BCE in Kurdistan)
5300–4500 BCE	Ubaid 3–4 (first towns in south)	Ubaid (“Northern Ubaid”) (first towns in north)
5800–5300 BCE	Ubaid 1–2 Chogha Mami Transitional Samarran	Halaf

Table 1. Comparison of chronologies for southern Mesopotamia (the Ubaid and Uruk sequences) and northern Mesopotamia (the “Late Chalcolithic or “LC”1–5 sequence)

Hassan Huvsein, Rozhgar Raashid, and Amine Mahmoud, on-site and in the Erbil Museum. We express our deep appreciation to Mr. Mala Awat Abu Bakr Othman, Director General of Antiquities for the KRG, and to Mr. Nader Babakr, Director of Antiquities for the Erbil Governorate. We especially thank Maghdid and Samira Maghdid, our host family in the village of Surezha. Financial support for the Surezha excavations came from the National Science Foundation (grant number 0917904), the Oriental Institute of the University of Chicago, and the generosity of private donors, notably Mr. Harvey Plotnick. We also thank the Oriental Institute of the University of Chicago for administrative support for this project.

Site Description

Surezha is a mounded settlement of 22 ha, located next to the modern village of Surezha, approximately 20 km south of the modern city of Erbil on the Makhmur road (fig. 1). Surezha was first recorded as Site 27 by Jason Ur and Harvard University’s Erbil plain Archaeological Survey (EPAS) in 2012. The UTM coordinates of the site are: N. 399555.0694, E. 3984361.1196, and the top of the high mound is 356 m above sea level. The ancient site has three parts: a) the high mound, b) the terrace, and c) the lower town. The conical-shaped high mound measures approximately 188 m northwest-southeast and 150 m from southwest to northeast, with an area of approximately 2.8 ha (fig. 2). The high mound rises to a height of 16 m above the terrace. The base of the high mound is surrounded by a terrace on all sides. The terrace is about 2 m high and slopes gradually down over a distance of approximately 70 m to the lower town which extends out from the terrace in all directions. Part of the lower town lies underneath the modern village of Surezha to the north and east. The combination of surface collections and excavations in 2013 indicated that the Chalcolithic occupations of the Surezha high mound included the following sequence:

- LC4 (Late Middle Uruk) — known from Uruk ceramics found out of context
- LC3
- LC2/3 transitional
- LC2
- LC1
- Ubaid
- Halaf — known mainly from Halaf ceramics found out of context in later deposits

We had four main goals for the 2016 Field Season:

1. Extend and refine the stratigraphic sequence of the site through continuation of the deep sounding in Operation 1, and focused excavations of Operation 5 and Operation 8 inside Operation 1 as a way to explore key transitional phases from LC1 to Ubaid, from LC2 to LC3, and from LC3 to LC4.
2. Continue excavation of Operation 2 at the south base of the high mound to expose Ubaid and LC domestic architecture, while clarifying the transition from Ubaid to LC1.
3. Develop a rigorous archaeobotanical sampling program to collect data on changing agricultural systems in the Chalcolithic.
4. Refine our ceramic chronology and typology for the Ubaid and the local LC1-4 periods on the Erbil plain.



Figure 1. Map of the Chalcolithic Near East showing the location of Surezha

EXCAVATIONS AT SUREZHA

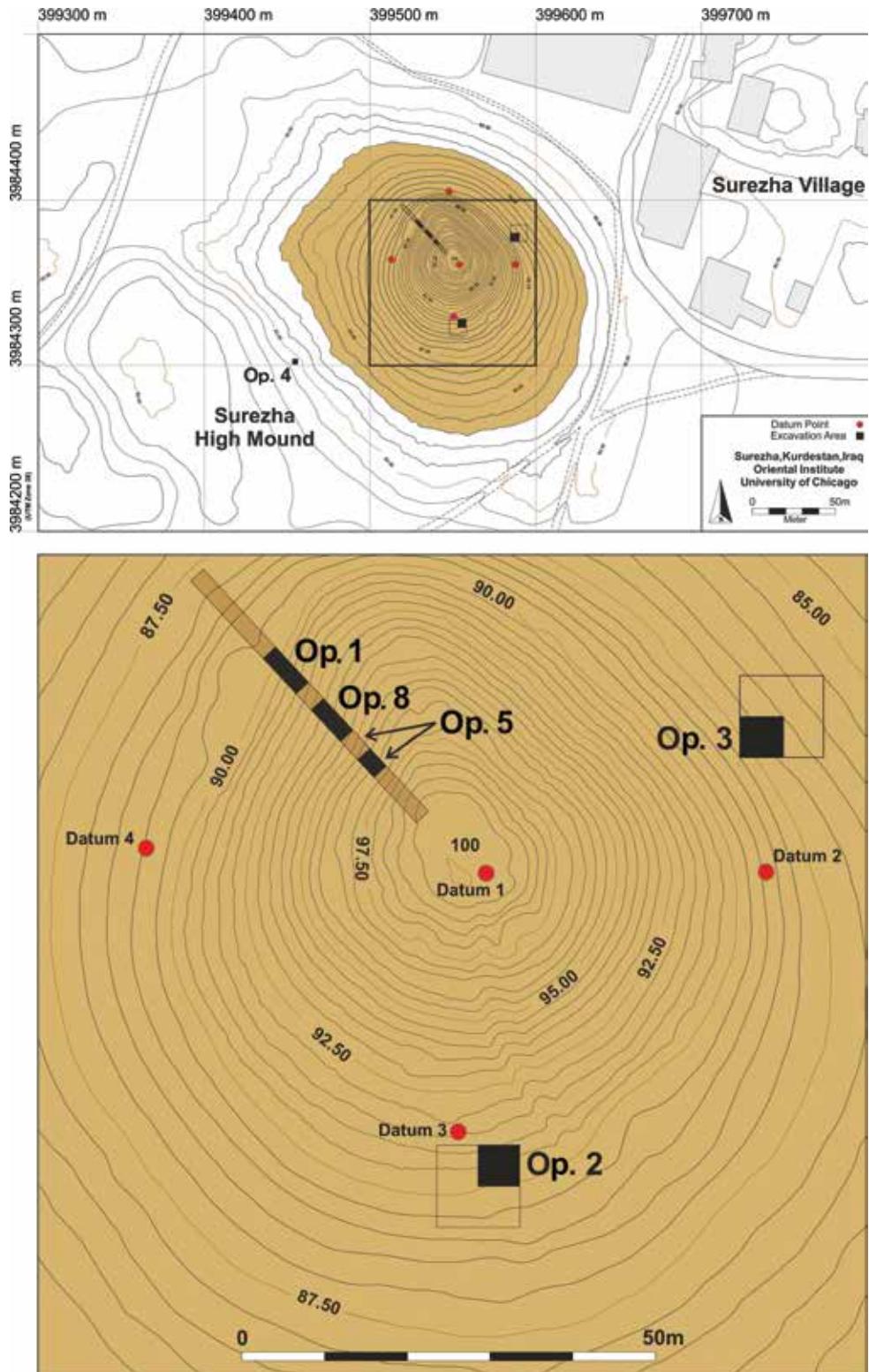


Figure 2. Topographic map of Surezha showing main 2016 excavation areas: Operations 1, 2, 5, and 8

Excavations

Excavations took place in four parts of the Surezha high mound — three areas in the step trench (Operation 1 deep sounding, Operation 5, and Operation 8), and one area at the south end of the mound (Operation 2).

Operation 1 Deep Sounding (Abbas Alizadeh)

Operation 1 is a step trench oriented northwest-southeast on the west slope of the Surezha high mound. When the trench reached the base of the high mound in 2013, excavations shifted to a deep sounding originating from the lowest “step” in the trench. Excavations of the deep sounding continued in 2016, with the goal of defining the LC1-to-Ubaid transition, and the hope of reaching the Halaf deposits underlying the Ubaid. We inferred the presence of Halaf deposits from the small but steady stream of painted Halaf sherds occurring out of context in the deep sounding. We excavated 4.5 m in the deep sounding in the 2016 field season (fig. 3). The deep sounding produced very few clear occupation floors or surfaces with preserved architecture. However, the ashy deposits contained enough charcoal, ceramics, chipped stone,

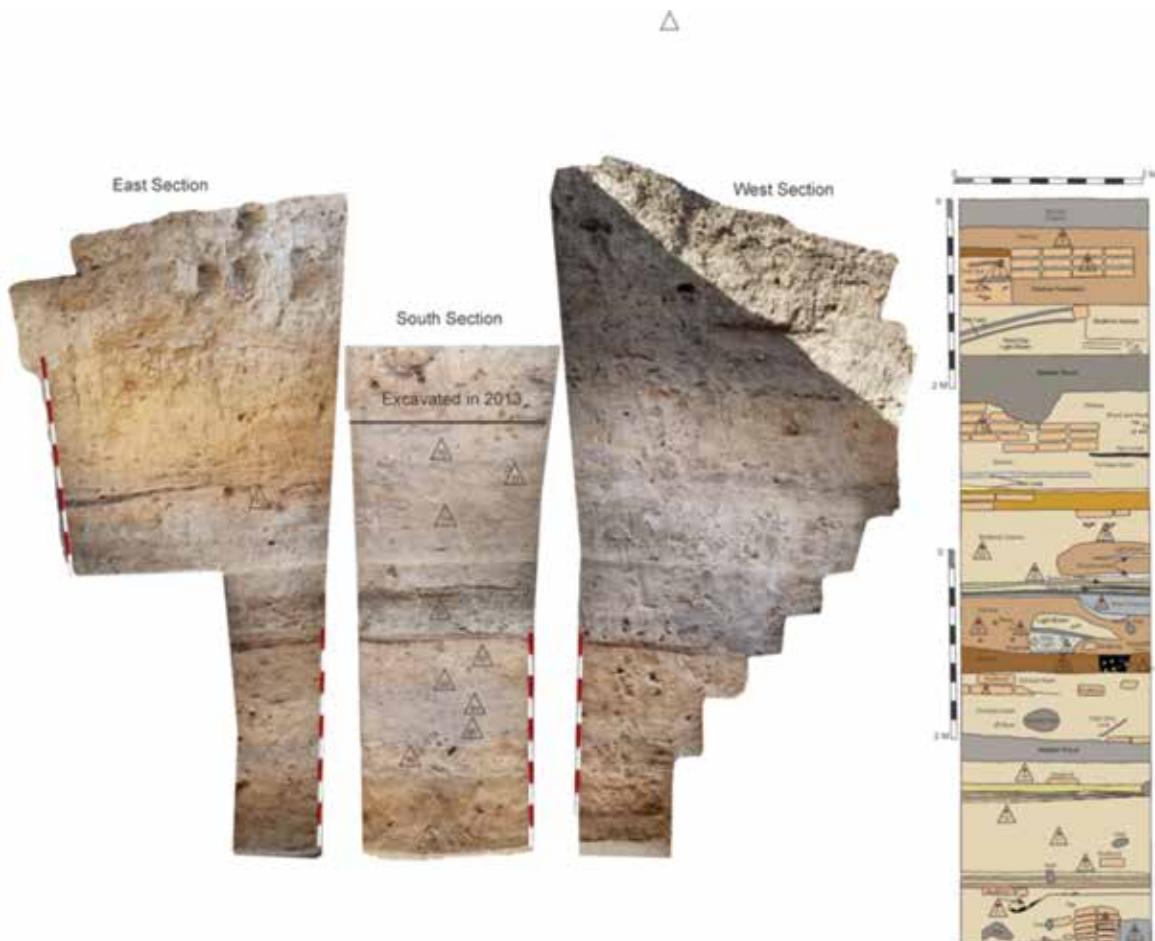


Figure 3. Operation 1 deep sounding stratigraphic profile

and bones, to make it clear that we were excavating cultural remains — most likely re-deposited trash or wash from actual architecture located somewhere outside the extent of our trench.

Except for two poorly preserved architectural loci 71 and 72, much of the deposit in the deepest levels of the mound consisted of thick, clayey, and grayish green deposits that could not be separated into finer levels, indicating gradual deposition rather than an identifiable sequence of occupation surfaces. Nevertheless, in Loci 83 and 84 we found more than twenty roughly biconical clay sling bullets on what seemed to be a horizontal deposit (fig. 4), but we were unable to find a surface related to this cache either in the trench or in close examination of the stratigraphic sections.

We had hoped to reach sterile deposits in the Operation 1 deep sounding. While from the depth of about 336 m above sea level (ASL) sherds became rare and almost no bones or stone tools were found, we did not find any deposit completely devoid of sherds down to 333.4 m ASL when the season ended on September 4. Due to the small ceramic samples recovered from these deposits, we can only draw tentative conclusions about the earliest occupations at the site. Our best estimate is that locus 69 and the deposits above it date to the LC1, while underlying mudbrick walls 70, 71, 74, and the deposits below them date to the Ubaid, down to locus 90, the deepest stratum reached in the 2016 field season. If this is correct, then the 2016 excavations were able to identify the LC1-Ubaid transition in the Operation 1 deep sounding. Although we did not reach any deposits with purely Halaf material, based on the out-of-context Halaf sherds discovered in locus 89 along with Ubaid painted ceramics, we are confident that these deposits are in fact present somewhere in the lower depths of the site.

Operation 2 (Michael Fisher)

Operation 2 is a 5 × 5 m trench at the southern base of the high mound. Excavations begun here in 2013 by Hamid Fahimi recovered well-preserved remains of two mudbrick houses oriented northeast-southwest, with a narrow alley between them. Associated ceramics, including the deep parallel comb incised ceramics and herringbone incised jars, suggested that these houses dated to the local expression of the LC1 period on the Erbil plain. Radiocarbon dates indicated that the LC1 period on the Erbil plain dated from approximately 4800–4200 BC. This was surprising, since it suggested that the Ubaid period may have ended on the Erbil plain earlier than in other regions such as north Syria, in what can be called a “sloping chronological horizon” for the Ubaid.



Figure 4. Operation 1 deep sounding Cache of unbaked clay ovoid sling bullets (SR 2827) dating to the Ubaid period. Similar caches have been found in Ubaid levels of Tepe Gawra (Iraq) and Tell Zeidan (Syria)

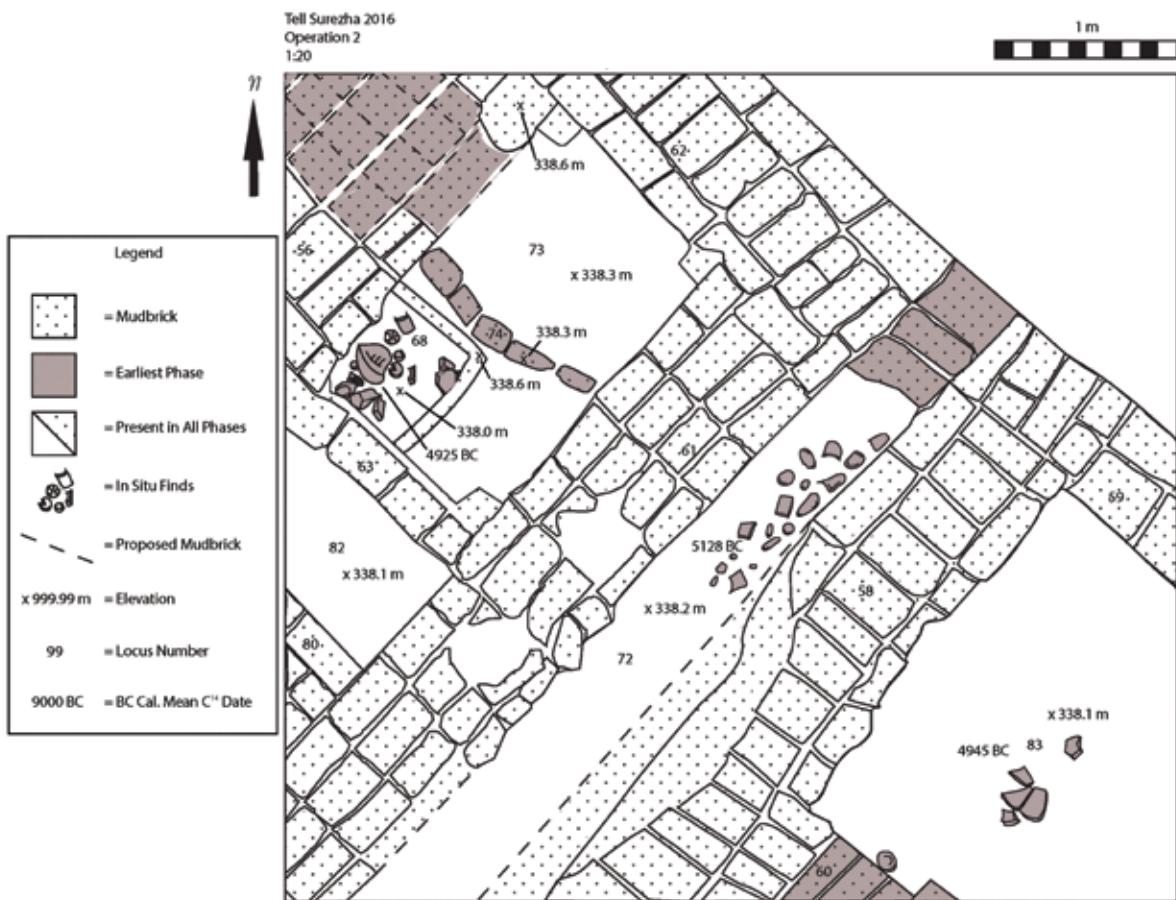


Figure 5. Operation 2 “West House” (upper left) and “East House” (bottom right) — Multi-room houses dating to the Ubaid period

The 2016 excavations conducted by Michael Fisher aimed to complete the exposure of the two mudbrick houses, while focusing on identifying the Ubaid-LC1 transition at the south part of the high mound. Although both structures were only partially exposed in the trench, they appear to have been constructed in similar fashion, and were largely contemporaneous in their use (fig. 5). The “East House” and “West House” are both multiple room houses with ca. 90 cm thick exterior walls 3–4 courses wide, subdivided into interior rooms with smaller, thinner walls. The two houses appear to have undergone at least one major rebuild, in which the exterior walls of the later construction phase were built on the same lines as the earlier exterior walls. During both the earlier and the later construction phases, the interior rooms underwent periodic modifications in size and layout (fig. 6).

The radiocarbon dates and ceramics associated with the East and West Houses show that they were continuously occupied in both the earlier Ubaid period (ca. 5300–4800 BC) and in the succeeding Late Chalcolithic 1 or LC1 period. Our evidence suggests that the transition from the Ubaid to the LC1 was gradual, with many stylistic continuities between the two periods. The floors of the East and West houses were generally clean; however, at least some recovered artifacts suggest that higher status individuals inhabited these structures. A small bin (locus



Figure 6. Operation 2 combined north and east stratigraphic profiles



Figure 7. Operation 2 West House bin 68 Ubaid ceramics associated with fragment of a black polished stone palette (at left). Polished stone palettes are a widely distributed Ubaid prestige good also found at Tepe Gawra and Tell Zeidan



Figure 8. Operation 2 East House floor locus 83 lot 88 fragment of a stone stamp seal (SR 1951) with incised decoration

68) in the West House contained typical Ubaid painted ceramics associated with a cache of sealing clays and a fragment of a polished black stone palette (SR 3180) (fig. 7). The Surezha palette is similar to contemporaneous examples known from Ubaid levels at Tepe Gawra and Tell Zeidan. In the East House, floor deposit locus 83 contained a fragmentary carved stone stamp seal with a possible sunburst motif (fig. 8).

Operation 5 (Max Price and Loghman Ahmadzadeh)

Operation 5 is located at the top of the conical mound of Surezha, and was briefly excavated in 2014 in order to extend the spatial and chronological coverage of the Operation 1 step trench to cover the uppermost occupational deposits on the high mound. After the suspension of the 2014 fieldwork at Surezha due to security conditions, excavations in Operation 5 resumed in 2016. Operation 5 was excavated in three steps (1, 3, and 4 – see topographic map, fig. 2). At the top, step 1 was a 2.65 × 2.00 m exposure. Step 3 was located downslope and 2.15 m northwest of step 1. Step 4, the lowest step on Operation 5, was a 3 × 2 m exposure located immediately to the northwest of step 3. Step 4 provided the stratigraphic link between Operation 5 and the 2013 step trench Operation 1.

The stratigraphy of step 1 consisted of mixed deposits containing both second millennium BC and Late Chalcolithic ceramics. These deposits were overlain and cut through extensively by later mixed deposits containing roofing fragments, domestic refuse, and spent ammunition found in the remains of huts, trenches, and refuse pits dating to the time when the mound was used as an anti-aircraft emplacement by the Iraqi army during the Iran-Iraq war of the 1980s.

Due to the extensive modern disturbances in step 1, we shifted our excavations downslope to step 3 (skipping over step 2). Excavation of step 3 sought to discover the abandonment layer spanning the transition between the second millennium Middle Assyrian occupation and the Late Chalcolithic occupations of the high mound. Unfortunately, we were unable to locate the deposits representing the hiatus in occupation of the Surezha high mound. However, step 3 did produce good evidence for the late Chalcolithic 3 (LC3) occupation of the site. The most important material derived from refuse deposit locus 19. This deposit contained large

amounts of ceramics, along with a basalt grinding stone and large stone pestle. Almost all the ceramics dated to the Late Chalcolithic LC3 period, with one intrusive bevel rim bowl sherd from the LC4 period. The LC3 diagnostic ceramics were handmade, chaff-tempered wares, most notably storage jars with internally carinated straight flaring rims and burnished gray ware bowls with rounded beaded rims. The unusually large ceramic deposit in locus 19 provided an extremely useful cross-section of the range of ceramics in the LC3 period — dating roughly 3850–3700 BC.

Like step 3 above it, the deposits in step 4 also dated to the LC3 period with key diagnostics such as gray ware bowls, internally flanged “dog-leg” rimmed jars, and bowls with internally thickened and beaded rims. Excavations in Operation 5 reached the same early LC3 levels as those in the adjacent Operation 8 to the northwest. Operation 5 locus 35 is a compact outdoor surface that forms the top of a brick collapse deposit, and it equates with Operation 8 locus 13. This is important, because these loci immediately overlie the LC2 deposits excavated by Abbas Alizadeh in his 2013 step trench Operation 1. In other words, both Operation 5 and Operation 8 reached the top of LC2 deposits at Surezha.

The most striking discovery in Operation 5 step 4 was an intrusive Middle Assyrian shaft tomb with a side chamber (locus 26) covered with a pitched mudbrick vault. The shaft of this tomb had been excavated in 2013 as part of the Operation 1 step trench, and a C14 sample from this shaft had been dated to the fourteenth century BC.

Inside the vaulted chamber, the body of a single adult was positioned on its left side, facing north with its left hand resting underneath its head. The skeleton was aligned east-west. A variety of grave goods were placed next to the skeleton (fig. 9). Near the head, the mourners placed a bowl (SR 2085) and a high-necked and band-painted jar (SR 2086). An unpainted jar (SR 2091) was placed by the feet of the deceased. The positioning of the bowls was reminiscent of a second Middle Assyrian burial recovered in 2016 in Operation 8 — which lay ca. 4 m to the northeast and parallel to the body in Operation 5 Locus 26 (see description below). Near the right hand were found the remains of an unbaked clay plate. Other graves goods included four large bone needles and four bone beads (SR 2094) along with animal bones (SR 2097), which derived from a single young caprine, probably a lamb, included as a food offering. As with the burial in Operation 8, articulated skeletal remains of a young caprine were also found within the jars. Unlike the burial in Operation 8, no metal pins were discovered in Operation 5 burial 26.

Operation 8 (Hosein Azizi)

Operation 8 is a 5.3 × 2.0 m section located in the middle section of the 2013 step trench Operation 1 (fig. 2). Operation 8 was designed to explore the transition between the LC3 and LC2 phases at Surezha in greater detail. Operation 8 was excavated from August 15–25, 2016. The majority of the excavated materials derived from secondary trash and tertiary wash



Figure 9. Operation 5 Middle Assyrian burial 26 (fourteenth century BC) grave goods



Figure 10. Operation 8 Middle Assyrian burial locus 7, photogrammetric image

deposits dating to this transitional phase. As noted above, excavations in both Operation 5 and Operation 8 reached the top of the LC2 phase.

A Middle Assyrian burial was cut down from an indeterminate surface into the LC2/3 transitional deposits such as locus 9 (fig. 10). The pit does not appear to have had a pitched mudbrick vault; in that way it differs from tomb locus 26 in Operation 5. The burial pit was roughly oval in shape, measuring 1.90 × 0.87 m, and is oriented northwest-southeast. The flexed skeleton of an adult (sex undetermined) is lying on its left side, with the left hand in front of its face. The facial bones of the skull were not preserved. A range of burial goods were interred with the body (fig. 11). Next to the head, a bowl containing sheep



Figure 11. Operation 8 Middle Assyrian burial locus 7 – grave goods



Figure 12a-b. Lucas Proctor consulting with Erbil metal-workers on design of the flotation machine (top) and the final assembly of the flotation machine (bottom)



Figure 13. Atefeh Razmjoo and Rajan Maghdid processing flotation samples to collect light and heavy fractions for analysis

bones — the remains of a food offering — was placed. Three additional ceramic vessels were placed in the grave — a large plain ware jar and two smaller, button based jars with painted horizontal bands. The grave goods included a bronze pin (or needle) with a loop (SR 2350), a second bronze pin (SR 2349), three long bone needles, and a stone bead necklace.

Archaeobotanical Analyses (Lucas Proctor)

Lucas Proctor (University of Connecticut) was responsible for the processing and analysis of the Surezha archaeobotanical samples were collected since the 2014 season. Lucas oversaw the fabrication of a “Siraf” type flotation machine in a metal-working factory in Erbil (fig. 12a-b). Eighty-five flotation samples were processed on-site, collecting both heavy and light fractions (fig. 13). These were exported to the US for analyses. These examinations are ongoing. Initial results from Lucas’ analysis of eleven samples indicate that cereal grains and chaff represented the vast majority of carbonized botanical remains in the examined samples. From the examined samples, barley and emmer wheat both appear to have been heavily exploited at Tell Surezha. Barley was the more common of the two, having been identified in all but one sample. This emphasis on heat and drought tolerant cereals is consistent with Tell Surezha’s location on the hot, semiarid Erbil plain. The Surezha data closely match the pattern of cereal remains recovered from other Ubaid/Chalcolithic sites in Northern Mesopotamia, especially

Tell Zeidan and Kenan Tepe. Flax seeds also common, probably as a source of fiber for textile (linen) production, and perhaps secondarily for oil.

Zooarchaeological Analyses (Max Price)

Analyses of the animal bone remains from Surezha were conducted by Max Price (Massachusetts Institute of Technology at MIT). The recovered faunal material ($N = 1,956$ fragments) builds upon the data recovered in 2013, giving us a total of 4,791 fragments from the 2013 and 2016 seasons for analysis. We now have samples of animal bones from the Ubaid, LC1, LC2, LC 2/3 transitional, and LC3 periods at the site.

Identified Taxa	Ubaid	LC 1	LC 2	LC 3
Sheep/Goat	62	57	22	89
Sheep	(3)	(4)	(2)	(9)
Goat	(1)	(18)	(8)	(2)
Pig	54	29	0	79
Cattle	19	7	0	22
Total	135	93	22	190

Table 2. Major identified taxa of domesticated animals from all contexts, broken down by phase.

Preliminary examination indicates that caprines (sheep and goats) are the most common taxa in all phases (table 2). This is consistent with the pattern seen at other Chalcolithic sites in Northern Mesopotamia. However, we were surprised to see the high number of pigs in the faunal record throughout the Ubaid-LC 3. In all phases except the LC 2, pigs make up 30-40% of the recovered domestic fauna.

Ceramic Analysis (John Alden)

Analyses of the ceramics was conducted by John Alden (University of Michigan). During the 2016 field season, John sorted and recorded 2,404 diagnostic sherds from Chalcolithic contexts in Operations 1, 2, 5, 6, 7, and 8 (fig. 14). Key categories were rims, bases, painted body sherd, incised body sherd, and other miscellaneous diagnostics (handles, lugs, spouts, etc.). Incised decorations such as horizontal deep-comb incision and shallow-incised herringbone and chevrons are proving to be especially useful stylistic elements to identify the local LC1 ceramic assemblage on the Erbil plain. In the 2016 season, John measured and drew 311 diagnostic ceramics. This analytical data set is essential for the development of the Surezha Chalcolithic ceramic chronology and typology, being conducted by Gil Stein. In addition to the Chalcolithic material, John also recorded and drew the complete ceramics recovered from the two Middle Assyrian burials Operation 5 locus 26 and Operation 8 locus 7. Finally, we selected thirty-two samples of Chalcolithic ceramics for geochemical analyses of elemental composition to be conducted by Leah Minc (Oregon State University).

2016 Radiocarbon (C14) Dates and Chronology

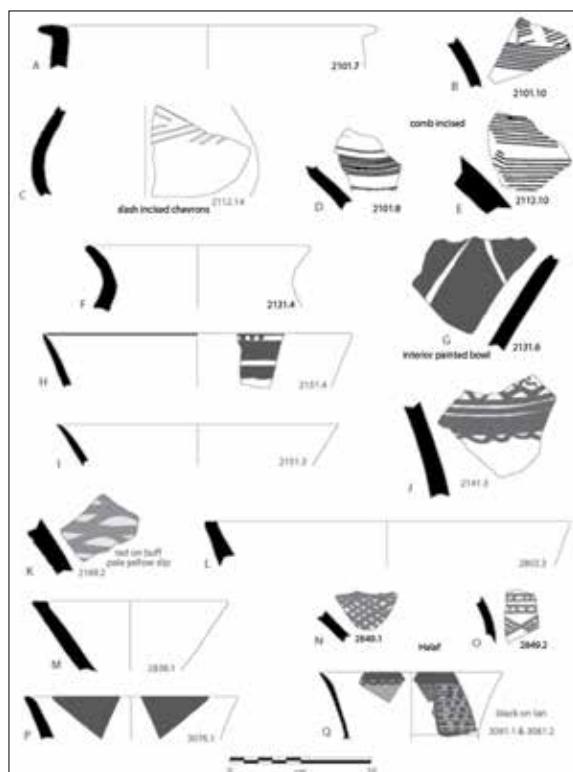


Figure 14. Selected diagnostic ceramics of the LC1, Ubaid, and Halaf phases at Surezha. A-G: LC1 phase; H-M, P: Ubaid phase; N, O, Q: Halaf phase

In 2016 we continued our radiocarbon sampling program aimed at defining an absolute chronology for the Chalcolithic ceramic assemblages on the Erbil plain. We experimented with radiocarbon dating ten samples of archaeological bone. However, none of these samples contained enough bone collagen to allow for any kind of reliable dating. As a result, we will limit future sampling to seeds and charcoal. Fourteen samples of seeds and charcoal were processed by Accelerator Mass Spectrometry (AMS dating) by Beta analytic Laboratory in Florida (table 3).

When combined with the sixteen AMS C14 dates from the 2013 season (see *Annual Report 2013–2014*), we are well on our way toward developing a reliable absolute chronology for the Chalcolithic of the Erbil plain region of Iraqi Kurdistan. The 1016 dates were especially useful because they confirm our tentative conclusion from ceramic analysis that the houses excavated in Operation 2 did, in fact, date to the later Ubaid period ca. 5200–5000 BC (calibrated).

Beta #	SR #	2 Σ BC Cal. Max	2 Σ BC Cal. Min	2 Σ BC Cal. Mean	Period/phase	Operation	Locus	Lot	Locus Description	Comments
450547	3002	3895	3695	3795	Late Bronze Age		26	33	A single adult inhumation with a vaulted mudbrick tomb structure.	Unreliable - charcoal originates from LC deposit cut through by excavation of Assyrian burial
450538	2075	3785	3655	3720	LC 3	5	24	29	Ashy sediment mixed with clay.	
454033	2389	4325	4280	4303	early LC 3	8	11	12	Wash layer	Date is too early - wash
	3041	3940	3710	3825	LC 2-3		34	48	Accumulated deposit of mudbrick detritus built up behind (south of) wall 32.	
450539	2248	5215	5025	5120	Ubaid?	2	29b	25	West Building North Room – floor level (latest floor in 2016)	
450543	2283	5215	5040	5127.5	Ubaid?	2	50	32	Alleyway	
453157	2605	5300	5080	5190	Ubaid?	2	53	35	East Building	
453156	2748	5215	5025	5120	Ubaid		66	58	East Building Room – sooty, medium gray and grayish-brown deposit occurring in sloping layers up against Wall 58.	
450546	2987	5310	5210	5260	Ubaid	2	75	79	East Building on top of Floor 83	
450549	3168	5040	4850	4945	Ubaid	2	83	88	East Building – floor level (second)	
	3199	5005	4845	4925	Ubaid		68	92	West Building North Room – small rectilinear area bounded by thin, short, crumbly clay walls.	
450547	2899	5215	5040	5128	Ubaid		72	70	Alleyway – compacted mudbrick and broken mudbrick collapse, with an area of stones and flat-lying sherds	
450548	2176	5050	4855	4953	Ubaid	2	76	14	Greenish gray deposit with chalk	
450545	2976	5200	4940	5070	Ubaid	2	76	76	Sounding level – earliest level	

Table 3. 2016 Radiocarbon Dates from Surezha

Conclusions

The 2016 field season at Surezha enabled us to recover important information that enables us to identify and date the local Chalcolithic cultures of the Erbil plain in the Kurdistan Region, east of the Tigris River in northeastern Iraq. In particular, we can now define, recognize and give absolute dates to the ceramic assemblages of the Halaf, Ubaid, LC1, LC2, and LC3 periods on the Erbil plain. These periods are important because they span the crucial time when social stratification, states, and urban societies first developed in Mesopotamia. The Surezha excavations are thus providing the first reliable basic information on the character and chronology of the local Chalcolithic cultures on the Erbil plain. With this solid baseline, we can start to understand the early development of towns and cities in this important, but so-far poorly known region of the Fertile Crescent.

GALILEE PREHISTORY PROJECT

Yorke M. Rowan, Morag M. Kersel, and Austin (Chad) Hill

Update on the Marj Rabba Publication Project

Six seasons of excavation and survey produced tens of thousands of chipped and ground stone pieces, fragmentary ceramic vessels, animal remains, soil samples, plants and seeds, coins, walls, hearths, and much, much more. Along with the artifacts and samples are the daily notes, digital records, maps, photographs, and plans, which together comprise a comprehensive record of the Chalcolithic (4500–3600 BCE) at Marj Rabba (2009–2014). Over the past year Senior Research Associate Yorke Rowan, with Research Associates Morag Kersel and Austin “Chad” Hill, concentrated their efforts on bringing together all of the evidence of the daily life at Marj Rabba.

Marj Rabba is a Chalcolithic site approximately 8 ha in size located in the hills of the Lower Galilee of modern-day Israel. Based on the results of six seasons of excavation, a geo-physical survey, and a pedestrian survey, Marj Rabba may be one of the largest Chalcolithic villages in the Galilee known to date. Analyses suggest at least three distinct phases of occupation characterized by fragments of mudbrick and stone walls, well-constructed, multiple

course rectilinear buildings, stone circles (perhaps silo bases) and other, smaller features. Large quantities of ceramic, lithic, faunal, and paleobotanical remains, in tandem with the architectural evidence, argue for an occupation by sedentary farmers carrying out mixed agriculture with an emphasis on the production of grain (Price et al. 2013; Rowan and Kersel 2014). Foregoing the traditional excavation/survey field season, the summer of 2016 was dedicated to analysis, processing, documenting, and preparing the results of the excavations and survey at Marj Rabba for publication. Rowan and Kersel spent long summer days in Jerusalem at the W. F. Albright Institute for Archaeological Research with the excavated materials and records (fig. 1).

With former NELC/Anthropology undergraduate Max Price, now a lecturer at MIT, Yorke and Research Associates Hill and Kersel published an article examining the possible ritual roles gazelles played during the Chalcolithic, a period which witnessed a decrease in hunting and a greater reliance on agriculture and domesticated animals. “Gazelles, Liminality, and Chalcolithic Ritual: A Case Study from Marj Rabba, Israel” in the *Bulletin*



Figure 1. Marj Rabba flint analysis at the W. F. Albright Institute of Archaeological Research (photo: M. Kersel)

of the *American Schools of Oriental Research* 376 (2016): 7–27 addresses the unusual discovery of burned gazelle feet in the well-constructed building (Building 1, on the cover of that issue of *Bulletin of the American Schools of Oriental Research*) at Marj Rabba, which may have been used for ritual purposes. This paper adds to discussions around the importance of gazelles during the Chalcolithic period. During 2016–2017 Hill, Rowan, and Kersel presented the results of this analysis season at the Annual Meeting of the American Schools of Oriental Research.

Future Directions for the Galilee Prehistory Project

With an eye to the future, and to the overarching goals of the Galilee Prehistory Project (GPP) — an examination of the dramatic changes in the relationship of villages, ritual sites, and mortuary practices during the Chalcolithic in the Galilee, a virtually unexamined region for this period — summer 2016 was also used to identify the next potential site for investigation. A goal of the GPP is to investigate a series of sites in the Galilee in order to set a base line and establish the variability for the region during the Chalcolithic. This, in turn, will contextualize why this period witnessed dramatic changes such as rapid agricultural expansion, mounting evidence for ritual practices, and intensification in craft production. Gathering data from this region will allow comparisons with the Chalcolithic assemblages excavated at sites in the Negev, the Golan, the Jordan Valley, and other lands bordering the eastern shores of the Mediterranean Sea. As a result further interpretations of subsistence economies during the Chalcolithic period will be better understood. To meet these goals another comparative site was needed. But would a site be identified?

In “How Do You Find a Site?” (*News & Notes* #228 Winter 2016) Rowan, Kersel, and Hill discussed the criteria used to decide where to excavate/survey more ephemeral prehistoric sites, like those focused on by the Galilee Prehistory Project. Archival and historic map evidence, oral interviews, previous pedestrian surveys, aerial images, and survey all provide potential clues and insights on finding “the next big site.” Sometimes single-period Chalcolithic sites are discernible on the surface, with visible walls, but more often these sites are invisible from the surface, obscured by orchards, agriculture, and soil overburden as a result of repeated flooding and deposits of sedimentation.

During the summer of 2016, through a series of conversations with various archaeologists, Rowan and Kersel identified a series of sites on the eastern side of the Upper Galilee region with potential for a future field investigation. A focus on a different Galilean environmental zone would provide an excellent comparison of roughly contemporaneous sites in the region. Often identified in advance of development (housing, road construction, industrial expansion, etc.), these sites were recognized in previous pedestrian surveys carried out by archaeologists from the Israel Antiquities Authority (IAA). Short reports and publications were consulted, in addition to meetings with archaeologists, like Yosef Stepansky. Rowan and Kersel visited Stepansky in his home to discuss the “best candidates” for future exploration. After consulting with Stepansky, Rowan and Kersel visited eight sites over three days (Ahhud, Ein Aka, Horvat Duvshan, Horvat Utza, Khirbet Eli, Site 61, Tel Nes/Tell es-Sanjak, and Zippori) on the eastern side of the Upper and Lower Galilee. Many of the sites are located on part of the Via Maris (Latin: “way of the sea”) the ancient trade route between Egypt and the northern areas of Anatolia, Mesopotamia, and Syria. Of the eight sites visited, two were assessed as more promising, while other sites were unappealing due to their close proximity to roads, disturbed nature, and lack of landscape integrity.

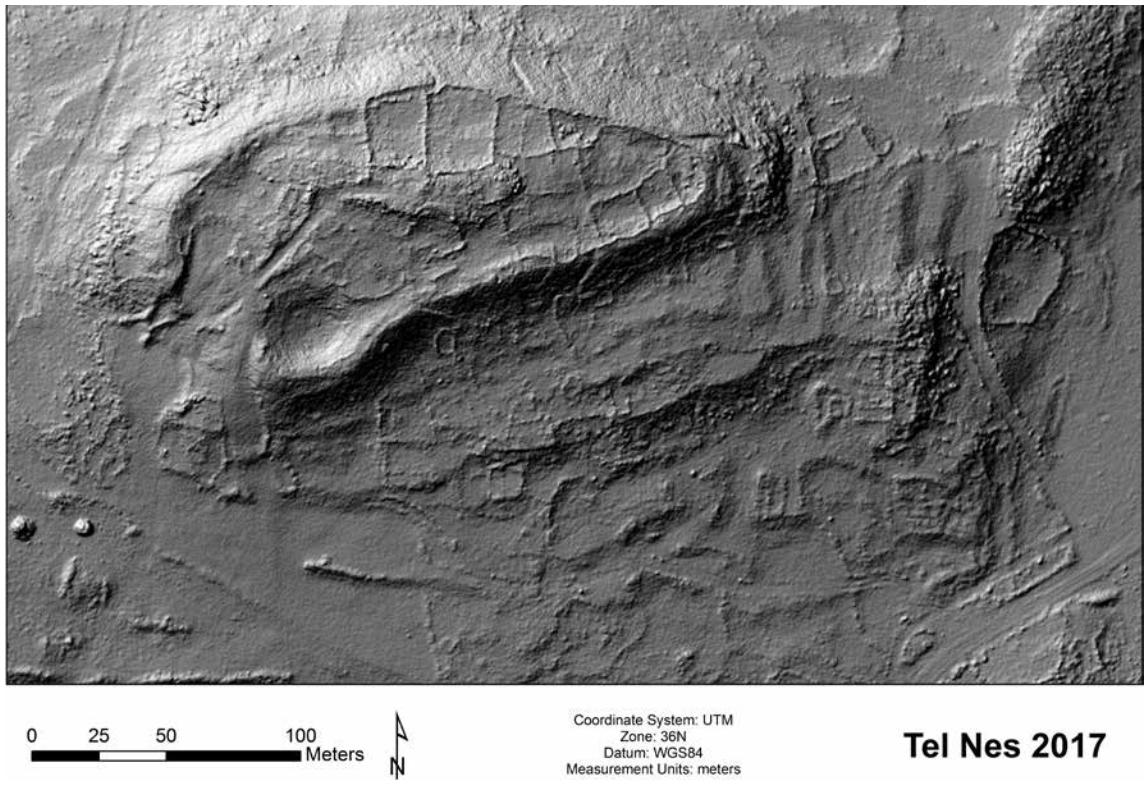


Figure 2. Orthophotograph of Tel Nes (*Tell es-Sanjak*)

Tel Nes, Tell es Sanjak, Tell es Sanjaq (Coordinates Zone 36N, 739400E, 3649500N)

At Tel Nes (*Tell es-Sanjak*, Arabic) a volcanic cone prominently stands out in the surrounding landscape (fig. 2). The site is a natural hill rather than a typical anthropogenic tell, with sherds from the Chalcolithic and Iron Age periods scattered on the summit and its slopes. Portions of rectangular buildings, which Rowan and Kersel examined during site visits, are evident from aerial photographs. The volcanic cone provides a good overview of the surrounding area and there appear to be local sources of water. Fortification walls at the site have been ascribed to the Iron Age (Stepansky pers. comm. 2012). The original IAA pedestrian survey identified retaining walls, building foundations, terraces, courtyards, and the remains of rectangular buildings (fig. 3), some attributed to the Chalcolithic period based on the surface collection of



Figure 3. Tel Nes walls on site surface of slope (photo: M. Kersel)



Figure 4. Overview of walls visible on surface of Horbat Duvshan (photo: M. Kersel).

ceramics. The IAA survey recorded approximately ten buildings, whose walls survived to a height of 1–2 basalt stone courses (Stepansky 2014). The combination of a natural landscape conducive to inhabitation, a local water source, intensive survey results, Chalcolithic ceramic distribution, and visible walls/rooms all said “excavate here.” Our next report for the Oriental Institute Annual Report will detail our exploratory field investigations at this site.

Horvat Duvshan (El-‘Assaliyeh, Arabic) (Coordinates Zone 36N, 739000E, 3647900N)

The site lies in the center of the Korazim Plateau, along the Via Maris. In 1978 members of Kibbutz Kefar Ha-Nasi identified the remains of almost fifty structures, visible from the surface (fig. 4). A later survey carried out by Stepansky (2005) from 1990 to 1993 estimated the site of Horvat Duvshan (the name is a reference to honey or honey production) to be 250 dunams (ca. 25 ha) in size with predominantly Chalcolithic pottery recovered from the surface. These findings were supported by Smithline (2013), who conducted limited salvage excavations (three 5 × 5 meter squares) in the northern part of the site, and by a 2012 intensive pedestrian survey in advance of road development on behalf of the IAA (Zingboym 2013). The Smithline excavations at Horvat Duvshan revealed typical “Golan” ceramics, although petrographic analysis suggest that the vessels were manufactured in close proximity to the site (Smithline 2013, p. 33). Environmental conditions are not conducive to the preservation of organic materials, but the extant walls and Chalcolithic sherds visible on the surface (figs.



Figure 5. Yorke Rowan on wall at Horbat Duvshan (photo: M. Kersel)



Figure 6. Surface collection of Chalcolithic artifacts (photo: M. Kersel)

5, 6), previous excavation and survey results, and the presence of a nearby water source ('Ein Duvshan) make this site a promising candidate for future excavation.

CONCLUSION

The Galilee presents particular challenges when searching for Chalcolithic sites for comparative evidence to contemporaneous sites from other regions. As a region that receives greater rainfall, preservation of the archaeological record is less ideal than more arid zones to the south and east. This also results in greater movement of sediments, and encourages the bioturbation created by plant growth and burrowing animals that directly impacts preservation. In addition, some ideal locations for prehistoric villages and hamlets remained appealing to builders in later periods, such that Late Neolithic and Chalcolithic remains are frequently found in the basal layers of tell sites. As a consequence, the presence of material culture from these early prehistoric periods may lack its original context. Taking into consideration the various environmental and human factors affecting the landscape and recognizing a lacuna in our understanding of the Chalcolithic period from this region, the GPP is exploring a number of sites in the Galilee in order to build a greater corpus of knowledge on the transition from sparse, early agricultural hamlets and villages to the profusion of larger, more economically complex Chalcolithic villages.

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GIZA PLATEAU MAPPING PROJECT

Mark Lehner

Ancient Egypt Research Associates (AERA)

Season 2017: The Old and the New

This year AERA team members busied themselves with the old and very new in research. I had the opportunity to return to some of my earliest work at the Sphinx, thanks to a grant from the American Research Center in Egypt (ARCE) Antiquities Endowment Fund (AEF) for the Sphinx Digital Database. This project will digitize, conserve, and make available as open source the archive from the 1979–1983 ARCE Sphinx Project, for which Dr. James Allen was project director and I was field director. My work at the Sphinx started three years earlier, in 1977, with Dr. Zahi Hawass, so that makes it exactly forty years ago.¹

Search for Khufu

We launched a new initiative, directed by Mohsen Kamel and Ali Witsell, to explore the older layers of the Heit el-Ghurab (“Wall of the Crow,” HeG) site. In some areas we have seen an older, different layout below what we have so far mapped, which dates to Khafre and Menkaure. We believe that the older phase settlement and infrastructure, which was razed and rebuilt, served Khufu’s building of the Great Pyramid.

The discovery in 2013, and publication this year, of the *Journal of Merer*² piques our interest all the more in the early phase of Heit el-Ghurab. Pierre Tallet and a team from the Sorbonne and the French Institute in Cairo discovered the inscribed papyri at Wadi el-Jarf on the western Red Sea Coast, in a port facility used only in the time of Khufu. Merer was the leader of a crew that delivered limestone by boat from the eastern Tura quarries to the Great Pyramid of Khufu. Why would a record of stone deliveries at Giza be found at on the Red Sea coast? Perhaps because Merer’s logbook belonged to his crew’s portable dossier of jobs, which could have included tasks on the Red Sea coast (sailing to Sinai for copper?), or delivering stone from Tura to Giza. Some of the files apparently slipped out at the last closing of the Wadi el-Jarf storage galleries, which Khufu’s engineers had cut into bedrock escarpments. The papyrus pieces lay between the huge blocks that closed one of the galleries.

Pierre Tallet’s publication of Merer’s Journal opens a window onto daily use of waterways around the HeG. It is possible that Merer stopped overnight on the shore of the very Fourth Dynasty settlement we have mapped, albeit, in its early phase. In his daily entries, Merer names places, and the *Heit el-Ghurab* site is possibly among them, under the name *Ankh Khufu* — “Live Khufu!” — determined with a *niwt* (town, village) sign.³ It is practically certain that Merer and his men off-loaded somewhere between the Wall of the Crow and the Sphinx, for only here does the Giza Plateau dip invitingly down, close to the Nile floodplain. At the northern end of this natural gateway, a short distance east of the Sphinx and Sphinx Temple, several lines of evidence hint at a very deep canal basin, where boats could off-load and turn around in a waterway wide enough for two-way traffic.⁴

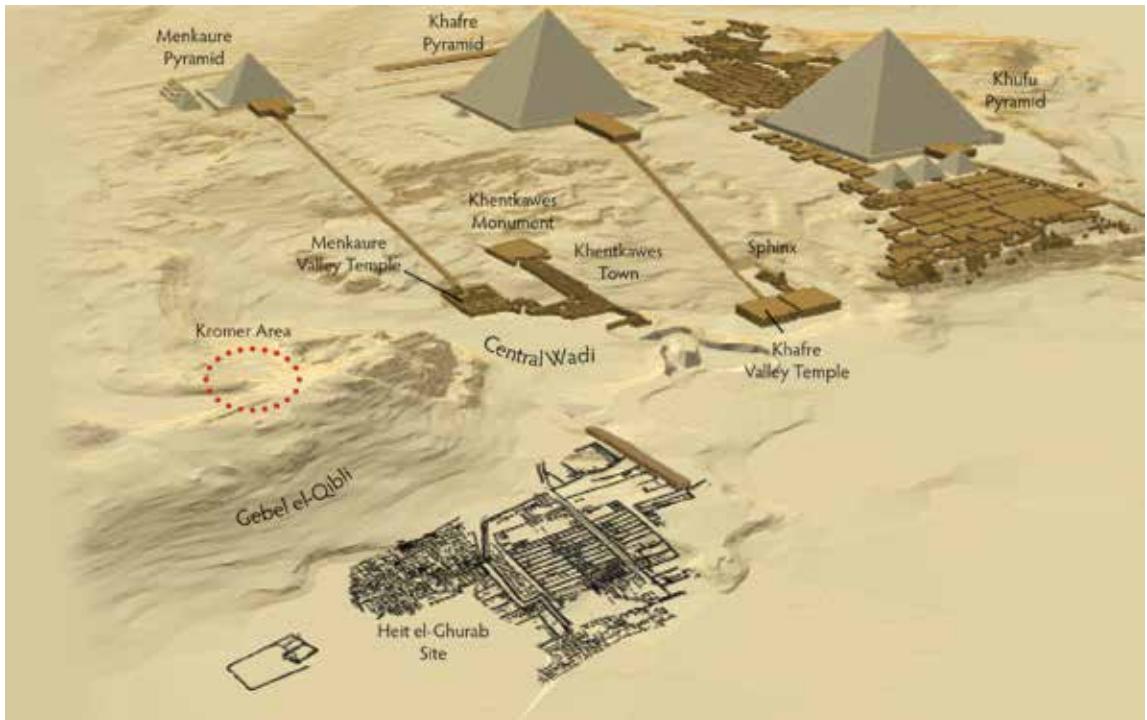


Figure 1. Model of the Giza Plateau with the Heit el-Ghurab site and Kromer excavation area

During spring 2017, Claire Malleson led a study season in our Giza Lab that included inventorying and analyzing material we had previously excavated from the early phase. This coming February–April (2018), we will further excavate parts of the early phase. We also plan to reinvestigate the site where in the early 1970s Karl Kromer investigated a massive dump of disarticulated settlement debris, up and over the Gebel el-Qibli, the escarpment that rises above the HeG on the west (fig. 1).⁵ Kromer found sealings of Khufu and Khafre, but none of Menkaure. In the main phases of the HeG, we have sealings of Khafre (including at least one from the same seal as used for one of the Kromer dump sealings)⁶ and Menkaure, but none of Khufu. So “Kromer’s dump” may be debris from the dismantling of the early HeG.

Geoarchaeology of Sphinx and Sphinx Temple

This year I developed graphics and began to write up observations from the thirty-year-old ARCE Sphinx Project data. As part of that project, in 1980, I joined geologist Thomas Aigner, University of Tübingen, to carry out a study of the Sphinx and Sphinx Temple that combined geology and archaeology.

We believed that the Egyptians created the Sphinx and Khafre Valley and Sphinx Temples as part of a single quarry-construction sequence. From bedrock strata corresponding to the Sphinx head, they took megaliths for building the Khafre Valley Temple. As they quarried deeper, they cut a U-shaped ditch – leaving a core from which they sculpted the Sphinx – and removed blocks from these lower layers to build the Sphinx Temple (fig. 2).

We had intended to publish this work, but did not do so. And so we work thirty-seven years later to present the information. Here I summarize our method, broad conclusions, the

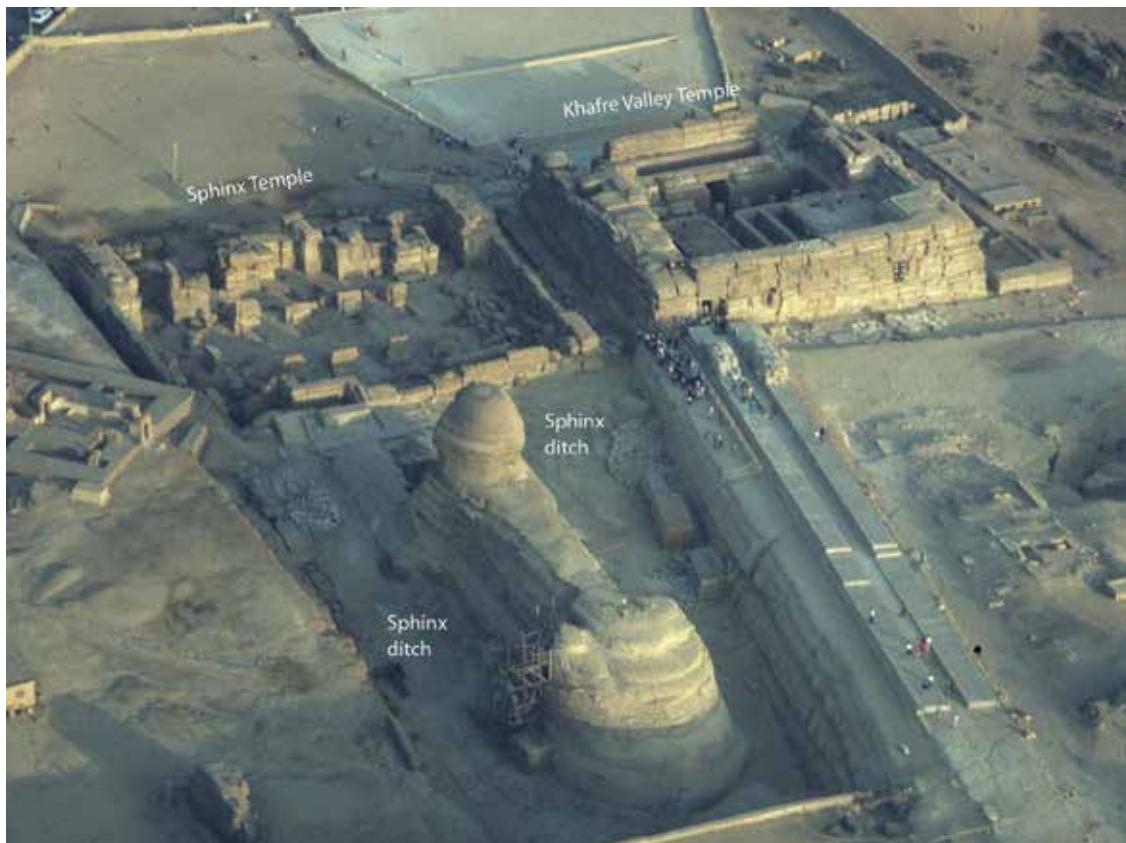


Figure 2. The Sphinx in its ditch, fronted by the Sphinx Temple (left) and the Khafre Valley Temple (right)

significance of this information for dating the Sphinx, and how revisiting this old study adds a piece to the picture puzzle of how the Egyptians built the Sphinx and Pyramids.

Mapping Stone by Stone

For the ARCE Sphinx Project, the German Archaeological Institute provided surveyor Ulrich Kapp and photogrammetry equipment to produce front and side elevations of the Sphinx. Between 1979 and 1983 I mapped the Sphinx and the two large temples stone by stone.

These temples are formed by gigantic limestone “core blocks,” so-called because they make up the core of the temple walls, which were to be clad in granite or fine limestone. These blocks are so thick, many of them consist of three geological layers. The layers in many blocks match those that run through the bedrock of the Sphinx itself.⁷

As I moved about the Sphinx Temple in the first year of my work, I was struck by how the geological layers run continuously, in many places, from one block to another, as the layers must have run in the bedrock (figs. 3, 4). Those who moved these stones apparently did not have much chance to mix them up from quarry to temple wall. The Sphinx and its temple must have been part of the same quarry-construction sequence. If the huge core blocks could be “fingerprinted,” they could be traced back to the quarry of the Sphinx. In 1980, I met Thomas Aigner who had the expertise to do this (fig. 5).



Figure 3. Sphinx and Sphinx Temple ruins; view to the northwest

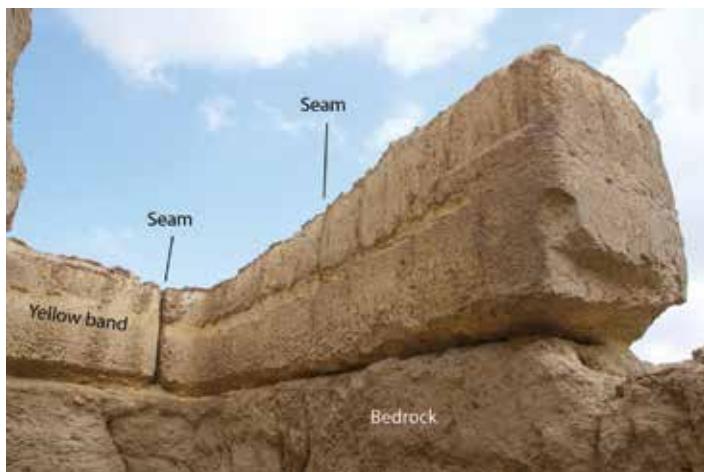


Figure 4. Core blocks (Type A) in the western side of the Sphinx Temple, cut from three geological layers, with a thin marl layer – the “yellow band” – running continuously through the middle of three blocks



Figure 5. Thomas Aigner and Ashraf Abd El-Aziz look at a large corral petrified in life position, in the eastern escarpment, Member I, around the corner from the Sphinx Amphitheater

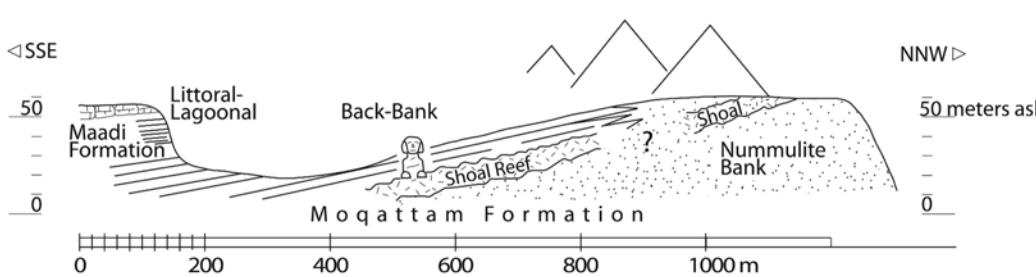


Figure 6. Thomas Aigner's schematic profile of the Giza Plateau, from north-northwest to south-southeast, showing principal geological layers of the Moqattam (Middle Eocene) and Maadi (Upper Eocene) Formations (figure: after Aigner 1983a, p. 363, fig. 11)

Seafloor Ecology Petrified

Aigner saw the Giza Plateau as sea floors, petrified and stacked into the bedrock layers from which pyramid builders quarried blocks, cut out tombs, and carved the Sphinx. He was interested in the “environment of sedimentation” tens of millions of years ago that produced the limestone.⁸

Here at Giza, the southern headwaters of a great sea, on its slow northward retreat into what became the Mediterranean, laid down silts and sediments that became the Egyptian tableland. Quarrymen fashioned the Sphinx out of the limestone bedrock at the low, southeastern base of the Pyramids Plateau. They knew well these bedrock layers, if not how the stone had originated millions of years earlier.

As the seawater retreated northward in the Eocene Epoch (65–38 million BP), a colossal bank of nummulites⁹ built up beneath the waters at the northwestern side of the Giza Plateau (fig. 6). Down the long southeastern slope (in the direction of the Sphinx and the Central Field) in deeper water a sandbar developed, on which grew a shoal and coral reef. As the Eocene seawaters retreated north, the water protected by the sand bank became a muddy lagoon, inhabited by burrowing bivalves and sea urchins. A sequence accumulated, petrified as soft, yellow marly layers interspersed with harder beds.

The shallow waters of the lagoon laid down sediments that make up the layers running through the body of the Sphinx (Member II) (fig. 7). Turbulent waters churned up mud and silts, which petrified into softer layers. Calmer waters laid down more compact sedimentation, the harder layers. The Sphinx head is of harder bedrock (Member III) than the body, representing, again, calmer waters.

Tracing Core Blocks

When Aigner and I set about our Sphinx Temple core block study, he had already logged bedrock exposures on the Giza Plateau. Now he took the opportunity to look at the bedrock in the Sphinx itself.

In 1980 one could see much more of the Sphinx bedrock “core body” than today, although, even then, masonry veneer covered the bedrock Sphinx “core body” to a little more than half the height on the south and about a third the height on the north. The entire bedrock front was exposed. Today, masonry added since the 1980s covers much more of the lion body. The exposed bedrock has been covered with paste to stop flaking. However, the bedrock layers still



Figure 7. Lagoon layers, of Member II, in the south side of the Sphinx ditch (which forms the northern side of Khafre's causeway, connecting his valley temple and upper pyramid temple), with numbered beds of Members I and II. According to Aigner's model (see fig. 9), these layers derive from a back-bay lagoon along what became southeastern flank of the plateau, behind the nummulite embankment and corral reef, as the Eocene sea water retreated northward about 50 million years ago; view to the southeast

remain exposed on the sides of the Sphinx ditch — the U-shaped quarry cut by the Sphinx builders.

We could get up close to the bedrock surface on the Sphinx's northern flank by climbing up onto the ledge of masonry casing, which stepped up to the west and around the curve of the north haunch. From there, the masonry stepped down to a broader ledge at the curve of the rump. Or, one could climb up onto the top of the lion back and walk along it to the back of the head.

When he excavated the Sphinx in 1925–1926, Emile Baraize filled in the recesses that had eroded into the back of the head with cement. He covered the back of the neck with ceramic bricks, masonry, and more cement. Aigner and I could consult photographs he took before he did this work (fig. 8).

A large chunk of the Sphinx's nemes headdress, with the relief-carved pleating, lay behind the head. The piece came to light in 1978 when a hole in the top of the back was cleared of sand, modern cement, and ceramic



Figure 8. The back of the Sphinx head. Photo taken Sept. 25, 1925, before Baraize filled in the recesses and neck with ceramic bricks, limestone, and cement; view to the east (photo: Archive Lacau C 1 006)

fragments that Baraize used in 1925–1926 to support the head. This has been called “Perring’s Hole,” after the engineer who worked with Howard Vyse in 1837.

Perring might have loosed the piece of the headdress when he tried to blast free his drill rods from a depth of 8.22 m. With this headdress piece, Aigner and I could examine closely the bedrock of one of the head layers, which were otherwise out of reach.

We examined each layer (or bed), giving each a number, bottom up. We marked bed numbers on photographs, old (fig. 8) and new (fig. 7), and on profiles of the Sphinx that Ulrich Kapp produced every 5 m with photogrammetry (fig. 9).¹⁰ These beds weathered differentially — harder beds protrude and the softer beds recede — making it easy to mark the beds.

I marked the bed numbers on a master profile across the front of the Sphinx and the Sphinx ditch to either side. In figure 9, Aigner’s schematic log of the Sphinx bedrock layers is on the left of the Sphinx. Aigner also charted the relative abundance of different fossils from former sea floors — urchins, oysters, sea stars, sponges, stromatolites, nummulites, and more.

Bed 8a, just below the neck, served as a good marker horizon and boundary between Members II and III. This “Operculind Pack Stone” featured a heavy concentration of fossils, especially *Operculina*.¹¹ Bed 8a thins (lenses) out on the Sphinx’s back behind the head.

The biggest distinction is that between Member I and Member II. Member I is the very hard, gray reef formation, while the first bed of Member II, 2a, is one of the softest of the yellow marl-clay layers, in some places so soft you can crumble it with your finger tips. Member II beds are distinct in quality and fossils from Member III, but the boundary is not so stark as that between Members I and II. Aigner, following geologist K. Lal Gauri, who also contributed to the ARCE Sphinx Project,¹² distinguished the boundary between Members II and III as running just at the top of the back, toward the front, between Beds 7 and 8.

We designated the Sphinx head Bed 9, with subdivisions assigned on the basis of archival photos, taken before Emile Baraize added masonry veneer in 1925–1926 (fig. 8). The chunk of headdress from Perring’s hole (see above) appeared to be “Operculind Wacke Stone” (fine-grained matrix with more than 10% fossils, abundantly *Operculina*).

The massive fine-grained bedrock of Beds 8–9 (Member III) made for good sculpting, with far more endurance than the soft-hard-soft sequence of Member II. This is why the Fourth Dynasty builders reserved Member III for the more exposed head. Details like the eyebrows have survived wind, rain, and sand for 4,500 years. But the Member II sequence was perfect for quarrying giant core blocks, because quarrymen could cut the bottoms and tops of the blocks along the clay-like yellow beds, and take out as many intervening beds as required (generally three) for the thickness of the block.

But from which beds exactly did they cut the core blocks? Would this tell us where they were in fashioning the Sphinx at the time they built the Sphinx Temple? Answering these questions required that we log each block.

Block-by-Block Came the Sphinx: Quarry and Construction Sequence

As Aigner examined each core block, I sketched its outlines onto the map that Herbert Ricke published in 1970¹³ and gave each its own number, a total of 173 blocks (fig. 11). Aigner and I took notes on lithic qualities and fossils of each block and assigned each block to one of seven types: A through G. Later, I re-mapped each block of the entire Sphinx Temple and Khafre Valley Temple. Recently, to bring this work to publication, I color-coded the core blocks according to the types we assigned (fig. 11).

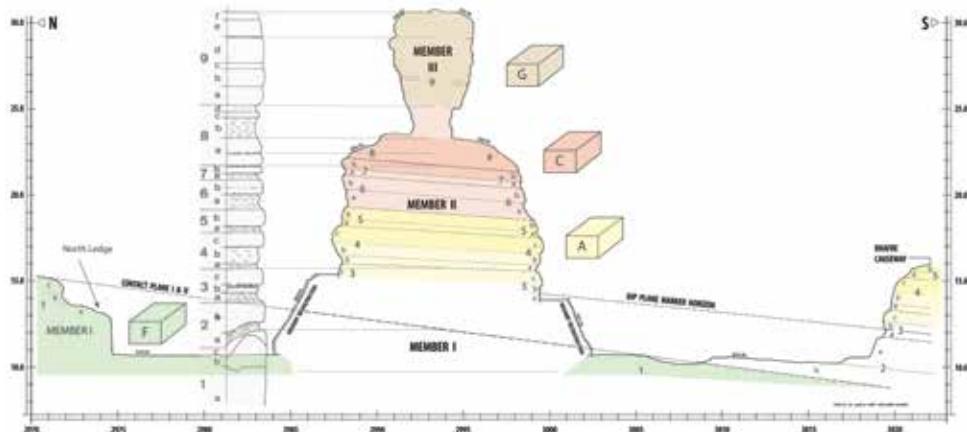


Figure 9. Profile across the front of the Sphinx and across the Sphinx ditch, with limestone beds numbered; color codes indicate source layers of large limestone core blocks in the Sphinx Temple (figure: Aigner's schematic profile of the limestone beds at the Sphinx)

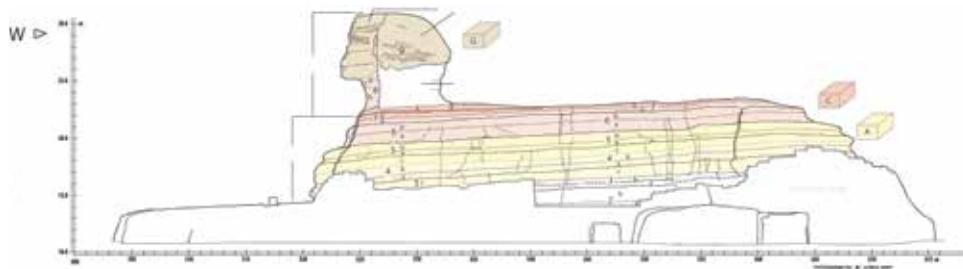


Figure 10. North elevation of the Sphinx, produced with photogrammetry by Ulrich Kapp, with limestone bedrock beds indicated and labeled by Mark Lehner; the Sphinx faces east. Colors signify match of beds (layers) to core blocks in the Sphinx Temple and Khafre Valley Temple (see below)



Figure 11. The Sphinx Temple map with core blocks color-coded as to type:

- Yellow = Type A core blocks
- Orange = Type B
- Red = Type C
- Purple = Type D
- Blue = Type E
- Green = Type F
- Beige = Type G
- Gray = bedrock



Figure 12. Sphinx and Sphinx Temple core blocks (foreground); Type A blocks (labeled) derive from Beds 4b-c to 5a, “yellow band” = Bed 5a. Some Type A blocks may derive from Beds 3c to 4b-c, so the “yellow band” would be Bed 4a

Most of the Sphinx Temple core blocks are Type A, which I coded yellow. These “standard” Sphinx Temple core blocks consist of three layers: upper and lower hard massive layers, separated by a soft, yellow marl layer. For long stretches of temple wall, the “yellow band” runs continuously through separate blocks (fig. 4). With confidence, we can assign Type A blocks — the majority type in the Sphinx Temple — to beds that correspond to the lower chest of the Sphinx, mostly Beds 4b-c to 5b (figs. 9–13). Quarrymen could have taken some Type A blocks from Beds 3c to 4b. The “yellow band” running continuously through Type A temple blocks corresponds most often to Bed 5a, across the top of the prominent boss on the Sphinx chest (fig. 10), but could also be the same stratum as Bed 4a across the bottom of the boss.

If most of the Sphinx Temple blocks come from the lower Sphinx chest layers, the Sphinx statue must have risen unfinished in the solid mother rock, only from chest level when builders began the Sphinx Temple down on a terrace 2.5 m lower than the floor of the Sphinx. I designated the Sphinx floor as Terrace I and the lower floor Terrace II.

Builders could have exploited these same layers anywhere in the Sphinx Amphitheater — the greater quarry from the Khafre causeway to the cliff north of the modern road (fig. 14). Or, they might have taken the blocks from where the layers extended directly over the temple.¹⁴ But then why did they not just cut the whole of the temple core walls directly from bedrock, as they did the lower parts of the back, western magazine walls (figs. 6, 7). We have evidence that they had already created Terrace 1 before the Sphinx was formed (see below).

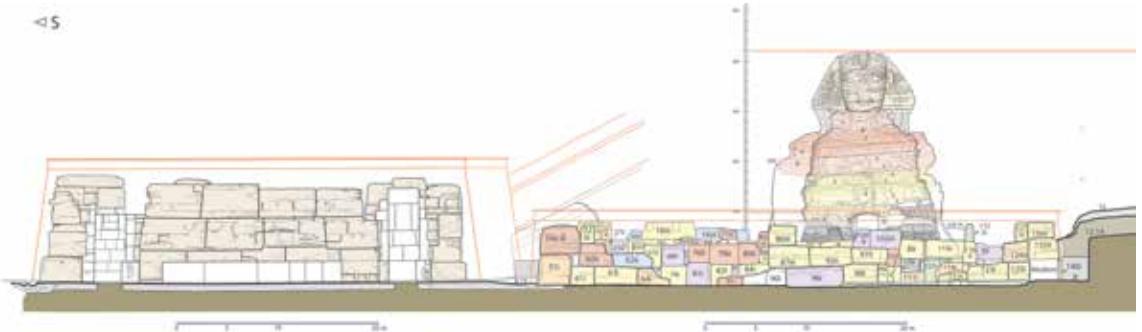


Figure 13. East elevation of the Khafre Valley Temple (after Hölscher 1912), Sphinx Temple (after Ricke 1970, pl. 2), and the Sphinx (from Ulrich Kapp photogrammetry) with core blocks and bedrock strata; Khafre Valley Temple core blocks are hypothesized to be Type G and to derive from Sphinx head layers

Type C blocks, coded red, came from layers near the top of Member II, layers of which are preserved in the top of the Sphinx chest and the base of its neck (figs. 9, 10, 13). They cluster near the front of the Sphinx Temple (fig. 11). We can imagine the quarry workers hewing the giant C blocks from layers that would become the lion's upper chest and top of the back. Gangs dragged those blocks to the eastern front of the Sphinx Temple. As quarry workers cut deeper, to the middle and lower Sphinx chest level, haulers and builders composed most of the core walls of the temple.

However, we must note that some Type C blocks rest upon Type A blocks (fig. 13), which we might not expect if Type C blocks were quarried and moved first. Did the quarrymen instead cut blocks in stepped fashion from more than one level, resulting in a mix of blocks from different strata? No. Huge quarry cuts that the workers left in the Giza Plateau suggest that they worked through the geological strata from top down. The C blocks on top of the A blocks are probably the result of rebuilding walls. Herbert Ricke noted how the builders deconstructed and then rebuilt the north and south walls of the Sphinx Temple, to expand the temple laterally so as to add pillared colonnades like those on the east and west.¹⁵ In this operation, they could have scrambled some of the blocks out of the original quarry-construction sequence.

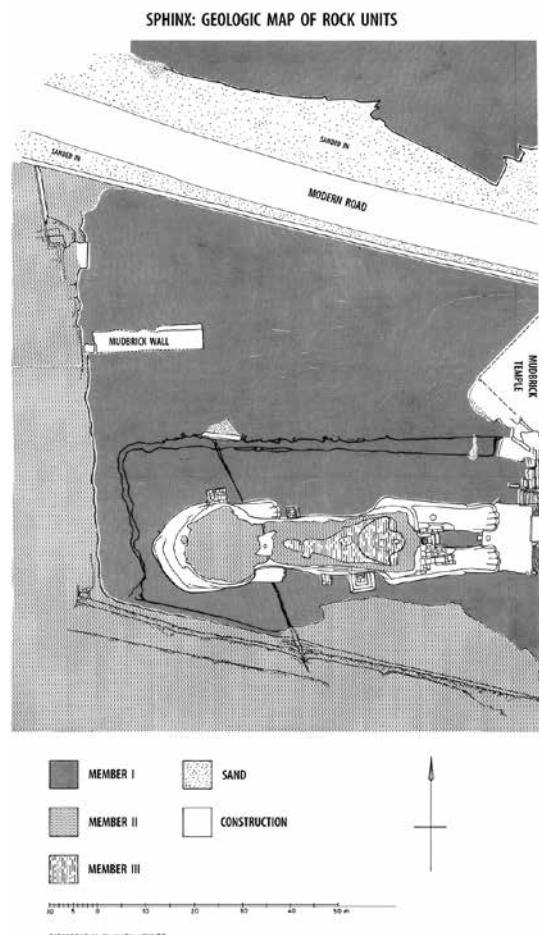
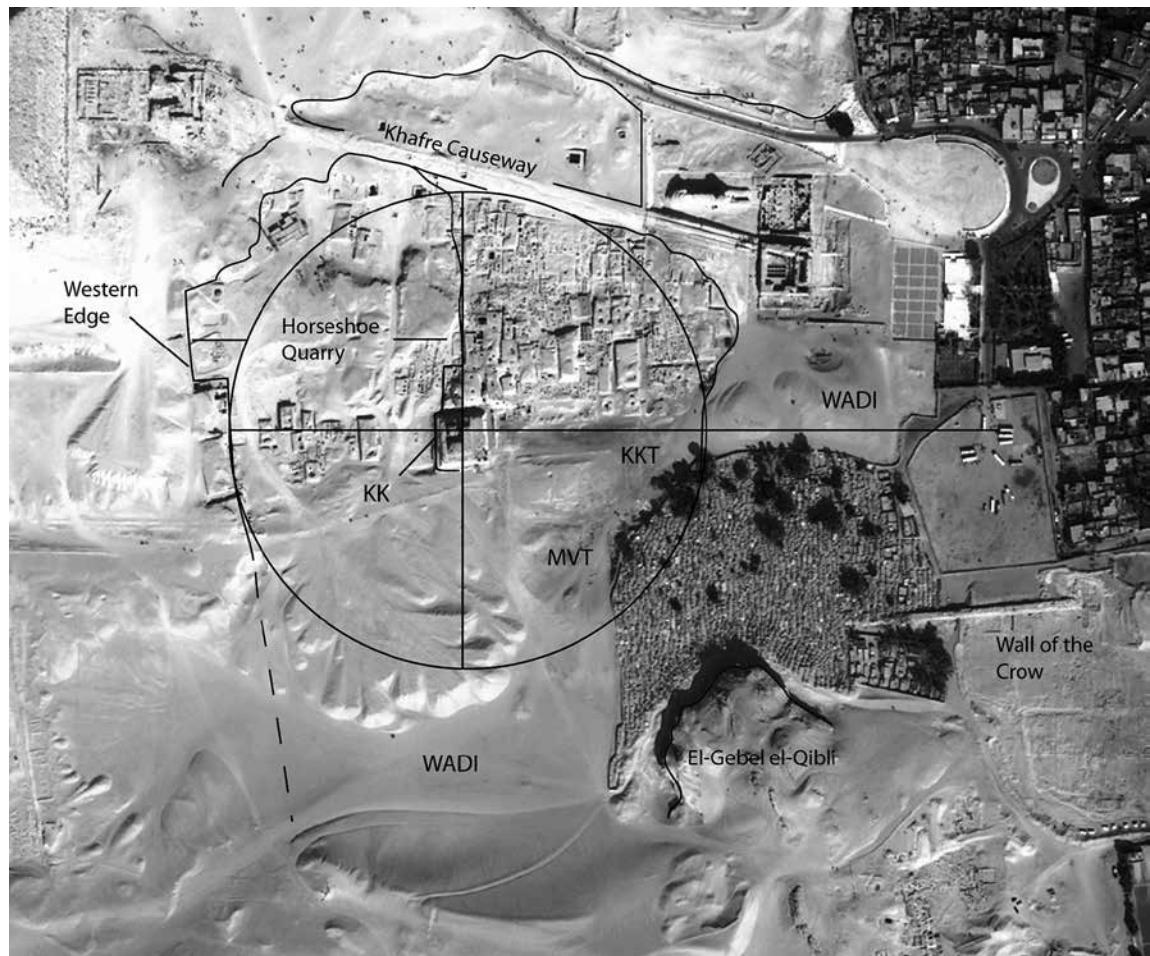


Figure 14. Map of Members I, II, and III exposed after quarrying to make the Sphinx Amphitheater, Sphinx, and Sphinx ditch, which isolated the lion body as an island of Member II and the Sphinx head as an island of Member III; the Sphinx head layers exist nowhere else in the immediate vicinity



Figure 15 (left). Distribution of Type B and D core blocks (orange and purple) within the Sphinx Temple

Figure 16 (below). The circle of Fourth Dynasty quarrying at the southeastern edge of the Giza Plateau. The Khentkawes I monument (KK) projects south at the approximate center. While never intended to be accurate, the radius of quarrying extends 200 m to the west, north, and east of the Khentkawes I monument. Quarry workers never exploited deeply the northeastern quadrant, between the Khentkawes monument and the Sphinx. People used the quarry blocks of this northeastern quadrant for mastabas and rock-cut tombs, starting in the late Fourth and mostly in the Fifth Dynasty



I note here that Type E blocks may derive from Bed 8a, and that Type F blocks came from the reef limestone of Member I. These types occur so infrequently in the Sphinx Temple that I will not deal with them further here. But they could both derive from within the Sphinx ditch.

Type B and D Blocks: Brought from Afar

Type B and D blocks show up at regular intervals within the core walls (fig. 15). They seem to have come from the quarries towards the Khentkawes Monument, southwest of the Sphinx, at the far end of a diagonal one can draw from the Sphinx across the northeastern quadrant of a greater circle of quarrying in the central field of the Giza Plateau (figs. 16, 17). The bedrock strata here are much higher than the Sphinx head layers, not in absolute elevation, rather in the sequence of the natural limestone strata.¹⁶

The spacing and fairly regular dispersal though the temple of Type B and D core blocks (fig. 15) could indicate two things: 1) The builders stockpiled these blocks and brought them into the walls whenever there was a hiatus in the quarrying, dragging, and placing of the regular A blocks; 2) because they quarried Type B and D blocks from much farther away, it took them much longer to haul the blocks to the temple site.



Figure 17. The quarry cut north of the Khentkawes Monument. All these beds, both the thick massive beds and the marly beds with many nummulites, lie higher in the stratification than the head of the Sphinx

Type G Blocks and the Temple Sequence

Already in 1910, when Uvo Hölscher excavated the valley temple, while the Sphinx Temple remained buried under sand and sediments 8 m high, he perceived that core blocks of Khafre Valley Temple came from the quarry that isolated the Sphinx block.¹⁷ Our tentative match of Type G blocks in the valley temple to Sphinx head layers tends to reinforce this hypothesis.

Herbert Ricke (1970) on Sphinx and Sphinx Temple Sequence

Herbert Ricke also thought that workers began to create the Sphinx as they built Khafre's valley temple and causeway.¹⁸ But our hypothetical temple sequence differs from Ricke's on the following point: He thought that as Khafre's workers quarried out the floor of the Sphinx ditch and then quarried 2.5 m deeper, down to Terrace 1, they used the blocks to build Khafre's Valley Temple and upper pyramid temple, and they next built the Sphinx Temple on the northern half of Terrace 1, which had remained empty.¹⁹

This belies Ricke's sequence: The match between the most common Type A ("yellow band") Sphinx Temple core blocks with the Member II layers (Beds 4–5) preserved in the lower Sphinx chest and in the sides of the Sphinx ditch. This and the continuity of the layers through long stretches of the Sphinx Temple wall, composed of multiple core blocks, suggests that builders did not stockpile the core blocks, but took them in sequence directly to the temple walls as quarrymen cut them from the Sphinx ditch.²⁰

First Thing On Terrace 1: The Khafre Valley Temple

Ricke assumed the Sphinx was more or less complete before the Egyptians made the Sphinx Temple. He did not recognize that the Sphinx and its temple came into being as the same quarry-construction sequence. *But Ricke did recognize a major sequence that has gone all but forgotten in the debate about which king ordered up the Sphinx.*

Ricke described enclosure walls of enormous limestone blocks that flanked the valley temple. The southern enclosure wall still exists, composed of a single course of locally quarried monolithic limestone blocks. At its western end, two enormous blocks make a corner and attach to the back, southwestern corner of the valley temple. The end block is fitted over a small granite block that remains in situ from a low bench or curb, 75 cm wide, that ran along the base of the south, east, and north sides of the valley temple. Ricke recognized that Khafre's builders had finished the low bench, and probably the entire granite casing of the valley temple, before they added the enclosure wall of large limestone blocks.

From its run to the east, 8.5 m from the valley temple south wall, the southern enclosure wall turns 90 degrees at the edge of the bedrock terrace in front of the valley temple. Here a single large block remains (fig. 18). The rock floor is cut as an emplacement bed for an additional long block that must have been removed. The missing piece would have brought the wall 5 m shy of the southern stone entrance ramp.

In front of the opposite, northeast corner of the valley temple, I mapped the foundation bed of a matching wall (fig. 19). Builders sunk the foundation slightly into the bedrock. As on the south, the northern enclosure wall once ran parallel to the northern side of the valley temple and 8.5 m from its granite casing. The foundation bed is just under 2.6 m (5 cubits) wide, the same width as the southern enclosure wall. Again mirroring its southern counterpart, the foundation cutting of the north wall shows that it turned a corner to run along the edge of the terrace in front of the valley temple, similarly stopping just shy of 5 m from the northern stone entrance ramp.



Figure 18 (left). The southeastern corner of the Khafre Valley Temple, with the turn of the southern enclosure wall (yellow) and the bed of a missing block that brought the wall just shy of 5 m from the southern entrance approach ramp. Spot heights are relative to an arbitrary datum set in 1978. Add 9.331 for meters above sea level. Highlighted in red: foundation for a small bench along the base of the southern and eastern temple walls, which were cased in granite, long missing

Figure 19 (right). The northeastern corner of the Khafre Valley Temple and southeastern corner of the Sphinx Temple. The turn of the foundation bed for an enclosure wall ends just shy of 5 m from the northern entrance ramp. The missing wall once ran 8.5 m from the granite casing of the Khafre Valley Temple, as does the southern wall (fig. 18). The wall bed appears to continue farther east, with an additional turn toward the south, but was covered under the mudbrick wall and platform of a later phase, contemporary with the approach ramps of the valley temple. The western mudbrick wall, which defines a corridor (or “canal”) framing tunnels (blue) under the ramps, turns into a stone rubble retaining wall just east of the Sphinx Temple, which was under construction when work stopped. A broad mud-paved platform bounds the “canal” north of the northern ramp

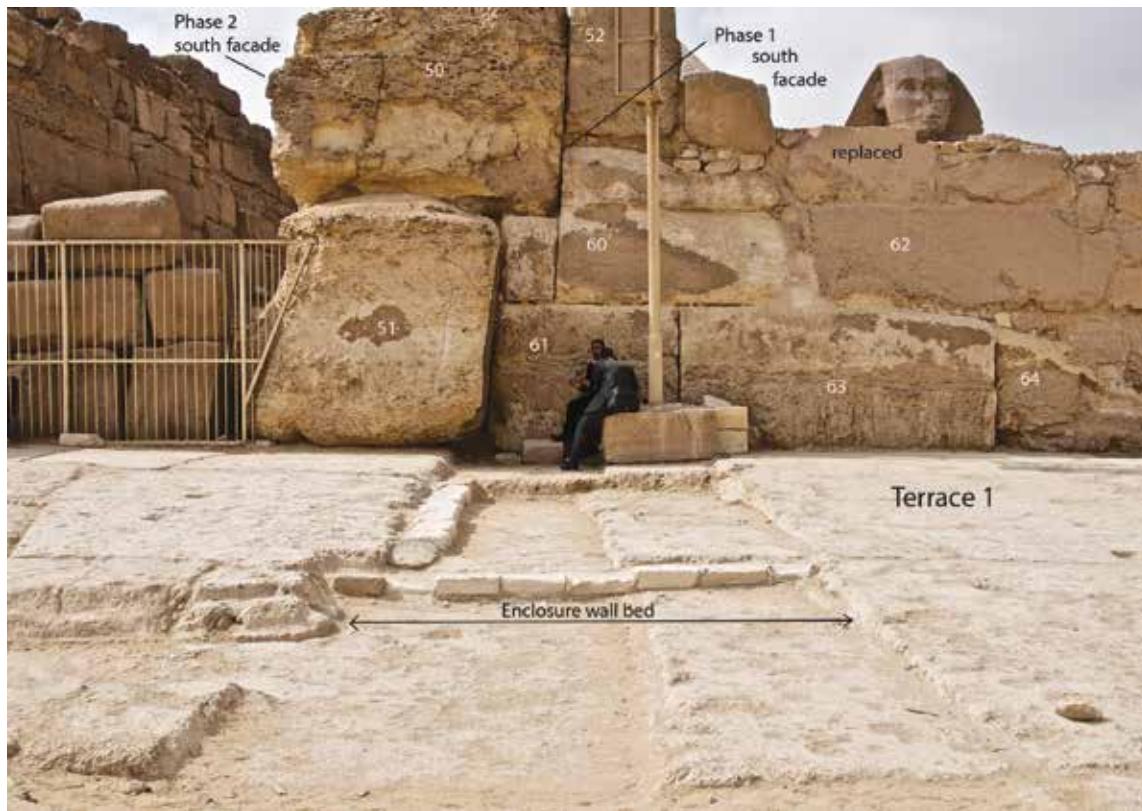


Figure 20. The bed of the northern enclosure wall of the Khafre Valley Temple, removed before Khafre's builders started the Sphinx Temple. The width of the bed, around 2.6 m (5 cubits), corresponds to the width of the southern enclosure wall and its bed. The builders left several blocks of the northern enclosure wall in place, including block 61, as part of the southern core wall of the Sphinx Temple

In a later stage of construction,²¹ when the king's builders set to work on the Sphinx Temple, they removed most of the northern enclosure wall, but left in place some of its blocks, which they incorporated into the southern wall of the Sphinx Temple. The foundation trench, cut into bedrock, remains as a record of where the northern wall had once stood (fig. 20). Builders left the enclosure wall blocks in place across the entire southeast corner of the Sphinx Temple.

So, in summary, enclosure walls that flanked the valley temple, north and south, reached out to enclose the front corners, but left a wide space for the approach ramps and front terrace (fig. 21).²²

The northern enclosure wall attached to the back end of the valley temple, 6 m east of the northwestern corner. As on the south, this connection is marked by a single surviving granite block of the low bench or curb that once ran along the base of the temple. Builders cut the large enclosure wall blocks to fit against and over the low bench, as we see on the south. The detail is important for showing that Khafre's valley temple stood complete, with its granite casing, when his builders added these enclosing walls.²³ Clearly, they launched into building the Sphinx Temple later still, after removing the northern enclosure wall.

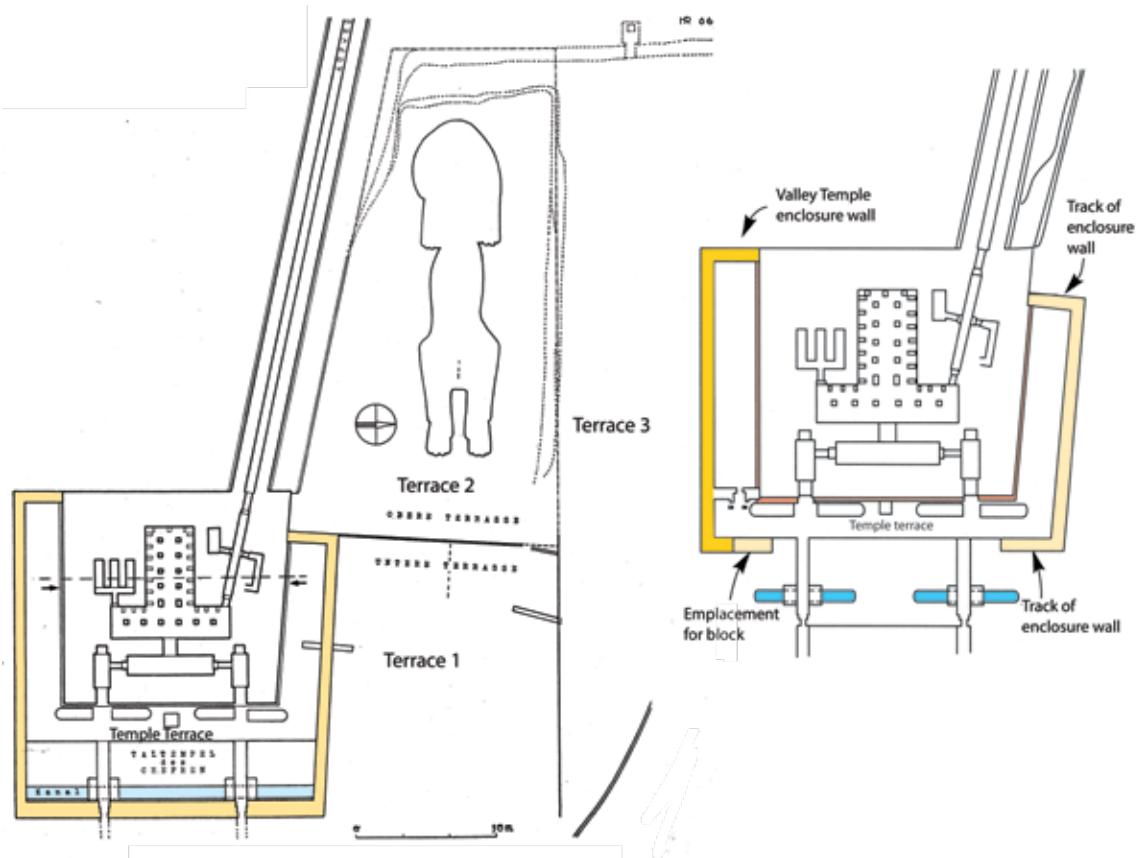


Figure 21. Ricke's schematic plan of the Sphinx, Terrace 1 before the Sphinx Temple was built, when Khafre Valley Temple included enclosure walls (left); early phase enclosure walls based on evidence mapped in 1993 (right) (see figs. 18–19)

How Much of the Sphinx was Done When Khafre Completed His Valley Temple?

How much of the Sphinx had Khafre's workers shaped when they finished his valley temple? They had reserved bedrock to carve the head, neck, and upper chest — just that part of the Sphinx above the top of Bed 5, the highest of the beds that produced Type A core blocks, from which most of the Sphinx Temple walls are composed (figs. 9, 10, 12, 13). They had probably started to shape the colossal statue down to this plane when the decision came down to build the Sphinx Temple in place of the northern enclosure wall.

At that point they began to gouge out the Sphinx ditch, taking Type A core blocks from Beds 5b down through 3c from within the ditch, and from where these layers extended out over Member I to the North Cliff within the greater Sphinx "Amphitheater" quarry (fig. 14). With one major modification — adding the north and south colonnades in a second phase²⁴ — the Sphinx Temple completely filled the northern part of Terrace 1, which had stood relatively empty except for the northern enclosure wall of the valley temple.

Khafre's workers started shaping the Sphinx as they built his valley temple. They were cutting the lower body out of its surrounding ditch as they made the Sphinx Temple, Khafre's last major addition to his pyramid complex. The builders did not finish. They left the Sphinx

Temple incomplete, without its exterior granite casing.²⁵ The quarrymen never finished cutting and straightening the Sphinx ditch. They left a testimony to their way of wasting unwanted rock on the North Ledge. They left a huge massif of Member I bedrock projecting to within a meter of the tail.²⁶

Terrace 1: A Landing Platform?

Working on decades-old data is not unusual in Near Eastern archaeology. For me, work on this old data has yielded new insight in the light of more recent information. The core block study I carried out with Thomas Aigner in 1980, together with very new information from Wadi el-Jarf and the *Journal of Merer*, impacts an understanding of the landscape and waterscape at Giza in the time the pyramids and Sphinx were built.

From Wadi el-Jarf Papyrus B we know Merer's men hauled stones in Tura. Papyrus fragment BIV may document them hauling stones at Giza, in the *Ro-She Khufu* ("Entrance to the Basin of Khufu," a kind of port authority, perhaps). In what we have of his logbook, Merer mentions frequently loading stone in Tura, but off-loading only once.²⁷ Tallet infers that quarry workers assembled blocks at Tura in "loading bays," where Merer's men could fetch and load them onto their boat. In fact, Middle Kingdom builders' graffiti often refer to stones as "brought from the storage enclosure, delivered at the ramp."²⁸ At Giza, we might expect an "off-loading bay." Terrace 1 could have served this purpose.

I hypothesize that it was Khufu's quarry workers who emptied and leveled Terrace 1. They worked through the sequence, from Member III down through the Member II beds, and then they cut 2.5 m down into Member I. This left a vertical bedrock face, rising 22 m, from which Khafre's workers would carve the Sphinx. We see similar deep, vertical quarry faces in the Central Field West quarry and at the Khentkawes Monument (fig. 17). While shaping the Sphinx, Khafre built his valley temple and the Sphinx Temple on the terrace quarried out under Khufu as an off-loading platform.

Hard rock realities forced Merer to deliver his loads at the low, southeastern base of the Moqattam Formation, the Pyramid Plateau proper, somewhere between the Wall of the Crow and the area in front of the Sphinx. At the northern end of this natural gateway, some 60 m east of the Sphinx Temple, evidence hints at the western end of a very deep canal basin (fig. 22),²⁹ where boats could off-load and turn around in a waterway wide enough for two-way traffic.³⁰ The western end of this basin was the best place for Merer to off-load and have his blocks dragged up to the southeast corner of the Great Pyramid³¹ — the closest he could get for the shortest possible drag-time, along the track of the modern asphalt road, which passes only 50 m north of the Sphinx.

This raises the possibility that Khufu's workers first opened the greater Sphinx ("amphitheater") quarry (fig. 14) by cutting a way through the escarpment on the northern side of this quarry (fig. 23). That would invite comment from the several scholars who would like to see Khufu as the one who conceived and created the Sphinx. However, the study of the Sphinx Temple core blocks reinforces Herbert Ricke's conclusion that Khafre finished the Sphinx, with as high a degree of probability as we can hope for, given current evidence.

I hope our work this year, with data old and new, contributes something to understanding how two of the world's most iconic ancient monuments, the Sphinx and the Great Pyramid, came into being, even as it raises new questions. And so the story evolves.



Figure 22. Reconstruction of Fourth Dynasty water transport infrastructure at Giza, with contour values in meters above sea level; white indicates low water level at 7 m asl; ZSW = Zaghloul Street Wall; HeG = Heit el-Ghurab site (map: Rebekah Miracle from AERA GIS, based on design by Mark Lehner)

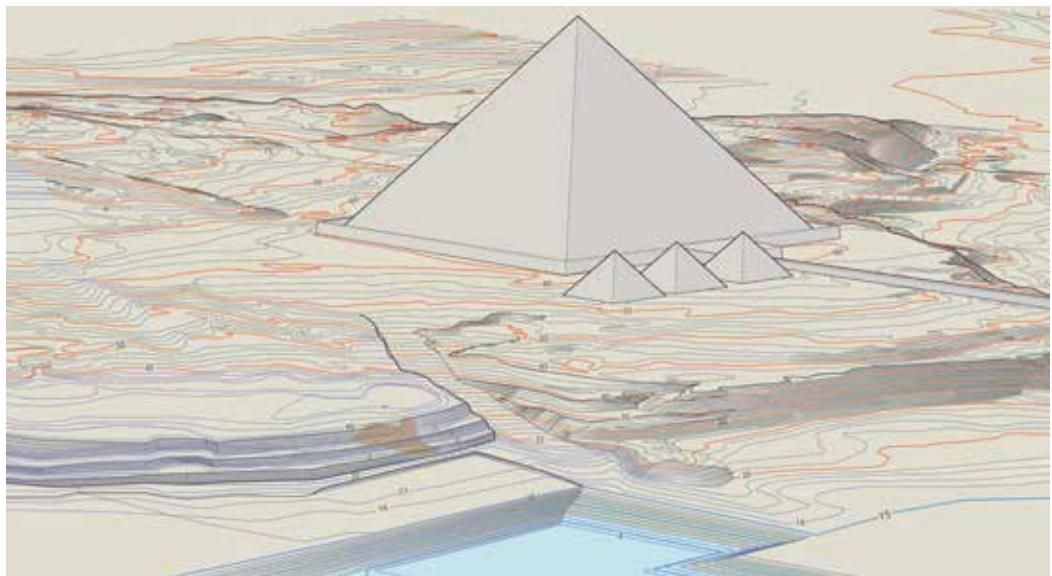


Figure 23. Reconstruction of the Giza Plateau eastern escarpment before the creation of the Sphinx, with a way cut to deliver material from the end of the central canal basin up to the Great Pyramid of Khufu

Notes

¹ At the time, James Allen was Assistant Director of ARCE. He is now Charles Edwin Wilbour Professor of Egyptology at Brown University. In addition to James Allen and Mark Lehner, the project included Ulrich Kapp (photogrammetry), Christiane Zivie-Coché (Egyptology), Attila Vass (survey), Susan Allen (survey), Peter Lacovara (survey), Cynthia Schatz (archaeology, survey), K. Lal Gauri (geology), and Thomas Aigner (geology). I gratefully acknowledge the financial support the Edgar Cayce Foundation provided ARCE for the Sphinx Project.

² Tallet 2017.

³ Tallet 2017, pp. 75–76.

⁴ Lehner 2014; forthcoming.

⁵ Kromer 1978.

⁶ Nolan 2010, p. 155, Seal 1 with Khafre's name.

⁷ Lehner 1980, pp. 14–15.

⁸ Aigner 1981; 1982; 1983a; 1983b.

⁹ *Nummulites gizehensis* are extinct unicellular plankton-like organisms that lived in the warm, shallow, tropical waters of the Eocene sea. They take their name from the Latin word for “coin” (*nummulus*) because each organism secreted a calcite shell in a coin-shaped spiral (<https://en.wikipedia.org/wiki/Nummulite>).

¹⁰ Thomas Aigner first numbered the beds starting with Beds 1-a-b-c in Member I and continuing in numerical sequence up to Beds 9 a- in the head. Geologist K. Lal Gauri later asked that I designate the beds starting with number 1 as the lowest layer in Member II and continuing the numerical sequence with alternate soft, marly beds as sub Roman numeral “i” and the harder beds as sub Roman numeral “ii” in Member II, so 1i, 1 ii, 2i, 2ii, etc. This left the Sphinx head layers as 8-plus-letter rather than 9. I used Gauri's (1984, fig. 3a-c) numbering in most publications where Member II Sphinx beds are designated Lehner (1991; 1994); Hawass and Lehner (1994, pp. 46–47); Gauri, Sinai, and Bandyopadhyay (1995); and Gauri and Bandyopadhyay (1999, pp. 183–211) also use Gauri's bed numbers. For the Sphinx core block study and this article, I now revert to Aigner's numbering, since he and I surveyed the Sphinx Temple core blocks together, after I drew and numbered all the blocks, and because we referenced Aigner's bed designations in our notes and comments.

¹¹ *Operculina* is a genus of foraminifera, ocean-dwelling single-celled organisms with shells.

¹² Gauri 1981a; 1981b; 1984.

¹³ Ricke 1970, plan 1. Ricke mapped the Sphinx Temple between 1965 and 1967. He included in his map all the details necessary to understand what the builders intended as their final result, but he did not outline each of the core blocks in his map. Using photogrammetry, he did draw most of the core blocks in his elevation views of the temple walls.

¹⁴ As I noted in Lehner 1980, p. 15, where I suggested builders took blocks from bedrock layers above the Sphinx Temple (Terrace 1) for building the Khafre Valley Temple.

¹⁵ Ricke 1970, pp. 16–20.

¹⁶ Hawass and Lehner 1994, pp. 46–47. While I reviewed these observations with Aigner in 2010, they should be further tested, documented, and published with survey and photographs.

¹⁷ Hölscher 1912, p. 19.

¹⁸ Ricke 1970, p. 4.

¹⁹ Ricke 1970, p. 34.

²⁰ Lehner 1980, pp. 14–17.

²¹ At least three major construction phases can be distinguished for the Khafre Valley Temple, prior to the two major construction phases that Ricke already delineated for the Sphinx Temple. These should one day be explicated and published.

²² I mapped what could be a continuation to the east of the bed of the northern enclosure wall. It passes under the mudbrick wall (see fig. 20). Like the more westerly segments on the north and south, the bed turns 90 degrees south, but this is not certain.

²³ The remaining building phase for the Khafre Valley Temple included the long limestone approach ramps, the pavement of the temple terrace and southern annex with its mudbrick magazines, and the massive mudbrick walls and platform framing the tunnels under the ramps east of the temple. Building phases of the Khafre Valley Temple have not yet been properly described.

²⁴ As Ricke 1970, pp. 16–29, outlined.

²⁵ Ricke 1970, p. 27.

²⁶ Lehner 2002; Ricke 1970, p. 4, recognized Khafre's workers did not finish cutting the North Ledge and west end of the Sphinx ditch.

²⁷ Tallet 2017, p. 77, fragment B22.

²⁸ Arnold 1990, e.g., pp. 77–78, nos. W27–28

²⁹ In the parlance of water transport infrastructure, a canal basin is “a waterway alongside or at the end of a canal, and wider than the canal, constructed to allow boats to moor or unload cargo without impeding the progress of other traffic, and to allow room for turning... For inland waterways, a land-locked harbor... often associated with wharves around its perimeter” ([Wikipedia.org/wiki/Canal_basin](https://en.wikipedia.org/wiki/Canal_basin); January 20, 2015).

³⁰ Lehner 2014; Figure 22 here is the result of my third attempt at reconstructing Fourth Dynasty waterways at Giza (see Lehner 1985; Ziegler 1999 for the first two attempts) based on vestiges of ancient features in the modern surface contours and more direct evidence that has come to light in the last thirty years, including Old Kingdom features encountered in excavation and sediments retrieved through deep core drillings. By contouring with values above sea level, using Fourth dynasty structures as benchmarks, I produced this bathymetric model of Fourth Dynasty water transport infrastructure. This year, I laid out the evidence and inferences that support this model in a forthcoming publication.

³¹ Lehner 2013, p. 2; 2014, p. 20; Tallet 2017, pp. 84, 152.

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ISLAMIC ARCHAEOLOGY AND THE ORIENTAL INSTITUTE

Tasha Vorderstrasse and Donald Whitcomb

The Islamic collections in the Oriental Institute Museum represent an important aspect of the archaeology of the ancient Near East. Over the years, various articles on Islamic archaeology, especially the Oriental Institute excavations at Quseir al-Qadim, Luxor, Aqaba, and most recently, Khirbet al-Mafjar have appeared in the Oriental Institute *Annual Report*. In the *Annual Report* for 2011–2012, we wrote of the need for a comprehensive examination for the Islamic collections in the Oriental Institute Museum (2012, pp. 81–82). From the earliest excavations of the Oriental Institute, Islamic materials have been included, such as Alishar Hüyük in Turkey and Khirbet al-Karak in Israel. Some major excavations have focused on Islamic sites, such as Istakhr and Rayy in Iran. In addition to Islamic archaeological collections, many objects have been purchased or donated to the museum. Among the most important are the Arabic manuscripts and papyri, studied by Nabia Abbott and more recent scholars. Finally, there are ethnographic items, including a fine collection of Palestinian costumes. All this material makes the collection one of the most important in the United States, but it has been relatively little studied and examined in detail. The 2015 exhibition, centered on the material from the site of Fustat (*A Cosmopolitan City: Muslims, Christians, and Jews in Old Cairo*), showcased the rich archaeological material from the excavations at Fustat in the Oriental Institute Museum, in addition to material in the museum from other excavations in Egypt and as well as the manuscripts and papyri.

We suggested a new project some five years ago, an introduction to Islamic Archaeology organized around these collections. As a first step toward this goal, we recognize the need for a comprehensive catalog of the Islamic holdings in the Oriental Institute Museum. This catalog should assist scholars working on the Islamic materials for research projects using Oriental Institute collections and provide interested members of the public a glimpse into all these collections for the first time, leading toward a new understanding of the archaeology of the Islamic period. Tasha has received a grant during the last six months to conduct an in-depth compilation of little studied or indeed unstudied aspects of the Islamic period collections in the Oriental Institute. The result of this research has been a detailed assessment of the collection as well as a better understanding of how a forthcoming catalog might be structured.

This year, Tasha looked at a variety of different materials from book bindings to ceramics and nineteenth-century photographs. This report will detail some of these findings. One of her particular interests has been examining the Chinese ceramics in the Oriental Institute Museum collection. A detailed study of the material indicated that the Oriental Institute Museum has a small but significant collection of Tang Dynasty ceramics when Chinese ceramics were first imported into the Near East in larger numbers, particularly to the Persian Gulf region. Early porcelains, celadons, and Changsha ware are found at the sites of Istakhr, Jundi Shapur, and Samarra. Particularly outstanding are two pieces in the Istakhr collection that are fragments of xing ware, a northern Chinese porcelain which was the finest porcelain available at that time (Krahl 2010, pp. 202–03). Although only two fragments were preserved, the fragments

were from a wine cup and a wine cup stand, which makes it tempting to suggest that it might possibly be from an original set (fig. 1). Thanks to the meticulous records kept by Istakhr's excavator, Erich Schmidt, it should be possible to demonstrate whether this is in fact the case or not. These cup stands have been dated to 825–850 CE and have been found at the Belitung shipwreck, a ship filled with ceramics destined for the Islamic market that wrecked off the coast of Indonesia (Krahl 2010, p. 203, fig. 150; Exhibition checklist cat. nos. 263–265).



Figure 1. Two fragments of xing ware from Istakhr, A169101 and A169126 (photo: Tasha Vorderstrasse)



Figure 2. Blue Mosque in Tabriz by Antoin Sevruguin (P. 1230/N. 23639)

One might continue studying specific artifact categories as a more productive beginning before turning to detailed analyses of the geographical areas represented in the Oriental Institute collections — materials that range from as far east as Iran and west as Morocco. As an example, the Iranian collection represents the largest part of the collection and includes important material still to be discovered. An unexpected collection illustrates this point: the Oriental Institute Museum archives has about 150 photographs of the Armenian-Iranian photographer Antoin Sevruguin (1830s–1933) (fig. 2). The work of Antoin Sevruguin has been studied in detail by scholars of early Iranian photography and an exhibition on his work was organized by the Freer/Sackler in 1999–2000 (Bohrer 1999). Although the presence of his photographs had already been noted, along with the publication of one of the photographs, in the catalog of the Oriental Institute exhibition *Picturing the Past* (Larson 2012, p. 51, fig. 6.2), these pictures had not been examined in detail until a recently published article (Vorderstrasse 2018).

It is naturally tempting to think of the Islamic collection at the Oriental Institute Museum as the product of a formidable history of archaeological excavations and surveys throughout the whole of the Middle East. Indeed, the study of this Islamic Archaeology has yet to be published. The recent research of Tasha has now demonstrated that these materials are extremely varied and in some cases highly significant for our understanding of Islamic material culture and history. This expands the range of the catalog topics and suggests a beginning for important research in the Oriental Institute for future Middle Eastern studies.

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KERKENES DAĞ PROJECT

Scott Branting

The 2016 season at Kerkenes saw an expansion of work following the issuance of a full excavation permit by the government of Turkey in 2015 (fig. 1). Excavations continued within Urban Block 8, located in the northern portion of the city. New support for the excavations came from the National Science Foundation (NSF) and the project is poised to see long-term research aimed at understanding the social organization of the city at Kerkenes Dağı. In addition, geophysical survey expanded upon the work in 2015 by connecting it to the large area of prior survey in the center of the city. Additional survey was also undertaken just outside the modern village of Şahmuratlı in the vicinity of a later Roman bath complex. Finally, ongoing monitoring and conservation efforts as well as ethnographic investigations remain important components of the project.

Geophysical Survey

Twenty-three days of geophysics were undertaken at Kerkenes during the months of May and June. A total of 64,400 sq m (6.44 ha) of area was surveyed with the project's RM-85 resistivity meter in the south-central portion of the city (fig. 2). This area was selected in order to connect the survey from 2015 with the larger contiguous area in the center of the city. It provides a more complete plan of the area around the large structure that was the focus of excavations in 2010 and completes the building by building city plan between this large structure and the megaron excavated in 2003. While some of the buildings in this area had been intensively burned in the city's final destruction, and thus already known from the magnetometry survey in prior years, other buildings were not as heavily burnt and were only discovered in 2016. The expanding building by building city plan holds great promise for contextualizing the discoveries made within the excavations and for investigating the broader social organization of this important city.

In addition to the work within the city, two days of geophysical survey were also undertaken just outside of the village of Şahmuratlı, the village that graciously houses the project. In 2015, following the find of a partial mosaic in a field, emergency excavations were undertaken at the location by the Yozgat Museum. The excavations uncovered a Roman bath com-

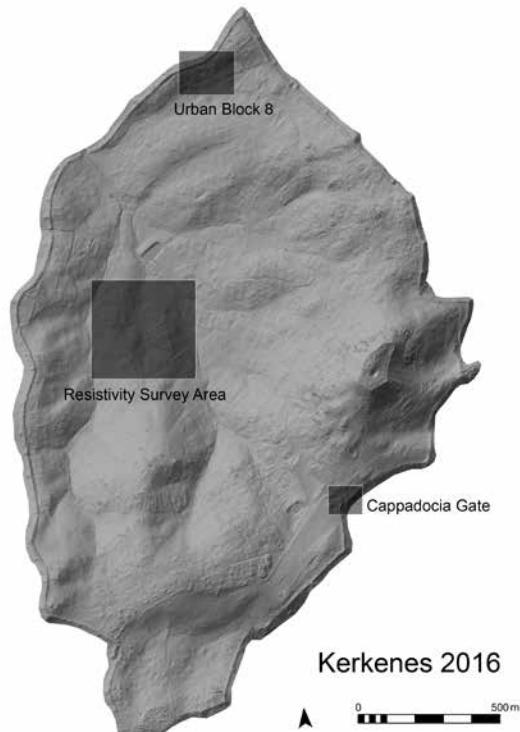


Figure 1. Map of Kerkenes showing major areas of work in 2016

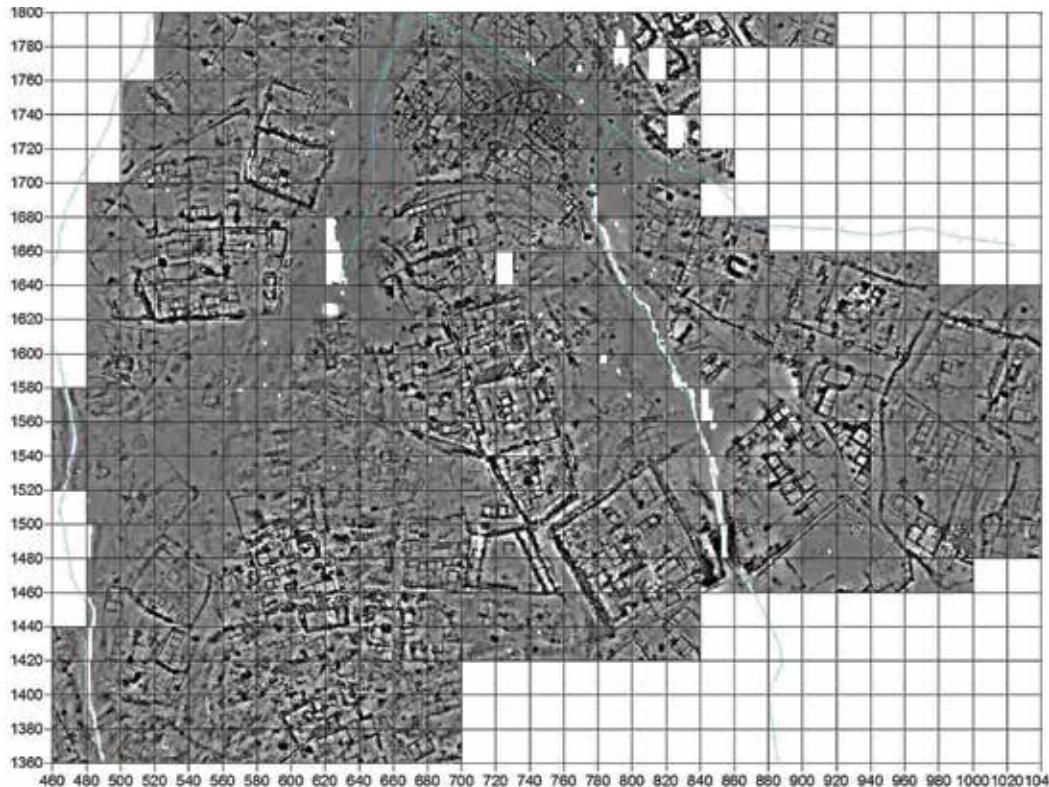


Figure 2. Results of the resistivity survey in 2016

plex. The Kerkenes team was asked to survey areas adjacent to this structure in order to try and determine the extent of the site for the Yozgat Museum. Sixteen grid squares, equaling 6,400 sq m (0.64 ha) of area, were surveyed with the RM-85 and an additional buried building was discovered well beyond the bath complex.

Surveys next year are planned to further expand upon the growing area that has been mapped in the center of the city, and to connect it up with a large area of survey in the north of the city. This will also help to connect the excavations in the north with buried structures found throughout the lower parts of the city. In addition, test surveys up at the highest point of the site, the later Byzantine castle, are expected to begin next year in collaboration with the FORTH Institute of Mediterranean Studies.

Excavation

Excavations in 2016 took place in three trenches: Trench 40 (TR40), Trench 29 (TR29), and Trench 31 (TR31) (fig. 3). All three of these trenches are located within Urban Block 8, in the northern portion of the city, and all three were partially excavated in prior seasons. These now contiguous trenches are part of a large horizontal exposure within Urban Block 8 that will eventually be extended to encompass the full 6,000 sq m of this urban block. At the end of the 2016 season a total area of 1,100 sq m has been excavated and a small section of the city wall at the northern end of the urban block has been cleared to reveal the front edge of the inner city wall. Extensive soil sampling in each of these trenches, with wet sieving of select

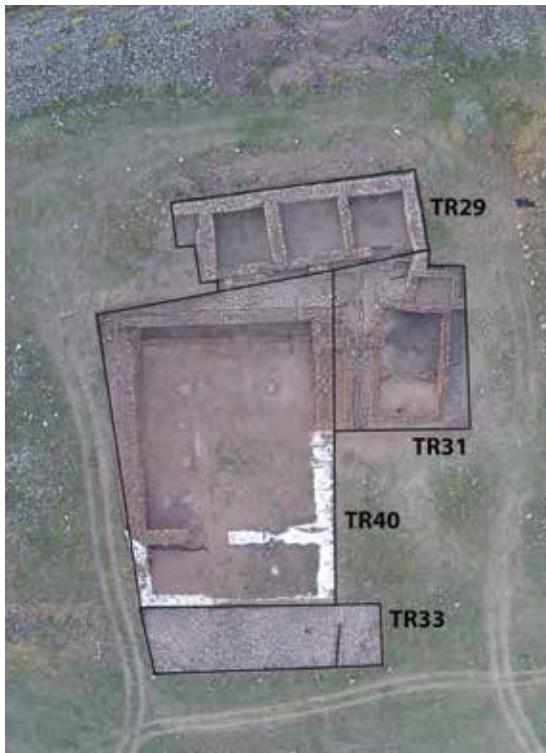


Figure 3. Aerial photograph of the excavation areas of Trenches 29, 31, 33, and 40

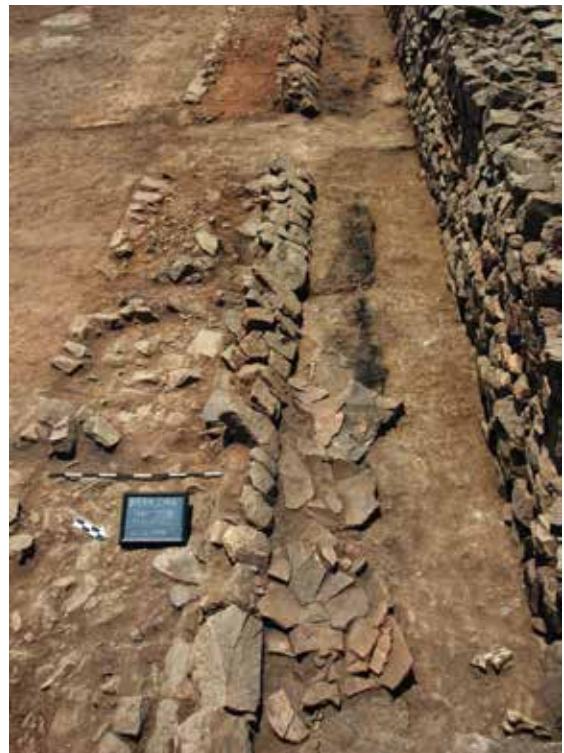


Figure 4. Stone walled bin with in situ pottery and wood in the northern end of the inner room of Trench 40

contexts, was paired with programs of pottery and metal analysis. Together these techniques are allowing us to discover different areas that were used for different activities by the people that once inhabited this urban block.

TR40 was placed to expose the entirety of a very large columned building near the middle of the urban block, along with a section of pavement just behind the building's back wall. In 2015 this trench had been extended by 300 sq m and the building collapse in the large inner room was excavated down to just above the floor level. In 2016, 260 sq m of this area was excavated to the preserved floor surfaces and the inner facing of the eastern and western walls were further articulated. The inner facing of both walls exposed this year showed evidence for posts, with rows of post holes identified at regular intervals between sections of interior wall facing. Patches of the highly burnt floor surface were also preserved, particularly in the southwestern quadrant of the inner room. Exposed bedrock in the more northern areas of the floor suggest that portions of the original floor surface was laid directly onto the bedrock. These areas of the floor did not survive weathering after the destruction of the building.

In the far northern end of the inner room a line of stones extending along a parallel line 1.5 m out from face of the north wall was found in 2015. We had postulated that it might be the front edge of a raised platform. Further excavation of the area this year revealed that this line was actually the uppermost course of a roughly 45 degree sloping stone bin edge, enclosing the northernmost area of the trench right up to the north wall of the building (fig. 4). Traces of floor plaster were found down ca. 30 cm at the bottom of the bin, particularly on the western side of the bin. The bin appears to continue farther through the line of the wall

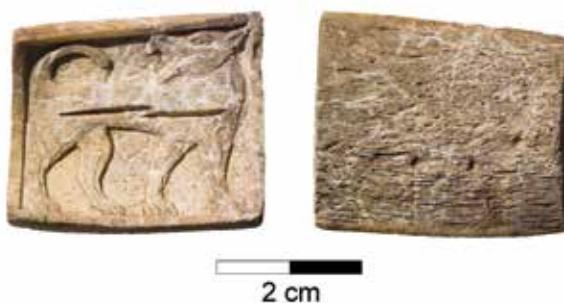


Figure 5. Carved bone plaque with the image of a canine from Trench 40

Across the inner room a range of notable finds were discovered at or just above the floor surface. Above the floor surface and still in mudbrick collapse from the wall between the inner room and the antechamber was found a 3.0×3.5 cm bone plaque with a carved figure of a canine (fig. 5). A more fragmentary and burnt ivory plaque, 8×4 cm in size, with three carved mythical figures including a sphinx was found directly on the floor near the farthest northwestern column base (fig. 6). An even more significant cluster of finds was located within the eastern third of the area of the sloping stone bin at the back of the inner room. This included more portions of the large vessel with lead pot menders first found in 2015, a few additional pieces of pottery, and discarded animal bone. Pieces of wood carbonized by the fire were also found in the bin in close proximity to the large vessel, including some small carved pieces of wood of which the largest was 4.0×2.6 cm in size (fig. 7).

Other carved items found near the large vessel included: miniature 2 cm long ivory bolsters and fragments with attachments (fig. 8), a small square 2.2 cm carved ivory frame (fig. 9), a bone cylinder just over 3 cm long and 2 cm in diameter (fig. 10), and hundreds of ivory and bone inlays and fragments. These could have all come from wooden furniture with bone, ivory, and wood inlays or the components of such furniture that may have been left here. Several additional metal items were also found in close proximity within that part of the bin



Figure 6. Carbonized pieces of carved wood from the eastern bin area of Trench 40

to the east and to the west in areas that will be explored further in 2017. Directly in front of the bin and running across the entire width of the room were two parallel lines of flat stones set 1 m apart and filled between with a leveling fill of small stones. These stones, based on parallels elsewhere in the city, are likely the subflooring for a wooden platform. No traces of the original wooden flooring were found beyond traces of burning on the rocks and in the soil matrix.



Figure 7. Fragmentary ivory plaque with mythical beasts from Trench 40



Figure 8. Portion of a miniature ivory bolster from the eastern bin area of Trench 40

Figure 9. Miniature ivory frame from the eastern bin area of Trench 40



Figure 10. Small bone cylinder from the eastern bin area of Trench 40

including: a portion of a copper alloy spatula, an iron arrowhead, and small metal tacks and rivets. In the western part of the bin area a small amount of additional pottery and bone were found along with a few more small finds including: a piece of amber inlay 1.5×0.9 cm in size and a perforated iron band a little over 6 cm long.

To the north of the building, a paved area extends back towards the multi-roomed building excavated in TR29 in 2011. It was in this building that the original ivory plaque from Kerkenes was discovered in 1996. A portion of this paved area was excavated in 2015 and the rest was excavated in 2016. A small portion of the pavement excavated this year falls in TR29 and the rest in TR40. This entire area has now been connected to form a large contiguous

excavation area. On the pavement within TR40 a small cluster of pottery and a copper-alloy shaft fragment just under 4 cm long were found. On the far eastern extents of this paved area at the entrance to Room 2 within TR29 an iron awl just under 4 cm in length was found (fig. 11).

TR31 is located directly to the east of the northern most end of TR40 and to the south of the eastern most end of TR29 (fig. 3). Portions of TR31 were excavated in 2012, including the staircase leading up into Room 3 of the multi-roomed building in TR29. In 2016, TR31 was extended to the south and east as the trench was enlarged by an additional 136.5 m^2 . At the end of 2012 the entrance to two rooms to the south of Room 3 in TR29 had been discovered. In 2016 the full extents of both of these rooms (Rooms 4 and 5) were defined as well as areas just outside the rooms and between these rooms and TR40.

The extents of Room 4, to the east of the staircase leading up to Room 3 in TR29, was defined and wall collapse from the final destruction was removed down to just above the floor level. This room will be cleared fully in 2017. To the south of Room 4 the larger Room 5, which measures $5.20\text{ m} \times 8.22\text{ m}$ in size, was defined and cleared all the way to the level of the plaster floor. The north and west walls of Room 5 exhibited well-preserved plain wall plaster across both interior wall surfaces (fig. 12). The largely continuous wall plaster surface



Figure 11. Iron awl from the edge of the pavement in front of Room 2 in Trench 29



Figure 12. Wall plaster on the northern wall of Room 5 in Trench 31. Note the slots for wooden vertical beams spaced roughly every meter

was broken by nine well defined 20 cm vertical beam slots located approximately 1 m apart along the face of both walls. Reed impressed mud plaster fragments, likely from the upper superstructure or thatch roof of the building were plentiful within the building collapse. Running east–west a secondary wall was found at and below the floor level. This wall appears to have been a small terrace wall to retain the level floor in the northern portion of the room. The well preserved plaster floor in the northern part of the room is not preserved over the top of this wall or across the much shallower southern portion of the room. Within Room 5 a number of objects were discovered including an almost complete trefoil jar (fig. 13) and various pieces of pottery. Two large grinding stones were also found which might provide a hint as to food preparation activities taking place in this room. A number of pieces of metal were also found including a complete copper alloy bilobate arrowhead (fig. 14).

Three thresholds for entrances into Room 5 were located, one in the southeastern portion of the room and two others in the northwestern portion of the room on either side of a wall extending from the room to the west before meeting up with the eastern wall of the large columned building in TR40. The northernmost of these entrances on the west side of the building opens onto the stone pavement coming down from the staircase to Room 3 in TR29. The southernmost of these entrances opens onto a 1.9 m wide stone paved corridor running north to south along most of the western side of Room 5. This corridor also contains the southward continuation of the drain noted in the pavement to the north in 2012 which presumably connects with the covered drain excavated in TR33 in 2014 and 2015. This paved



Figure 13. Trefoil jug found on the floor of Room 5 in Trench 31

Figure 14. A copper alloy arrowhead from Room 5 in Trench 31

corridor can also be accessed from the pavement area to the north by a threshold in the wall that bisects the two western entrances into Room 5. This corridor area is removed from the eastern wall of the large columned building in TR40 by a wall defining its western extent and a narrow 1 m wide slot to the west of that wall with no discernible entrances. This slot appears to have preserved mud plaster on its walls, but further understanding of this feature will need to await full excavation in 2017.

The entrance on the southern end of the eastern wall of Room 5 opens onto a stone paved surface area extending to the north and to the east. This outside paved area extends to the north almost half the length of Room 5 and between 1.15 m and 1.60 m to the east from the outside face of the wall. To the east this paved area is separated from a second stone paved area by a 7.0 cm unpaved slot that may have functioned as a drain. This second paved area to the east of the narrow slot continues beyond the easternmost extent of TR31. To the north of the first paved area is an unpaved area extending 1.2 m out from the eastern wall of Room 5. A stone set in the northwestern corner of this area was presumably the footing for a post that formed part of a roof over this unpaved area and the pavement to the south. Sections of plaster preserved on the lowest courses of the outside of the eastern wall of Room 5 also suggest that these areas may have been at least partially roofed, and numerous fragments of burnt wood could be evidence of the frame and roof in this area.

Recording of the excavations has increasingly made use of 3D models derived from photogrammetric methods and 2016 saw the entirety of the excavations recorded in this manner. These models can then be exported for digitization and the resulting plans and sections checked in the field, speeding up the orthorectification process used prior to the 2015 season. In addition, the models provide new ways to visualize the architecture and the archaeology in order to better understand how these areas were originally built and used. Finally, the models provide a way to monitor shifts in the standing architecture in order to plan long-term preservation efforts in collaboration with our colleagues at Abdullah Gül University in Kayseri. In the interim, following excavation, plastered floors and walls were covered in geotextile and a clean layer of soil to help preserve them during the upcoming winter.

Facilities and Infrastructure Improvements, Conservation, and Ethnographic Research

Accompanying the archaeological excavations and surveys, Associate Director Sevil Baltalı-Tırpan from Istanbul Technical University continued her important work of engagement and ethnography with the local village of Şahmuratlı during the 2016 season. This work provides a critical conduit for understanding both the site and the project from the perspectives of our gracious hosts in the village. It is essential that local understandings of the site are given voice because they are an important part of this living landscape that we all work within. Over time we plan to more actively incorporate aspects of these memories and histories into the long-term site presentation efforts by the project, so that all stakeholders have involvement in both its presentation and preservation.

Speaking of preservation, in the Cappadocia Gate continued photogrammetric work using drone photography was completed in order to model changes occurring within the towers, walls, and glacis (fig. 15). Yearly modeling will form a baseline from which ongoing conservation efforts can be designed and tested. With such a large and unique structure that was so heavily burnt in the final destruction of the city, 3D models that can be compared from year



Figure 15. 3D model of the Cappadocia Gate generated from drone photography

to year provide a practical way to monitor it and aid in making decisions about what steps can be taken to preserve it. This same modeling was also used elsewhere in the city, on a smaller scale, to record and monitor the reconstructed wall caps in the area of the 2010 excavations. Additional infrastructural work during the 2016 season included replacement of portions of the fencing surrounding both the Cappadocia Gate and the Palatial Complex and the removal of modern graffiti found over the winter on the front of the Palatial Complex. An extension and regrading of the new road leading up to the northern portion of the city was also completed by the Sorgun Administrative Director, Metin Kayhan. Even with the critical new road, road access to the city remains a key problem for those wishing to visit the city, and future road extensions were discussed with the new Yozgat Governor after he arrived in July.

Acknowledgments

We are very grateful for the support of the Ministry of Tourism and Culture during the 2016 season. In particular, we are grateful to Bahar Hasırcı of the Yozgat Museum for graciously serving as the Ministry Representative. We received excellent advice from Hasan K. Şenyurt, Director of the Yozgat Museum, and the museum's staff helped to facilitate this work. In addition, we received support from the Yozgat Governors Abdulkadir Yazıcı and Kemal Yurtnaç, the Sorgun District Governor Ali Arslantaş, the Sorgun Mayor Ahmet Şimşek, the Şahmuratlı Mayor Turan Baştürk, the Sorgun Administrative Director Metin Kayhan, and the Yozgat Director of Culture and Tourism Lütfi İbiş. Financial supporters of the project included: the Merops Foundation, the University of Central Florida, the American Research Institute in Turkey (ARIT) together with the National Endowment for the Humanities (NEH), and the National Science Foundation (NSF) through Grant Award # 1624105, "Investigation into the Social Organization of an Early City." Finally, no work would have been possible without our dedicated international team drawn from universities across the world and throughout Turkey.

SEEN NOT HEARD: COMPOSITION, ICONICITY, AND THE CLASSIFIER SYSTEMS OF LOGOSYLLABIC SCRIPTS

Ilona Zsolnay

Aspects of visual code — features that writing can impart beyond the spoken word — were the subject of the 13th Annual Oriental Institute Symposium, Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts, March 1–2, 2017, organized by Ilona Zsolnay, 2016–2018 Oriental Institute Postdoctoral Fellow. Thanks to the generous funding of Arthur and Lee Herbst, this symposium enabled scholars from the fields of Egyptology, Sinology, Hittitology, and Mesoamerican, Cuneiform, and Sign Language studies to examine the visual and even tangible qualities of writing. Traditionally, writing — a graphic form of communication — has been approached as a vehicle for representing, and therefore conveying, the spoken word, an oral and aura form of communication. Even studies of pictographic, hieroglyphic, and logographic scripts — scripts that, at least initially, used image-based systems — have concentrated on the means and extent to which they signify units of sound (are glottographic), be these phonological units, entire objects, or grammatical infixes, and vocally denote grammatical structures. For Seen Not Heard, presenters' interrogations took innovative trajectories, incorporating methodologies more common to linguistics and semiotics, communication studies, art-historical analysis, as well as more traditional philology.

Seen Not Heard took place in Breasted Hall over a two-day period, with the bulk of the presentations given on the first day, and was organized into four broad topics: text as experiential; the iconicity, indexicality, and semantics of logographic signs and their assignments; classifiers; and the use of organization in indicating intent. Together, the



Figure 1. Seen Not Heard presenters (photo credit: Bryce Lowry)

From the top (right to left): Jerry Cooper, Andréas Stauder, Guolong Lai, Zev Handel, Claudia Brittenham, David Schloen; Holly Pittman, Orly Goldwasser, Piotr Michalowski, Christopher Woods; Ilona Zsolnay, Elisabeth Rieken, Haicheng Wang, and Josh Roberson

presentations demonstrated that to approach writing as a form of communication which is not simply a handmaiden to speech is to reveal its multidimensional aspects. Writing can be seen and touched; it can allure, envelop, and distance. Because of its pictoriality, writing can be used to give silent cues or reveal inaudible, assumed, or incongruous settings. Thus, the results of Seen Not Heard were riveting and enlightening and decidedly demonstrated that accounting for the materiality and visual nature of writing is as important for comprehending the messages and the societies that created and received them as are the linguistic texts borne through them.

The proceedings of the 13th Annual Oriental Institute Postdoctoral Symposium is set to be published by early 2019. For a more detailed discussion of the conference, see I. Zsolnay, “Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts,” *News & Notes* 234, Summer, pp. 10–13 (<https://oi.uchicago.edu/research/news-notes-quarterly-newsletter>).

MODELING THE ANTIQUITIES TRADE IN IRAQ AND SYRIA (MANTIS)

Fiona Rose-Greenland, James Marrone,
Oya Topçuoğlu, and Tasha Vorderstrasse

Modeling the Antiquities Trade in Iraq and Syria (MANTIS) is an interdisciplinary research team based in the Oriental Institute. We use excavation data and art market data to study probable market values of Near Eastern artifacts. The model that we have built should have broad application in the ongoing scholarly effort to measure the scope and value of the global trade in looted antiquities. This report provides an update on our activities since our 2015–2016 *Annual Report*.

Refining the Research Scope

Our interest from the outset was whether it is possible to combine excavation data with market observations to predict market values for an entire archaeological site. To the best of our knowledge we are the first team to achieve the completion of such a model. We tested the model on two sites: Tell Bi'a and Dura Europos. We selected them as our main sites because they offer different archaeological profiles and yet are comparable in the context of contemporary looting patterns. While we initially discussed applying the model to ten sites, we found that variations in the reliability and accessibility of data from the other sites, combined with the time-intensive nature of the work, made the two-site focus more feasible. The refined scope of research allowed us to dig deeper into the market dynamics for our test sites. Our analysis revealed, for example, the relative market demand for Bronze Age, Hellenistic, and Roman materials (fig. 1). A finding like this has practical application for counter-looting initiatives, for example by highlighting categories of objects that are most vulnerable to trafficking and illicit sales.

Report from the Archaeological Research Team

At the time of our last report, the archaeological team was working on data collection from Tell Bi'a and Dura Europos. This work was completed in June 2016. Research assistants Monique Vincent and Teagan Wolter, together with project co-director Oya Topçuoğlu, combed through the work published by Eva Strommenger and her team who worked at the site between 1980 and 1995. These include annual excavation reports which appeared in the *Mitteilungen der Deutschen Orient-Gesellschaft (MDOG)* periodicals between 1982–1995, and six special volumes in the *Wissenschaftliche Veröffentlichung der Deutschen Orient-Gesellschaft (WVDOG)* series published between 1998 and 2007 and dedicated to graves; finds from the Early Bronze Age levels; written documents; city walls, houses and temples; seals and seal impressions; and the architecture and small finds excavated in Palace A. A total of 2,612 objects, excluding individual pottery fragments which often do not have market value, were entered into the OCHRE database as a result of this work. Material for Dura Europos was collected from the online

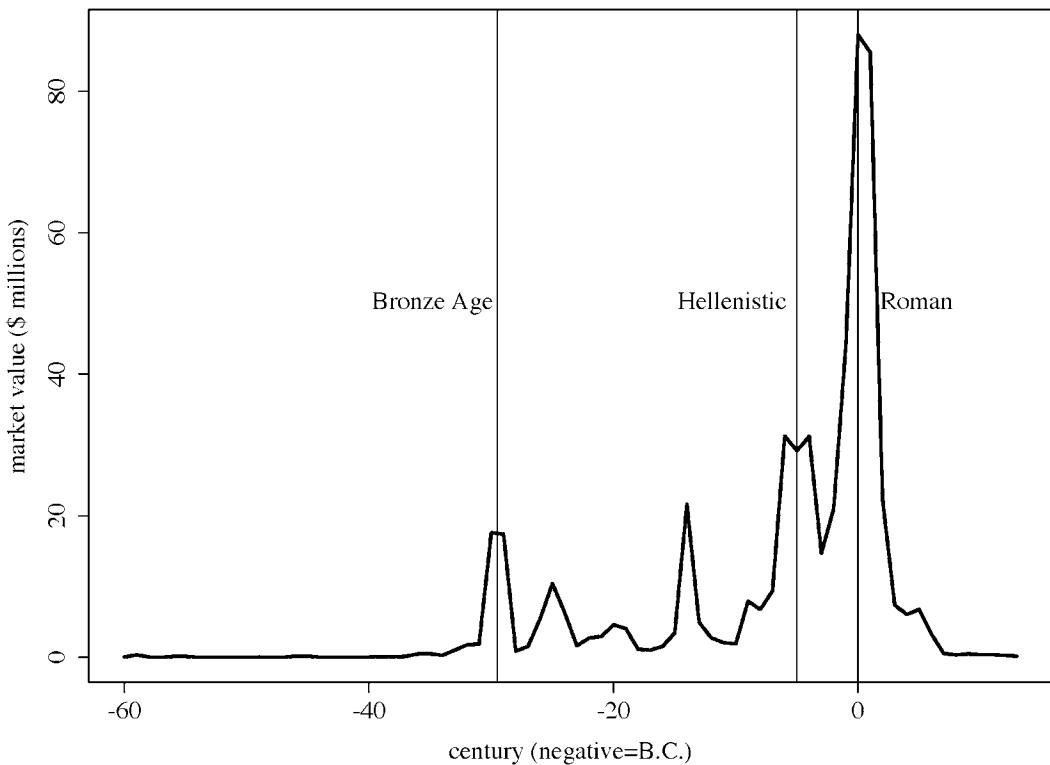


Figure 1. Total market value of objects in market database, by century of origin (2016 US dollars). Collecting trends imply that Bronze Age, Hellenistic, and Roman objects are most highly valued, and Dura Europos forms a relevant test case for the latter two periods (image: Yale University Art Gallery)

records provided by the Yale University Art Gallery based on the work of the Yale University-French Academy team that worked at the site between 1928 and 1937. These records represent 12,398 objects and exclude coins. Coins were excluded from data collection and the resulting market analysis, because they are usually sold by auction houses that specialize in coins and therefore do not overlap with the auction houses that were studied by MANTIS's market data research team.

Archaeological Analysis

At both sites, we analyzed artifacts along lines of five characteristics: period/date, type, size, component materials, and geographic origin (i.e., findspots). This level of analysis supports the statistical work of price imputation. In addition, we studied other kinds of patterns in the data. At Dura Europos, for example, we examined the different types of artifact assemblages that are found at the site. This includes items that are commonly thought of as coming from Hellenistic-Roman archaeological sites such as coins, but also less common items, such as textiles, parchment, and papyri documents (all of which are often omitted from studies of looting since they are not thought to be marketable) (Bradford Wells, Fink, and Gilliam with Henning 1959). These additional finds underscore the importance of looking at assemblages in detail and also considering them as part of the wider archaeological context of Syria. To take

another example, by reconstructing object findspots in specific buildings at Dura Europos, we may be able to generate a clearer picture of what was potentially in the ground prior to illicit digging activity. In previous research, Guiraud showed that intaglios at Dura Europos came primarily from houses, the rampart fill, or blocks with houses and commercial installations. They largely did not come from religious areas of the site or the necropolis (located outside the city walls), although apparently, people did lose several in bathhouses (Guiraud 1992, p. 52, fig. 4). As for artifact assemblages, the detailed work of Baird on the site (2014), for example, has meant that it is possible to partially reconstruct the finds in some of the houses (fig. 2). Some of the finds from House E4 could be reconstructed on the basis of her work (see Baird 2014, pp. 131–37) and connected with finds at the Yale University Art Gallery. Further study of the excavation records of House E4 will hopefully lead to more information about finds from this house, as well as other parts of the site, in the future. This will allow us to build up a more detailed understanding of where certain types of artifacts are found and begin to suggest what types of objects might have come out of different parts of the site when it was looted.

Report from the Economic Research Team

Since the last report, the market data has been expanded, yielding a final database comprising 41,587 unique individual objects sold at thirty-three different firms. Using the standardization technique described in last year's report, the market and archaeological data were made

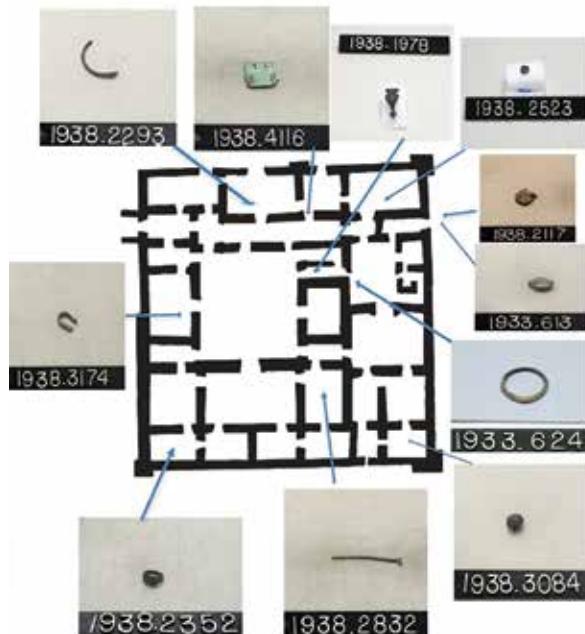


Figure 2. Reconstruction of Dura Europos House E4 with the findspots of some of the objects found in the Yale University-French Academy excavations in 1932–1933 (image: Yale University Art Gallery)

(*Findspots based on the work of J. Baird. The Inner Lives of Ancient Houses: An Archaeology of Dura Europos. Oxford: Oxford University Press (2014): 131–37. Schematic house plan after Dura Europos glass negative h36a: Plan of e4, southern half. Dura Europos Archive. Yale University Art Gallery*)

commensurable by recording the characteristics of each object according to 322 different descriptor variables. When size and/or date were unknown, they were imputed using random forests. This machine learning technique uses the 322 observed variables in thousands of random combinations to determine those which best predict price, and then applies the predictions to out-of-sample data.

The next step accounts for the observation that sale location and context are important predictors of price: objects sold in a large group or at a lower-tier auction house have lower price-per-item (and probably lower unobserved quality) than objects that sell in smaller groups or at top-tier auction houses. Two non-linear regression techniques were used to model hypothetical final sale outcomes of excavated items. The techniques predict various outcomes using bundles of observable characteristics. Random forests were used to predict both the probability of each object selling at each firm, as well as the probability of selling in a group of a given number of other objects. Finally, a Bayesian Additive Regression Tree (BART) analysis determined the expected price and predicted standard deviation for each archaeological item in each firm/group combination.

In the final step, a simulation performed one million hypothetical sales of each archaeological item by randomly drawing a firm/group size based on the probabilities determined above, as well as a random sale price from the predicted price distribution. Aggregating all trials over all objects provided an average total price along with a 95% confidence interval. The estimates are for the recorded archaeological items, but can be adjusted to account for the entire Dura Europos or Tell Bi'a site by accounting for how much of the site was excavated.

Research Output and Future Directions

In addition to the data collection and analysis work, MANTIS team members also spent time introducing the project and disseminating the preliminary results of our analysis in various outlets.

In April, Fiona co-curated (with OI Research Associate Morag Kersel) *The Past Sold: Case Studies in the Movement of Archaeological Objects*, an exhibit at the University of Chicago's Neubauer Collegium for Culture and Society. The show featured photographs and documents from three research projects: MANTIS, Follow the Pots, and Landscapes of the Dead. In May, Jim presented a paper at the two-day conference "Antiquities as Global Contraband" at the Neubauer Collegium. The paper showcased our model and explained the principle of data matching between excavation and market observations. Also in May, Oya presented at the annual meeting of the American Institute for Conservation of Historic and Artistic Works. Her talk focused on the effects of the Syrian conflict on the cultural heritage of the region, its repercussions on the black-market trade for antiquities and MANTIS's work on quantifying this trade.

We have also been working on publishing our work in peer-reviewed journals. Jim was invited to submit a contribution to the *Journal of Cultural Heritage Special Issue: Cultural Heritage in Times of Armed Conflicts in the Middle East: Much More Than Material Damage?* His article, "Quantifying the Supply Chain for Near Eastern Antiquities in Times of War and Conflict" will be published in 2018. Fiona's paper on artifact valuation and public policy design is in preparation for submission to *Social Studies of Science*. In addition, Fiona is editing a special issue for the *International Journal of Cultural Property*, "New Insights into the Antiquities Market," to be published in 2018. Oya and Tasha are preparing an article for this issue entitled "Small

Finds, Big Values: A Study of Cylinder Seals and Coins from Syria and Iraq on the Antiquities Market,” in which they will provide an analysis of Bronze Age cylinder seals and Hellenistic-Roman coins from Syria and Iraq sold by online galleries and auction houses. Tasha’s article on textiles and cultural heritage in Syria is in press in an edited volume, *Cultural Heritage Care and Management in Theory and Practice* (ed. C. Salvatore).

Finally, Fiona, Jim, Oya, and Tasha are working on an article entitled “Evaluating the Market Value of Cultural Artifacts from Looted Archaeological Sites” for submission to *Science Advances*, the online open-access offspring of *Science*. The article presents the work conducted by the MANTIS team since the beginning of the project, detailing the data and research methodology, as well as the results of the analysis conducted on the two test cases, Tell Bi'a and Dura Europos.

Website

In June of this year we updated our website, <https://oi.uchicago.edu/research/projects/mantis>, to reflect our revised research questions, provide more details on our model combining archaeological data with analysis of sales of Near Eastern antiquities on the market, and announce public talks and forthcoming papers by our team members. We would like to thank Knut Boehmer, the IT Support Specialist of the Oriental Institute, for his endless patience and continuous help in improving our web presence.

Future Directions

Three of the four project co-directors are leaving the University of Chicago this summer. Fiona joined the Department of Sociology at the University of Virginia, Oya joined the Middle East and North African Studies Program at Northwestern University, and Jim is with the RAND Corporation in Washington, DC. Tasha remains at the Oriental Institute in her new role as University and Continuing Education Program Coordinator. Although we are no longer working together physically, we continue the intellectual partnership by collaborating on co-authored papers and supporting each other’s individual publications. The immediate task is to publish our four-author paper on site-level market estimates. Beyond that, we are working on several topics related to artifact looting and trafficking, always maintaining our commitment to strong empirical work, data transparency, and novel conceptual contributions.

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 2014 *The Inner Lives of Ancient Houses: An Archaeology of Dura Europos*. Oxford.
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MUMMY LABEL DATABASE (MLD)

François Gaudard

During the past academic year, the editors and collaborators of the Mummy Label Database and the Death on the Nile projects kept busy in many ways:¹

Sergio Carro Martín has been adding the html text to more than 300 mummy labels in the database. Sofía Torallas Tovar, Alberto Nodar Domínguez, Raquel Martín Hernández, and Alba de Frutos García edited the catalog of the exhibition *Pharaoh's Reeds: A Papyrus Journey up The Nile*, which coincided with the 28th International Congress of Papyrology and took place in Barcelona from April 21 to September 25, 2016, at the Archive of the Crown of Aragon (Arxiu de la Corona d'Aragó, Palau del Lloctinent). Raquel Martín Hernández wrote the catalog chapter for the section of the exhibition dedicated to the funerary world of ancient Egypt (see “Publications by Team Members,” below) and, together with Marina Escolano Poveda and Alba de Frutos García, prepared the following catalog entries:

- Cat. 49. “Declaration of Death,” p. 110.
- Cat. 50. “Funerary Papyrus,” pp. 110–11.
- Cat. 51 “Linen Bandages with Hieratic Book of the Dead,” p. 111.
- Cat. 52 “Greek Mummy Label,” pp. 111–12.
- Cat. 53 “Demotic-Hieratic Mummy Label,” p. 112.²
- Cat. 54 “Fragments of a Cartonnage Mummy Mask,” pp. 112–13.
- Cat. 55 “Mummy Mask,” p. 113.
- Cat. 56 “Mummy Mask,” pp. 113–14.

Klaas Worp and François Gaudard kept tracking lost mummy labels in several museum and private collections around the world. Among other things, their efforts focused on the following labels: the locations and inventory numbers of which were uncertain or unknown. Here are the results of their investigations:³

- TM 8717: This wooden Greek mummy label is housed in the Ashmolean Museum of Art and Archaeology in Oxford, with the inventory number 1888.791.
- TM 26003 and TM 26004: According to Trismegistos, these two wooden Greek mummy labels used to be part of the Prime collection in New York and were bought by Prime in 1855. William Cowper Prime (1825–1905) was an American attorney, journalist, and art historian. In 1874, he was elected as the first vice president of the Metropolitan Museum of Art in New York. In 1890, he donated his collection of pottery and porcelain to the Princeton University Art Museum. Contrary to all expectations, neither of these two museums houses the labels in question. Their current locations and inventory numbers are still unknown.
- TM 29389: This wooden Greek mummy label is housed in the Albertinum in Dresden, with the inventory number ZV 1561, Aeg. 801.

- TM 32108: This wooden Greek mummy label was formerly part of the Fouquet collection in Cairo. Daniel Marie Fouquet (1850–1914) was a French physician living in Cairo, whose extensive collection of antiquities was auctioned at the Hôtel Drouot in Paris, in June 1922. The current location and inventory number of this label are still unknown.
- TM 117641: According to Trismegistos, this wooden Demotic-Greek mummy label was formerly part of the Wiedemann collection, with the inventory number Wiedemann 3s. Alfred Wiedemann (1856–1936) was a German Egyptologist, who served as a professor at the University of Bonn. His collection was originally located in Bonn before being transferred to the Ägyptisches Museum und Papyrussammlung in Berlin. However, it turns out that there is no trace of this mummy label in this museum. Further investigations revealed that it is neither part of the collection of papyri and ostraca of the Seminar für Alte Geschichte (Bonn University), nor of that of the Ägyptisches Museum (Bonn University). Its current location is still unknown.

In addition to completing the Mummy Label Database, the present research provides us with material to update Klaas Worp's checklist of mummy labels, entitled *Greek, Greek/Demotic and Demotic Mummy Labels: A Survey*,⁴ which is downloadable for free on our "Death on the Nile" website: <http://www.proyectos.cchs.csic.es/death/node/15>.

Publications by Team Members Related to the Projects

The following articles have been published, submitted, or are in press:

- Raquel Martín Hernández, "The Funerary World in Egypt / El món funerari a Egipte / El mundo funerario en Egipto." In *Pharaoh's Reeds: A Papyrus Journey Up The Nile / Les Flors del Faraó: Un viatge pel Nil a través dels seus papis / Las Flores del Faraón: Un viaje por el Nilo a través de sus papiros*, pp. 52–57, 165–70, 262–67. Barcelona: European Institute of the Mediterranean (IEMed.), 2016.
- Sofía Torallas Tovar, "Nota a dos inscripciones griegas de la Tingitana y la lengua de las comunidades judías en el Norte de África." In *Tí ἡμίν καὶ σοί; Lo que hay entre tú y nosotros: Estudios en honor de Victoria Spottorno*, edited by María Jesús Albarrán Martínez and Amalia Zomeño Rodríguez, pp. 211–22. Córdoba: UCOPress, 2016.
- Sofía Torallas Tovar, "Nota sobre una etiqueta de momia cristiana del Louvre." In *Estudios Papirológicos: Textos literarios y documentales del siglo IV a.C. al IV d.C.*, edited by María Jesús Albarrán Martínez, Raquel Martín Hernández, and Irene Pajón Leyra, pp. 189–196. Cuadernos de la «Fundación Pastor». Madrid: Fundación Pastor de Estudios Clásicos, 2017.
- François Gaudard, "A Greek-Demotic Mummy Label in the University of Cambridge Museum of Archaeology and Anthropology," to be published in a Festschrift honoring a colleague (in press).
- François Gaudard, "Funerary Shrouds from Dendera in the Oriental Institute Museum of the University of Chicago, Part I: OIM E4786," to be published in a Festschrift honoring a colleague (submitted).

- François Gaudard, “On the Immortality of the God Seth.” In *Illuminating Osiris: Egyptological Studies in Honor of Mark Smith*, edited by Richard Jasnow and Ghislaine Widmer, pp. 93–98. Material and Visual Culture of Ancient Egypt 2. Atlanta: Lockwood Press, 2017.

Acknowledgments

For their help and professionalism, Klaas and François would like to thank the following scholars, cited below in alphabetical order:

- Niv Allon, assistant curator, Egyptian art, The Metropolitan Museum of Art, New York.
- Françoise Bérard, directrice, Bibliothèque de l’Institut de France, Paris.
- Diana Craig Patch, Lila Acheson Wallace curator in charge, Egyptian art, The Metropolitan Museum of Art, New York.
- Andreas Dorn, curator, Ägyptisches Museum, Bonn.
- Kordelia Knoll, Oberkonservatorin, Albertinum, Dresden.
- Marcel Marée, assistant keeper in the department of Ancient Egypt and Sudan, British Museum, London.
- Liam McNamara, assistant keeper for Ancient Egypt and Sudan, Ashmolean Museum of Art and Archaeology, University of Oxford.
- Ludwig Morenz, Rheinische Friedrich-Wilhelms-Universität, Bonn.
- J. Michael Padgett, curator of ancient art, Princeton University Art Museum.
- Winfried Schmitz, Papyrus- und Ostrakonsammlung, Institut für Geschichtswissenschaft, Rheinische Friedrich-Wilhelms-Universität, Bonn.
- Alice Stevenson, curator, Petrie Museum of Egyptian Archaeology, University College, London.
- Special thanks go to professor Geoffrey T. Martin for his unfailing support to the project and for drawing our attention to mummy labels in various collections worldwide, as well as to Knut Boehmer, our IT specialist at the Oriental Institute, for his technical advice and efficiency.

Notes

¹ For details on these joint projects of the Instituto de Lenguas y Culturas del Mediterráneo y Oriente Próximo, Centro de Ciencias Humanas y Sociales – CSIC, Madrid, and of the Oriental Institute of the University of Chicago, readers can consult the 2008–2009 *Annual Report*, as well as the other annual reports, available online in Adobe Portable Document Format (PDF): <http://oi.uchicago.edu/research/projects/mummy-label-database-mld>.

² See F. Gaudard, “A Demotic-Hieratic Mummy Label in the Museu de Montserrat.” In *Mélanges offerts à Ola el-Aguizy*, edited by Fayza Haikal, pp. 159–168. Bibliothèque d’Étude 164. Cairo: IFAO, 2015.

³ The Trismegistos reference numbers cited are prefixed TM: <http://www.trismegistos.org/index.html>.

⁴ This checklist also includes late hieratic mummy labels.

NIPPUR

McGuire Gibson

It seems more and more likely that we will be able to resume excavations at Nippur in the near future. Several other foreign groups have gained permission to work in the south of Iraq, at first restricted to Ur and its vicinity. But lately, work has begun at Girsu (modern Tello) and Nina (modern Surghul), which were part of the Lagash kingdom, southeast of Nippur.

In the meantime, I can report good news that the Inanna Temple final report is in the editorial office and is being actively worked on, meaning that Tom Urban and his staff are giving the manuscript the meticulous scrutiny that marks that office. We hope to see its publication in a matter of months. Richard Zettler, Karen Wilson, and Jean Evans make up the team that has put this manuscript together. It was in 1973 that I took over the responsibility for the Inanna Temple publication from Carl Haines, who had begun the final plans and architectural descriptions before he was diagnosed with a terminal illness. I handed the job off to Richard Zettler, then an outstanding graduate student, to use as the basis for his dissertation. As always happens to the best scholars, he got a position at the University of Pennsylvania, and although he did publish a book on the Ur III level of the temple (ca. 2100 BC), the writing up and analysis in detail of the many earlier and later levels of that stack of temples had to take a back seat to his teaching and ongoing excavations in Syria. He did establish a fine working relationship with professor Donald P. Hansen (New York University Institute of Fine Arts), who had excavated the temple under Carl Haines, and they produced many pages of manuscript before Don's death. For the past five years or so, Zettler has worked closely with Wilson (who in the 1980s had analyzed the lower levels of the Temple as a dissertation under Hansen at NYU), and with Evans (who was Hansen's final PhD and a specialist in the art and archaeology of the Early Dynastic period; a period in which most of the early levels of the Inanna Temple were built, used, and demolished and then had a new version of the structure erected on the ruins). This publication has been a long time coming to fruition, but the result will be a greatly enhanced presentation of this most important sequence of temples.

I have begun working, once again, on reports of our work on Area WG at Nippur, where we exposed a sequence of Parthian, Sasanian, and Early Islamic levels (ca. 150 BC–1,000 AD), a set of periods that have tended to be neglected. Even when excavations of these periods have been done, they are often isolated operations showing only the remains of one of the periods, so that the continuities and changes from one level to another are still too little known. I had almost finished this report some years ago, when I became aware that the “specialist” in ceramics had made rather serious errors in the assignment of findspots to some of the pottery. These errors would make less clear the changes in pottery during the sequence, so we needed to redo the chapter. The specialist, in the meantime, had died, so we had to come to an understanding of his rather individualistic way of recording and then work back in the original field records to make sure everything was assigned to its proper place in the stratigraphy. In the meantime, I made a commitment to publish Iraqi archaeologists' reports that had been damaged in the looting of the Iraq Museum and had received two grants to carry out that work. This commitment turned out to be a much larger and more time-consuming effort than initially thought. But, Mark Altaweel (now teaching at University College London)

and I have finally arrived at the final phase and are handing over the last manuscript to the publishers this year.

James A. Armstrong, another former student who wrote a brilliant dissertation based on his excavations at Nippur, is also nearing completion of his book that details the archaeology and history of Nippur from the Kassite period to the Neo-Babylonian (ca. 1400–538 BC). Much of his time in the past decade or more has been devoted to a definitive study (with Hermann Gasche) of the pottery of the entire second millennium in Babylonia. This magnificent book, that was based in part on the pottery from his excavations, was published in 2014 and will remain a ceramic bible for years to come.

Our house at Nippur has been repaired and renovated in anticipation of the return to excavations. The gigantic mound that is Nippur remains as difficult to tackle as ever, but as a result of the series of digging seasons that we did since 1972, we know where to look for specific information and the potential rewards are enormous.

THE ORIENTAL INSTITUTE PARTNERSHIP WITH THE NATIONAL MUSEUM OF AFGHANISTAN

Gil J. Stein

Preservation Partnerships and Their Goals

In 2016–2017 we completed the fifth full year of the partnership between the University of Chicago's Oriental Institute (OI) and the National Museum of Afghanistan (NMA). This project, funded by the US Department of State and the US Embassy in Kabul, has been assisting the Museum by working with its staff to develop a bilingual objects management database, conduct a full inventory of the NMA's holdings, do conservation assessments for the objects, rehouse the objects in archival quality containers, and train the NMA staff in conservation, database management, and artifact curation procedures. We are on the verge of finally completing the inventory database of all objects in the Museum. However, we are continuing our in training and capacity building for the staff of the National Museum in object conservation, database management, and best practices for object curation.

Over the last two years the OI has expanded the number and scope of the heritage preservation partnerships we are conducting in Afghanistan so that we now have three grants underway, with Gil Stein as the Principal Investigator (PI). The first of these — the “Core Operations Grant” — provides the infrastructural support that allows us to expand our work to encompass both the National Museum of Afghanistan (NMA) and the Afghan Institute of Archaeology (NMA). The main new initiative supported by the Core Operations Grant is the “Hadda Sculptural Restoration Project” at the NMA. The second grant — the “Afghan Heritage Mapping Project” (AHMP) — is now in its second year of working with the Afghan Institute of Archaeology to train the staff and concurrently develop a geospatial database whose ultimate goal is to use remote sensing data to document all the main archaeological sites in Afghanistan. The third grant is the “Mobile Museum” Project, which is developing educational programs that combine video, 3D printing, and other media to teach high school students in provincial cities around Afghanistan about the National Museum in Kabul and its collections.

The OI component of the partnership with the NMA consists of two parts. The “Chicago team” consists of Gil Stein (PI), Brendan Bulger (grant planning, administration and budgeting) and Alison Whyte (conservation). Our “Kabul team” consists of Field Director Alejandro Gallego Lopez and Head Conservator Fabio Colombo (fig. 1).



Figure 1. The OI Kabul and Chicago team visiting the restoration project at Top Dara — the largest and best preserved surviving Buddhist stupa in Afghanistan.

Left to right: Gil Stein, Alejandro Gallego-Lopez, Fabio Colombo, Alison Whyte, Jolyon Leslie (Head of Top Dara restoration project), and Brendan Bulger



Figure 2. Gandharan style early Buddhist sculptures from Hadda in the Presidential Palace vaults



Figure 3. Alejandro Gallego-Lopez inventorying gold bracelets in the Presidential palace vaults

We have worked closely not only with the National Museum of Afghanistan (NMA) and its Director Fahim Rahimi, but also with local partners and most importantly with the US State Department and the US Embassy-Kabul. Local logistical support for our project is provided by ACHCO (a Kabul-based non-governmental organization that specializes in cultural heritage projects in Afghanistan); our close partners have been ACHCO founder Jolyon Leslie, and Ahmad Bilal, who has worked closely with Brendan Bulger on accounting, budgets, and logistics. At the US State Department, our key partners have been Laura Tedesco, the Cultural Heritage Program Manager at the Office of Press and Public Diplomacy, responsible for Afghanistan and Pakistan, while the State Department's financial management of the grant is overseen by Grachelle Javellana. At the US Embassy-Kabul, our partners have been Counselor for Public Affairs Terry Davidson, Cultural Affairs Officer Stephanie Kuck, and Cultural affairs Specialist Alia Sharifi.

The OI-NMA Inventory

Our main priority for the past five years has been to conduct the first full inventory of all the holdings of the National Museum. The Museum had been devastated by the Afghan civil war (1989–1995) when the building was rocketed, burned, and looted. During the subsequent period of Taliban rule, Taliban forces entered the Museum in March 2001 (at the same time as the destruction of the Bamiyan Buddhas) and smashed hundreds of priceless sculptures and figurines, including some of the world's most important examples of Early Buddhist (second–seventh centuries CE) Gandharan art from the Buddhist Monastery complex of Hadda in southeast Afghanistan near the Khyber Pass (fig. 2).

In 2016–2017, the joint OI-NMA team of Alejandro, NMA curators, and NMA conservators finished inventorying the all of the artifacts stored off site within the vaults of the Central Bank in the Presidential Palace (fig. 3). Roughly 22,000 of the National Museum's most significant artifacts have been housed in this high-security location. This inventory process in the Presidential Palace also involved the packing of the objects in acid-free archival material and some conservation assessments and interventions.

In the past year, our team also inventoried a collection of 100 artifacts repatriated from Japan back to the National Museum in Kabul. This treasure trove included important objects from major archaeological sites in Afghanistan, such as Ai Khanoum, Hadda, Bamiyan and



Figure 4. The Kashyapa Brothers relief – an important example of early Gandharan art from the Buddhist monastery site of Shotorak. This relief, looted from Afghanistan, was part of a shipment of 100 looted objects repatriated from Japan back to the National Museum in Kabul in 2016

Shotorak — most notably the famous Kashyapa Brothers Relief, one of the treasures of early Gandharan Buddhist art (fig. 4). After conservation, the repatriated collection was the focus of a beautiful special exhibit at the National Museum.

With the inclusion of the repatriated items from Japan and the objects in the Presidential Palace vaults, as of June 2017, we have now inventoried 135,707 pieces, documented in 44,925 database records. Our database also now houses 126,956 images, including scanned archival records and 108,816 object photographs. This represents 99% of the NMA's holdings. This is a remarkable achievement. Of course, no inventory database is ever truly complete. New objects continue to be accessioned by the Museum — most notably from the ongoing rescue excavations at the second–eighth century CE early Buddhist city of Mes Aynak. Our joint team of Afghan and international specialists continues the work of inventorying the Mes Aynak finds as they arrive from the field, and are working to stabilize and preserve them.

General Conservation Activities

After database development and implementation of the inventory, object conservation and conservation training form a second key element in the OI-NMA Partnership. Our two project conservators, Fabio Colombo and Alison Whyte, worked closely with the staff conservators of the NMA to train and assist them in condition assessment and rehousing of each artifact.

OI Field Director Alejandro Gallego-Lopez worked with Fabio and Alison to help the NMA curators assemble and install new shelving in the storerooms for the proper rehousing of the collections, specifically in Storeroom 6, where we have been helping curators plan an efficient re-organization of space.

In 2016-17, Fabio worked with the NMA conservators to carry out condition assessment and acid-free rehousing for each artifact. They collaboratively assigned a conservation priority (1-4), documented the general and specific conditions of each piece, and then identified and executed a rehousing strategy for the artifacts. During this process, they sent the objects most in need of conservation/restoration directly to the restoration department for treatment, cleaning, and/or reconstruction.

A. Object Assessments by Conservation Priority (to date):

1. Immediate Treatment Needed:	1,508	(3% of total)
2. Conservation Required:	5,994	(13% of total)
3. Aesthetic or Structural Repairs Needed:	8,038	(18% of total)
4. Stable:	29,282	(66% of total)

B. Objects by Percentage Intact (to date):

• Objects 98-100% Intact:	18,150	(40.40% of total)
• Objects 95-100% Intact:	23,141	(51.51% of total)
• Objects 90-100% Intact:	25,635	(57.06 % of total)

The Hadda Sculptural Restoration Project

In addition, with the support of our new Core Operations Grant, our conservators were able to launch a new initiative — the Hadda Sculptural Restoration Project. The 1,500 year-old sculptures from Hadda in the NMA's holdings are one of the most important collections of Early Buddhist (Gandharan) art in the world. These priceless sculptures were systematically smashed by

the Taliban over three months from January through March 2001. At great personal risk, the NMA staff secretly collected and stored the smashed fragments of these sculptures. In the first stage of a planned three-year project, Fabio Colombo and Alison Whyte began a one-year program of assessment, analysis, and documentation of the Hadda fragments to develop a detailed work plan for their conservation, restoration, and eventual public display. Our initial results are extremely promising. In Museum Storage Room 6, we found nineteen metal storage trunks filled with fragments of sculptures from a variety of sites. Twelve of these trunks contained an estimated 5,000 fragments of sculptures from Hadda (fig. 5). Fabio and Alison's



Figure 5. OI conservator Alison Whyte inspecting one of the trunks filled with sculptural fragments from the early Buddhist monastery site of Hadda, smashed by the Taliban in 2001. The Hadda project is working to conserve, re-assemble, and restore an estimated 100-200 of these sculptures.



Figure 6. Hadda sculptural fragments with preserved external surfaces depicting heads and clothing; the high proportion of external fragments will greatly aid in the restoration process

preliminary assessment showed that the fragments consisted of sculptures formed from a range of materials — stucco, limestone, and occasionally schist. We estimate that the fragments originated from a minimum of 100–200 sculptures. The initial sample suggests that a large proportion of these pieces are fragments of the exterior of the sculptures, preserving details such as facial features, limbs, and clothing (fig. 6). This means that the chances for reassembling the sculptures will be quite good. Fabio and Alison were able to locate a number of exterior surface fragments that preserved the museum registration numbers written on them. Sadly, the actual paper registration records that would describe these objects were burned in the attacks on the National Museum during the Afghan Civil War (when an estimated 90% of the Museum's registration records were destroyed). We are continuing the assessment phase of the project; on that basis in the coming year we will develop a detailed plan for the conservation and restoration of the Hadda sculptures.

The Mobile Museum Grant

The National Museum of Afghanistan is a unique educational resource for Afghan citizens of all ages. However, outside of Kabul, virtually no students in provincial cities have any real knowledge of the Museum or its importance for learning about the history of Afghanistan. The National Museum of Afghanistan Outreach Initiative (NMAOI) is a three-year collaboration with the Oriental Institute of the University of Chicago. This project will develop the first national-scale program of outreach education to raise awareness of the National Museum among school children (grades 6–12) through in-class presentations in twenty-four schools in six cities across Afghanistan: Kabul, Herat, Mazar-I Sharif, Bamiyan, Kandahar, and Jalalabad.

Presentations materials will also be made at five of the US Embassy's Lincoln Learning Centers across the country, and at two orphanages in Herat.

The Mobile Museum Grant will combine innovative digital technology, "object-based learning," and traditional educational tools in multiple pathways of engagement with students to create a "Mobile Museum." Class presentations by trained staff will also include video, iPad use, 3D printed copies of Museum objects, distribution of brochures/rack cards about the Museum to all students, and provision of posters and banners for permanent display in the schools. The range of class presentations will be further extended by posting the program materials on the NMA website, at Lincoln Learning Centers, and on a special YouTube channel. On-site evaluation interviews and questionnaires will be used to assess and improve program effectiveness.

In 2016–2017 we purchased a 3D Spider scanner for the artifacts at the Museum, and NELC doctoral student Josh Cannon conducted initial training sessions on how to use it to scan selected artifacts. We also hired an Afghan Project manager, Mr. Jalil Yusoufi, to work with NMA Director Fahim Rahimi in coordinating the development of a short video about the Museum, and we have selected an Afghan video production company to be our implementing partner. Mr. Yusoufi will also be working to develop the programs for the presentations at high schools in the six cities, and will recruit classroom presenters to actually conduct the programs.

The Afghan Heritage Mapping Project (AHMP)

Our third heritage preservation grant supports the "Afghan Heritage Mapping Partnership" (AHMP). This is a three-year project sponsored by the US Department of State as part of its ongoing commitment to the protection of cultural heritage in Afghanistan and the development of digital infrastructure governmental bodies for the monitoring of threats to Afghan cultural heritage. Emily Hammer, who headed the Oriental Institute's Center for Ancient Middle Eastern Landscapes — the CAMEL Lab, up to summer 2017 — spearheaded our development of the geospatial database using remote sensing imagery and detailed Soviet era topographic maps of Afghanistan. Emily worked closely with Tony Lauricella, Kate Franklin, Becky Seyfried, Mike Fisher, and student lab assistants to integrate published site locations from sources (such as Warwick Ball's Archaeological Gazetteer of Afghanistan) with new sites located through the satellite imagery. We have been largely focusing our efforts on the parts of Afghanistan that were most heavily settled in ancient times — regions such as Bactria in the northern part of the country, where literally thousands of mounded sites can be seen in the satellite images (fig. 7).

The work of the AHMP is conducted in parallel in Chicago and in Kabul. In Chicago, the Partnership draws on satellite imagery and other geospatial technologies to build a comprehensive geographic information systems (GIS) database of identifiable archaeological sites across Afghanistan. The goals in creating this database are to:

1. Inventory and map known and previously unknown archaeological heritage sites, especially in areas threatened by future mining development, urban expansion, and looting;
2. Document the current state of archaeological site preservation and analyze spatial and temporal patterns in looting; and
3. Create a planning tool that will allow heritage protection to be incorporated into mining, economic, and urban development projects.

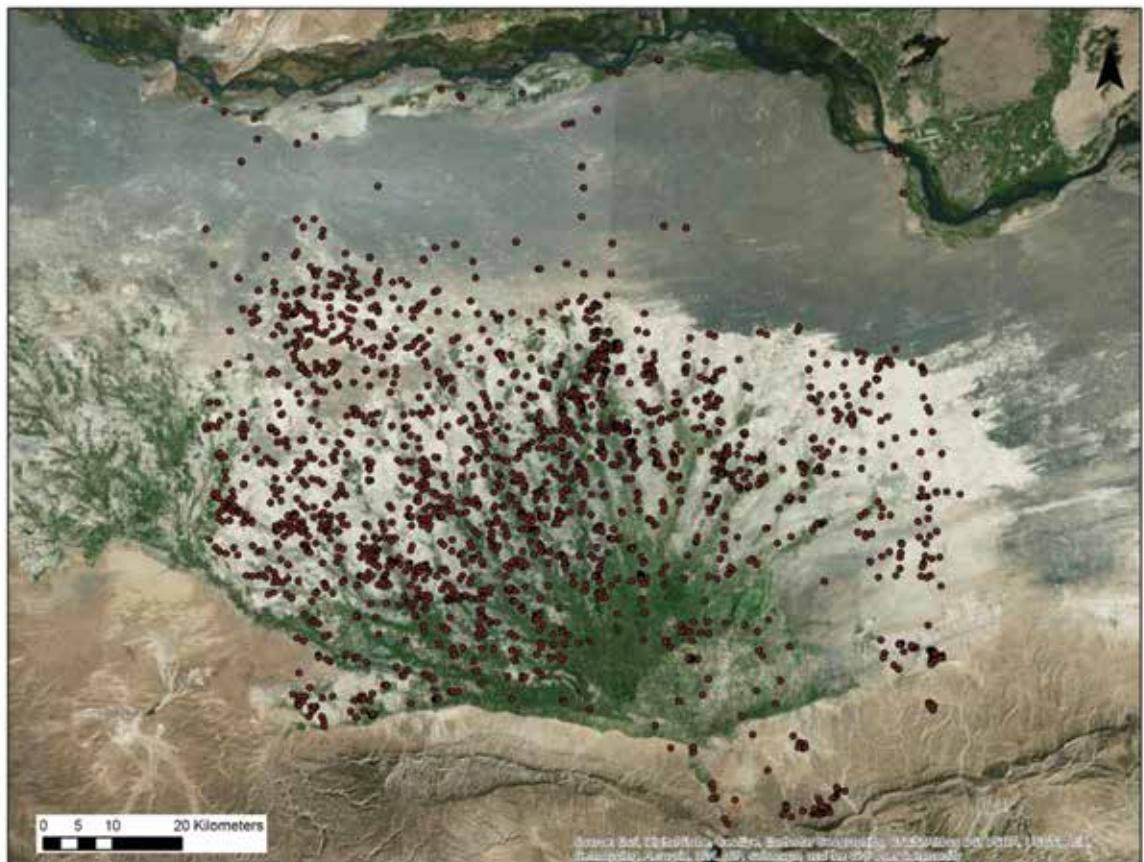


Figure 7. Remote sensing image of the Balkh oasis in Northern Afghanistan with red dots marking looted archaeological sites

In Kabul, AHMP focuses on building capacity and infrastructure. We have developed a partnership with Kabul Polytechnic University (KPU), where KPU faculty and foreign archaeologists such as Jessica Giraud have been teaching intensive classes to train a cohort of Afghan heritage professionals at the Afghan Institute of Archaeology (AIA) and other organizations in the use of GIS technology for cultural heritage management and especially the location and documentation of archaeological sites (fig. 8). As part of this work, we have



Figure 8. Jessica Giraud and colleagues from Kabul Polytechnic University teaching an introductory course in the use of geographic information systems (GIS) for cultural heritage preservation in the GIS Lab at Kabul Polytechnic University



Figure 9. Afghan Institute of Archaeology (AIA) Director Noor Agha Noori and Minister of Information and Culture Bawari cutting the ribbon to open the library/data archive at the AIA

worked with AIA Director Noor Agha Noori to renovate and equip a Geographic Information Systems (GIS) Laboratory with six work stations at the AIA, and have also renovated the AIA library so it can serve as a suitable data archive for the geospatial and archaeological data generated by our project (fig. 9).

Conclusion

Overall, the OI's five years of cultural heritage preservation work in Afghanistan have made significant progress in documenting heritage and in training Afghan heritage professionals through hands-on work in conservation, object curation, database management, and the use of GIS technology. This is an ongoing effort; our efforts focus on creating a well trained, well equipped cohort of Afghan professionals who will ensure that the projects and programs we have developed will be able to stand on their own as long-term sustainable resources to document and protect the irreplaceable historical treasures of Afghanistan's rich history of civilizations.

ORIENTAL INSTITUTE NUBIAN EXPEDITION (OINE) PUBLICATION PROJECT

Lisa Heidorn, Bruce Williams, and Artur Obłuski

Volumes 14 and 12 of the OINE series have been approved for publication and volume 13 is almost ready for submission. Beyond the publication of our extensive research on the Nubian sites excavated during the High Dam Campaign from 1959 and 1964, work on 3D images for Darginarti is now under way and we are designing attributes to establish databases for both Serra East and Darginarti. The latter online database project will complete the activities required by our grants from the White-Levy Foundation and the ARCE Antiquities Endowment Fund. This is surely a major milestone for the project and we believe that these volumes will make a major contribution to our understanding of the history and cultural development in northeast Africa, stretching from the fourth millennium BCE (OINE 3–4) through the early first millennium (OINE 14), and on through the early second millennium CE (OINE 12) with many stops between (OINE 1–2, 5–10) in northeast Africa.

This year marks a point when the project turns from one set of tasks to another. It is useful now to summarize the works that are now complete or nearing completion before discussing the future.



Figure 1. Oriental Institute Nubian Expedition 1964 – Serra East and Darginarti

Back row: John C. Lorence, Mielburn D. Thurman, and Otto J. Schaden

Front row: Louise Storts, Bruce G. Trigger, Richard H. Pierce, James E. Knudstad, and Wenche Pierce

(Not present: Rudolph H. Dornemann, Sylvia Ericson, and Alfred J. Hoerth)

OINE 14 — The Second Cataract Fortress of Dorginarti

Lisa Heidorn

In the past year the manuscript has undergone outside peer review and been approved for publication by the director and Oriental Institute publications committee. At present the manuscript, figures, maps, and plates are being edited and formatted.

The book's major contribution is the augmentation of the social and political history of Lower Nubia in the period between the withdrawal of the Egyptians from the region under the last Ramesside kings and the rise of the Twenty-Fifth Dynasty rulers at Napata, a period of just over 300 years. Before now, because of limited textual and archaeological data, the area was considered mostly unpopulated and unimportant during this period. Graves with pottery of Napatan date (eighth–seventh century BCE), texts mentioning Egyptian Viceroys of Kush, a title insinuating control over the area of Lower Nubia during the Egyptian Third Intermediate Period (ca. 1000–730 BCE), and the stele of queen Katimala at Semna West (ninth century BCE) mentioning conflict and claiming some kind of control over the Mountains of Gold in the Eastern Desert as well as lands and herds of Amun, were left floating in an otherwise unwritten account of the area.

The archaeological materials from Dorginarti and the evidence just mentioned together provide enough information to suggest that Lower Nubia was not an abandoned backwater in the early first millennium BCE, as is sometimes suggested. A fortress was initially established at the site towards the end of the ninth century BCE or early eighth century, and the site's



Figure 2. The Nubian field crew of workmen, 1964, at Serra East (photo: James E. Knudstad)



Figure 3. Housing/house units along the north wall at Dorganarti (photo: James E. Knudstad)

architecture, pottery, and objects provide data to fill some of the long hiatus in the history of relations between Egypt and Nubia.

The fortress has the appearance of an Egyptian establishment because of the prevalence of wheel-made Upper Egyptian marls and silt vessels, suggesting that its provisions were supplied from Egypt. If in fact it was the Kushites who had established the fortress, or who had assumed control of it, then the pottery would indicate that they had strong links with Upper Egypt by the reign of Alara or Kashta. However, there is, as textual evidence, only the inscription of queen Katimala to prove that by the late ninth or early eighth century the Kushites had gained control in Lower Nubia or that they enjoyed close relations with the administration in Upper Egypt.

The Level III fortress was home to a permanent garrison, with houses that could accommodate families, and even a child's footprint was found in the floor plaster of the official residence. The fort at this time served as a long-term base for guarding the river and its surrounding territory and was a center for the provisioning of administrative personnel, resident soldiers and their dependents, roving military patrols, and reinforcements. Lower Nubia was considered a precarious region, and whoever controlled the passages through the Second Cataract region, where Dorganarti was situated, also controlled the luxury trade from the south and the nearby desert routes, including the gold-bearing regions in the eastern desert.

The later fortress at Dorganarti yielded Egyptian pottery, as well as Phoenician and East Greek amphorae sherds, all dating to the sixth century BCE. The historical events surrounding this Level II foundation are much more certain, since there is textual and archaeological evidence to corroborate the reason for its existence. The re-establishment of the stronghold



d)

was clearly undertaken as part of the Twenty-Sixth Dynasty rulers' campaigns and raids into Lower Nubia, which is hinted at by evidence from the reigns of Psamtik I and Necho II, and which is most certainly attested by stelae recording an actual campaign of Psamtik II in the early sixth century BCE. The textual records are confirmed by graffiti left by Psamtik II's Greek, Carian, Phoenician soldiers at Abu Simbel, Buhen, and the nearby rocks of Gebel Sheikh Suleiman. Further proof is provided by the well-dated, imported amphorae at Darginarti, which also date to the sixth century BCE.

We can only hope that other archaeological materials and texts will surface in the future resulting in the complete erasure of the "dark age" in first millennium BCE Nubia.

OINE 12 — Cerre Matto, the Churches, Houses, Workshops, and Cemetery

Bruce Williams

Built in the ruins of the Middle Kingdom fort, the Christian town at Serra East, called "Cerre Matto" in a document found there, the longest text in Old Nubian, was one of the most complete, and certainly the most coherent of the later medieval settlement sites excavated in Nubia. Its four churches, numerous free-standing houses, workshop area, and even cemetery, give vivid life to our understanding of the period. Although tiny in size, each less than 10 sq m, the churches were all complete domed basilicas. Two were named in documents, the Church of Jesus (probably the one in the center of the town), and the Church of the Cross (probably the

second of two churches erected to the south, where the cemetery was located). The cemetery was filled with low platforms, each with a little niche to hold a lighted lamp, many of them preserved, encrusted with the residue of repeated use. The houses were of much the same size, and stoutly built, in two and even more storeys. The ground floor rooms were vaulted, and the roofs flat, made of timbers, matting, and mud. Although the town was not formally planned, with exactly defined streets and alleys, the industrial area was carefully separated from the domestic buildings. With oval, circular and irregular lean-to-like structures of mudbrick and mud arranged on either side of a partition wall, it had ovens, hearths, bins and even kilns for pottery, rather surprising for a small town in an age when pottery production was precise and almost industrial.

OINE 13 — Cerre Matto, the Christian Period Pottery, Small Objects, Glass, and Texts

Bruce Williams

So many complex and standing buildings, including a church with fragmentary wall paintings, rapidly filled up the space for a volume. I decided to separate the pottery, objects, glass, and written records into a separate book, which is now receiving finishing touches for submission. There was a surprising amount of material. Christian Nubia's famous painted pottery was present in great abundance and its designs have an interesting interconnection with the Byzantine world, one not shared with Egypt just to the north. On the other hand, glazed pottery from Egypt and elsewhere in the Islamic world was surprisingly abundant in greater numbers than so far reported from other sites. It appears also to include locally-made glazed wares; a first for Nubia. As part of this project, we were able to verify that a major collection of Coptic and Old Nubian documents were indeed from Serra, making it one of the great documentary repositories, further verified by such items as an illuminated page from the *Book of the Institution of Archangel Michael*. Some years ago, Alexandros Tsakos, who has written the



Figure 4. Christian period sherd with a the head and forequarters of the mount belonging to a warrior saint, who would be shown spearing a dragon or other religious enemy



Figure 5. Christian period sherd with a unique depiction of a Nubian crown with horns, E19530

chapters on Greek, Coptic, and Old Nubian documents from Cerre Matto, translated the grave stela of a high official, eparch of Nubia Philoxenos who was buried close to the South Churches in 1025. This dates the foundation of the town over a century earlier than conventional dates for the Late Christian Period. Another team member, Robin Seignobos, who worked up the Arabic inscriptions, found in translating another work that Serra was named as a conquered town in the later thirteenth century. With no sign of disturbance, Cerre Matto lasted two and a half centuries through some tumultuous times, especially the conquest of Kasr Ibrim farther north by troops of the famous Saladin. Cerre Matto began earlier than supposed and lasted longer, more importantly, showing the Late Christian Period as one of thriving culture in Nubia. My thanks go out to fellow members of the Cerre Matto project team: Carol Meyer, Natasha Ayers, Lawrence Lissak, Dobrochna Zielinska, Nadejda Reshetnikova, Alexandros Tsakos, and Robin Seignobos.

Qasr el-Wizz

Artur Obłuski

In 2016–2017 the focus of the team was to work on a comparative analysis of Qasr el-Wizz material.

Artur Obłuski completed excavations of the Ghazali monastery in the Wadi Abu Dom of the Bayuda Desert, it being the closest analogy to the Qasr el-Wizz monastery known from Nubia so far, in terms of spatial organization. Pottery recovered from there will help Katarzyna Danys to identify the characteristics of vessels used in Nubian monasteries. Still Qasr el-Wizz remains the only monastery in Nubia that yielded textual finds, a circumstance which will allow us to begin the study of spirituality in Nubian monasticism.

An article inspired by the study of the textual finds from Wizz written by Alexandros Tsakos, “Religious Literacy in Greek from the Christian Monastery at Qasr el Wizz, Lower Nubia,” has appeared in *Graeco-Africana et Afro-Byzantina*, Proceedings of the International Conference on Graeco-African and Afro-Byzantine Studies at the University of Johannesburg (October 27–November 1, 2014), Thekla Sansaridou-Hendrickx and Benjamin Hendrickx (eds.), Supplement to *Ekklesiastikos Pharos*, Johannesburg 2016, pp. 220–30.

Moreover, research on various aspects of the Nubian monasteries based on Qasr el-Wizz finds, like its economy, relation to Egyptian monasticism and overall comparison to monasticism on the fringes of the Byzantine World. This has been presented in several public talks, for instance, at the Oriental Institute, the Congress for Coptic Studies Claremont, California and the Papal Institute for Monastic Studies, Rome, Italy. Finally, the publication by Samuel Moawad, *Die arabische Version der Vita Dioscori: Edition und Übersetzung* (Patrologia Orientalis 56, fasc. 1, No 246, Turnhout 2016) has allowed Tsakos to reconstruct further lines of the manuscript find nr. 65-11-20, which contains previously unknown passages from (one of) the Sahidic version(s) of the Vita Dioscori.

The Fourth Cataract

With the completion of this part of the project, OINE 12, OINE 13, and OINE 14, the project will now turn attention to the excavations and survey conducted in 2007 and 2008 at Hosh el-Geruf, al-Widay and on the island of Umm Gebir in the Fourth Cataract area (see our previous

annual reports from year 2007–2008). As with the Dorginarti-Cerra Matto phase of the OINE project, we expect this to be a major effort that will result in two volumes. All the pottery sent from the Sudan to the Oriental Institute Museum in 2015 was unpacked and stored into our archaeology lab over the holiday period in 2016 and into the early months of 2017 by Bruce Williams, Kathryn Bandy, and Lisa Heidorn.

OINE 11 — Serra East, the Middle Kingdom Fortress of Repelling the Medjay and the New Kingdom Town of Teh-Khet

Bruce Williams

In addition to the Fourth Cataract publication project, the fortress of Serra East and its successors into the New Kingdom needs to be completed for publication, although major progress, the reconstitution of the survey and preparation of final plans was accomplished thanks to a grant from the Michela Schiff-Giorgini foundation. Like volumes OINE 12, 13, 14, and 15 (The Christian Monastery of Qasr el-Wizz), this volume results from the work of the Oriental Institute in the archaeological salvage occasioned by the construction of the High Dam at Aswan in the 1960s, etc. All of the sites published in the recent Nubian Expedition publications were excavated in the 1960s and were initially classified using the pottery, architectural, and object approaches of that era. Thus, it has been challenging to publish the materials with much less data than is usually required in current publications. From its inception, the project was focused on the visual side of archaeological presentation, to offer details that would make the reports serve as research resources rather than final conclusions. This approach is also used for the publication of OINE 11.

For many years, the records and materials were not accessible due to the complete renovation of the museum and its storage space, but, since 2010, we have been able to resume the work. Three areas have benefitted from the delay. Kathryn Bandy and Susan Penacho intensively restudied a large group of seal impressions found in quarry dumps at Serra East fortress, with many new types identified. Their reconsideration of the evidence for the types of objects and architecture shows that what was sealed now offers new information about the logistics of the fortress garrisons. Pottery is now studied very differently than it was when the excavation took place, and the resulting evidence for its manufacturing methods and its movement has already offered new information on the organization of ancient industry for me to incorporate it into OINE XX; this was the topic of a paper presented by Nadejda Reshetnikova and myself at pottery conference Vienna 2 — *Ancient Egyptian Ceramics in the 21st Century* in 2012 and subsequently published in the proceedings.

The architect for both seasons and director for one in 1964, James E. Knudstad, not only prepared meticulous measured sketches in addition to his final drawings, but he also recorded all of the survey data as well. This has allowed Nadejda Reshetnikova to create layered electronic drawings in AutoCAD that are completely scalable and usable for 3D presentation, a major technological leap.

PERSEPOLIS FORTIFICATION ARCHIVE PROJECT

Matthew W. Stolper

Most of the work of the Persepolis Fortification Archive (PFA) Project is a matter of adding new data of known kinds, making new connections, and eliciting an increasingly rich texture of languages, art, institutions, and society at the center of the Achaemenid Persian empire around 500 BCE. At times, the close attention that this requires leads to something altogether different and surprising.

That happened again as PFA Project editor Annalisa Azzoni (Vanderbilt University, Nashville) pored over images of the Aramaic texts on Fortification tablets and fragments. Among about 850 monolingual Aramaic documents recorded until now, one persistently resisted interpretation until she recognized that it is not written in Imperial Aramaic at all. It is written in Egyptian Demotic, confirmed by Oriental Institute colleagues Janet Johnson and Brian Muhs (fig. 1).

If that does not seem remarkable, consider it not only in the archival context formed by the thousands of Fortification texts written in Elamite cuneiform writing and the hundreds written in Aramaic script, but also alongside the single Fortification documents written in Greek, Phrygian, and Old Persian alphabets, the one intrusive legal document written in Babylonian cuneiform, and the several impressions of seals with Egyptian hieroglyphic inscriptions or cartouches. As each of these were identified, it seemed remarkable but exceptional. Now, considering them together, the Persepolis Fortification Archive shows examples of almost every writing system in use at the time in western Asia and the Mediterranean world. The examples are all in ordinary, practical documents. The people who wrote, filed, and stored them had to suppose that someone could use them, read them, or have them read, so at least some of the people who produced and kept the Fortification Archive moved more or less easily among these ways of recording. This is a practical embodiment of the trait with which the inscriptions of the Achaemenid kings represent the vastness of the empire, describing it in Old Persian and Elamite versions as including “all kinds of people,” in Babylonian versions “people of many tongues.”

This discovery also exemplifies some of the fortunate circumstances of the PFA Project, including Azzoni’s broad training in the epigraphy of “many tongues,” the interlocking scholarly and technical skills of the PFA Project team, and the unique reserves of expertise of “all kinds of people” at the Oriental Institute — circumstances that the PFA Project will continue to rely on for as long as the PFA is in the Oriental Institute’s custody.



Figure 1. Fort. 2131-301 (Fort. 11146), formerly known as PFAT 671, a Fortification tablet with Coptic text

Final legal determination of the PFA's custody is imminent. In early July 2017 the Supreme Court accepted the legal dispute over the tablets for review in the term that began in October 2017. The court heard oral arguments in December. A ruling is expected before this Annual Report is published. If the Court follows a recommendation from the office of the Solicitor General and upholds the ruling against the plaintiffs, the legal threat to the integrity of the PFA and to ongoing research on the PFA will end. Until then, the PFA Project continues all phases of its emergency efforts to record the Archive and to make its records public.

Azzoni continued to finalize readings of Aramaic epigraphs on Elamite tablets, readings of monolingual Aramaic Fortification tablets, and readings of Aramaic seal inscriptions. She also recorded new epigraphs, monolingual documents and seal inscriptions as they were identified. Project editor Elspeth Dusinberre (University of Colorado, Denver) has drafted most of a monograph on more than 580 seals identified from impressions on the monolingual Aramaic tablets, to be supplemented with information from newly identified items.

Project editor Wouter Henkelman (*École Pratique des Hautes Études*, Paris), continued work on his collated critical edition of the ca. 2,500 still unpublished Elamite document recorded in draft editions by the late Richard T. Hallock. He continued to compile textual and critical notes, also drawing on new collations of previously published texts, Hallock's own corrections recorded in marginal notes, and information drawn from Elamite texts that I continue to record in draft form.

I recorded about 95 new Elamite documents (for a running total of about 1,650 items, and a running total of recorded Elamite texts and fragments close to 6,500 items). Veteran student worker Teagan Wolter (NELC) entered about 200 of the new texts, glossed and parsed in preliminary form, for presentation by the Online Cultural Heritage Resource Environment (OCHRE). Most of the newly entered texts are fragments of registers, that is, documents in comparatively long and complex formats from the late stage of information processing at Persepolis. The task of entering them is slower and the number of distinct items is smaller than when this work focussed on shorter and simpler texts, but the volume of information organized and entered is larger.

The same is true of my collations of my first readings of Elamite documents, now also concentrating on registers. I group the registers according to the seals impressed on them, guided by chapters of Tytus Mikołajczak's NELC dissertation (completed in winter, 2018) on these seals and the accounting procedures that the documents reflect. This allows me to consider together items that I first recorded separately, sometimes at long intervals, but that were originally produced by the same ancient offices and staffs; comparison leads to improved readings and confident restorations of broken passages. I collated about 195 registers, for a running total of about 1,040 collated texts. Graduate student Rhyne King (NELC) continues to enter these corrections in OCHRE, updating editions of about 75 more Elamite texts (for a running total of about 740), and correcting entries in the Elamite glossary in OCHRE.

Project editor Mark Garrison (Trinity University, San Antonio) continues to face the task of recording the seals impressed on the Fortification tablets in terms of triage. Garrison, Dusinberre, and student workers under their instruction have compiled collated scale drawings of about 2,000 of seals, ready for publication (allowing for further tweaking as more impressions are identified). They also made preliminary sketches of about 1,450 others. Still to be cataloged and collated are the impressions on more than 2,800 sealed, uninscribed tablets recorded with digital images, and still to be identified are impressions of new seals on about 1,000 of the newly edited Elamite texts.

Thanks again to a grant from the Roshan Cultural Heritage Institute, veteran student workers Christina Chandler (Bryn Mawr University) and Erin Daly (Classics, University of Chicago) returned to work on the seals during the summer of 2016, and Daly continued work throughout the year. They returned again during the summer of 2017, now joined by Emma Petersen (University of Minnesota) (fig. 2). Chandler focused on final drawings and records of the inscribed seals, which are to be the topic of her doctoral dissertation (fig. 3). Daly first divided her attention between recording seals on uninscribed tablets and identifying new seals on tablets with new Elamite texts (about 25 new seals on about 135 documents until now). Later, she concentrated on work for Dusinberre's publication of the seals on the Aramaic tablets, making final drawings of "cross-over" seals, that is, seals impressed both on Aramaic and on Elamite and/or uninscribed tablets. During the summer of 2016 visiting student Delphine Poinsot (École Pratique des Hautes Études, Paris) took time from her research on Sasanian seals to learn about the Fortification seal corpus and assist in recording seals on uninscribed tablets.

Other priorities of this phase of the Project, if time and circumstances permit, include making final collated drawings of new seals identified from impressions on unpublished Elamite documents, making final drawings of new seals identified from impressions on uninscribed tablets, identifying and recording the seals on uninscribed tablets, and checking for new seals among the remaining uncataloged fragments. The potential importance of the last of these tasks was vividly demonstrated by Garrison's startling recognition of the seal of the prince Aršama among the fragments four years ago (see *Annual Report* 2012–2013, p. 105, 2014–2015, p. 144 fig. 1).

Photographers Ami Huang and Alexandra Hoffman (both NELC) made conventional digital images of about 95 new Elamite tablets



Figure 2. PFA seal recording team at work

(From left) Erin Daly, Emma Petersen, and Christina Chandler

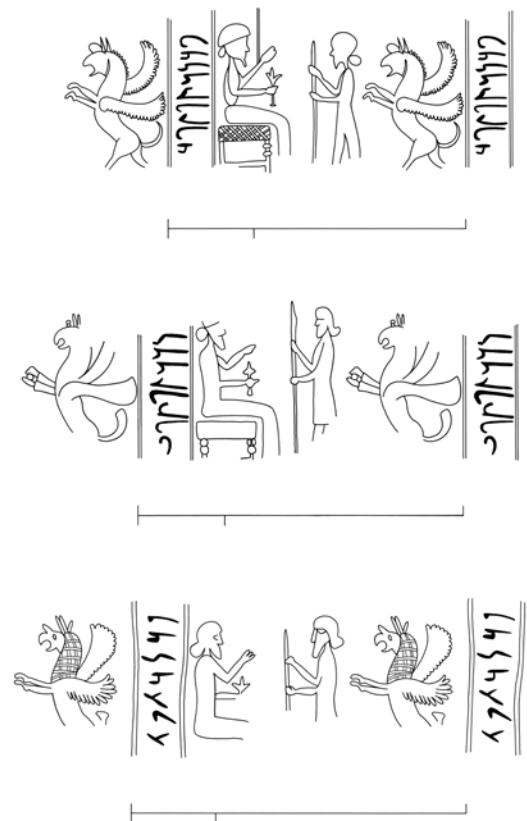


Figure 3. Collated line drawings of PFS 0066a*, PFS 0066b*, PFS 0066c*, three similar but not identical seals, with Aramaic inscriptions naming Prndt (Iranian *Farnadāta), entitled ptptn (Iranian piθfakāna), "issuer of rations." The seals were used successively by an office that disbursed grain and flour for the king's entourage, in years 19–21 (PFS 0066b*), 22 (PFS 0066a*), and 24–25 (PFS 0066c*) of Darius I

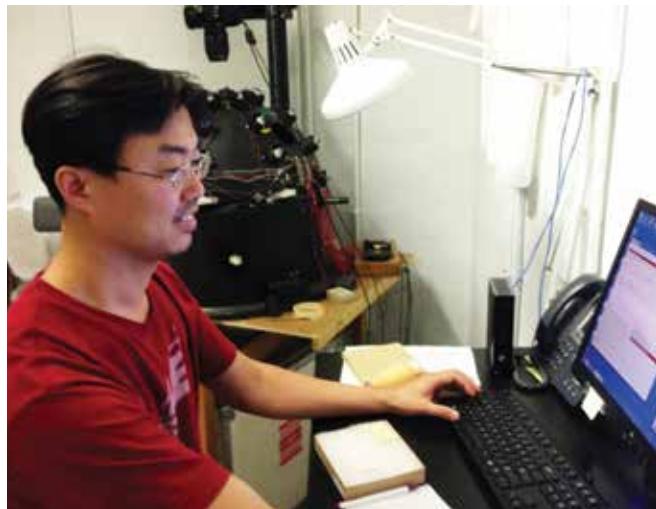


Figure 4. Capturing Polynomial Texture Mapping (PTM) image sets: Young Bok Kim and PTM apparatus



Figure 5. Processing PTM image sets: Clara Dandy and Oliver Natarajan

and fragments. Nilofar Saraj, Thomas Chiodini (both CMES) and Kimia Maleki (School of the Art Institute) edited images of about 350 items, including re-editions to correct color and contrast problems in some previously captured images. Chiodini has also resumed X-Ray fluorescence scanning of selected tablets.

In the Project's high-resolution imaging lab, Theresa Tiliakos, Young Bok Kim (both NELC), and Nathan Downey (college) made about 1,700 dynamic polynomial texture mapping (PTM) image sets of about 280 tablets and fragments, and about 560 high-resolution filtered-light scans of about 40 items (fig. 4). Monica Philips (NELC) assumed oversight of post-processing the accumulated PTM imagery, facilitated by updating the work stations and adding a computer for uploading/downloading the large image files. Along with Michael Bechtel (NELC) and Patrick Howard (CMES) during the academic year, and Oliver Natarajan (Williams College) and Clara Dandy (University of Chicago Lab School) during the summer, she processed scans of about 6,800 surfaces from about 1,000 tablets and fragments, reducing the backlog of unprocessed images to about three years' worth (fig. 5).

Public and academic presentations of PFA-related material include: Mark Garrison's discussion of religion and religious imagery at the Kamran Seminar of the Zoroastrian Association of Metropolitan Washington DC in July; a treatment by Wouter Henkelman and myself on recent work on Achaemenid Arachosia and Bactria at the Franke Institute/Oriental Institute conference on Ancient Afghanistan organized by Richard Payne and Gil Stein in Chicago in October; Annalisa Azzoni's summary of recent findings in the Aramaic Fortification texts at the meeting of the American Schools of Oriental Research in San Antonio in November; Christina Chandler's discussion of the seal PFS 0305* (see *Annual Report 2015–2016*, p. 146) at the meeting of the Archaeological Institute of America in Toronto in January; and Tytus Mikołajczak's paper on network analysis of seals and proper names in accounting documents at the meeting of the American Oriental Society in Los Angeles in March.

A documentary entitled "Persépolis, le paradis perse," produced, broadcast and streamed by the European culture channel ARTE (<http://www.arte.tv/en/>), aired in France on February 10, 2017, and in Germany on March 5, 2017), includes remarks on the OI's excavation of the PFA, scenes of Henkelman reading Fortification documents with Iranian students in the



Figure 6. Reading Persepolis in Tehran; Milad Abedi, Hamaseh Golestaneh and Milad Jahangirfar during a televised course in Achaemenid-Elamite palaeography under supervision of Shahrokh Razmjou and Wouter Henkelman at the National Museum of Iran

admin-archive) by Azzoni, Dusinberre, Garrison, Henkelman and myself combines an updated introduction to both the PFA and the Persepolis Treasury Archive with a compendious current bibliography. Other major Project-related works announced in previous publications of the *Annual Report* also appeared in 2017: *Persian Religion in the Achaemenid Period/La religion perse à l'époque Perse* (Classica et Orientalia 16), edited by Henkelman and Céline Rédard, with articles by Henkelman and Garrison; *Die Verwaltung im Achämenidenreich – Imperiale Muster und Strukturen/Administration in the Achaemenid Empire – Tracing the Imperial Signature* (Classica et Orientalia 17), edited by Bruno Jacobs, Henkelman, and myself, with articles by Azzoni, Garrison, Henkelman, and myself, as well as other contributions that draw on PFA material old and new; and Garrison's monograph on *The Ritual Landscape at Persepolis* (Studies in Ancient Oriental Civilization 71), lavishly illustrated with digital images and drawings of PFA seals.

A dozen more PFA-related articles published or submitted during the last year include: Azzoni's collaboration with Jan Tavernier on aspects language interference in the Aramaic Fortification Documents ("Scribal Confusion in Aramaic Renderings of Iranian Anthroponyms," in the proceedings of the First International BANANA Conference on Babylonian Names and Name-Giving, held in Leiden in September 2016 (see <http://greatermesopotamia.be/events.html>); Henkelman's survey of Egyptians in the Persepolis archives (in Wasmuth 2017, pp. 276–302, 386–94); my article on a high-ranking "treasury secretary" at Persepolis (https://www.academia.edu/32662073/M._STOLPER_From_the_Persepolis_Fortification_Archive_Project_6_The_Dossier_of_%C5%A0arbaladda_Treasury_Secretary_at_Persepolis); and my companion pieces on the chronology of the PFA, one on intercalary months in Crisostomo *et al.* [eds.] forthcoming) and another on the earliest and latest texts (in another *Festschrift*, not yet announced).

Readers will recognize a growing focus on what last year's report described as reviewing and correcting accumulated records, so that even after the tablets themselves leave the custody of the Oriental Institute, the information in them will continue to yield new results. As the discovery of the Coptic tablet and the previous recognition of the seal of Arsames demonstrates, new results can still be expected from the very process of review.

National Museum of Iran (fig. 6), and comments on the implications of the PFA for contemporary Achaemenid archaeology around Persepolis.

The Project weblog (<http://persepolistablets.blogspot.com>), maintained by Charles E. Jones (Pennsylvania State University) added eight new postings in the past year, for a cumulative 247 entries (including the annual reports of the PFA Project), about 200,000 page views since 2010, 90 subscribers, and 1,300 followers on Facebook and other social media.

A long-delayed entry on "Persepolis Administrative Archives" in the *Encyclopaedia Iranica* (<http://www.iranicaonline.org/articles/persepolis-admin-archive>)

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TELL EDFU

Nadine Moeller and Grégory Marouard

The 2016 season at Tell Edfu primarily focused on the Fifth Dynasty (ca. 2494–2345 BCE) in Zone 2 situated to the west of the Ptolemaic temple, which contains the earliest settlement remains so far discovered (fig. 1). The season started on October 12, 2016 and finished on November 15, 2016. This year's team members were Nadine Moeller (director), Grégory Marouard (co-director), Valerie Le Provost (Old Kingdom pottery), Aaron de Souza (Nubian pottery), Kathryn Bandy (sealings and small finds), Oren Siegel (enclosure walls), Natasha Ayers (pottery), Emilie Sarrazin (archaeology), and Sasha Rohret (faunal remains). Our inspector for this season was Amal Abdallah.

The main aim of this season has been to investigate the precise nature of this settlement quarter and its function. Another objective has been to determine the long-term evolution of this early urban center during the third millennium BCE. Several of the buildings we excavated this season were founded directly onto the natural bedrock and constitute the first settlement in this area of the tell. According to the ceramics and a clay sealing inscribed with the Horus name of king Djedkare-Isesi (ca. 2400–2375 BCE), this settlement quarter can be considered an *ex nihilo* foundation during the Fifth Dynasty. It is now clear that the town developed from the south and the east and spread towards the northwest. The oldest parts of the town and temple dating back to the earlier the third millennium BCE are now mostly covered by the later Ptolemaic temple and Mammisi. A recently conducted ground-penetrating radar analysis in



Figure 1. General view of Zone 2 towards the east

the surroundings of the Ptolemaic temple during the Groundwater Lowering Project funded by USAID has revealed to the eastern side of the temple complex the existence of a cliff, which probably marked the eastern limit of the settled area and suggests that the tell of Edfu might have initially stood on a sandstone island formation with an early occupation on its eastern edge. Over the following millennia, the Nile moved gradually eastwards to its modern position but its precise location during the Pharaonic period is still unknown and will be part of a geomorphological study next season 2017. The maximum limit of the ancient city towards the west and north was already reached during the transition between the end of the Old Kingdom and the beginning of the First Intermediate Period (ca. 2100 BCE). In the following millennia to come the site never grew any further in these two directions, which is most likely linked to the annual floodwaters that affected the lower-lying areas beyond the tell.

Also this season, thanks to the Fund for Innovating Research in Egypt (FIRE), we started to use photogrammetry software for the first time in order to record archaeological remains. Agisoft PhotoScan software allowed for easy processing and assembling of 3D images and orthophotographies, which are images that have been geometrically corrected so that the scale is uniform and the image can be used for drawing on without any distortions. We used this software to record smaller rooms in Zone 2 but also for several of the monumental enclosure walls. The results turned out to be extremely promising and provide a much more efficient way to record the ancient structures with the highest precision. In addition to photogrammetry, we also used a 3D handheld scanner for the first time in the field, the Artec Space Spider model, mainly for the recording of smaller objects from the excavation. The advantage of using such a scanner is its high accuracy (<1 mm) and speed, which generates a 3D model of the actual object showing texture and color. There is also the possibility to 3D print these kinds of models later, if desired. This tool provides an important improvement for efficiently recording small finds from the excavation, especially when repeated access to them once they are in storage can be difficult.

Concerning the excavation on site, we continued the study of the ancient town walls last season for which several test trenches were excavated with the aim to investigate its foundations. This operation was led by Oren Siegel (department of NELC) who has been studying these walls, their architecture, function, and date for his PhD research. The study of small finds by Kat Bandy and faunal remains by Sasha Rohret (department of NELC) was mainly conducted in the official Ministry of Antiquities storage magazine at Elkab but also on site. Furthermore, we engaged in some site management work supporting the local Edfu inspectorate, which included replacing and repairing the neon lights inside the temple of Edfu, the clearance of trash along the southern side of the tell, and the adding of more white gravel along the pathway of the visitor center. We also trained one local inspector in ceramic analysis and fieldwork methods.

Excavation in Zone 2

At the beginning of the season, we continued excavating numerous small domestic courtyard installations covering the entire zone east of the Old Kingdom enclosure walls (Zone 2). According to the ceramic finds, this settlement phase can be dated to the transition of the late Fifth to the early Sixth Dynasty. Most of these courtyards were enclosed by thin mudbrick walls, measuring only one brick in width (about 15 cm). They are part of rather informal, domestic installations which developed in this part of the town (fig. 2). Most of them were open



Figure 2. Excavation of small domestic courtyard installation dating to the late Old Kingdom

yard areas including smaller storage and food production installations. Further characteristics of these courtyards were that they had covered much of the area without any clearly visible streets or pathways through the settlement. The general character can be described as an agglutinated form where many of the walls separating the yard areas were shared by multiple installations. In addition, it was also difficult to identify any more substantial structures that would have been used as dwellings. This occupation level marks a complete change in organization and function from the previous settlement remains underneath it. In the central part of Zone 2, a small complete alabaster cosmetic vessel and several small stone weights were found on top of the floor level of one of the courtyards (fig. 3), which is also marked by numerous traces of production of objects in copper. All those open spaces are also equipped with small round bins marked by mudbricks laid in a circle. One of the courtyards contained a reused large storage vessel that was turned upside down and had been placed on the floor level of the courtyard (fig. 2). An intentional hole had been cut into its base that served as the opening in order to be used as a small short-term storage bin. Additional light



Figure 3. Small alabaster vessel and overfired bread mold piece



Figure 4. Overview of southern half of Zone 2 showing burnt courtyards of domestic character

walls and a small corridor between various open spaces can be seen on the southern side of the excavation area (fig. 4). This settlement area has been affected by several incidents of fires, which damaged and destroyed these structures filled with massive demolition layers of burned construction material. Another large room to the south contained the fallen bricks of a collapsed wall and a complete spouted bowl lying on its surface (fig. 5).

The previous phase of settlement remains, which is below the occupation levels discussed above, shows very different characteristics and function in comparison to the light domestic courtyard installations. Two large buildings occupied most of Zone 2, which were separated by a thick perimeter wall, partially recognized at this point of the excavation. All the well-built walls of the two structures and perimeter wall had been founded directly onto the natural bedrock and can therefore be considered the very first architectural installations in this area. Along the northern side, comparable installations have already been excavated in 2014; showing very similar characteristics in terms of quality and layout, they



Figure 5. Collapsed wall and complete bowl on the floor of a courtyard



Figure 6. Southeast corner of large Old Kingdom building with thick and sloping walls

surface (fig. 6). A small entrance is situated on its eastern side, which was already discovered in the previous seasons (see *Annual Report 2012–2013*, p. 118, fig. 7). It contained a preserved lintel and the wooden door in situ, which also means we have almost the full elevation of this structure, down to its threshold. Unfortunately, this building is mainly preserved on its eastern side; the interior was completely destroyed except for the entrance area by sebakhs digging. This year we focused our efforts on excavating the area on the southern and northern side of this building in order to better understand its layout and function within the settlement area of Zone 2. We were able to confirm that the foundation level of the southeastern corner was built directly on the natural sand which means it is the oldest structure built *ex nihilo* here.

Even though we have little evidence so far that could tell us something about its precise purpose, we were able to observe that it must have been considered an important feature in this settlement area since the later enclosure walls situated north of this building made an ef-

were also founded directly on the natural sand (see details below and *Annual Report 2015–2016*, pp. 151–52).

The precise function and nature of the two newly discovered building complexes is not clear yet and will be the main focus for next season since we still have to excavate much of the settlement remains above this more monumental phase. In any case, the construction details and the architectural organization of this first occupation level here does not resemble any domestic architecture but clearly belongs in the sphere of some kind of official/administrative/cultic installation. For example, this can be clearly seen at the large building on the western edge of Zone 2 which has walls that measure more than 2.3 m in thickness and which were well-preserved and even regularly renovated. The southern façade was, for example, rebuilt with a second wall showing a distinct slope, a feature that has never been associated with domestic dwellings, and covered with a thick layer of fine mud plaster creating a well-finished exterior



Figure 7. Perimeter wall (W 1210) separating two monumental building complexes



Figure 8. Rooms with fireplaces and activity areas on the northern side of Zone 2 (late Fifth Dynasty)

fort to avoid it by being constructed with several turning angles northward. Furthermore, it is evident that the larger mudbrick perimeter walls on the southern and eastern sides (W 1210 and W 1170) clearly separate this large building from another building complex to the south (fig. 7). The foundation layer of Wall W 1210 was directly built into the natural sand layer. To the eastern and northern sides, this unusual building was surrounded by an open space without any mudbrick structures, possibly a large courtyard. Last season we only started to excavate the thick fill layers that gradually covered this open space and hopefully next year we will reach the corresponding outer floor levels, which might contain some trash deposits or abandonment layers that could shed some light on the function of this complex. According to the pottery it dates to the Fifth Dynasty, and in stratigraphic terms, it belongs to the same settlement phase as the rooms located further north, underneath the later enclosure walls (see further details below and fig. 8). Therefore, it can also be related to layers which date back to the

reign of Djedkare Isesi, which marks the time when this settlement area started to be occupied and developed, probably as an extension from an older center to the east which is now covered and/or most likely destroyed by the Ptolemaic temple foundations.

Along the exterior of the late Old Kingdom enclosure walls on the northern side of Zone 2, we also continued the excavations of several well-built rooms with corresponding floor levels that were covered in many areas with fireplaces and deposits of white and grey ash including traces of metallurgical activity such as crucible fragments and copper ore (see *Annual Report 2015–2016*, p. 152 and fig. 3). Most of these layers were carefully sieved because of the presence of a large number of broken clay sealings from baskets, boxes, doors, and storage jars, which can be seen from the negative imprints on the back. So far, only two pieces with inscriptions were found, one of which is exceptionally well-preserved (accidentally burned in a fireplace) and shows the Horus name of king Djedkare-Isesi, the penultimate ruler of the Fifth Dynasty (ca. 2414–2375 BCE) (fig. 9).

These rooms and their corresponding walls were also built directly on the natural sand and can therefore be considered the earliest structures in this part of the site, clearly in connection (possible annexes) with the main building described before. In fact, it is now clear that the settlement in Zone 2 was only founded in the second part of the Fifth Dynasty and might be an extension westwards of the early town at Edfu.



Figure 9. Clay sealing with the Horus name of Djedkare Isesi

Study of the Enclosure Walls

This season we continued the investigation of the ancient town walls at Tell Edfu. Along the southern side, we cleaned four visible enclosure walls that are exposed in the large, almost vertical sebakhs cuts of the tell. For all these walls, it was also important to take a closer look at their foundations in order to establish architectural details and the archaeological layers into which these walls were built. In most cases, it turned out that these walls had been built directly onto the natural bedrock with no visible foundation trench. Oren Siegel prepared profile drawings of the layers underneath and against the walls and collected small pieces of pottery from these layers for dating these walls, which is probably the biggest challenge in this investigation. The overall aim is to link the different parts of the exposed areas through structural comparison in order to establish the expansion and long-term development of city at Edfu. There is evidence that at the end of the third millennium BCE (late Sixth Dynasty) the ancient city was surrounded by two separate town wall systems: an outer and an inner one. On the northern limit of the tell, we cleaned a large stretch of about 70 m of three consecutive enclosure wall phases that marks the northern limit of the site and consists of three different wall phases (fig. 10). All of the enclosure walls were also documented intensively with photographs using photogrammetry software to create orthophotos and 3D models, which are particularly useful given the monumental scale of these walls systems that would make any recording with the usual Total Station a very long and tedious process.



Figure 10. Enclosure walls dating to the First Intermediate Period and Middle Kingdom along northern side of Tell Edfu

Work in the Elkab Magazine

This season we worked for about four weeks in the magazine of Elkab where most of our small finds are stored as unregistered and registered objects from the previous seasons. Sasha Rohret specifically focused her work on the study of animal bones (faunal remains) from the past excavations in Zones 2 and 3, dating to the Old Kingdom and First Intermediate Period, for her future dissertation project, which will be part of a wider comparative study of the faunal remains assemblages from Edfu and Dendara dating to the third millennium BCE. Kathryn Bandy continued updating our database and taking additional photos of the stored objects. She also started to use the 3D scanner for some of the most important objects, recording with high-precision a variety of artifacts such as figurines, some ostraca, and other small finds, which had been excavated previously and are currently stored in the magazine (fig. 11).



Figure 11. Kathryn Bandy and Emilie Sarrazin using the 3D scanner in the Elkab magazine



Figure 12a-b. Installation of new lights in the temple of Edfu

Site Management Efforts

This season we conducted several site management activities in the temple of Edfu and in the southern area of the visitor center on behalf of the local inspectorate. We purchased new glass tubes and transformers for replacing the broken lights inside the Ptolemaic temple, which had left a considerable portion of the inner rooms in darkness (fig. 12). The new lights are now fully functional and provide reasonable lighting conditions inside the side rooms and chapels.

We also cleaned the trash dumps that had accumulated over many years along the southern side of the tell. All the trash, which was mainly old building material from prior construction work, was cleared out and the still useful materials were organized into clean piles with the support of the Edfu inspectorate. We also bought two truckloads of white pebbles in order to fill the ground along the main tourist pathways in order to make them look clean and attractive for the numerous visitors coming to the site, who often venture to the various stelae and statue fragments on display in the open-air museum area around the temple and tell.

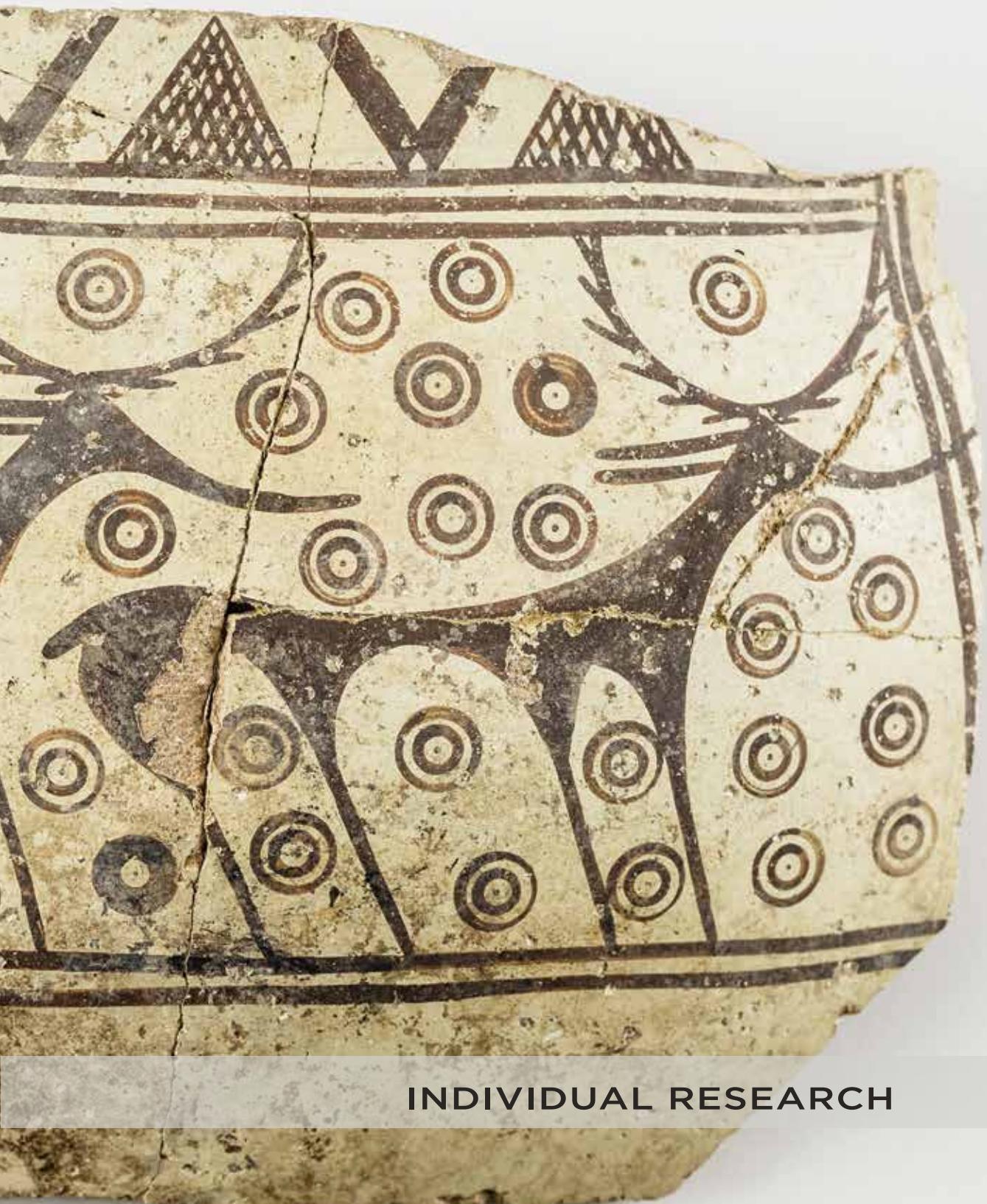
At the end of the season, Nadine Moeller gave a presentation of the recent results at Tell Edfu to the inspectors of the local inspectorate (fig. 13). The aim was to teach the young in-



Figure 13. Nadine Moeller presenting the recent results to members of the Edfu inspectorate

spectors about archaeological fieldwork and research questions. This received an enthusiastic response, and we would like to thank Ramadan Hassan for his help with translating English into Arabic.

The directors and entire Tell Edfu team would like to thank the Edfu inspectorate for their help and collaboration this year, especially Susi Samir Labib (Chief Inspector), Ramadan Hassan Ahmed, Dr. Sami, and of course Amal Abdallah and Marwa Hassan Abd el-Rassul. We would also express our gratitude to Nasr Salama, general director of Aswan and Nubian Antiquities Council. We also thank Jane Smythe and Mary Sadek (ARCE Cairo office) for their help with the paperwork and MoA related matters. Last, but not least, we thank especially the Oriental Institute and Gil Stein for the ongoing support in addition to the many supporters amongst the OI membership for making the annual fieldwork in Egypt possible, in particular the Fund for Innovating Research in Egypt (FIRE).



INDIVIDUAL RESEARCH



Overleaf: Sherd with Stags. Alişar Höyük, Turkey. Iron Age II, ca. 1000–700 BC. Syro-Anatolian Collection. A10266 (D. 19193)

INDIVIDUAL RESEARCH

Richard H. Beal

Richard Beal spent his time revising the entries in the L volume (published in 1979) for inclusion on the electronic eCHD. This means looking for newly found or newly published references, new studies on the works we have already cited, adding new or differently understood meanings, adding dates to texts not previously dated, and rearranging the articles in accordance with the way we did things in later volumes. Some preliminary copy editing of the final fascicle of the letter Š has also been accomplished.

This year saw writing and rapid publication in *Archiv für Orientforschung* of a longish obituary for his Doktorvater, Professor Harry A. Hoffner, of the Oriental Institute. Professor Hoffner was the founding and longtime co-editor of the Chicago Hittite Dictionary. Appearing in the same issue, but written six years earlier, is a review of Jörg Klinger's book *Die Hethiter*, which is a 128 page summary of our knowledge of the Hittites. A review of Andrew Knapp, *Royal Apologetic in the Ancient Near East* for the *Journal of the American Oriental Society* is in progress. Written and appearing this year was an article "Disabilities from Head to Foot in Hittite Civilization" for a volume *Disability in Antiquity*, edited by Christien Laes. Toward the end of the period he has been working on a lecture and illustrations on the origins of the Hittite, Anatolian studies, and cuneiform studies at the University of Chicago to be presented at the 10th International Congress of Hittitology to be hosted by the Chicago Hittite Dictionary and held at the Oriental Institute the last week of August 2017. Together with Oya Topçuoğlu, the CHD's senior lexicographic assistant and newly minted PhD, he is putting together a condensed version, which will form a temporary exhibit in conjunction with the congress. In February he and his wife, JoAnn Scurlock, organized a one day conference at St. Mary's University in Notre Dame, Indiana. The conference was entitled "What Difference Does Time Make" and was in honor of the 100th anniversary of the midwest branch of the American Oriental Society. We thus had participants from the various fields making up the American Oriental Society. We hope to publish the papers. Finally, he has been helping JoAnn Scurlock edit Akkadian medicinal plant texts as part of the European Union's Floriental project.

Robert D. Biggs

Robert Biggs continued to serve as co-editor of the series *Die babylonisch-assyrische Medizin in Texten und Untersuchungen* and spent part of the summer of 2016 fulfilling his responsibilities. He had an article published in a volume honoring Professor Nicholas Postgate, with whom he worked at the site of Abu Salabikh in 1976, a happy return to the excavation where he served as epigrapher with Donald Hansen in 1963 and 1965. Another article is to appear shortly in the McGuire Gibson *Festschrift*.

Fred M. Donner

Fred Donner was busy this year with his usual teaching and advising responsibilities, with serving on a number of promotion and tenure committees for the University of Chicago and other institutions, and reviewing about a dozen article or book manuscripts for various journals or publishers. He was also quite active giving lectures at various venues. In June 2016 he presented a lecture at the University of Tübingen, Germany, on an Arabic papyrus in the Oriental Institute's collection that may be the oldest extant Arabic letter and offers a tantalizing view of the earliest Islamic community in Arabia. In September he presented a talk on "Documentary Sources for the Early Islamic State" at a conference on documentary sources for the medieval Near East in Vienna, Austria. In November he presented "Where Did Arabic Come From...and Why?" to other faculty of the Oriental Institute at its quarterly "Connections" seminar, which became the nucleus for a longer paper, "Scripts and Scripture in Late Antiquity: An Overview," which he prepared for a conference on this theme in May (see below). In March he made a presentation to the Oriental Institute Docent Training Day on "Islam's Rise and Islamic Heritage," and in April he presented a lecture on "The Development of Arabic Epistolography" to the University's Late Antique Mediterranean Seminar.

Along with his OI colleague Rebecca Hasselbach-Andee, and several graduate students, Donner was the lead organizer of an international conference on "Scripts and Scripture: Writing and Religion in Arabia, ca. 500–700 CE," convened at the University May 18–19, 2017. The conundrum that was the focus of the conference is the fact that three traditions of writing that had flourished in the Arabian peninsula in antiquity — the south Arabian, ancient north Arabian, and Nabataean — each with a distinctive script, all had effectively died out by about 600 CE; yet shortly thereafter, in the early seventh century, there appeared the text of the Qur'an, Islam's sacred scripture, in a language (Arabic) that hitherto had not been a literary language, and in a distinctive new script. To consider aspects of this puzzle, the conference brought together fourteen scholars of Arabian epigraphy, Arabian religion, and early Qur'anic studies from the US, France, UK, the Netherlands, and Finland who engaged in robust discussion and whose written communications will be gathered together in a volume to be published in the Oriental Institute's LAMINE series (Late Antique and Medieval Islamic Near East), probably in late 2018 or 2019. The conference was possible because of generous support from many parties, notably Guity Nashat, the France Chicago Center, the Franke Institute for Humanities, the Divinity School, the Oriental Institute, the Center for Middle Eastern Studies, the Department of Near Eastern Languages & Civilizations, and the Department of History — to all of whom we are profoundly grateful for making possible what turned out to be a very stimulating conference.

During the year, Donner completed and submitted for publication two articles: "Talking About Islam's Origins," to appear in the *Bulletin of the School of Oriental and African Studies*; and "Arabic Fath as 'conquest' and its origin in Islamic tradition," for Al-'Uṣūr al-Wustā, the *Journal of Middle East Medievalists* 24 (2016), pp. 1–14. The latter has already appeared in the online journal. Also appearing this year but submitted earlier were his article "A Typology of Eschatological Concepts," in Sebastian Günther, Todd Lawson, and Christian Mauder (eds.), *Roads to Paradise: Eschatology and Concepts of the Hereafter in Islam* (3 vols., Leiden: Brill, 2016), pp. 757–72; and his review of Michael Penn's book *When Christians First Met Muslims*, in the online Review of Qur'anic Research 3.1 (2017).

Finally, Donner was gratified to be honored by his colleagues in the organization Middle East Medievalists by being awarded MEM's "Lifetime Achievement Award" at the 50th Annual MESA Conference in November 2016 in Boston.

François Gaudard

François Gaudard completed his twenty-third year as part of the Oriental Institute scholarly community. During the past academic year, his priorities were his two Oriental Institute projects, that is, the edition of the Oriental Institute Museum funerary shrouds from the Graeco-Roman period and the Mummy Label Database (MLD) (see Project Reports).

One of the interesting orthographical peculiarities Gaudard noticed while studying the OI shrouds is the fact that the toponym T³-rr "Ta-rer," which is a designation of Dendera,¹ is always written as  T³{wy}-rr, with the sign  t³ written twice instead of once:  T³-rr. The most similar example of this unusual writing is attested as   T³{wy}-rr, with the dung-beetle standing for the sign  t³ (see H. Gauthier, *Dictionnaire des noms géographiques contenus dans les textes hiéroglyphiques*, vol. 6, Cairo, 1929, p. 26, and S. Cauville et al., *Le Temple de Dendara. Les chapelles osiriennes: Index*, Bibliothèque d'Étude 119, Cairo, 1997, p. 603 [116,3]).

As a co-editor of the MLD and of the Death on the Nile Project, Gaudard, in order to locate missing mummy labels, contacted several institutions including the Ägyptisches Museum, Bonn; the Albertinum, Dresden; the Ashmolean Museum of Art and Archaeology, Oxford; the Papyrus – und Ostrakonsammlung, Institut für Geschichtswissenschaft, Rheinische Friedrich-Wilhelms-Universität, Bonn; the British Museum, London; the Metropolitan Museum of Art, New York; the Princeton University Art Museum; the Petrie Museum of Egyptian Archaeology, University College, London; and the Universitäts Bibliothek, Freiburg. He also worked on the publication of additional mummy labels.

Among other things, Gaudard published an article discussing the possible immortality of Seth. Since this god has long been distinguished from other Egyptian gods by his differences, such as his excesses and lack of restraint, it is not surprising that, when it comes to the subject of death, he seems to be an exception to the rule in that he can apparently be depicted as immortal. Over the years, several Egyptologists have pointed out Seth's ability to survive the various attempts to annihilate him. In this article, Gaudard not only discusses this question in light of previous scholarship, but also presents a rare, if not unique, example that could be taken as proof of a belief in the immortality of Seth during the Graeco-Roman period.

As in previous years, Gaudard served as an editorial consultant for Egyptology articles published in the *Journal of Near Eastern Studies* (JNES), the *Journal of the Society for the Study of Egyptian Antiquities* (JSSEA), and the *Journal of the American Research Center in Egypt* (JARCE).

One of Gaudard's articles has been published this past year, and three others are in press:

- "The Camel as a Sethian Creature." In *Essays for the Library of Seshat: Studies Presented to Janet H. Johnson on the Occasion of Her 70th Birthday*, edited by Robert K. Ritner, pp. 41–53. *Studies in Ancient Oriental Civilization* 70. Chicago: The Oriental Institute (in press).

- “Funerary Shrouds from Dendera in the Oriental Institute Museum of the University of Chicago, Part I: OIM E4786,” to be published in a *Festschrift* honoring a colleague (in press).
- “A Greek-Demotic Mummy Label in the University of Cambridge Museum of Archaeology and Anthropology,” to be published in a *Festschrift* honoring a colleague (in press).
- “On the Immortality of the God Seth.” In *Illuminating Osiris: Egyptological Studies in Honor of Mark Smith*, edited by Richard Jasnow and Ghislaine Widmer, pp. 93–98. Material and Visual Culture of Ancient Egypt 2. Atlanta: Lockwood Press, 2017.

Gaudard would also like to take this opportunity to honor the memory of his former mentor, Professor-Dr. Erhard Grzybek, whose passing, on November 19, 2016, saddened him deeply. In addition to being both a world-renown historian of antiquity and Egyptologist, who taught at the universities of Lausanne, Dijon, and Geneva, Erhard was a true gentleman and friend as well. He also served as the president and as the honorary president of the *Società Internazionale di Studi Neroniani*, the goal of which is to promote the study of the Roman Empire during the first century AD. His research interests covered a wide span, ranging from subjects as varied as the Macedonian and Ptolemaic calendars to the process of Jesus. One of his favorite topics was the study of the Hellenistic kingdoms. Gaudard fondly remembers taking his classes dealing, among other things, with the diadochi, the Seleucids, the Ptolemies, or the Phoenicians, during which, Erhard, without even looking at his notes a single time, so bewitched his audience that nobody realized two hours had passed by. That was also part of the magic of knowing him.

Note

¹ For *Tȝ-rr* “Ta-rer” as a designation of Dendera, see, e.g., *Wb* V, p. 226/1; Fr. Daumas, *Dendara et le temple d'Hathor: Notice sommaire*, RAPH 29, 1969, p. 12; H. Kockelmann, *Edfu: Die Toponymen- und Kultnamenlisten zur Tempelanlage von Dendera nach den hieroglyphischen Inschriften von Edfu und Dendera, Die Inschriften des Tempels von Edfu*, Begleitheft 3, 2002, p. 52, 65–66.

McGuire Gibson

McGuire Gibson, besides working on Nippur publications, is in the final phase of a project he took on with Mark Altaweel to recover, translate, and publish reports by Iraqi archaeologists on manuscripts that had been lost or damaged in the looting of the Iraq Museum in 2003. The most important of those publications, Muzahim Hussein’s *Nimrud: The Queens’ Tombs*, appeared last year and is available in a full-color paper version or as a downloaded version from the Oriental Institute press. The last publication is on two excavations carried out in the Diyala region, which has been a focus of Oriental Institute excavation and survey since 1929. One of these excavations, carried out by Salah Rmeidh at Tell Asmar (ancient Eshnunna), exposed a large area of private houses close to some trenches that the Chicago team had made at the south end of the city. There are at least three levels of houses, from the Ur III to the late Isin-Larsa period (ca. 2100–1900 BC), and they parallel the findings of the Chicago expedition at the site, although the earlier work concentrated on the administrative area of the town.

These houses are larger than normal, often have family altars in the corners of courtyards or large rooms, and have yielded almost 2,000 objects, including 200 cuneiform tablets and important cylinder seals.

The other site to be reported in this final Iraqi volume is by Hussein Ali Hamza on his work at a site called Muqdadiya, right in the middle of a modern town on the main road from Baghdad to Iran. This site would have been part of the Eshnunna kingdom, and the finds can easily be linked to those from Eshnunna itself. Here, also, there were cuneiform tablets (one of which may give a hint as to the ancient name), cylinder seals, and hundreds of other objects.

Gibson still serves on the boards of The Academic Research Institute in Iraq and the American Institute for Yemeni Studies. Despite the current situations in both countries, fellowships are still being given out for work by Americans outside the countries and to Iraqis and Yemenis for research done inside them. Activity is much reduced, of course, but the situation in Iraq is improving and there may be a flourishing of scholarly activity there. Meanwhile, in Sanaa, Yemen, the institute's buildings are still intact and have not yet been damaged by Saudi planes.

Petra M. Goedegebuure

Petra Goedegebuure continued her work on split-ergativity in an invited presentation for the seminar *Historical Linguistics* (Department of Linguistics), to support her second book (*The Anatolian Core Cases*, in progress). Whether or not split-ergativity is present in the Anatolian languages is currently one of the most debated topics of Anatolian syntax. Petra shows how the New Hittite ergatives developed out of individualization markers in Middle Hittite. Syntax was also the topic of a presentation at the Annual Meeting of the American Oriental Society in Los Angeles, March 2017 ("Left-Dislocation in Old Hittite"), where Petra discussed a hitherto overlooked construction that introduces contrastive topics, best translated as 'but as for'. Linguistics of extinct languages heavily depends on sound philology, and this was again shown when Petra found a join between fragments of a tablet that allowed her to prove the existence of the 'as for' construction. This finding was accepted for publication in N.A.B.U. ("A New Join to a Hittite Festival of Thunder: KBo 31.183 + KBo 34.185 + KBo 20.61 [CTH 631]"). Petra is also preparing the talk for publication.

Petra's review of Annick Payne's *Iron Age Hieroglyphic Luwian Inscriptions* was published in the *Journal of Near Eastern Studies* 76. As part of her research for the review, Petra could establish the meaning of three Luwian expressions that were hitherto not understood. One of them, a loan translation of the Akkadian geographical name *eber nāri* 'Beyond-the-River', was already discussed in the *Annual Report* of 2015–2016. Another word is *panuwā-*. Others translate this word either as 'to make drink' or 'to grant a portion', but Petra could show that both translations are grammatically impossible. Instead, we need to translate *panuwā-* as 'to make plentiful, abundant', and connect it with the Hittite word *panku* 'totality'. The study will result in an article with the working title *Luwian Lexical Notes*.

Anatolia has always been simultaneously inhabited by different cultures speaking different languages; this was no different for the Hittite period. Petra provided the concluding remarks for the workshop *Talking to Others: Ancient Inscriptions in Multicultural or Multilingual Contexts* (three sessions in the winter quarter), organized by the Oriental Institute's Brian

Muhs and Richard Payne, and Alain Bresson from the Classics Department. She also showcased the research of the Oriental Institute's Hittitologists on the topic in *News & Notes Quarterly Newsletter* 234 ("Hittite Anatolia: Cornucopia of Cultures in Contact").

Petra furthermore participated in the Chicago Hittite Dictionary Project, (see Project Reports) and, together with the other members of the CHD and the graduate students of the graduate program Anatolian Studies, continued the preparations for the 10th International Congress of Hittitology, to be held in Chicago, August 28–September 1, 2017 (<http://ich10.uchicago.edu/>). Petra created the conference website and handled registration and accommodation, but also a respectable amount of correspondence. Together with the students she worked on the program and the book of abstracts.

Theo van den Hout and Petra talked about their work at a dinner meeting with the Young Professional Members Hittite Roundtable (Winter 2017, Oriental Institute).

Gene Gragg

Gene Gragg has completed and submitted a chapter "Semitic and Afroasiatic" for a revised edition of Robert Hetzron's *The Semitic Languages* being prepared for Routledge by John Huehn-ergard. Work on this chapter has led to the preparation of considerably more Berber, Egyptian and Chadic material for eventual inclusion in AAMA (<http://aama.github.io>) — which would make the archive begin to live up a little more to what the acronym implies, "Afroasiatic Morphological Archive."

What has been referred to as the "Morphology, Red in Tooth and Claw" project, or, more prosaically, "Inflection-Class Change: The Cushitic Suffix Conjugation Revisited," explores how the rise and spread of this conjugation class can be interpreted as the "defining" Cushitic shared innovation within Afroasiatic, and tries to tackle some of the linguistic/cultural evolutionary implications of such an interpretation. A preliminary report on the project has been prepared (originally for presentation at the NACAL 45 meeting in Leiden), and an article version should be ready shortly.

Emily Hammer

Emily Hammer completed her third year as director of the Center for Ancient Middle Eastern Landscapes (CAMEL). As in past years, much of her research efforts were directed towards projects detailed in CAMEL's section of the *Annual Report*. CAMEL strives to encourage student research and team publications. To this end, Emily jointly authored four articles with CAMEL students and staff: a piece for the journal *Antiquity* with graduate student Anthony Lauricella on pre-Islamic fortresses of the Balkhab River Valley in northern Afghanistan; a piece for the journal *Near Eastern Archaeology*, again with Anthony Lauricella, on historical U2 spy plane imagery of desert kites in eastern Jordan; a piece for the *Journal of Field Archaeology* with Heritage Analyst Kathryn Franklin on remote survey of Spin Boldak in southeast Afghanistan; and a piece for the *Journal of Cultural Heritage* with Heritage Analyst Rebecca Seifried, Kathryn Franklin, and Anthony Lauricella on remote, diachronic assessments of the archaeological heritage and looting situation across Afghanistan.

Emily continued working on four personal projects concerning the history of pastoral land-use, southern Mesopotamian urbanism, political landscapes and land-use in Bronze and Iron Age Naxçıvan, Azerbaijan, and methods for using new sources of declassified aerial and satellite imagery. An extensive review article on the history of pastoralism in southwest Asia from the Neolithic to the Bronze Age (coauthored with Benjamin Arbuckle, University of North Carolina at Chapel Hill) was accepted for publication in the *Journal of Archaeological Research*. In April and May, Emily traveled to southern Iraq for the first season of a new survey project she began at Ur, in collaboration with the excavations directed by Elizabeth Stone (Stony Brook University) and Abdulamir Al Hamdani. In four weeks of fieldwork, Emily and a team of Iraqi students from Nasariyah collected pottery and dug test pits at seventy sample sites spread across Ur's south mound and outlying areas. They also captured over 10,000 aerial images of the site using a UAV camera. This imagery is currently being processed to develop a high-resolution topographic model of the mounds and surrounding areas. The goals of this research are to elucidate the settlement size and some aspects of city organization at Ur. In mid-May, Emily traveled to the National Archives' Aerial Film section in Greenbelt, Maryland, to collect historical imagery of archaeological sites from two newly declassified sources: U2 spy planes (1958–1960) and the Hexagon satellite program (1971–1984). The imagery collected will be useful for several different ongoing projects, but also contributes to two articles that Emily and Jason Ur (Harvard University) are currently preparing on the use of U2 and Hexagon imagery for archaeological research. In June and July, Emily and an undergraduate student traveled to Naxçıvan to resume a magnetometry survey of hilltop fortresses begun last year (funded by a grant from The National Geographic Society). In collaboration with geophysics expert Jason Herrmann (Tübingen University), they are working to trace the subsurface remains of a huge wall that formerly surrounded two Iron Age fortresses and a lower town between them.

In the realm of teaching, Emily offered three courses during 2016–2017. Two of these courses, *Ancient Landscapes I and II*, are an introduction to GIS and landscape studies for archaeologists and historians. The second course guides students in creating their own spatial research project. Fourteen students in this second course presented the results of their GIS research projects to faculty and fellow students in a poster session held in mid-March. Emily co-taught a third course, *Archaeological Approaches to Settlement and Landscape Survey*, with Alice Yao in the Anthropology Department. This course was an introduction to method and theory for archaeological survey.

During the course of the year, Emily gave six public lectures, including one invited lecture and five conference presentations at the American Schools of Oriental Research and the Society for American Archaeology Annual Meetings.

On July 1, Emily left the Oriental Institute to take a new position as assistant professor in the Near Eastern Languages and Civilizations Department at the University of Pennsylvania. She will continue to work with CAMEL and the Afghan Heritage Mapping Project in the coming year in order to bring several ongoing projects to publication.

Rebecca Hasselbach-Andee

Rebecca Hasselbach-Andee was on academic leave during the fall and winter quarters in 2016, during which she worked on various projects. She continued her analysis of Akkadian in various articles that have all been submitted for publication by now, including two overview

articles on Akkadian grammar and, in one case, its socio-linguistic context for two separate volumes, one edited by herself for Blackwell Wiley (*A Companion to Ancient Near Eastern Languages*) and the other by her colleagues John Huehnergard and Na'ama Pat-El. The latter is intended to be a volume on Semitic languages specifically.

Hasselbach-Andee has further looked into the question whether or not Akkadian should be considered an “archaic” language, as it is often suggested based on its chronology, or rather an innovative language based on various innovative features it exhibits in its phonology, morphology, and syntax. Based on the evidence at her disposal, she concludes that Akkadian is both archaic and innovative at the same time. This article, “Archaism versus Innovation: The Hybrid Nature of Akkadian,” will appear in the conference volume of the *International Association of Comparative Semitics*, which met in Madrid in June 2016. In an article she wrote for another edited volume, she further investigated the issue of whether or not Semitic languages had an inherited morpheme to mark the dative case. Based on evidence from Akkadian, it has been suggested that such a morpheme existed, but Hasselbach-Andee’s investigation of Akkadian, Hebrew, Ugaritic, and comparative evidence from other Afro-Asiatic branches such as Cushitic and Omotic, suggests that the morpheme in question has no case function but rather reflects an adverbial ending. This article will be published under the title “Dative or No Dative: The Function of the Morpheme *-is in Semitic.”

Besides her work focusing on Akkadian, Hasselbach-Andee continued to expand her interests in socio-linguistics. She wrote an article on “Multilingualism and Diglossia in the Ancient Near East” for the *Companion to Ancient Near Eastern Languages* she is editing for Blackwell Wiley. The article deals with examples of multilingualism and the functional divisions of different languages in the ancient Near East and the methodological problems faced when trying to evaluate the linguistic situation of ancient speech communities for which we solely have evidence in writing. She presented a shorter version of this article that primarily focuses on the issue of diglossia at the yearly meeting of the North Atlantic Conference on Afro-Asiatic Linguistics in Leiden (Netherlands) in June 2017.

Besides these articles, Hasselbach-Andee continued to work on the translation and revision of Josef Tropper’s grammar of Classical Ethiopic, which will be concluded at the end of the summer, and the editing of the aforementioned *Companion to Ancient Near Eastern Languages* for Blackwell Wiley.

Janet H. Johnson

Jan Johnson enjoyed giving a lecture at the Egyptian Consulate here in Chicago last summer, speaking on “Women in Ancient Egypt: Legal Equality, Social Differentiation in a Duality Based Civilization.” She also gave talks on “Gender Studies from an Egyptian Perspective” for “Approaches to the Study of the Ancient Near East,” the introductory class for MA students in the Department of Near Eastern Languages and Civilizations (NELC) in the fall and “Gender in Ancient Egypt” for an undergraduate class on Gender in the ancient Near East offered by one of NELC’s graduate students in the winter. Also in the fall, she gave a talk on “Demotic Magical Handbooks” as part of a conference on “The Form, Utility, and Professional Technē of Practical Handbooks in the Ancient World” sponsored by the Neubauer Collegium here on campus. In the spring she gave a presentation within the training sessions for new Mu-

seum Docents, talking about Egyptian writing (especially on how Egyptian writing shows up in museums) and about the Chicago Demotic Dictionary Project (see Project Reports). She sponsored the one-quarter research stay of Reinert Skumsnes, a young Norwegian graduate student working on gender in New Kingdom Egypt, was proud to have three students receive their PhD degrees this year, and enjoyed her annual Skype discussions with students from Michelle Gueguen's fifth grade classes at the Science and Art Academy in Des Plaines, Illinois. Her article on "Compound Nouns, Especially Abstracts, in Demotic" appeared in the *Festschrift* for Mark Smith, her former student. She served on several OI and NELC search and promotion committees, which always provide the opportunity to become acquainted with the research of fine young scholars outside her own field of expertise.

W. Raymond Johnson

This year **Ray Johnson** completed his thirty-ninth year working in Egypt, his thirty-eighth full year working for the Epigraphic Survey in Luxor, and his twentieth season as Chicago House Field Director. On June 7, 2017, Ray was pleased to give an Oriental Institute Membership Lecture in Breasted Hall entitled *The Epigraphic Survey at 93: Changing the Face of Archaeology with New Digital Technologies at Chicago House, Luxor, Egypt*, now accessible for viewing online at: <https://youtu.be/T-pDr7hGUKg>.

Ray participated in the four-day Luxor conference Sekhmet Omnipresent sponsored by Hourig Sourouzian and Betsy Bryan from March 23 to 26 and presented a paper entitled *Sekhmets of Gold at Amenhotep III's Luxor Temple*. In that study he proposed that the granodiorite deity sculptures commissioned by Amenhotep III for the Luxor Temple sanctuary — including a special series of standing Sekhmet statues — were intentionally left rough-surfaced for the application of gesso and gilding, a hitherto unrecognized and extraordinary treatment for Amenhotep III period statuary.

Ray published more preliminary results of his Amarna Talatat Project this summer with "A Pastoral Scene from El Amarna Reconstructed" in *KMT* magazine, issue 28, no. 3 (fall 2017). This group of five Amarna talatat blocks directly join to form a bucolic scene of herdsmen tending goats and cattle outside the walls of a palace and gives us a rare glimpse into the lives of the non-nobility at Amarna. Additional publications that appeared this past year include his article "The Abusir Tutakhamun Blocks: Origin and Context," in *Another Mouthful of Dust. Egyptological Studies in Honour of Geoffrey Thorndike Martin*, edited by Jaap van Dijk, where Ray relates three Tutankhamen period inscribed slabs discovered by Zahi Hawass with a relief in the OI Museum (OI 10591), all of which join an inscribed wall in the Saqqara tomb of Horemheb that depicted a palace Window of Appearances. This winter Ray was inspired to begin writing his first book on the Amarna period entitled *Amenhotep III, Akhenaten, and the Founding of Amarna*.

Walter Kaegi

Walter Kaegi was invited to give the keynote address at Eberhard Karls Universitaet Tuebingen on June 16, 2017, on the Battle of Yarmuk entitled, "Retrospective Reflections on Military Operations at Yarmuk and Vicinity." With the assistance of Sami Swiss and Camel Lab, he

developed and organized satellite photos of terrain of Battle of Yarmuk (636 CE) and vicinity. Emily Hammer provided advice.

Walter prepared his last courses on Byzantine Empire History (Empire 330–610, 610–1025) prior to imminent retirement on September 30, 2017. He revised and corrected his 2013 paper “Seventh-Century Africa: Military and Political Convergences and Divergences” for the German Archaeological Institute Rome (DAIRom). He also attended the International Congress of Byzantine Studies at Belgrade, Serbia and participated in session discussions during August 2016.

Walter prepared a testimonial for the career of the late Georgetown University professor of Arabic Irfan Shahid, who died November 9, 2016. He also prepared a comparative study of seventh-century Byzantine and Tang Dynasty historical trends and institutions. He developed the study of Arnold J. Toynbee the Byzantine Historian and served as co-director for the University of Chicago Workshop on Late Antiquity and Byzantium.

Winter quarter 2017, Walter sponsored a NonCredit Divisional Student (NDVS) from University of Rouen, France. Additionally, he investigated records of the career of late Professor Halil Inalcik and prepared materials for Turkish television interview about Inalcik’s career here at University of Chicago. Besides, he investigated and began to re-organize Kaegi’s old research files, notes, and travel records (including Iraq, Syria, Egypt, Libya, Tunisia, Anatolia) from 1962 to present.

Morag M. Kersel

During the 2016–2017 academic year **Morag Kersel** was re-appointed as a Visiting Fellow with *The Past for Sale: New Approaches to the Study of Archaeological Looting* at the Neubauer Collegium at the University of Chicago. In collaboration with Fiona Greenland and DePaul undergraduate Brittany Moore, Morag worked with the Neubauer, the Oriental Institute, and the McCormick Theological Seminary to mount the exhibit “The Past Sold: Case Studies in the Movement of Archaeological Objects” the capstone event of The Past for Sale project. Over three years The Past for Sale brought together archaeologists, anthropologists, art historians, social scientists, public policy experts, and legal scholars in the hope of finding amicable solutions to one of the most intractable problems facing those who care about culture: how to stem the worldwide epidemic of looting of archaeological sites. The exhibit encapsulated many of the issues raised during the three years of research and study at the Neubauer Collegium.

There is ongoing debate over the legal or illegal movement of archaeological materials and the Neubauer collaborative exhibit examined the positive and negative transfer of artifacts. The general themes of the display presented the effects of movement on local people, landscapes, national identities, and international policy. Panels and didactic materials addressed how to assess movement through economic modeling (MANTIS — Modeling the Antiquities Trade in Iraq and Syria) and using Unpiloted Aerial Vehicles (UAVs) to monitor change over time at an Early Bronze Age IA (ca. 3600–3200 BCE) cemetery site in Jordan.

The third element of the exhibit highlighted an innovative and somewhat controversial 1970s initiative of the Department of Antiquities (DOA) in Jordan and the American Schools of Oriental Research (ASOR). Systematic excavations in the 1960s at the Early Bronze Age (ca. 3600–2000 BCE) site of Bab adh-Dhra’ on the Dead Sea Plain in Jordan recovered thousands



Figure 1. Josh Tulisiak helping to interpret and install pots from Tomb Groups A 72NW and A 44 (photo: Morag Kersel)

generous in loaning pots and associated archival materials for display. With the assistance of Jean Evans, Morag worked closely with Helen McDonald, Laura D'Alessandro, and Josh Tulisiak to interpret and to install pots from Tomb Groups A 72NW and A 44. Morag and Fiona Greenland documented the exhibit in the spring (2017) issue of the *Oriental Institute News & Notes*.

Grégory Marouard

Last November 2016, **Grégory Marouard** was appointed as a Titular Research Associate in Egyptian Archaeology, with a special focus on settlement and harbor archaeology.

During last summer 2016, Grégory focused his research on the completion of an important paper on the excavation that he has conducted since 2011 at the Wadi al-Jarf, the harbor of king Khufu on the Red Sea coast (CNRS, IFAO, MAE project). Co-authored with Pierre Tallet (University Paris-Sorbonne), this article entitled “The Harbor Facilities of King Khufu on the Red Sea Shore: The Wadi al-Jarf / Tell Ras Budran System” has been published in the last issue of the *Journal of the American Research Center in Egypt* (JARCE 52, 2016, pp. 135–77).

His contribution to the third monograph of the IFAO excavations at Ayn Sokhna appeared in the volume *Ayn Sokhna III. Le complexe des galeries-magasins, rapport archéologique*, FIFAO 74, 2016.

A short overview of the survey conducted in 2015 at the Roman harbor at Kom ed-Dahab was also published, “From Space to Ground: Aerial Images and Geomagnetic Survey at Kom ed-Dahab” (Mensaleh Lake, Egyptian Eastern Delta’, *News & Notes* 231 (2016): 16–21).

In September 2016 Grégory attended the “State of the Field in Egypt” conference organized at the Joukowsky Institute for Archaeology and the Ancient World, Brown University. He spoke on the “Breaking Geographic Boundaries” session on the question of “Excavating and Surveying the Coast and Marshes of Egypt in the Year 2010: Two New Examples of Harbors at Wadi al-Jarf (Red Sea) and Kom ed-Dahab (Mezaleh Lake.”

From early October until mid-November 2016, Grégory supervised, as co-director together with Nadine Moeller, the latest season at Tell Edfu (see Tell Edfu Project Report). He

of ceramic pots from various tombs, all requiring basic conservation and storage. The Early Bronze Age pot quandary led the Jordanian DOA and ASOR (the excavation sponsors) to come up with a scheme to distribute artifact tomb groups to educational institutions for purposes of study, display, and student-based learning. Archival records of the transactions and ethnographic interviews provide a fascinating glimpse into the unusual dispersal of this corpus of material. The Oriental Institute and the McCormick Theological Seminary are two of the twenty-four institutions that received tomb groups and both were

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was specifically in charge of Zone 2, focusing on the Old Kingdom settlement remains. He focused the investigation there on the very first phases of occupation, which can be dated now to the second part of the Fifth Dynasty.

From mid-November 2016 until the end of January 2017, Grégory conducted his third campaign at Dendara in Upper Egypt. This project, which focuses on the archaeology of the ancient town of Lunet, is conducted on the French Archeological Institute (IFAO) archaeological concession in close collaboration with the IFAO team directed by Pierre Zignani (CNRS). He conducted two consecutive missions (cf. Dendara Settlement Report) which focused on the extra-mural remains of an extensive residential neighborhood (First Intermediate Period to Early Middle Kingdom) and, in the intra-mural area, on the early phases of the settlement (Naqada IIC-D, Naqada IIIC-D, and Old Kingdom) next to the temples of Hathor and Isis.

Early January 2017, Nadine Moeller and Grégory Marouard gave a joint OI Members' Lecture at Breasted Hall, "The Two Sister-Sites of Tell Edfu and Dendara," that focused on the recent results of their respective projects in Upper Egypt.

In April, Grégory attended the biennial conference on the current state of research in the Nile Delta area, organized by the Egypt Exploration Society in Alexandria, Egypt. He presented a poster entitled "Kom ed-Dahab — An Emporion from the early Roman period in the Menzaleh Lake," that focuses on the OI survey that he has conducted at Kom ed-Dahab in 2015.

He joined after that the seventh season of excavations at the Wadi al-Jarf. As a Senior Archaeologist, he supervised the fieldwork operation on Zone 5, characterized by a large workmen barracks installation, the largest building from the Pharaonic period ever discovered on the Red Coast. This fieldwork was conducted congruently with Grégory personal research on those very characteristic facilities, used during the Fourth Dynasty in order to accommodate craft and food activities and to provide housing spaces for workers' teams engaged in the large-scale projects of this period, particularly in the mining expeditions contexts or on the pyramids construction sites.

Still in April, Grégory gave a lecture on his recent excavations results at Dendara at the Annual Meeting of the ARCE, in Kansas City.

He devoted the rest of spring and early summer preparing various fieldwork reports and several articles. He submitted a synthesis of the recent discovery of Predynastic and Early Dynastic contexts at Dendara in a short article entitled "Dendara at Its Origins: New Evidence for a Predynastic and Early Dynastic Settlement Site in Upper Egypt," which was accepted for publication for the next fall issue of the ASOR journal, *Near Eastern Archaeology* (NEA 80/3).

He also submitted for the fall 2017 issue of the *Oriental Institute News & Notes*, a short notice on the use of drone and photogram-



Figure 2. Grégory Marouard using a drone DJI Phantom 4 at Dendara (photo: Nadine Moeller)

metry technologies applied to urban archeology at Dendara in an article entitled “Dendara from Another Perspective: The Use of New Technologies on the Field in Egypt” (*News & Notes* 235).

Early July 2017, he attended the seventh Old Kingdom Art and Archaeology conference in Milan, Italy, and gave a joint lecture with Nadine Moeller on “Two Sister-Sites at the Beginning of the Old Kingdom: Recent Results on the Settlement Excavations at Tell Edfu and Dendara.”

Carol Meyer

In 1995 **Carol Meyer** began research on the massive corpus of glass from the early Islamic fortified town at Aqaba, Jordan, excavated by Donald Whitcomb of the Oriental Institute and Kristoffer Damgaard of the University of Copenhagen, but she dropped it in order to pursue other projects. This was fortunate. In the intervening decades, databases (in particular, ones capable of operating on personal computers), became available. Very large corpora cannot be handled efficiently with file cards, much less with handwritten notes. Even with current technology, it is a multi-year effort to sort and tabulate the glass, draw selected pieces, and create a working typology, while also addressing questions about dating, technology, or trade. To date, the glass from the 1986, 1987, 1988, 2008, 2010, 2011, 2014 seasons, and three-quarters of the 1989 season have been processed, amounting to 7,729 entries for 12,002 sherds, over 1,100 digitally inked drawings, and 59 photographs. The 1992, 1993, and 1995 seasons remain. First results include publication of a group of Abbasid glass in the next issue of *Journal of Glass Studies*, including a tally of the colors of glass employed, a far more accurate count than an impressionistic evaluation of what is common or rare (fig. 3). The full corpus will be published as a monograph in the projected Aylah Excavation Series. In addition, Meyer proofed the English and French versions of her paper “Bi’r Umm Fawâikh: Gold Mining in Byzantine Times in the Eastern Desert” to appear in an online publication by the Collège de France this year.

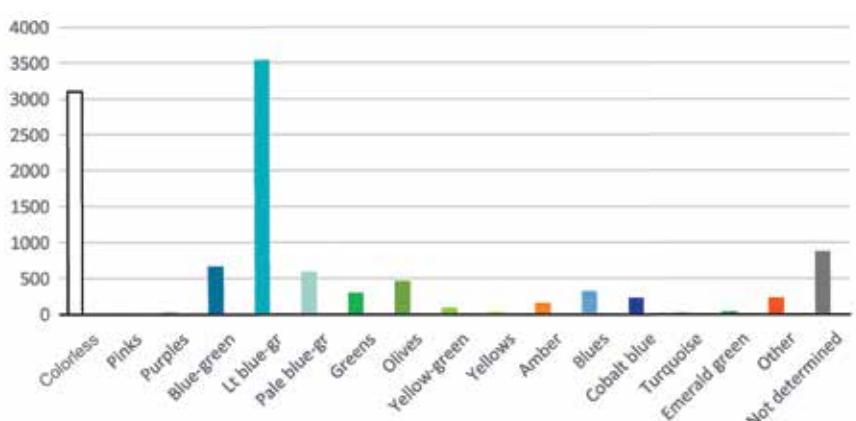


Figure 3. Color distribution by count of sherds (N = 10,761). Oriental Institute seasons 1986, 1987, 1988; Aylah Archaeological Project 2008, 2010, 2011, 2014

Nadine Moeller

From October until December 2016 **Nadine Moeller** directed the fieldwork at Tell Edfu, together with Grégory Marouard, and participated in the third season of excavations at the ancient city of Dendara, led by Grégory Marouard, which is welcomed on the concession of the French Archaeological Institute in Cairo (IFAO). At the beginning of the Winter Quarter, Moeller gave a joint OI Members' lecture about the recent fieldwork and discoveries at Tell Edfu and Dendara. She was also quite busy with several administrative tasks in the winter, internally for the OI but also in the external capacity as Board Member of ARCE. In the latter case, she was part of the committee for the Executive Director search for ARCE which involved several short trips to Washington, DC. In February, Moeller was elected to chair the OI Directorship Review Advisory Committee to the Provost, together with Janet Johnson, Petra Goedegebuure, and James Osborne with the task to review the renewal of the current OI director. On February 23, she had been invited to give a lecture at the Classical Arts Society, at the Art Institute, with the title "The Ahmose Tempest Stela – an Ancient Egyptian Account of a Natural Catastrophe. Chronological Implications and the Archaeological Evidence." In March, she did an ARCE lecture tour in California and presented on the same topic at three ARCE Chapters (Orange County, EEO at Los Angeles and Berkeley). She then took part in the ARCE Annual Meeting in Kansas City in April, where she presented the recent results from the excavations at Tell Edfu. After the Annual Meeting, she hosted two European colleagues, Pierre Tallet (University Paris IV / La Sorbonne) and Dimitri Laboury (FRS-FNRS Senior Research Associate at the University of Liège) in Chicago, who both offered workshops to the current graduate students as well as OI faculty and staff.

In terms of her own research, Moeller completed the edition of the proceedings of the workshop on the Hyksos ruler Khayan last summer, in collaboration with Irene Forstner-Müller, which has now been reviewed and accepted for publication. This volume presents the recent discoveries at three important sites in Egypt, in the north at the Hyksos capital Avaris located at Tell el-Dab'a in the Eastern Nile Delta, and in the south at Abydos and Tell Edfu, which can be considered new pieces to the puzzle for the reconstruction of the political, economic, and cultural developments characterizing the Second Intermediate Period (ca. 1750–1550 BCE). The aim of this publication is to present the archaeological discoveries in detail in order to re-evaluate the current understanding of the history of the Second Intermediate Period. Moeller also continued to write her second book project on the New Kingdom empire under contract with Cognella Academic Publishers.

Brian Muhs

Brian Muhs' third monograph, *The Ancient Egyptian Economy, 3000–30 BCE*, appeared with Cambridge University Press in July 2016. An article, "More Papyri from the Archive of Panas Son of Espmetis," *Enchoria, Zeitschrift für Demotistik und Koptologie* 34 (2014/2015): 89–103, appeared in September, based on a paper that he presented in September 2011. He also wrote an article, "Money, Coinage, and the Ancient Egyptian Economy," for *Oriental Institute News & Notes* 233 (Spring 2017), pp. 4–9.

Brian presented several papers, including "Choice Constraints in Ancient Egyptian Taxation," at the workshop, The Mechanics of Extraction: Comparing Principles of Taxation and

Tax Compliance in the Ancient World, at the Institute for the Study of the Ancient World at New York University on September 30–October 1, 2016; “Crime and Punishment in the Ptolemaic Fayum: Evidence from a group of Demotic ostraca in Ann Arbor,” at the conference, Le Fayoum: Archéologie, Histoire, Religion, at Campus CNRS in Montpellier France on October 26–28, 2016; and “The Nag’ el-Mesheikh Ostraca and the ‘Liquidity Crisis’ in the Egyptian countryside in the final years of Ptolemy IV,” at the Eastern Mediterranean Seminar Papyri and History, at the University of Chicago on April 14–15, 2017.

Brian co-presented two lectures with Tasha Vorderstrasse, namely “A Funerary Association at Antioch: Contextualizing the Mnemosyne Mosaic,” at the American Schools of Oriental Research 2016 Annual Meeting in San Antonio on November 16–19, 2016; and “The State’s Role in Monetary Circulation in Achaemenid and Hellenistic Egypt and Bactria,” at the Ancient Societies Workshop at the University of Chicago on February 7, 2017. He also co-presented a paper with Jacqueline Jay on “Demotic Ostraca from Early Ptolemaic Thebes in Context” at the 68th Annual Meeting of the American Research Center in Egypt, Kansas City, Missouri on April 21–23, 2017.

Brian moderated one session at the conference Down to the Hour: Perspectives on Short time in the Ancient Mediterranean, co-sponsored by the Oriental Institute at the Franke Institute for the Humanities, at the University of Chicago on February 24–25, 2017; and another session at the Oriental Institute seminar Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts, at the Oriental Institute, at the University of Chicago on March 2–3, 2017.

Kiersten Neumann

Kiersten Neumann’s research continues to delve deeper into the realm of sensory experience with respect to the visual and material culture of the ancient Near East. A recent peer-reviewed publication, “Gods Among Men: Fashioning the Divine Image in Assyria,” in *What Shall I Say of Clothes? Theoretical and Methodological Approaches to the Study of Dress in Antiquity*, demonstrates how the gods’ dress and the performance of dressing the gods conferred divine identity and social status during the Neo-Assyrian period. These materials acted as a cue for appropriate behavior in the context of ritualized practice and contributed to the establishment of hierarchies that were fundamental to the ideology of the royal court. In progress is a publication on the Nabu temples of the Neo-Assyrian period. The structures’ physical and visual properties, placement within the citadel landscape, and activities staged within demonstrate that these temples had the potential to evoke in a singular way the specialized divinely ordained wisdom particular to the *ummânus* (scholarly professionals and master craftsmen). Smaller studies of this nature have helped Kiersten finalize a proposal for her book project on the Neo-Assyrian temple. This study argues that embodied sensory experience, such as that related to the temple, was a primary contributor to processes of ritualization in Assyria. An understanding of the senses beyond the hierarchical five-sense framework rooted in Western philosophy is adopted, as is a contextual approach that is mindful of the entire sensory landscape. Additionally, Kiersten continued to publish on objects from the Oriental Institute collections, including *News & Notes* artifact highlights on a stamped brick from the

Ramesseum, a stone pendant from Persepolis, a molded juglet from Istakhr, and a seal cutter's practice piece from Mesopotamia.

In October, Kiersten traveled to Iran as a second host for the Oriental Institute's Ancient Land of Persia travel program, led by Gil Stein. In addition to seeing archaeological sites that Kiersten has long dreamed of visiting, including Persepolis, Susa, and Chogha Zanbil, the tour introduced Kiersten to more recent wonders of Iran — the cities of Esfahan and Shiraz, and Yazd's Zoroastrian Towers of Silence. Inspired by this trip and her experience curating the special exhibition, *Persepolis: Images of an Empire*, Kiersten is preparing a paper for the 2017 ASOR Annual Meeting on tactile representation and interactions of the Apadana reliefs at Persepolis.

During the course of the year, Kiersten gave fifteen public lectures, including four invited lectures, four conference presentations, and seven community/campus talks. She participated in two international conferences focused on sensory experience: *Sounding Sensory Profiles in Antiquity: On the Role of the Senses in the World of Ancient Israel and the Ancient Near East*, Universität Wien; and, *Sensing Divinity: Incense, Religion and the Ancient Sensorium*, British School at Rome and the École française de Rome. In February, Kiersten returned to her alma mater to deliver the Assyrian Heritage Lecture, hosted by the University of California, Berkeley and the Assyrian American Association of San Jose, entitled "Feeding the Gods in the Neo-Assyrian Temple." While in Berkeley, she led a meeting of the Akkadian Reading Group on the summary texts of Tiglath-pileser III related to his western campaigns. In March, she delivered the keynote address, entitled "The Legacy of an Assyrian King," at the King Ashurnasirpal Dinner Gala of the Assyrian Aid Society of America Chicago Chapter. Lastly, she chaired the successful inaugural run of the Senses and Sensibility in the Near East session at the 2016 ASOR Annual Meeting, where she also continued as co-organizer of the Art Historical Approaches to the Near East session.

James Osborne

James Osborne devoted much of this academic year to completing a number of writing projects. The first of these includes two articles on his intensive survey of the 16 ha lower town of the site of Tell Tayinat. Tayinat, of course, features prominently in the Oriental Institute Museum's Syro-Anatolian gallery, having been the site of a major OI excavation during the 1930s. Those excavations concentrated primarily on the monumental acropolis of the site, unearthing the impressive monumental remains that are currently on display. Mostly left unexamined at the time, however, was the large lower town where most of the city's non-elite inhabitants would have lived. James spent two field seasons conducting an intensive high-resolution survey of this component of the site as part of the Tayinat Lower Town Project. Last summer was devoted to processing and analyzing data and writing up the results. This has led to two significant publications: a synthetic comparative article published this year in the journal *Antiquity*, and a more formal site report that will appear in the fall in the journal *Anatolica*.

Besides these articles based on his fieldwork, James continued writing on one of his favorite subjects, monumentality in the past and present. One article that came out this year was a survey of the various methodologies archaeologists have used to understand monuments

made by two of the ancient Near East's most famous states: the Hittite and Neo-Assyrian empires. This article appeared in a volume titled *Mercury's Wings: Exploring Modes of Communication in the Ancient World*. James also published a more unconventional article in the *Journal of Social Archaeology*, one discussing the hostile treatment of monuments by comparing Iron Age statues with a Civil War monument of Robert E. Lee and Stonewall Jackson in modern-day Baltimore, Maryland.

James was pleased to collaborate with ceramic specialist Steven Karacic on a study of the clay sources used to make Cypriot and Cypriot-style pottery excavated in the Amuq Valley by the OI in the 1930s. This endeavor was particularly rewarding because it involved the use of the OI's own portable X-Ray Fluorescence machine and the generous help of Laura D'Alessandro and Alison Whyte in the conservation lab. The findings were published in the science journal *PLoS ONE*.

Besides these publication efforts, James was involved with a number of events around the Oriental Institute, including giving a talk to the wonderful OI volunteers, another to the OI's dedicated Visiting Committee, a Members Lecture to the broader OI community, and a Connections Seminar talk to the OI faculty. These complemented more conventional conference presentations, including the Annual Meetings of the American Schools of Oriental Research and the American Institute of Archaeology.

Hratch Papazian

Hratch Papazian's primary research activities during this past year have centered around the Old Kingdom Gebelein papyri. He has recently submitted an article for publication entitled "Life and Labor in the Twin Towns: the View from Old Kingdom Gebelein," which lays out the framework for the research on those texts, in addition to discussing several matters pertaining to social identity and the nature of the ancient site and its constituents. He also continues to maintain an active interest in the Old Kingdom step pyramid of Sinki in south Abydos, where he is conducting evaluations for conservation and site preservation purposes. In January 2017 Papazian was elected a member of the Arts and Humanities Research Council Peer Review College (Academic and International Colleges) for a four-year term.

Susanne Paulus

Susanne Paulus devoted her second year at the Oriental Institute primarily to studying the legal and economic history of the Middle Babylonian period. To prepare for her next book, *Comparative Studies in Kassite Archives – A Legal, Economic, and Social History of Babylonia (1350–1150 BCE)*, she translated an additional sixty texts, most of which were excavated from Nippur, and recorded all the transactions of roughly 1,200 individuals in a comprehensive database that helps to establish archival relationships and enables the analysis of complex administrative, legal, and economic processes. She presented the first results of her study at the 62nd Rencontre Assyriologique Internationale (Philadelphia) in a paper titled "Redistribution Revisited – Administration of Kassite Nippur." The paper was given as part of a workshop that she organized together with Timothy Clayden (Oxford). In this workshop, ten

leading scholars of Kassite studies from Europe and the US presented their latest findings in Middle Babylonian archaeology, linguistics, and culture. The proceedings of this workshop are currently in preparation.

In connection with this project, Susanne also studied the use of different currencies and other forms of payment alongside the role of gold in the Middle Babylonian economy. She presented the results of her research in three invited lectures, the first one at the Symposium of the Canadian Society for Mesopotamian Studies (Toronto), the second one at the symposium Society and Administration in Mesopotamia During the Kassite Period (Leiden), and the third one at the Ancient Societies Workshop (Chicago).

During the year, she completed two articles, “Turn! Turn! Turn! — Kassite Legal Terminology in Administrative Context” and “The Old Babylonian-Kassite Transition — Three phases of Kassite royal policy.” She also published two articles, “Außergerichtliche (?) Maßnahmen in mittelbabylonischer Zeit” and “The Babylonian Kudurru-inscriptions — treated with special regard to legal and social historical implications”; the first is a legal-historical study of out-of-court dispute resolutions during the Middle Babylonian period, while the second summarizes the results of her doctoral research on land donations.

During the course of her research, Susanne also developed an interest in Mesopotamian inscriptions labeled as ancient forgeries. Using methods from diplomatic studies and comparative material from various medieval periods, she reevaluated well-known controversial documents, including the Agum inscription and the Cruciform Monument. The results of this project were presented at the American Oriental Society (Los Angeles) and will be published in an article titled “Fraud, Forgery, and Fiction: Is there Still Hope for Agum(-kakrime)?”

Finally, to help with public outreach, she wrote an article titled “Kudurrus — Guardians of Property” for *Oriental Institute News & Notes*. She additionally published a post on the blog The Ancient Near East Today on the cuneiform script. Together with Atorina Zomaya from Assyrian Kitchen, she started the Ancient Cooking Class, which brings together reconstructed Mesopotamian recipes with Assyriological knowledge about food and cooking in Mesopotamia

Richard Payne

During the 2016–2017 academic year, **Richard Payne** continued primarily to make progress on a book manuscript, currently entitled *The First Iranians: Religion and Empire in Late Antiquity*. In conjunction with the project on the animating role of the Zoroastrian religion in Iranian imperialism, he completed several articles ancillary to the book. He revised and published “Territorializing Iran in Late Antiquity: Autocracy, Aristocracy, and the Infrastructure of Empire” in *Ancient States and Infrastructural Power* (Philadelphia, 2017), which explores the political implications of infrastructural development, in particular the increasingly coercive power of the court vis-à-vis the aristocracy in the fifth and sixth centuries CE. “Les polemiques syro-orientales contre le Zoroastrisme et leur contexte politique,” a study of the politics of polemic that sees texts stridently hostile toward religious others as indices — paradoxically — of social and political integration rather than conflict, appeared in *Les controverses religieuses en syriaque* (Paris, 2016). An article on the mechanics of taxation in the Iranian empire explores the religious, ideological framing of fiscality, arguing that theories of social reciprocity rooted in Zoroastrian cosmological thought disseminated by the court were intended to elicit the

compliance of an aristocracy: “Taxation, Aristocratic Autonomy, and Theories of Reciprocity” will appear in the *Mechanics of Extraction* (New York, 2018). His article on the importance of long distance Silk Road trade to state finances finally appeared in Chinese translation in *Between Empires: Rupture, Transmission, and Transformation* (Shanghai, 2017). He completed additional articles that will appear in German and Spanish translations, respectively: “El imperio de los iranos: La creación de una clase dominante y sus bases económicas en la antigüedad tardía” in *Capital, deuda y desigualdad. Distribuciones de la riqueza en el Mediterráneo Antiguo* (Buenos Aires, 2017); and “Die Christianisierung des Stūrih: Recht, Fortpflanzung und Elitenbildung im Sasanidischen Reich” in *Spätantike Rechtssysteme im Wandel: Rezeption, Transformation und Rekontextualisierung von Rechtsbegriffen* (Berlin, 2017). Apart from such book-related projects, he initiated new lines of research on the impacts of Hun nomadic imperialists on the political structures and culture of the Caucasus in late antiquity and on the appropriation of second and third century Greek romantic literature — especially its pornographic modes of representation — by Christian hagiographers writing in Syriac in the Iranian world in the sixth and early seventh centuries.

Richard organized two major conferences, in Berlin and Chicago respectively, on topics at the intersection of archaeology and history and the Middle East and Central Asia that will both result in edited volumes. The Huns between Central Asia, the Near East, and Europe: The Archaeology of Nomadic Imperialism, co-organized with Philipp von Rummel, offered a comprehensive reappraisal of the history of the Huns on the basis of recent archaeology, notably in Russian-speaking scholarly communities, thanks to the support of the Deutsches Archäologisches Institut in Berlin. The Limits of Empire in Ancient Afghanistan: Rule and Resistance and the Hindu Kush, co-organized with Gil Stein, compared how successive imperial regimes attempted to govern within the complex political ecology of highland Afghanistan, thanks to the support of the Oriental Institute and the Franke Institute for the Humanities. He also organized three workshops/mini-conferences in conjunction with the Imperial Interstices: The Agents of Eurasian Interaction in Late Antiquity project, together with three other faculty organizers, at the Neubauer Collegium. In addition, he served as the faculty coordinator for the Ancient Societies Workshop and the Multilingual Inscriptions Workshop, working to bring a dynamic range of speakers to campus within the fields of ancient history and archaeology.

Richard presented his work at New York University, Yale University, Oxford University, Barnard College/Columbia University, the University of California at Berkeley, the Ruhr-Universität Bochum, and the University of North Carolina at Chapel Hill as well as at workshops on campus.

Hervé Reculeau

During the 2016–2017 academic year, Assistant Professor of Assyriology **Hervé Reculeau** continued to research how environmental change affected the Bronze Age societies of Upper Mesopotamia. He discussed the topic at the University of Chicago’s Annual Humanities Day (November 2016), in his lecture “Coping with Climate Change in Mesopotamia,” where he addressed the ways several ancient Near Eastern societies managed or failed to overcome episodes of prolonged droughts and the subsequent modifications in their agricultural production. He also looked at how weather dictated the seasonality of long-distance communica-

tions in Bronze and Iron Age Upper Mesopotamia, in a book chapter entitled “De l'influence des conditions météorologiques sur les communications en Haute Mésopotamie,” which is set to appear in the volume *Unterwegs in Obermesopotamien. Rekonstruktion der Historischen Geographie mithilfe von Naturraum und Routen* (HIGEOMES I), edited by A. Otto et al., Gladbeck: Peter Werner.

Hervé also gave a lecture at the Oriental Institute’s Connection Seminar (February 2017), where he presented some “Elements for a History of Technology in Mesopotamia: The Case of Valley Irrigation in Mari.” This was part of an ongoing research on irrigation and water management in the kingdom of Mari (Syria), partly based on unpublished material that he is editing. This study, which will provide a comprehensive analysis of irrigation technology on the Middle Euphrates valley in the early second millennium BCE, has made substantial progress during the past academic year, and will be published in 2018 in the form of a monograph bearing the (slightly revised) title *Florilegium Marianum XVI. L'agriculture irriguée à Mari: Essai d'histoire des techniques* (Mémoires de NABU 21), Paris: Sepoa. Another aspect of Hervé’s research on Mesopotamian agriculture this year involved an exploration of the puzzling issue of quantification in Ancient Economic History, with a paper called “On some Metrological Issues Affecting Yield Estimates in Second Millennium BCE Upper Mesopotamia.” It suggests new ways for establishing reliable conversions of numerical data found in cuneiform records into modern surface and capacity units. This allows to study ancient Mesopotamian agriculture in a comparative perspective, by looking at its productivity. The paper will be published in the 2018 issue of the *Journal of Cuneiform Studies* 70).

Hervé also presented the Old Babylonian tablets from Tell Muqdadiya (in the Diyala Valley of Iraq) at the 227th Annual Meeting of the American Oriental Society in Los Angeles, California (March 2017), and saw the publication of the following articles: “Claiming Land and People: Conceptions of Power in Syria and Upper Mesopotamia during the 2nd Millennium BCE,” in *Raum-Ordnung. Raum und soziopolitische Ordnungen im Altertum*, edited by S. Schmidt-Hofner, Cl. Ambos, and P. Eich, pp. 175–214. Akademiekonferenzen 18. Heidelberg: Winter; a Review of “Dercksen, J.G. (ed.), Anatolia and the Jazira during the Old-Assyrian Period, Old Assyrian Archives, Studies, Volume 3 (= OAAS 3), PIHANS 111, Leiden, 2008.” AfO 53: 177–82; and “Farming in Ancient Mesopotamia (And How the Oriental Institute Helped Us Understand It),” *Oriental Institute News & Notes*, 232 (Winter 2017): 4–13.

Seth Richardson

In addition to his work as Managing Editor of the *Journal of Near Eastern Studies* (see separate report), **Seth Richardson** published a number of articles and co-edited works during the past year. First and foremost was a comparative history book co-edited with Clifford Ando entitled *Ancient States and Infrastructural Power: Europe, Asia, and America* (Philadelphia, 2017), about how early states built their power from an initial position of weakness (Richardson’s essay there is called “Before Things Worked”). He also co-edited a special issue of (and wrote the introduction to) the *Journal of Ancient Near Eastern History* (2/2) on the subject of scholarship and inquiry, which included essays by Theo van den Hout and Dennis Pardee.

Six of Richardson’s articles also appeared in the past year, including: “Obedient Bellies,” on hunger and food security in Babylonia (*Journal of the Economic and Social History of the Ori-*

*ent 59/5, 2016); “The Many Falls of Babylon and the Shape of Forgetting,” on late traditions about the collapse of that city’s First Dynasty, in *Envisioning the Past through Memories*, ed. D. Nadali (London, 2016); “Insurgency and Terror in Early Mesopotamia,” in *The Brill Companion to Insurgency and Terrorism in the Ancient World*, edited by L. Brice and T. Howe (Leiden, 2016); “Building Confidence: Assyria’s Nascent Cosmopolis,” on the development of Assyrian imperial elite group identity, in *Imperial Cosmopolitanisms*, edited by R. Payne et al. (Oxford, 2016); “Goodbye, Princess: Iltani and the DUMU.MUNUS LUGAL,” a reinterpretation of the existence of a supposed Babylonian princess (*Journal of Cuneiform Studies* 69, 2017); and “Messaging and the Gods in Mesopotamia: Signals and Systematics,” in *Mercury’s Wings: Exploring Modes of Communication in the Ancient World*, edited by R. Talbert and F. Naiden (Oxford, 2017).*

Richardson also was an invited speaker this year in: Prague (at Charles University, on Assyriology and the Humanities); Berlin (at the Freie Universität, on ancient concepts of space); Boston (at a Harvard Divinity School/Max Planck Institute workshop on Mesopotamian ideas about animals); Leiden (at NINO, on prosopographic studies); University of Mainz (on the role of talking animals in Sumerian and Akkadian literature); Paris (at Chicago’s Paris Center, on the problem of “uncertain” omens); and New York (at ISAW, on a paradigm shift in Assyrian ideas about distant lands). He also gave papers at the Annual Meeting of the American Oriental Society in Los Angeles on Babylonian slavery and at the Philadelphia Rencontre Assyriologique Internationale on divine emblems and law. He is looking forward this year to completing papers on historical problems of slavery, geography, ideological concepts of “forever,” and studies of Old Babylonian cuneiform documents.

Robert K. Ritner

Robert Ritner’s published articles during the year include: “Oriental Institute Museum Notes 16: Two Egyptian Clepsydrae OIM E16875 and A7125,” *Journal of Near Eastern Studies* 75/2; “Pantheistic Figures in Ancient Egypt,” published in R. Jasnow and G. Widmer, eds., *Illuminating Osiris: Egyptological Studies in Honor of Mark Smith*, and; “The Libyan Mahasun Tribe,” published in *Göttinger Miszellen* 250. Six additional articles and a *Festschrift* volume are in press awaiting publication, including ten entries for Jean Evans, et al., eds., *Highlights of the Collections*, by the Oriental Institute Museum.

During the academic year he provided a series of lectures on theology, Egyptian divination, timekeeping, and themes of the “mummy’s curse” in film. As invited keynote speaker for the International Conference on Conceptualizing the Divine: Revelations, Internalizations and Identifications with the Divine in the Greek, Near Eastern and African Worlds, he presented the only African component, “‘I know the god who is in people’: The Dynamics of Human and Divine Interactions in Ancient Egypt” at North-West University, Potchefstroom, South Africa (April 20).

Ritner began the year with the Oriental Institute series Film, Faculty and Food (July 25), during which he presented “The Mummy’ and the Mummy’s Curse,” detailing the Egyptological background and the prop history of the 1932 Boris Karloff classic as well as that of other mummy-themed movies such as *Charlie Chan in Egypt* (1935). For the former film he detailed such features as the plot’s dependence on the Demotic tale of Setna Khamuas and the ultimate destruction of the 1932 oracular Osiris statue in the Flash Gordon serials. For the Chan

adventure, he deciphered the film's attempts at hieroglyphic curses and revealed the explicit sources of the 1930s compositions. The presentation was accompanied by a showing of the seminal Karloff film.

For the Annual Symposium of the University of Pennsylvania Center for Ancient Studies (November 11), he spoke on "Private Divination and Public Oracles in Ancient Egypt," a lecture that he was asked to repeat for the North Texas Chapter of the American Research Center in Egypt in Dallas (March 25), and for Oriental Institute Museum Docent Training (June 19, accompanied by a relevant gallery tour). For the Franke Institute symposium Down to the Hour: Perspectives on Short Time in the Ancient Mediterranean, Ritner presented the results of his investigation on "Two Egyptian Water Clocks in the Oriental Institute's Collection" (February 24). These conclusions he would repeat in three successive gallery lectures on astronomy and time measurement for the Oriental Institute Breasted Society and the Webster Institute Members of the Adler Planetarium during A Night of Astronomy, Astrology, and Magic at the Oriental Institute (April 13).

On November 16, he was filmed by Blink Films of London on behalf of the Smithsonian Channel for a second documentary on his work with Nadine Moeller on the Ahmose Tempest Stela and the eruption of Thera. Ritner was elected to the Board of Governors of the American Research Center in Egypt (ARCE) in 2017.

Yorke Rowan

Yorke Rowan continued to direct two field projects, the Galilee Prehistory Project (GPP, Israel) and the Eastern Badia Archaeological Project (EBAP, Jordan). In October 2016 Yorke proposed a thematic issue of *Near Eastern Archaeology* to the journal editor, Thomas Schneider, based on the numerous field projects currently conducting research in the eastern desert of Jordan. In June 2017 the guest-edited issue titled "Repopulating the Badia" appeared, including articles such as "Droning on in the Badia: UAVs and Site Documentation at Wadi al-Qattafi," by Yorke and OI Research Associate Austin "Chad" Hill, and "The Late Neolithic Presence in the Black Desert" co-authored with Yorke, Gary Rollefson, Alexander Wasse, Austin "Chad" Hill, and Morag M. Kersel. Also part of EBAP, Yorke co-authored "Investigations of a Late Neolithic Structure at Mesa 7, Wadi al-Qattafi, Black Desert 2015," which appeared in *Neo-Lithics* 1/16: 3–12. Yorke also co-authored short summaries on Wadi al-Qattafi and Wisad Pools, which were published in the *American Journal of Archaeology* 120.4: 634–37. In March Yorke presented "Repopulating the 'Land of Conjecture': The Late Prehistoric Presence in the Black Desert, Jordan" at the Landscape of Survival — The Archaeology and Epigraphy of Jordan's North-Eastern Desert conference at the University of Leiden. Yorke was also co-author of conference papers, including "Drones in the Desert: Unpiloted Aerial Vehicle (UAV) Survey in the Black Desert, Jordan" with A. C. Hill at the Annual Meetings for the Society for American Archaeology in Vancouver (March 2017), "Early Holocene Desertification of Eastern Jordan" presented at the Open Science Meeting of Past Global Changes in Zaragoza, Spain (May 2017), and "Investigations of Prehistoric Exploitation in Jordan's Black Desert" at the 13th International Congress on the History and Archaeology of Jordan in Amman (May 24, 2016). Yorke's review article "Gods and Scholars: Archaeologies of the Religion in the Near East" discussing *Defining the Sacred: Approaches to the Archaeology of Religion* (N. Laneri, 2015) and *Religion at Work in a Neolithic*

Society: Vital Matters (I. Hodder, 2016) was published in *Antiquity* (90.353: 1387–89). In addition to working on the monograph for the excavations at Marj Rabba, Yorke and colleagues published “Gazelles, Liminality and Chalcolithic Ritual: A Case Study from Marj Rabba” in the *Bulletin of the American Schools of Oriental Research* 376: 7–27, from which the journal editors selected an image for the cover. Finally, working with Emily Teeter and the preparators Josh Tulisiak, Erin Bliss, and Kathleen Cescon, Yorke put together a visual exhibit Drones over the Desert: Archaeology and Aerial Photography at the Oriental Institute, which opened in the Oriental Institute’s Lower Level outside of the LaSalle Banks Room.

Foy Scalf

Foy Scalf spent the majority of the 2016–2017 year preparing for the upcoming special exhibit Book of the Dead: Becoming God in Ancient Egypt. This work included final object selection, close work with the museum team on exhibition design, inviting contributors, editing contributions, and type-setting the catalog in InDesign. Thirteen scholars have written chapters summarizing for a popular audience technical work in their area of expertise covering all aspects of the Book of the Dead: birth and development, production and use, magic and theology, and death and rediscovery. The international background of the contributors reflects the importance of European projects in Book of the Dead studies, but the Oriental Institute catalog will constitute one of the most significant American contributions to the field since the work of T. George Allen over forty years ago.

In addition to work on the exhibit, Foy had the opportunity to teach two classes this year. Nearly thirty students braved a sixteen-week hybrid course on “Intensive Advanced Middle Egyptian Grammar” taught for the Oriental Institute adult education program. Students covered nearly an academic year’s worth of material in that short time and have now begun reading Egyptian texts through an informal monthly meetup group. Further strengthening the collaboration with Dominican University, who has been sending students to the Research Archives on their practicums for the last few years, Foy taught a hybrid course on the History of the Text: Early Books and Manuscripts up to the Age of the Printing Press. The course combined classroom discussion, online coursework, and site visits to provide a well-rounded, immersive experience for graduate students in the library sciences. Site visits to the Oriental Institute, University of Chicago Special Collections Research Center, and the Newberry Library highlighted the vast resources the city of Chicago has to offer for the history of the book.

Foy made a number of contributions to various scholarly projects throughout the year. A paper presented at ASOR in November (kindly read by Emily Cole) has been submitted as an article to the panel proceedings slated for publication in *Maarav*. “The Pragmatics of Interment: How the Placement of Funerary Papyri Embodied the Divine in Roman Egypt” details how ancient Egyptians used funerary papyri within the burial context. In certain cases, the papyri themselves served as symbolic substitutes for the goddesses Isis and Nephthys. Final edits were made to “The Papyrus of the Treasury Scribe Iry-Iry A New Ramesside Source for a Memphite Hymn to Osiris and the Book of Caves (BD 168),” which is scheduled for publication in the December issue of *Journal of Egyptian Archaeology*. An article on Demotic and Hieratic scholia appeared in the November issue of *Journal of the Society for the Study of Egyptian Antiqui-*

ties (2015–2016). Foy also collaborated with Robert Ritner on a Demotic magical papyrus from the Michigan collection, which will be published in the near future.

From July 2016 to June 2017, Foy gave nearly twenty talks, many at institutions in Chicago or the surrounding suburbs on behalf of the Oriental Institute Community Scholars program.

Gil J. Stein

In summer 2016, **Gil Stein** continued to co-direct (with Abbas Alizadeh) the Oriental Institute's excavations at the site of Surezha on the Erbil Plain in the Kurdistan Region of north-eastern Iraq. This project marks the first OI excavation in Iraq since the Gulf War of 1991. The Surezha excavation results are presented in a separate section of this report.

As principal investigator of the Oriental Institute's Partnership with the National Museum of Afghanistan (see separate report) Gil made three trips to Afghanistan in 2016–2017 to assess project progress, coordinate with the National Museum director, and to work with Field Director Alejandro Gallego Lopez and the Kabul team of registrars, conservators, and consultants. We are now about 99.5% finished with the inventory database of the holdings of the Museum. Gil is also the PI for two additional grants — the “Afghan Heritage Mapping Project” (AHMP) and the “National Museum of Afghanistan Outreach-Mobile Museum” project.

Gil continued the working with Belinda Monahan on the publication of the Late Chalcolithic Uruk and local Jazira Late Chalcolithic ceramics from his 1992–1997 excavations at the fourth millennium BC Uruk Mesopotamian colony site of Hacinebi.

Gil presented four academic papers during the 2016–17 academic year. On January 23, 2017, he presented the paper “In the Shadow of the Taliban. Preserving the Cultural Heritage of Afghanistan” at the University of Arizona. On April 28, 2017, Gil presented “University of Chicago Oriental Institute: Department of State Sponsored Projects for Heritage Preservation and Capacity-Building in Afghanistan 2012–2017” at the US Department of State, Washington, DC. On May 3, 2017, Gil presented a joint paper (Gil Stein, Alejandro Gallego Lopez, and Michael Fisher) “Assessing the Losses: Integrating Data Sources to Develop a Preliminary List of Objects Missing from the National Museum of Afghanistan” at the conference Antiquities as Global Contraband, Part of the Past for Sale Project at the Neubauer Collegium at the University of Chicago. On July 7, 2017, Gil presented the paper “Iran and the Eastern Iranian World: Shared Economic, Political, and Cultural Landscapes” in the conference Iran’s Archaeological Heritage: Ancient Civilizations in the Focus of Current Research, co-sponsored by the Deutsche Forschungs Gemeinschaft (DFG) and the Bundeskunsthalle Museum in Bonn, Germany.

Gil had three publications in the past academic year:

- 2016 — Gil Stein. “The Oriental Institute Partnership with the National Museum of Afghanistan 2015–2016 Report.” *Oriental Institute Annual Report 2015–2016*. pp. 130–35. University of Chicago Oriental Institute Publications.
- 2016 — Lamya Khalidi, Bernard Gratuze, Gil Stein, Augusta McMahon, Salam Al-Quntar, Robert Carter, Richard Cuttler, Philipp Drechsler, Elizabeth Healey, Marie-Louise Inizan, Damase Mouralis, Ernst Pernicka, Anne-Kyria Robin. “The Growth of Early Social Networks: New Geochemical Results of Obsidian from the Ubaid to Chalcolithic Period in Syria, Iraq and the Gulf” *Journal of Archaeological Science: Reports* 9: 743–57.

- 2017 — Amy K. Styring, M. Charle, F. Fantone, M. M. Hald, A. McMahon, R. H. Meadow, G. K. Nicholls, A. K. Patel, M. C. Pitre, A. Smith, A. Sołtysiak, G. Stein, J. A. Weber, H. Weiss, A. Bogaard. “New Isotope Evidence for Agricultural Extensification Reveals How the World’s First Cities Were Fed” *Nature Plants* 3, 17076 www.nature.com/natureplants.
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Emily Teeter

Outside and in addition to her routine museum work, **Emily Teeter** continues to conduct research on stelae in our collection from Medinet Habu. Continuing work that she has been doing for years, Emily also submitted a detailed essay on the history of the Art Institute’s Egyptian collection to the Department of Ancient and Byzantine Art, part of a larger project to document the collection. Under a Memorandum of Understanding between the Field Museum and the Oriental Institute, she was invited to join the curatorial team for a show “Ancient Mediterranean Cultures in Contact” that opens at the Field Museum on October 20, 2017. The show will feature a few objects from our collection as well as from the Art Institute. Emily also assisted the St. Louis Art Museum with text and labels for their new Egyptian gallery.

Publications included an article in *News & Notes* (co-authored with Conservator Alison Whyte) about a Late Period mummy shroud in our collection. Her essay “Earthly and Mythical Mothers in Ancient Egypt” appeared in *Motherhood in the Ancient World*, edited by Dana Cooper and Claire Phelan.

Teeter continues to serve on the boards of the American Research Center in Egypt, the Society of Biblical Literature’s Writings of the Ancient World, and the Council of American Overseas Research Centers (CAORC). She attended meetings of CAORC and ARCE and also ICOM and CIPEG in Italy, giving a paper at CIPEG on the history of the links between curators at the Oriental Institute, the Field Museum, and the Art Institute. Among her many lectures, she spoke to the International Women’s Association on the rise of consumerism in ancient Egypt, the South Suburban Archaeology Society, and ARCE chapters in Washington DC and Philadelphia. She continued to assist the Egyptian Consulate in Chicago with their cultural outreach efforts. She also gave an adult education course here at the Oriental Institute on technology in ancient Egypt that was enlivened by accurate replicas of ancient tools made by docent Laurence Lissak as well as by his insights into how the tools were made and used. The final session was a very noisy high spirited hands-on session where the tools were used.

Teeter led a Smithsonian tour to Egypt in February 2017, and individual travel for the year consisted of visits to the UK and Malta.

Theo van den Hout

Enjoying his sabbatical as a Guggenheim Fellow, **Theo van den Hout** divided his time between the Chicago Hittite Dictionary and related activities (CHD, see Project Reports), and the manuscript for his book on literacy *Doing Things with Tablets. Writing and Reading in Hittite Anatolia*. The title refers to the Hittite expression “to do something with/on a tablet,” that is, “to write.” He finished a preliminary version and sent it off to a few readers. His hope is

to incorporate their suggestions and critiques this coming fall and winter and to be able to submit a final manuscript to Cambridge University Press early in 2018. Theo also wrote two entries for the *Reallexikon der Assyriologie*: “Ziege” (goat) and “Zypern. Nach den heth. Quellen” (Cyprus in Hittite sources).

Three articles appeared in print since July of 2016: “In Royal Circles: The Nature of Hittite Scholarship,” *Journal of Ancient Near Eastern History* 2015 (2016), 203–227; “A Brief Note on the Syntax of Writing in Hittite” in *Audias fabulas veteres. Anatolian Studies in Honor of Jana Součková-Siegelová*, edited by S. Velhartická, pp. 426–37 (Leiden: Brill); “Schreiben wie Seeher. The Art of Writing: Remarks on the When and How of Hittite Cuneiform,” in *Innovation versus Beharrung. Was macht den Unterschied des hethitischen Reiches im Anatolien des 2. Jahrtausends v. Chr.? Internationaler Workshop zu Ehren von Jürgen Seeher, Istanbul, 23–24. Mai 2014*, edited by Andreas Schachner, pp. 39–47 (Istanbul: Ege Yayınları).

Two entries were published in the *Reallexikon der Assyriologie*: “Waškuwatašši” (a deity) and “Weihgabe. B. Bei den Hethitern” (votive gift, together with James Burgin). The journal *Archiv für Orientforschung* 53 (2015) 504–05, published Theo’s obituary of Philo H. J. Houwink ten Cate, his former teacher and advisor. A brief biography of Hans Güterbock appeared in R. S. Bagnall et al., *The Encyclopedia of Ancient History* (John Wiley & Sons), 2pp. <http://onlinelibrary.wiley.com/doi/10.1002/9781444338386.wbeah30404/pdf>.

On November 3, Theo delivered the 10th Annual Leon Levy Lecture at the Institute for the Study of the Ancient World in New York, entitled “A People Without a Name or Who Were the Hittites?” Further lectures were “Hittite Hacking or How to Avoid Seal Fraud,” on October 15, Humanities Day at the University of Chicago, and “Gold and Greed. Facts and Legends on Midas and the Ancient Phrygians” for the docents of the Oriental Institute on February 13.

Tasha Vorderstrasse

Thanks to the generosity of the Aldis V. Liventhals and Malda S. Liventhals, **Tasha Vorderstrasse** was able to work extensively on the Islamic collection from December 2016 to May 2017. This included documenting the Qajar period photographs of Antoin Sevruguin and other parts of the Iranian collection, as well as working on the materials from Arabia, Turkey, Iraq, and Palestine. She also worked on registering and photographing pottery from the Islamic collection. She presented on the incantation bowls from Mesopotamia at the joint Breasted Society and Webster Society event: “Astrology and Incantation Bowls”; at the Armenian Circle of the University of Chicago: “Antoin Sevruguin: An Armenian Photographer in Qajar Iran;” at the Egyptian consulate: “A Cosmopolitan City: Muslims, Christians, and Jews in Old Cairo,” and at the Oriental Institute Lunchtime Gallery Talk: “The Invention of Coinage and its Subsequent Use in the Achaemenid Persian Empire.” She also continued her work at Princeton Art Museum on the Antioch excavations, visiting for several days to work on the pottery from the site in their collection. She also continued work on the MANTIS project (see separate report).

Tasha taught an Oriental Institute adult education class on the site of Dura Europos, entitled: “Dura Europos: Life on the Roman Empire’s Edge and Its Discovery,” and led a short two-day “Dura Europos Discovery Tour” to Yale University in New Haven in order to see the Dura Europos collection. This included a visit to the Dura Europos exhibition at Yale University Art Museum, hands-on presentation of Dura Europos coins at Yale University Art Museum,

hands-on presentation of Dura Europos papyri and parchment at Beinecke Library, and a tour of Yale Babylonian Collection.

Tasha presented several times on the work that she and Asa Eger of the University of North Carolina Greensboro are doing on the Qoueiq area of north Syria. This included an invited lecture at the Louvre in September 2016: “Patterns of Medieval Occupation in North Syria: Evidence from the Qoueiq Survey Material in the Louvre Museum,” a presentation at the ASOR 2016 Annual Meeting with Asa Eger, “Between Byzantium, the Crusaders, and the Islamic World: Medieval Settlement in the Qoueiq Valley”; and at the State of Islamic Heritage Conference in 2017: “The Tangible and Intangible Heritage of the Qoueiq Region in North Syria.” At the ASOR 2016 Annual Meeting she also co-presented with Brian Muhs, “A Funerary Association at Antioch: Contextualizing the Mnemosyne Mosaic.” She also presented at the Ancient Societies Workshop with Brian Muhs, “The State’s Role in Monetary Circulation in Hellenistic Egypt and Bactria”; at the “Limits of Empire in Afghanistan” conference, “The Limits of the Kushan Empire in the Tarim Basin”; and for the Chicago Archaeological Society, Chicago, “University of Chicago Excavations at Ambroyi, Armenia: 2013–2014.” Further, Bruce Williams presented her lecture at “Nubian Art in a Byzantine, Ethiopian, and Coptic Context” in Warsaw: “The Art of the Manuscript Illumination in Medieval Nubia.”

John Z. Wee

John Wee is author of the following academic articles and essays in 2016–2017: “Pan-astromonical Hermeneutics and the Arts of the Lamentation Priest,” *Zeitschrift für Assyriologie und Vorderasiatische Archäologie* 107/2: 78–101; “Earthquake and Epilepsy: The Body Geologic in the Hippocratic Treatise *On the Sacred Disease*,” in *The Comparable Body*, edited by J. Z. Wee (Studies in Ancient Medicine, Brill). Forthcoming are his Brill monographs *Knowledge and Rhetoric in Medical Commentary and Mesopotamian Commentaries on the Diagnostic Handbook Sa-gig*; the edited volume *The Comparable Body* (Studies in Ancient Medicine, Brill); as well as the essays “Five Birds, Twelve Rooms, and the Seleucid Game of Twenty Squares,” in *Magic and Medicine in Mesopotamia*, edited by S. Panayotov, et al. (Brill); and “Medicine and Healing, Ancient Near East,” in *Encyclopedia of the Bible and its Reception*, Vol. 16 (de Gruyter).

In the past year, John presented the following lectures and conference papers: “Pan-astromonical Hermeneutics and the Arts of the Lamentation Priest” at the Workshop on *Pre-Medieval Commentaries in Medicine and Mathematical Sciences* at the Max Planck Institute for the History of Science (Berlin, August 25–27, 2016); “On Mesopotamian Planets and Star Maps,” at the Wednesday Lunch Series for Faculty at the Franke Institute for the Humanities (University of Chicago, October 12, 2016); “Knowledge and Inquiry in the Mesopotamian Diagnostic Handbook,” at the Conference on *The Form, Utility, and Professional Technē of Practical Handbooks in the Ancient World*, Magical Knowledge Project sponsored by the Neubauer Collegium (University of Chicago, November 12, 2016); “Sundering the Beast: From the Babylonian Micro-Zodiac to Dodekatemoria in Greco-Roman Late Antiquity,” at the Workshop on *Scale in Ancient Astrology* (Durham University, December 9–10, 2016); Cornerstone Lecture on “A (Very) Brief History of Ancient Astronomy” and mini-lectures on “Discovery of the Zodiac Man” and “Herodotus and the Ever-present Past” for Renaissance Weekend (Santa Fe, February 16–20, 2017); “Mathematical Astronomy from Babylonia to Chicago,” at *A Night of Astronomy, Astrology, and Magic at the*

Oriental Institute, sponsored by the James Henry Breasted Society and the Adler Planetarium's Webster Institute for the History of Astronomy (Chicago, April 13, 2017); as well as chair the session on *Mesopotamian Timekeeping and Its Relationship to Greco-Roman Practices* at the Conference on *Down to the Hour: Perspectives on Short Time in the Ancient Mediterranean* (University of Chicago, February 24–25, 2017).

In addition, he is preparing papers for these upcoming presentations: "The Royal Game of Ur from Ancient Mesopotamia," at the 39th Annual Humanities Day at the University of Chicago (October 21, 2017); "Scholasticism and Technical Writing in Late Babylonian Medical Education," at the Meeting of the History of Science Society (Toronto, November 9–12, 2017); and "Stone Ducks: Weights and Measures in Ancient Mesopotamia," for the Oriental Institute Lunchtime Gallery Talk (University of Chicago, December 7, 2017).

Donald Whitcomb

As was mentioned in the last *Annual Report*, **Donald Whitcomb**'s health problems interrupted routine and special activities. Foremost was the 10th meeting of ICAANE (the International Congress of the Archaeology of the Ancient Near East), in which Islamic Archaeology is a recognized aspect (with over thirty papers offered). Don intended to present a paper on Sasanian cities, but failing that, finished a study for a volume on Iranian cities. At perhaps the other extreme, Tasha and Don finished a draft of a study of glazed ceramics in Nubia, a chapter in Bruce Williams' next volume.

Don continues to teach some courses; in the fall was the Introduction to Islamic Archaeology, which is always a pleasant review of the entire field and what has happened in the last couple of years. In the spring, Don tried a new seminar on Islamic Trade, which brought a healthy mix of archaeologists and historians, each "group" trying to understand the other's field. In addition, two student-originated conferences asked for Don's participation: first was the MEHAT (Middle East History and Theory) meeting on Islamic archaeology and landscapes; second was a conference organized by Gwendolyn Kristy on the State of Islamic Heritage, an important discussion of looting and damage to Middle Eastern sites.

Don's attention is naturally still drawn to the need for articles on the Mafjar excavations. The first article was a summation of the mosques on the site, some five in all over the few centuries of its occupation. This led to a panel at the ASOR meetings on Mafjar presenting new ideas about the site and its discoveries. Consequentially, an offer was evoked to put the ideas into an article for *Near Eastern Archaeology* called "New Excavations and Hypotheses," with sections by Michael Jennings, Andrew Creekmore, and Ignacio Arce (and a happy museum discovery by Tasha Vorderstrasse).

The year produced appearance of almost forgotten articles that had languished in process of publication. The oldest was a study of *qusur* (Umayyad estates) as periodic palaces, that is, the seasonal habitations of peripatetic Caliphs as they checked on their lands and officials. Another was a long-held dream of discussing the archaeology of Mu'awiya, an early caliph who is famed for many innovations changing Islam from a "Believer movement" toward an Islamic state (at least if one may follow Fred Donner's new hypothesis).

Returning to the study of Iran, Don had an opportunity to discuss the complicated story of Arthur Upham Pope, who photographed Persian architecture and collected (and was a dealer

in) Persian art. He was a lifelong friend of Erich Schmidt, the great archaeologist who worked at Persepolis for the Oriental Institute. This story of early archaeology in Iran has a personal note for Don, in that he worked for Pope in 1969 in Shiraz. At that time, he was more interested in the Persian Gulf; he was happy to return to the subject to describe a “sequence of Iranian ports” for a special issue of the *International Journal of the Society of Iranian Archaeologists*.

Don believes that an archaeologist must always be concerned with his artifacts, most particularly pottery. There was to be a special issue of the *Journal of Islamic Archaeology* on the problem of “grenades.” The editor approached Don because most of the articles supported this identification — that these heavy round jars with a tiny hole at the top were actually weapons, medieval grenades filled with “Greek fire” or naphtha. Don finds this explanation nonsense and suggested they were fire-starter flasks. This is an old idea of aeolipiles, that is, when filled with water and placed next to a fire, they produced steam that would “brighten” or enhance the fire. He was encouraged with the discovery of these “grenades” beside every fireplace at Mafjar, and many other Islamic sites.

More recently, Don reviewed Gideon Avni’s new book, *The Byzantine-Islamic Transition in Palestine*, which was useful preparation for a conference in Providence, Rhode Island, called “Marking the Sacred: The Temple Mount / Haram al-Sharif in Jerusalem.” This was a gathering of many of the same Israeli and other archaeologists as at a similar meeting at Brown University in 2006. This time historians and scholars of religion attended; happily, the archeologists kept things lively. Don attempted, hopefully with more clarity, to show that the early Islamic occupation on and around the Haram al-Sharif held all the elements of an Islamic city. This Muslim occupation was set next to the Christian community and included the return of the Jewish community!

This year included change on an even more personal note. Don and Jan decided to give up the farm in Portage, the scene of more than a few picnics for the OI. They purchased a small bungalow in Hobart, Indiana, where they intend to have future, though regrettably smaller picnics.

Karen L. Wilson

Karen Wilson is pleased that *Nippur VI: The Inanna Temple* has been accepted by the Oriental Institute Press and will appear in the Oriental Institute Publications series. *Nippur VI* will be the final publication of the Oriental Institute excavation of the Inanna Temple at the site of Nippur during the late 1950s and early 1960s. The authors of the volume are Richard L. Zettler, Karen L. Wilson, Jean M. Evans, and Robert D. Biggs, with contributions by R. C. Haines and Donald P. Hansen. The series editor is McGuire Gibson. The Oriental Institute Publications Office is currently editing and formatting the volume(s).

This past year, Karen also continued to serve as Kish Project Coordinator and Research Associate at the Field Museum, preparing aspects of the publication of the work of the Joint Field Museum and Oxford University Expedition to Kish in 1923–1932. She is extremely pleased that the Oriental Institute Publications Committee has agreed to publish the manuscript as a volume in the Oriental Institute Publications series. The volume presents the results of a symposium conducted in November 2008 that focused on current research and updated excavations at the site. Chapters cover studies of the human remains, textual evidence, lithics,

animal figurines, seals and stucco, as well as a catalog of the Field Museum holdings from Kish and Jamdat Nasr.

Karen worked this past year on the Oriental Institute excavations at Tell Abu Salabikh, a site that lies approximately twelve miles northwest of Nippur, Iraq. Two brief soundings by members of the Nippur Expedition took place during six weeks in the spring of 1963 and two weeks in the winter of 1965. Over 500 tablets discovered in two adjacent buildings at the site were published by Robert D. Biggs in *Inscriptions from Tell Abū Ṣalābih* (Oriental Institute Publications 99. Chicago and London: University of Chicago Press, 1974). However, the field records and the pottery, seals and sealings, and other objects found, still remain to be studied and published.

Christopher Woods

Chris Woods devoted much of this past year to continuing work on long-term projects, completing several publications, and presenting papers at various conferences. Chris served on the advisory search committees for the dean of the Humanities Division and director of the Laboratory Schools, as well as on several others including the Oriental Institute, Department of Near Eastern Languages and Civilizations, and University committees. He continued his editorship of the *Journal of Near Eastern Studies* and oversaw the Oriental Institute's Postdoctoral Scholars Program.

This year's research projects included finalizing a draft of *Materials for the Sumerian Lexicon* (Volume 18): *Igituh, Idu, Lanu, and the Group Vocabularies*, to be published by the Pontifical Biblical Institute. Chris also completed several articles concerned with early cuneiform writing and numeracy and he began a monograph on this topic, provisionally entitled "The Origins and Development of Writing in Ancient Mesopotamia: A History, 3500–2000 BCE." This year also saw the last of Chris' Signs of Writing conferences, which took place July 25–27, 2016, with two days at the University's Paris Center and a third at the Sorbonne (co-hosted by the École Pratique des Hautes Études and the University of Basel). Funded by the Neubauer Collegium for Culture and Society, Signs of Writing: The Cultural, Social, and Linguistic Contexts of the World's First Writing Systems (in collaboration with Edward Shaughnessy, East Asian Languages and Civilization) was a three-year research project designed to investigate, from a comparative and interdisciplinary perspectives, the cultural and social contexts and structural properties of the world's oldest writing systems. Particular emphasis was placed on the four primary writing systems from Mesopotamia, China, Egypt, and Mesoamerica, looking at the similarities and differences in the archaeological and paleographic records across regions as well as the psycho-linguistic processes by which humans first made language visible. The first of our three annual conferences took place in Chicago on November 8–9, 2014; a second conference took place in China on June 25–30, 2015, and was hosted jointly by the Chicago Center in Beijing and Fudan University in Shanghai.

Chris presented at the Signs of Writing conference in Paris, speaking on "Determinatives in Sumerian Writing from the Perspective of Noun Classifier Systems." At the Rencontre Assyriologique Internationale meeting in Philadelphia, also in July, Chris spoke in a session honoring Oriental Institute Professor Emeritus Miguel Civil on "In the Mind's Eye: Possible Mental Abacus Calculations in Mesopotamia." Chris gave two invited lectures this year: the

inaugural Abraham Sachs Lecture in Assyriology at Brown University, where he spoke on “Big Numbers in Babylonia: An Early Abacus in Comparative Perspective;” and in Columbia University’s Program in World Philology Lecture Series, where he presented on “Philology and Linguistic Awareness at the Dawn of Writing.” Finally, at this year’s Annual Oriental Institute Symposium, Seen Not Heard — Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts, Chris spoke on “The Semantic Basis of Sumerian Writing.”

Ilona Zsolnay

Ilona Zsolnay was extremely pleased to join the Oriental Institute as its thirteenth Symposium Postdoctoral Fellow, for 2016–2018. She arrived in September of last year, hailing from the Babylonian Section of the Penn Museum, University of Pennsylvania, where she had been in residence for the previous seven years. There she served primarily as project manager for the Philadelphia extension of CDLI (<http://cdli.ucla.edu/collections/penn/penn.html>) and as lecturer in Akkadian.

Zsolnay spent the summer of 2016 completing and publishing various projects. Most significant of these was the release of her edited anthology, *Being a Man: Negotiating Ancient Constructs of Masculinity* (New York: Routledge, 2016) (<https://www.routledge.com/products/9781138189362>). The volume comprises the proceedings of a Mellon-funded conference that Zsolnay organized at Penn. Just before her arrival at the OI she attended to the final stages of the volume’s publication, which included creating a usable and useful index and proofreading the contributions, including her joint chapter with the late Joan Goodnick Westenholz, “Categorizing Men and Masculinity in Sumer.” Zsolnay held the first physical copy of the book at her OI desk and is proud to announce that in April of this year, *Being a Man* received an excellent review in the *Bryn Mawr Classical Review* (<http://bmcr.brynmawr.edu/2017/2017-04-32.html>). The reviewer agreed that recognizing constructs of masculinity is crucial for accurately comprehending societal organization and concluded that the volume is a much-needed addition to the field of ancient Near Eastern studies. Also last summer, Zsolnay approved the final proofs for her forthcoming article “Analyzing Constructs: A Selection of Perils, Pitfalls, and Progressions in Interrogating Ancient Near Eastern Gender” and was honored to attend the conference Signs of Writing: The Cultural, Social, and Linguistic Contexts of the World’s First Writing Systems III, Paris, July 25–27, 2016, the third meeting of Chris Woods’s Neubauer Collegium interdisciplinary project devoted to early writing systems.

In fall 2016 Zsolnay stepped in as facilitator of the OI Connections Seminar, while Stephanie Rost was on maternity leave, and began preparations for Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts. Her busy fall semester also included an informative primer on the impressive OCHRE database by Sandra Schloen and Miller C. Prosser and attendance at several talks at the Society of Biblical Literature Annual Meeting in San Antonio.

Seen Not Heard took place March 1–2, 2017, in Breasted Hall at the Oriental Institute. The conference was exceedingly well attended, attracting scholars from manifold University of Chicago departments, and brought together a celebrated roster of international presenters. For a synopsis of this conference, see Zsolnay’s article in *News & Notes* 234, pp. 10–13 (<https://oi.uchicago.edu/research/news-notes-quarterly-newsletter>).

Just after Seen Not Heard wrapped up, in spring 2017, Zsolnay presented “Chaos Versus Precision: ĜIŠHUR, ĜARZA, ME, and the Whims of the Gods,” at the AOS Annual Meeting in Los Angeles, and chaired the session Ancient Near East V: Literature. In her presentation, she interrogated the visually different logograms ĜARZA (PA.AN) and ĜARZA₂ (PA.LUGAL), which may each be used to indicate the Sumerian word ĝarza, and contextualized their attestations. In 2017, Zsolnay was also invited to peer review an article for *Akkadica* and write a review of *The Role of Women in Work and Society in the Ancient Near East* (edited by Brigitte Lion and Cécile Michel) for the journal *Wiener Zeitschrift für die Kunde des Morgenlandes* (WZKM).

Although Zsolnay’s writing and editing responsibilities for the Seen Not Heard proceedings have already begun in earnest, she continues to work on an edition of CBS15209 (Civil’s Išme-Dagan N). This v-tablet contains a heretofore unedited hymn to the god Nergal that has received little attention. Based on tablet form, it has been suggested that it, together with IšD C, K, and X, form an Išme-Dagan cycle. However, although all contain similar terminology, their syntax, subject matter, and style are quite different. In her presentation at the American Oriental Society Annual Meeting in 2014, “Nergal Revisited: An Analysis of CBS15209 aka Išme-Dagan N,” Zsolnay presented these initial findings and continues to edit the tablet and investigate its relation to other productions attributed to this Isin king.



RESEARCH SUPPORT



Overleaf: Griffin Plaque. Megiddo, Israel. Late Bronze Age IIB, ca. 1300–1200 BC. Megiddo and Levant Collection. A22212 (D. 5473)

RESEARCH SUPPORT

COMPUTER LABORATORY

Knut Boehmer

During my second year as the Oriental Institute's IT Support Specialist, most things have become more familiar. With a lot of new faces coming to the building, and some old ones leaving, it had its share of new challenges and experiences as well, which I enjoyed. Looking back though, I am confident that the IT infrastructure and the digital offers the Oriental Institute provides today have significantly improved and that we are heading in a good direction.

Oriental Institute IT Inventory

The OI inventory list has been continually extended, allowing a glimpse into the number of computers that the Oriental Institute uses; while quite a few older models were discarded the inventory currently contains around 220 active devices in the building.

Recycling Pickups

As planned, the recycling pickups have continued. In fact, the demand was so great that the intervals had to be moved from the planned semi-annual schedule to a quarter schedule, resulting in four vans full of discarded electronics picked up over the last year.

Direct Support

The change away from a ticketing system and towards a more personal support was a success – the overall majority of issues that arose were solved within twenty-four hours, with only a handful persisted for more than seventy-two hours. Feedback and approval of the “direct support” were very positive, so that this system will continue for the next year.

Purchase Process

The Oriental Institute's reaction to the offer of managing IT- and technology-related purchases was also very positive, with one purchase about every two days on average with little to no complaints on the changed workflow. As such, the service offer will remain.

AV / Hybrid Classes

One of the biggest changes of the past year has been in the OI video recording capabilities. Starting with Foy Scalf's online course in 2016, the process has been optimized, streamlined, and made more versatile. A solution was found to enhance the upgraded classroom AV's recording capabilities, as well the creation of a mobile setup that can be moved throughout the building, allowing recordings of classes inside offices or brown bag lunches in the La Salle Banks room. During the last year, a total of eighty-five class recordings have been created and made accessible to online participants and students.

Going forward, the majority of the Oriental Institute's adult education courses will be offered as hybrid courses, allowing participants from all over the world to participate. Also,

the hardware will be improved to increase quality of the recordings, as well as offer new opportunities like live streams or interactions with the classroom.

Oral History Project

Connected to the hybrid courses, a modification of the mobile recording setup was used to support the Museum and Research Archive's Oral History Project. Two hour-long interviews, one with Professor Robert Biggs, the other with the former OI Museum Archivist John Larson, were recorded and published to the Oriental Institute's YouTube channel, each one allowing invaluable insights and experiences of a lifetime of working within the building.

"The Suq" POS System

The search for a reliable partner for the Oriental Institute's Museum Shop (The Suq) was concluded in autumn of 2016. Working with the service provider "Lightspeed," the shop computer was replaced by an iPad, allowing for a more streamlined purchase process and, simultaneously, keeping a cloud-based inventory accessible from multiple devices at all times.

University of Chicago IT Leadership Council

As of June 2017, I am proud to represent the Oriental Institute with a seat in the newly founded University of Chicago IT Leadership Council. The goal of this council is to have a voice in top-level decisions that are made in the field of IT across campus, as well as allowing networking with other departments and IT teams. This also allows for efficiency and services provided to be improved for all members of the Oriental Institute.

The above points highlight only a few of the tasks that I have worked on since October 2016; for additional details please contact me directly.

INTEGRATED DATABASE PROJECT

Foy Scalf

Introduction

The Integrated Database Project (IDB) completed Phase III in October 2016. Phase III was funded by a Museums for America Collections Stewardship grant from the Institute for Museum and Library Services (MA-30-14-0541-14). During Phase III, records from two additional Institute departments were further incorporated into the database. We have now migrated nearly 40,000 records from the Center for Middle Eastern Landscapes (CAMEL) and over 50,000 records from the Museum Archives (table 1). In addition to integrating these records into the

Table 1. Total records in the Integrated Database

Department	Records in EMu	Records on Website
Research Archives	535,000	524,336
Museum Registration	276,735	234,781
Photographic Archives	188,627	103,804
Museum Archives	50,481	50,477
CAMEL	38,947	8,315
Museum Conservation	10,115	—

larger information network in our internal EMu system, all of the Museum Archives records and all CAMEL records for which there are no copyright restrictions are now also available online. This represents a major step forward for the public accessibility of information from the Oriental Institute's collections. Never before has the CAMEL or Museum Archives information been available to such a wide audience. These datasets join the Research Archives, Museum Registration, Photographic Archives, and Conservation; combined together, there are more than 1,000,000 records now in the IDB. Each day the usefulness of this information increases as it is further linked between departments, creating a data web that will reveal relationships that would otherwise remain hidden to the researcher (fig. 1).

Over the past few years, a number of important internal projects have been completed. The entire paper registration card collection and all the accession records have been completely digitized and incorporated into EMu. The archives of T. George Allen have been digitized and cataloged. We have now embarked on a project to digitize and transcribe the complete collection of photo registration cards in the Museum Archives. Several volunteers are working to scan and catalog archival photos of objects from our museum collection. Public domain library volumes and online resources are being cataloged by Research Archives volunteers. All of these resources are now available to anyone with access to the internet for research, education, and teaching. Further details about individual departments' accomplishments can be found in their annual reports.

[Return to Search Results](#)

P. 21850

Photo Number(s): 021850

Negative Number(s): -

Digital Number: -

Accession Photo Number: 1874

Accession Negative Number: -

Field Negative Number: --

Identifier: P. 21850.jpg

Description:

Location: Oriental Institute AZ369 Provenance: Iraq: Khorsabad Details: Dr. Wilson Breyer and a group of students in front of the winged bull.

Registration Number(s):

A7369

Unit ID: P. 21850



Click the image to view full size 

Figure 1. Photographic Archives record showing links to other collections via hyperlinked registration and photograph numbers

Online Collections Search (oi-idb.uchicago.edu)

The Online Collections Search has continued to undergo development over the last academic year. In September 2016, over 6,000 CAMEL records went live to the public, including thousands of declassified satellite images and digitized maps. For each of these records, CAMEL's geographical data allowed us to plot the maps' outlines within an Esri leaflet viewer on the web (fig. 2). We should thank our colleagues Sharon Grant and Peter Herbst from the Field Museum of Natural History for their help and inspiration for this idea. For researchers who want the original data, the GIS files can be downloaded via a "Download Files" link displayed on the page.

A number of fields were added in December 2016 to the Research Archives display, search, and facets, including fields for summaries, abstracts, language, and acronym. Abstracts are cataloged for all library materials that come with one. This adds a very important searching capability to the catalog as a research tool. Although the fact that we catalog all individually authored chapters and articles, it remains that the title fields do not always accurately reflect what the article is about. The abstract and summary field will help researchers find material that may otherwise have been missed. In the future, we will move to incorporate a full text search for all PDFs in the database. At the same time, the data format for the Museum Collections records was updated and the search was changed for museum registration numbers so that it reflected the same format as found in our print volumes (e.g., E9787F). Similar changes were made in January 2017 when each department's tab was separated into its own index, field registration number was added to the search for museum collection records, and records for lecture videos were updated and improved to increase findability.

In May 2017 the site underwent a major overhaul to convert it from a single page to a multipage application. This change allows a number of new improvements. First, users can

[Return to Search Results](#)

Survey of Egypt: Key_1_100000_Topo_Maps_of_Egypt_1

[Click the image to view full size](#) 

Spatial Type: Map

Subcategory: Normal Desert

Creation Date: --

Resolution: 481

Description: --

Scale: 1:1250000

Visibility: 4

Source: Oriental Institute Archives Map Collection

Citation: British War Office, Intelligence Division: The Survey of Ancient Middle Eastern Landscapes, Oriental Institute, University of Chicago

SP4: --

Language: English

File Format: tif

CAMEL ID: 1052519

UUID: 877cc5ea-35af-4f45-8e8a-03d958a98088

Stable URL: <https://oi-idb.uchicago.edu/id/877cc5ea-35af-4f45-8e8a-03d958a98088>

[Slide 1 of 1](#)

[Key_1_100000_Topo_Maps_of_Egypt](#)

[Download Files](#)



Figure 2. CAMEL Record with Esri Leaflet Viewer

now right click to open records within individual browser tabs. Second, user behavior can now be tracked through Google Analytics on the site. For example, we know that in the first 90 days of activation, over 3,200 users visited the site in 7,200 sessions. The average session duration was 5 minutes and 24 seconds. 45% of use of the site involved users viewing the detail pages for individual records, 34% involved new searches, and 18% involved revised searches. The most popular record remained the iconic lamassu (OIM A7369, <https://oi-idb.uchicago.edu/id/10443a90-e395-4a2f-a81f-75a3b2312c1c>) with 159 views until a Twitter post went viral concerning OIM A8761, an ancient mace-head that looks like a fidget spinner. That record was viewed 209 times (<https://oi-idb.uchicago.edu/id/a15f109e-cd53-4600-99e8-12efa642bc93>). The most popular search was “Theban Tomb 158,” searched 67 times, with “Theban tomb 55 Ramose” and “Theban tomb 93” coming in close behind with 33 and 32 searches respectively. The preliminary results from the Google Analytics demonstrate that the vast majority of users are using a simple search method to view individual records. Only a very small percentage of users were building complex searches across multiple fields or multiple departments.

The conversion to a multipage application was accompanied by the implementation of stable URLs for each record in the database. Each record is now identified by a GUID (Global Unique Identifier). That GUID is part of the URL following <http://oi-idb.uchicago.edu/id/> and the stable URL with GUID is displayed at the bottom of every details page for each record (fig. 3). As GUIDs are intended to be globally unique numbers, our intention is to maintain these links indefinitely, so that users can confidently link to objects in our collections without fear of the link disappearing or becoming disabled. These developments are further improvements to ensure that the OI collections are accessible and sustainable for the long term future.

[Return to Search Results](#)

Records of the Oriental Institute Negatives Collection, -

Level Attribute Item

Title Proper: -

Unit Title: Negative N. 638

Extent: -

Dimensions: -

Date: -

Source: -

Unit ID: Item 609

Physical Description: 1 glass plate negative

Scope and Content: This is a negative labelled "Iraq: Bismaya(?)". The identifying numbers are P. 9446, N. 638, and Bismaya F. Neg. 341.

UUID: bc5e808a-195b-4fbc-a2af-fed86d607202

Stable URL: <https://oi-ida.uchicago.edu/id/bc5e808a-195b-4fbc-a2af-fed86d607202>

Collection: Records of the Oriental Institute Negatives Collection

Box: Records of the Oriental Institute Negatives Collection

Folder: Records of the Oriental Institute Negatives Collection

Click the image to view full size 

Slide 1 of 1
N. 638_P. 9446
[View Photo Archive record.](#)

Figure 3. Museum Archive record with stable URL and hierarchy links

As we move forward, we will continue to improve the usefulness and functionality of the site. Within the next academic year, we will add addition search and faceting options, fix a number of minor display issues, expand the citations functionality to all records, add a tab for people and organizations, and add a separate tab for Epigraphic Survey records. We are also investigating implementing a login mechanism for users to save, annotate, and share records. Finally, we are interested in publishing our data as linked open data to the semantic web for incorporation into much larger datasets.

Phase Four

In November 2016, Phase IV of the Integrated Database began. This phase focuses on two major and very important silos. One part of the project focuses on material from the Museum Archives. Archival material for cataloging and digitization has been selected based on regions most under threat, specifically excavation records from sites in Syria and Iraq including Tell es-Sweyhat, Khorsabad, Nippur, Hamoukar, Khafaje, Tell Asmar, Tell Agrab, and Ishchali. The second part focuses on material from the Oriental Institute's Epigraphic Survey and will include migrating records from a 4D database into EMu as well as digitization of paper records in their archives. These datasets are a critical missing link in providing further metadata about the museum's objects and publications now available through the Integrated Database, in particular information about discovery contexts and relationships to other objects. Records imported and created in Phase IV will be linked to the datasets that were transferred into the new database system during Phases I–III of the project and all non-sensitive data will be made

available in full through the public search webpage. Funding for Phase IV has come from a Museums for American grant from the Institute of Museum and Library Services (MA-30-16-0311).

Acknowledgments

First and foremost, we would like to thank the funders who make this project possible: the Oriental Institute, the University of Chicago, the Institute for Museum and Library Services, and Aimee Drolet Rossi. It is also very important to acknowledge the very large team working on the IDB, including all the Oriental Institute faculty, staff, students, and volunteers who do the dirty work of cataloging, digitizing, and data cleaning on a daily basis. Their names can be found in the annual reports for the individual departments involved in the IDB project. This project, by its very nature, is collaborative and could not be done without the help of many people. Sincere thanks goes out to each and every team member who has helped make the IDB the success it is today.

JOURNAL OF NEAR EASTERN STUDIES

Seth Richardson

The *Journal of Near Eastern Studies* (JNES) published eighteen major articles and nineteen book reviews in annual year 2016–2017 (volumes 75/2 and 76/1). Our articles covered topics as diverse as ancient gaming boards carved in rockfaces at Petra, the role of sound in ancient divination, and the ongoing effort to document the looting of the Mosul Museum in Iraq. Among works by Chicago authors, JNES has featured Robert Ritner's analysis of two Egyptian water-clocks (*clepsydrae*) in the Oriental Institute Museum collection, Ahmed El Shamsy's essay on an early Islamic papyrus about procedures for prayer, and Tasha Vorderstrasse and Kathryn Franklin's study of the form and function of villages in medieval Armenia.

The journal continues to enjoy a substantial page expansion (twenty-five more pages), increased subscriptions and online viewing (+9.3%), and an almost three-fold increase in impact-factor ratings according to the ResearchGate and Scimago indexes, all while improving profitability (against the trend for journals, +4%) and selectivity in publication (with an acceptance rate now at only 11.2%). Editorial policies have also improved time-to-decision for submitting authors from about six to three months over the past five years, and time-to-publication from over twenty-four months to twelve. Double-blind review was introduced in 2013.

JNES is looking forward in the coming year to publishing exciting discoveries in Babylonian astronomy, early Islamic *hadith*-sayings, and new Sumerian literary works, among others. Interested readers are encouraged to visit the journal at: <http://www.journals.uchicago.edu/toc/jnes/current>.

OCHRE DATA SERVICE

Sandra Schloen

In the beginning...

...were clay tablets from the Persepolis Fortification Archive, whose future now lies in the hands of the Supreme Court. Regardless of the fate of the physical tablets, their digital selves will be safeguarded in the Online Cultural and Historical Research Environment (OCHRE), having been captured there over these past ten years in all of their textual, lexical, artistic, and photographic glory. More than 6,300 fully articulated text editions, 11,000+ glossary entries, and almost 170,000 images (50+ TB) are managed by OCHRE's integrative research environment, which also serves as a collaborative dissemination platform, and an archival repository.

...was legacy data, the management of which consumed much of the energy of the OCHRE Data Service staff in the early days. File cabinets full of the paper trail of archaeology expeditions, like those of the ten-year expedition to Zincirli; drawers and boxes of slides, CDs, and film negative strips, some taken of objects not likely to be seen again from museums in Syria; documents like those of the Chicago Demotic Dictionary, woven together with now obsolete, non-Unicode fonts — these are the data salvaged from research of the past by the OCHRE Data Service to begin new life in the digital age.

...is data born digitally on new research projects like that of Tell Keisan, Israel. Under the direction of David Schloen, field staff running OCHRE onsite and offline record excavation details, capture geospatial-features, and create a photographic record, all of which is in the database and on the server by nightfall in time for its first backup at the University of Chicago's Digital Library Development Center (DLDC). This satisfying process fully captures the spirit of the mantra from the early days of computing "get it once, get it early, get it right!"

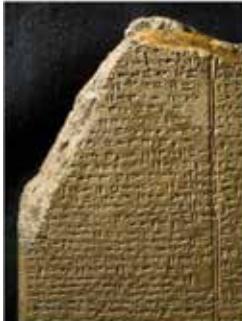
...is itself a phrase that carries great significance for a major new project recently taken on by the OCHRE Data Service entitled Critical Editions for Digital Analysis and Research (CEDAR). Conceived of by David Schloen, and with the financial and technical support of former University of Chicago student Paul Funk of Cambridge, Massachusetts, CEDAR will provide a single software environment in which scholars can trace textual variants and explore the transmission of major literary traditions. Partnering in the ambitious task of creating digital critical editions of canonical corpora, while also developing and testing a digital system for their exploration and analysis, are the following UChicago colleagues: Christopher Woods for the Gilgamesh Epic; Jeffrey Stackert of the Divinity School for the Hebrew Bible; and Ellen MacKay of the English department for Shakespeare's plays. With Genesis 1:1 as our starting point ("In the beginning..."), our initial test cases will be the first eleven chapters of the Book of Genesis (the "Primeval History" from Creation to Abraham), the Sumerian copies of the Gilgamesh Epic, and the various early printings of Shakespeare's Hamlet. Texts and variants will be digitally captured and preserved; facsimile images will be linked; commentary will be tracked down and integrated; and tools will be developed to explore these rich collections. Underlying these tools is the OCHRE database with its generic and highly flexible, yet rigorous, data model, which provides a common platform for data integration, analysis, and publica-

tion of scholarly knowledge in the humanities. The CEDAR project will show that a common, shared system can be applied to common problems of scholarship across a range of disciplines.

...were the students, seeking to use technology to answer research questions. Thirty years ago it was student David Schloen whose study of the economic texts at Ugaritic found him entering person- and place-names into now long-outdated Paradox tables, foreshadowing the more powerful data structures that would evolve from the rudimentary beginnings of database technology and which would, many years on, inspire OCHRE. Seven years ago it was student Miller Prosser — studying Ugaritic under Dennis Pardee, crafting a Microsoft Access database to capture the details of the texts he was researching for his doctoral dissertation — who reached the conceptual limits of standard database approaches. Now a senior Research Database Specialist at the OCHRE Data Service, and a valued colleague, Miller exploits OCHRE to the fullest, diligently amassing and unifying all things Ugaritic in the Ras Shamra Tablet Inventory (RSTI) project database. Just this month a new crop of students signed up to work on the various research projects supported by the OCHRE Data Service. Despite the ongoing cycle of research project beginnings and endings, this remains constant ... the steady stream of hard-working, highly intelligent, invariably impressive student assistants for whom we are infinitely grateful. While they pause with us but for a while, they contribute richly, then move on to their own beginnings.

Ras Shamra Tablet Inventory

HOME TABLETS TEXTS TECH ABOUT
research on the tablets and texts from Ras Shamra-Ugarit



Project Info



Tablets



Texts

Table 4: Transcription

Column 1	Column 2
(1)	[broken]
(2)	[broken]
(3)	[broken]
(4)	amr . ly3 b ¹ . tr
(5)	l . abh . il mlk
(6)	dykmnh . yy b ¹ . lt
(7)	rt . w bnh . ylt
(8)	w sbt . aryb
(9)	wn . in . bt . lb[?]
(10)	km . dm . w hze
(11)	k . km . tgfr[?]
(12)	m [l] b ¹ . lmfl
(13)	bnh . mgb . rbt
(14)	gtrt . ym . ngtb
(15)	kl . knyt
(16)	mtb . gdry . bt . ar
(17)	mlf . tly . bt . rb
(18)	mb . aryb . bt . ybdr
(19)	ap . mn . rgmm

Figure 1. New this year: publish data from OCHRE directly to a traditional website. Pictured here is: ods.uchicago.edu/rsti.

For more information regarding our services and our active research projects, please visit our website at: <http://ods.uchicago.edu/rsti>.

Note

¹ <http://persepolistablets.blogspot.com/2017/06/supreme-court-takes-up-dispute-over.html> (last accessed July 10, 2017)

PUBLICATIONS OFFICE

Thomas G. Urban

The full-time staff of the Publications Office remained Leslie Schramer (thirteenth year) and Thomas G. Urban (twenty-ninth year). On March 31 Leslie resigned and moved on to work for another publisher. On June 21 the Oriental Institute hired Charissa Johnson to succeed Leslie. Part-time staff includes Assistant Editor Rebecca Cain (eighth year) and Editorial Assistants Ariel Singer and Emily Smith, both in their third year. Alexandra Cornacchia joined the staff as an Editorial Assistant toward the end of the year. Alexandra Witsell signed on to a six month contract to work on *The Second Cataract Fortress at Dorginarti*, by Lisa A. Heidorn. Jaslyn Ramos joined the staff as a summer intern for an eight-week term.

This was another busy year. A new title was published in print and online, and five others are set to be published before the end of the calendar year. Four titles were reprinted. The *Annual Report*, four issues of *News & Notes*, and the *Chicago House Bulletin* were published. Copy editing continues with museum labels, brochures, lecture series fliers, the monthly *Volunteer Voice*, and other notices. The Publications Office continues to manage the printed material for the Post-Doc Seminar, which includes the set of guidelines, continually edited by new post-doc fellows, posters, programs, name badges, and miscellanea — and the book that reports on the topic of the seminar. A good amount of time continues to be spent assisting the Chicago Demotic Dictionary (CDD).

Sales

Casemate Academic and Oxbow Books continue to handle the bulk of book distribution for the Oriental Institute. A limited number of titles are also available for in-house sales in the Suq museum gift shop. Contact information for Casemate Academic and Oxbow Books:

Casemate Academic
1950 Lawrence Road
Havertown, PA 19083

Tel. 1.610.853.9131
Fax 1.610.853.9146

Casemate@casematepublishers.com
www.casematepublishers.com

Oxbow Books
47 Church Street
Barnsley, S70 2AS UK

+44 (0)1226 734350
+44 (0)1226 734438

orders@oxbowbooks.com
www.oxbowbooks.com

Electronic Publications

The Publications Office continues to upload PDFs of new publications simultaneously with the release of corresponding printed titles. Downloads of printed materials remain complimentary.

To access the complete catalog of Oriental Institute titles, which includes *Annual Reports*, *News & Notes*, and *Chicago House Bulletins*, please visit:

<http://oi.uchicago.edu/research/catalog-publications>

New Titles Published In-Print and Online

1. *The Early/Middle Bronze Age Transition in the Ancient Near East: Chronology, C14, and Climate Change*. Edited by Felix Höflmayer. OIS 11
2. *The Oriental Institute 2015–2016 Annual Report*. Edited by Gil J. Stein. AR 2015–2016
3. *Chicago House Bulletin* 27. Edited by W. Raymond Johnson. CHB 27
- 4–7. *Oriental Institute News & Notes*. Edited by Amy Weber and Jennie Myers. NN 231–234. Quarterly
- 8–19. *Volunteer Voice*. Edited by Sue Geshwender et al. Volunteers. Monthly
- 20–21. *Programs and Events*. Edited by Carol Ng-He, Kiersten Neumann, and Jennie Myers. Education, Museum, Membership

Volumes Reprinted

1. *Visible Language*. Edited by Chris Woods. 2010. OIMP 32
2. *The Egyptian Book of the Dead: Documents in the Oriental Institute Museum at the University of Chicago*. By Thomas George Allen. 1960. OIP 82
3. *The Mechanics of Ancient Egyptian Magical Practice*. By Robert K. Ritner. 1993. SAOC 54
4. *Performing Death: Social Analyses of Funerary Traditions in the Ancient Near East and Mediterranean*. Edited by Nicola Laneri. 2007. OIS 3

Volumes in Press

1. *Book of the Dead: Becoming God in Ancient Egypt*. Edited by Foy Scalf. OIMP 39
2. *Highlights of the Collections of the Oriental Institute Museum*. Edited by Jean M. Evans, Jack Green, and Emily Teeter.
3. *The Ritual Landscape at Persepolis: Glyptic Imagery from the Persepolis Fortification and Treasury Archives*. By Mark B. Garrison. SAOC 72
4. *Preserving the Cultural Heritage of Afghanistan. Proceedings of the International Conference Held at Kabul University, November 2014*. Edited by Gil J. Stein, Michael T. Fisher, Abdul Hafiz Latify, Najibullah Popal, and Nancy Hatch Dupree

Volumes in Preparation

1. *Essays for the Library of Seshat: Studies Presented to Janet H. Johnson on the Occasion of Her 70th Birthday*. Edited by Robert K. Ritner
2. *From Sherds to Landscapes: Studies on the Ancient Near East in Honor of McGuire Gibson*. Edited by Mark Altaweel and Carrie Hritz
3. *Great Hypostyle Hall in the Temple of Amun at Karnak, Volume 2. Translation and Commentary*. Peter J. Brand, Rosa Erika Feleg, and William J. Murnane†
4. *The Sheik's House at Quseir al-Qadim: Documenting a Thirteenth Century Red Sea Port*. By Katherine Strange Burke
5. *Excavations in the Plain of Antioch III: Stratigraphy, Pottery, and Small Finds from Chatal Höyük in the Amuq Plain*. By Marina Pucci, with contributions by John A. Brinkman, Günther Hölbl, Theo van den Hout, and Dominique Collon

6. *Where Kingship Descended from Heaven: New Light on Ancient Kish*. By Karen L. Wilson and Deborah Bekken
7. *Nippur VI: The Inanna Temple*. By Richard L. Zettler and Karen L. Wilson, with contributions by Jean M. Evans, Robert D. Biggs, Richard C. Haines, Donald P. Hansen, McGuire Gibson, James Knudstad, and John C. Sanders
8. The Second Cataract Fortress of Dorginati. By Lisa Heidorn. OINE 14
9. *The Palace of the Rulers: Ešnunna Administrative History from the Ur III to the Old Babylonian Period*. By Clemens Reichel
10. *Unpublished Bo-Fragments in Transliteration*. By Oğuz Soysal. CHDS 3
11. *Kerkenes Final Reports 1. Excavations at the Cappadocia Gate*. By Geoffrey D. Summers, with contributions by Yılmaz Selim Erdal, Susanne Berndt Ersöz, Evangelia Ioannidou-Pişkin, Yasemin Özarslan, Françoise Summers, Robert Tate, Nilüfer Baturayoğlu Yöney, with Introduction by David Stronach, and Turkish summary by Güzin Eren
12. *The Demotic Dictionary of the Oriental Institute of the University of Chicago*. Edited by Janet H. Johnson

Volumes in Backlog

1. "Like 'Ilu Are You Wise." *Studies in Northwest Semitic Languages and Literature in Honor of Dennis G. Pardee*. Edited by H. H. Hardy II, Joseph Lam, and Eric D. Reymond
 2. *Excavations at Serra East*. By Bruce Williams et al.; OINE 12
 3. *Private Costume in Egyptian Art*. Aleksandra Hallmann
 4. *Kerkenes Final Reports 2. Excavations at the Palatial Complex*. By Geoffrey D. Summers, with contributions by Susanne Berndt Ersöz, Ahmet Çinici, Yılmaz Selim Erdal, Evangelia Ioannidou-Pişkin, Noël Siver, and Françoise Summers. Introduction by Nicholas D. Cahill and summary translated into Turkish by Güzin Eren
 5. *Digital Epigraphy*, Second Edition. Epigraphic Survey
-

RESEARCH ARCHIVES

Foy Scalf

Introduction

The mission of the Research Archives has expanded rapidly over the last decade with the adoption of technology, the compilation of “big data,” and the rise of Digital Humanities. Although at the core the library serves to facilitate research about the ancient Near East for the faculty, staff, students, and members of the Oriental Institute, our audience and services have greatly diversified. Assisting with printed materials is now just one of many tasks we perform for our patrons and we often find ourselves helping with digital resources, accessing online databases, or determining how to look up information in an online platform. We are commonly providing digital scans of materials to researchers around the world and our volunteers work on projects from across the Institute such as assisting with digitization for museum registration and cataloging for museum archives. This change has been accelerated by the implementation of the Integrated Database, which now helps us record, organize, and share data about our collections (see separate report). As libraries morph to better accommodate this developing landscape, it is important to reflect on our core mission in the face of mission creep.

Our role is to ensure that researchers can easily and efficiently access the information needed to develop new understandings of the cultures of the ancient Near East. We seek to help find, interpret, and share that understanding, with our academic colleagues, our institutional cohorts, and the general public. Each year the Research Archives plays a key role in this network. By staying committed to print publications, the Research Archives maintains control over access and usage of materials. It also provides a sustainable, long-term foundation during this time of burgeoning, but often tenuous, digital information — an era for which many believe we face a “digital dark age.” If certain sectors of digital scholarship on the ancient Near East disappear in the next twenty-five to fifty years, which is likely given the histories of their print analogues, paper copies may actually be the most reliable “back up.” It is our mission to develop, preserve, conserve, and grow these collections, but more importantly to make sure they are used. Like the growing popularity of artisanal products, service in the Research Archives relies on a specialized knowledge base, which allows us to provide for library patrons in a way that general reference librarians or shared services cannot. We want to merge the traditional with the non-traditional, the print with the digital, the library catalog with the cultural lexicon, to transform how we work with data and how we understand the ancient world. Over the last academic year, the Research Archives staff and volunteers have worked thousands of hours on a variety of projects for the Oriental Institute to make this happen.

Acquisitions

The Research Archives had another healthy year of growth during 2016–2017, acquiring 1,131 volumes in 301 accession lots (table 1). Nearly one third of these volumes consisted of

journals, with monographs, serials, theses, and pamphlets occupying the other two thirds. These numbers reflect print volumes exclusively.

Table 1. Research Archives Acquisitions July 2016–June 2017

Month	Number of Accession Lots	Monographs, Series, Pamphlets	Journals	Total Volumes
July 2016	21	36	49	85
August 2016	26	61	10	71
September 2016	38	45	34	79
October 2016	16	51	10	61
November 2016	25	77	15	92
December 2016	33	36	33	69
January 2017	9	100	7	107
February 2017	20	39	32	71
March 2017	41	76	99	175
April 2017	19	87	19	106
May 2017	27	93	12	105
June 2017	26	59	51	110
Totals	301	760	371	
Total Volumes				1,131

Online Catalog

Since the fall of 2007, the online catalog has grown by over 340,000 records, averaging over 25,000 records per year (table 2). This average has declined since the apex in 2008–2009, which

had been due primarily to the processing of backlogged data migrated from old databases. In 2016–2017, we added another 10,000 records, all processed and cataloged manually by the staff and volunteers of the Research Archives. We continued to improve the public face of the catalog by adding summary/abstract, language, and acronym fields to the search and display. Each record also now has a stable URL that allows users to confidently link to the record. All of these updates are discussed in the annual report for the Integrated Database Project.

Analytics from the Research Archives catalog show the breakdowns in the types of material in the collection (table 3).

Table 2. Catalog Records

Year	Number of Catalog Records Added	Total Number of Catalog Records
2016–2017	10,000	535,000
2015–2016	15,000	525,000
2014–2015	20,000	510,000
2013–2014	30,000	490,000
2012–2013	40,000	460,000
2011–2012	30,000	420,000
2010–2011	30,000	390,000
2009–2010	40,000	360,000
2008–2009	63,000	320,000
2007–2008	62,000	257,000
2006–2007	28,000	195,000
—	—	—
2003–2004	10,000	130,000

Table 3. Research Archives Analytics

Type	Total Number of Catalog Records
Total Volumes	64,747
Monographs	15,999
Monograph Sections	63,908
Series	1,371
Series Volumes	20,112
Series Volume Sections	85,262
Journals	943
Journal Volumes	27,609
Journal Volume Articles	307,732
Thesis	1,018
Pamphlets	2,522
Reviews	118,695
Festschriften	569
Digital Invoice Records	1,226
Digital Cover Art Records	5,380
Adobe PDF	18,512

Readers will immediately see that journal articles represent well over half the total number of database records (307,732 of 535,000). Scholars will find especially useful our indexing of journals, conference proceedings, and Festschriften, all the records of which are available for download through our online catalog (oi-idb.uchicago.edu) in formats compatible with major bibliographic software platforms (e.g., EndNote, Zotero).

Among those items cataloged in the past academic year, a selection of interesting material completed by Oriental Institute scholars, published outside of OI publication venues, can be highlighted. The following list is organized alphabetically based on the last name of the current Oriental Institute faculty or staff member listed as an author.

1. Emily Hammer and Anthony J. Lauricella. “Historical Imagery of Desert Kites in Eastern Jordan.” *Near Eastern Archaeology* 80 (2017): 74–83.
2. Janet H. Johnson. “Compound Nouns, Especially Abstracts, in Demotic.” In *Illuminating Osiris: Egyptological Studies in Honor of Mark Smith*, edited by Richard Jasnow and Ghislaine Widmer, pp. 163–71. Material and Visual Culture of Ancient Egypt. Atlanta: Lockwood Press, 2017.
3. Pierre Tallet and Grégory Marouard. “The Harbor Facilities of King Khufu on the Red Sea Shore: The Wadi al-Jarf/Tell Ras Budran System.” *Journal of the American Research Center in Egypt* 52 (2016): 135–77.
4. Kiersten A. Neumann. “Gods Among Men: Fashioning the Divine Image in Assyria.” In *What Shall I Say of Clothes?: Theoretical and Methodological Approaches to the Study of Dress in Antiquity*, edited by Megan Cifarelli and Laura Gawlikowski, pp. 3–23. Selected Papers on Ancient Art and Architecture 3. Boston: The Archaeological Institute of America, 2017.
5. Jason Ur and James F. Osborne. “The Rural Landscape of the Assyrian Hinterland: Recent Results from Arbail and Kilizu Provinces.” In *The Provincial Archaeology of the Assyrian Empire*, edited by John MacGinnis, Dirk Wicke, and Tina Greenfield, pp. 163–74. McDonald Institute Monographs. Cambridge: McDonald Institute for Archaeological Research, 2016.
6. Myles Lavan, Richard E. Payne, and John Weisweiler (eds.). *Cosmopolitanism and Empire: Universal Rulers, Local Elites, and Cultural Integration in the Ancient Near East and Mediterranean*. Oxford Studies in Early Empires. New York: Oxford University Press, 2016.

7. Richard Payne. "Territorializing Iran in Late Antiquity: Autocracy, Aristocracy, and the Infrastructure of Empire." In *Ancient States and Infrastructural Power: Europe, Asia, and America*, edited by Clifford Ando and Seth Richardson, pp. 179–217. Empire and After. Philadelphia: University of Pennsylvania Press, 2017.
8. Robert K. Ritner. "Oriental Institute Museum Notes 16: Two Egyptian Clepsydrae (OIM E16875 and A7125)." *Journal of Near Eastern Studies* 75:2 (2016): 361–89.
9. Robert K. Ritner. "Pantheistic Figures in Ancient Egypt." In *Illuminating Osiris: Egyptological Studies in Honor of Mark Smith*, edited by Richard Jasnow and Ghislaine Widmer Widmer, pp. 319–24. Material and Visual Culture of Ancient Egypt. Atlanta: Lockwood Press, 2017.
10. Austin (Chad) Hill and Yorke M. Rowan. "Droning on in the Badia: UAVs and Site Documentation at Wadi al-Qattafi." *Near Eastern Archaeology* 80 (2017): 114–23.
11. Virginia R. Herrmann and J. David Schloen. "Assyrian Impact on the Kingdom of Sam'al: The View from Zincirli." In *The Provincial Archaeology of the Assyrian Empire*, edited by John MacGinnis, Dirk Wicke, and Tina Greenfield, pp. 265–74. McDonald Institute Monographs. CAMBRIDGE: McDonald Institute for Archaeological Research, 2016.
12. Oğuz Soysal. "On Recent Cuneiform Editions of Hittite Fragments (III): Review of *Texte aus dem Bezirk des Grossen Temples III*, by Marie-Claude Trémouille. Keilschrifttexte aus Boghazköi 51 (Berlin: Gebr. Mann Verlag, 2009)." *Journal of the American Oriental Society* 136 (2016): 417–38.
13. Michael T. Fisher and Gil J. Stein. "Aks of War: A Digital Museum Inventory for a War-Torn Afghanistan." In *Proceedings of the 9th International Congress on the Archaeology of the Ancient Near East: Volume 1: Travelling Images – Transfer and Transformation of Visual Ideas, Dealing with the Past: Finds, Booty, Gifts, Collections at Risk: Sustainable Strategies for Managing Near Eastern Archaeological Collections*, edited by Rolf A. Stucky, Oskar Kaelin, Hans-Peter Mathys, and Andrew S. Jamieson, pp. 449–63. International Congress on the Archaeology of the Ancient Near East 9. Wiesbaden: Harrassowitz Verlag, 2016.
14. Virginia R. Herrmann, Theo van den Hout, and Ahmet Beyazlar. "A New Hieroglyphic Luwian Inscription from Pancarlı Höyük: Language and Power in Early Iron Age Sam'al-Y'DY." *Journal of Near Eastern Studies* 75 (2016): 53–70.
15. John Zhu-En Wee. "Virtual Moons over Babylonia: The Calendar Text System, Its Micro-Zodiac of 13, and the Making of Medical Zodiology." In *The Circulation of Astronomical Knowledge in the Ancient World*, edited by John M. Steele, pp. 139–229. Time, Astronomy, and Calendars 6. Leiden: Brill, 2016.
16. Donald S. Whitcomb, Michael Jennings, Andrew Creekmore, and Ignacio Arce. "Khirbet al-Mafjar: New Excavations and Hypotheses for an Umayyad Monument." *Near Eastern Archaeology* 79 (2016): 78–87.

We continue to add links to online material, both new and old (table 4). Currently, there are over 118,000 links to online material in the Research Archives catalog (roughly 23% of all catalog records). Journal articles available online, either through subscription or open access, constitute the bulk of these links. However, we also link to items available elsewhere on the internet, including books, dissertations, series, and manuscripts.

Table 4. Links to Journal Articles

Journal	Links	Access
<i>Journal of the American Oriental Society</i>	15,573	JSTOR
<i>Catholic Biblical Quarterly</i>	12,585	Ebsco
<i>American Journal of Archaeology</i>	11,757	JSTOR/AJA
<i>Antiquity</i>	11,324	Antiquity
<i>Zeitschrift für Papyrologie und Epigraphik</i>	8,473	JSTOR
<i>Syria</i>	6,010	JSTOR
<i>Journal of Near Eastern Studies</i>	5,424	JSTOR/JNES
<i>Journal of Egyptian Archaeology</i>	4,428	JSTOR
<i>Biblica</i>	3,910	Open
<i>Bulletin of the American School of Oriental Research</i>	3,825	JSTOR
<i>Palestine Exploration Quarterly</i>	3,533	Ebsco
<i>Zeitschrift für Assyriologie</i>	3,305	Open/De Gruyter
<i>Göttinger Miszellen</i>	3,110	DigiZeitschriften
<i>Zeitschrift der Deutschen Morgenländischen Gesellschaft</i>	2,955	Open
<i>Near Eastern Archaeology (formerly Biblical Archaeologist)</i>	2,575	JSTOR
<i>Académie des inscriptions et belles-lettres. Comptes rendus</i>	2,346	Open
<i>Bulletin de l'Institut Français d'Archéologie Orientale</i>	2,021	Open
<i>Journal of the Economic and Social History of the Orient</i>	1,496	JSTOR
<i>Journal of the American Research Center in Egypt</i>	1,374	JSTOR
<i>Aula Orientalis</i>	1,152	Open
<i>Bibliotheca Orientalis</i>	1,143	Peeters
<i>Journal of Cuneiform Studies</i>	1,141	JSTOR
<i>Iraq</i>	1,140	JSTOR
<i>Review of Biblical Literature</i>	1,092	Open
<i>Studien zur Altägyptische Kultur</i>	929	JSTOR
<i>Polish Archaeology in the Mediterranean</i>	858	Open
<i>Anatolian Studies</i>	847	JSTOR
<i>Iran</i>	729	JSTOR
<i>Forschungen und Berichte</i>	698	JSTOR
<i>Oriental Institute News & Notes</i>	574	Open
<i>Orient: Report of the Society for Near Eastern Studies in Japan</i>	479	Open
<i>Journal of the Ancient Near Eastern Society</i>	378	Open
<i>Sudan and Nubia</i>	355	Open
<i>Bulletin: Société d'Égyptologie Genève</i>	315	Open
<i>Journal of Hebrew Scriptures</i>	250	Open
<i>Ars Orientalis</i>	249	JSTOR
<i>Aeragram</i>	239	Open
<i>Cahiers de Karnak</i>	189	Open
<i>British Museum Studies in Ancient Egypt and Sudan</i>	134	Open
<i>Égypte Nilotique et Méditerranéenne</i>	125	Open
<i>Achaemenid Research on Texts and Archaeology</i>	102	Open

<i>Cuneiform Digital Library Notes</i>	92	Open
<i>Cuneiform Digital Library Journal</i>	62	Open
<i>Lingua Aegyptia</i>	47	Open
<i>Cuneiform Digital Library Bulletin</i>	54	Open
<i>ASDIWAL: Revue Genevoise d'Anthropologie et d'Histoire des Religions</i>	41	Open
<i>Studia Orontica</i>	37	Open
<i>Mitteilungen der Sudanarchäologischen Gesellschaft zu Berlin</i>	29	Open
<i>Zeitschrift für Antikes Christentum</i>	25	De Gruyter
Total	119,529	

Resources on the Web

In addition to the online catalog, the Research Archives maintains a series of open access online resources:

Introduction & Guide

https://oi.uchicago.edu/sites/oi.uchicago.edu/files/uploads/shared/docs/research_archives_introduction%26guide.pdf

An updated introduction and guide to the Research Archives contains a brief history, a guide to the Research Archives collection, and instructions for using the online catalog.

Online Resources

<http://oi.uchicago.edu/research/research-archives-library/online-resources>

Links to important online resources within the fields of ancient Near East studies are provided on this page with a focus on major tools and large databases.

Acquisitions Lists

<https://oi.uchicago.edu/research/research-archives-library/acquisitions-lists-research-archives>

The acquisitions reports of the Research Archives are distributed in Adobe Portable Document Format (PDF) on a monthly basis. This process has been active and continuative since September 2007.

Annual Reports

<https://oi.uchicago.edu/research/research-archives-library/research-archives-annual-reports>

Annual Reports for the Research Archives are available from 1969 to 2014.

Oriental Institute Staff Newsletter

<https://oi.uchicago.edu/research/research-archives-library/oriental-institute-staff-newsletter>

From February 1998 until March 2005 an Oriental Institute Staff Newsletter was circulated among faculty, staff, students, and the wider academic community. In the interest of preservation, remaining copies of the newsletter have been scanned and archived online.

Dissertations

<https://oi.uchicago.edu/research/research-archives-library/dissertations>

With the permission of the authors, the Research Archives provides access to Adobe Portable Document Format (PDF) copies of dissertations completed in the Department of Near Eastern Languages and Civilizations of the University of Chicago.

Dissertation Proposals

<https://oi.uchicago.edu/research/research-archives-library/dissertations/dissertation-proposals>

With the permission of the authors, the Research Archives provides access to Adobe Portable Document Format (PDF) copies of dissertation proposals completed in the Department of Near Eastern Languages and Civilizations of the University of Chicago.

Adopt-a-Book Campaign

<https://oi.uchicago.edu/research/research-archives-library/adopt-book-campaign>

The Research Archives has launched an “Adopt-a-Journal” campaign in order to increase support for the Research Archives. Donors are recognized through personalized book plates made in their honor and placed in volumes of their choosing.

Social Media Sites

<https://www.facebook.com/pages/Research-Archives-of-the-Oriental-Institute/153645450792>

The Research Archives now maintains an official page on Facebook. Information about recent publications of Oriental Institute scholars or reviews of recent Oriental Institute publications is distributed through this page. 3,374 individuals currently follow the Research Archives through this presence on Facebook.

Donations

Donations, both financial and in the form of books, continue to play an important role in the acquisitioning efforts of the Research Archives. A number of books are received through the *Journal of Near Eastern Studies* and through the Oriental Institute Museum as the Research Archives receives copies of publications that contain images of objects in our collections. Several journal subscriptions are maintained solely through donations of individual library patrons. In the realm of preservation, tattered and aging volumes can often be replaced or supplemented through book gifts and donations are extremely helping in filling past gaps in the collection. We would like to extend our sincere thanks to the following individuals and institutions for their generous gifts and exchange agreements this year: Bob Aliber, Amelie Beyhum, Gretel Braidwood, British Institute at Ankara, Deutsches Archäologisches Institut, Andrea Dudek, James L. Foorman, Margaret Foorman, Judith Gillespie, Nadine Goebel, Lewis Gruber, Misty Gruber, James Holland, Mariye C. Inouye, Israel Antiquities Authority Library, Catherine Mardikes, Carol Meyer, Demetria Nanos, Kiersten Neumann, John Perry, Seth Richardson, Roberta Schaffner, David Schloen, Emily Teeter, Ray Tindel, Tom Urban, George Whitesides, Barbara Whitesides, Bruce Williams.

Volunteer Program

Research Archives volunteers constitute 25% of the entire volunteer program of the Oriental Institute. Considering in 2007 the Research Archives did not have a single volunteer, that is an amazing accomplishment. We have been able to accomplish major projects with their help; without them, the incredible increase we've had in digitization, cataloging, and data cleanup would be completely impossible. They continue to devote their time freely and passionately to the us at the Oriental Institute and trust us to use their time wisely. I cannot thank them enough. We all owe sincere gratitude to the following: Eric Aupperle, Joe Barabe, Rebecca Binkley, Alannah Berson, Ray Broms, Betty Bush, Gaby Cohen, Jenna Cordisco, Kim Crawford, Meg Forajter, Emma Gilheany, Irene Glasner, Elizabeth Green, Kate Hodge, Polina Kasian, Kat Jarboe, Alex Jimerson, Elisa Landaverde, Kristin Leasia, Marge Nichols, Roberta Schaffner, Gabriele Correa da Silva, George Thomson, Ian Williams, Amy Zillman.

Visitors

The Research Archives continues to be a place of international collaboration among the community of scholars studying the ancient Near East. Over the past year, we had research visits from the following individuals (in alphabetical order) and I apologize for anyone who may have been missed: Kamila Braulińska, Gene Cruz-Uribe, Eric Hughes, Alex Loktionov, Mitch Miranda, Peter Piccione, Peter Raulwing, Reinert Skumsnes, Fazilat Soukhakian, Pierre Tallet, Steve Vinson, Keely Wardyn, Jennifer Westerfeld, Avi Winitzer, Payman Yadollahpour, Yoshi Yausoka, Rachel Young, and the Great Chicago Libraries class of Elmhurst College.

Staff Acknowledgments

Most of you reading this will have worked with Laura Krenz, Sunwoo Lee, Sasha Rohret, Rebecca Wang, and Ian Williams throughout the year as they helped find books, organize the library, catalog records, or just greet you when you come in. The Research Archives requires a close-knit team to run efficiently and I could never do it alone. I want to thank each of them for all the hard work they put in over the year and for their congenial attitudes in the office. They are excellent employees and coworkers, who make managing the library that much easier.

TABLET COLLECTION

Susanne Paulus, Andrew Wilent, and Walter Farber

Report of the Curator

Susanne Paulus

It was a great pleasure and honor to take over the curatorship of the Tablet Collection from my colleague Walter Farber. I want to thank him heartily not only for his many years of service, but also for the support and assistance he provided me during the period of transition. The Tablet Collection of the Oriental Institute, with its thousands of cuneiform tablets and even more casts, is a great treasure of knowledge. Many of the tablets in our collection are still unpublished and are waiting to be discovered. As curator, I see it as my foremost duty to make this knowledge accessible to researchers all over the world, and to advance the publication of the tablets. To facilitate this, the Tablet Room will remain an easily accessible and welcoming space for scholars and students.

To make the scholarly community aware of the tablets in possession of the Oriental Institute, the full catalog of published and unpublished cuneiform objects was made accessible online via the Integrated Database (<https://oi-idb.uchicago.edu/>). I cannot thank my predecessor and his assistants enough for collecting and recording all accessible information about our tablets and for digitizing the Tablet Room catalog cards.

While the existing catalog provides a good starting point, one cannot help but notice that when it comes to our unpublished tablets, information is still sparse. The entries are lacking not only photographs of the tablets, but also a categorization of their content. This information is especially important as it enables researchers to find the texts that they are interested in studying. Therefore, improving the information available about our tablets will be the focus of my work for the Tablet Collection. This is an ambitious project which will need more resources than we currently have. The first step in this process will be evaluating the needs for augmenting the catalog, conservation, and storage of our tablets. With this information, an application for funding will be possible.

Report on Visitors and Publication Projects

Andrew Wilent

The Tablet Collection and its study space, the Tablet Room, once again enjoyed a productive year. Jeanette Fincke of Heidelberg University visited in July 2016 to study a tablet belonging to the series URU.AN.NA in preparation for a new edition. Piotr Michalowski of the University of Michigan visited in March 2017 to study tablets from Nippur. In April, Sebastian Borkowski of the University of Geneva spent three weeks studying tablets from Nippur as part of the research project, “Disputations in Ancient Near Eastern Literature: A Text Editing Project,” under the direction of Catherine Mittermayer. Émilie Pagé-Perron of the University of Toronto also visited in April to study tablets and additional excavated objects from Adab. Magnus Widell of the University of Liverpool visited for a week in May, continuing his project

to publish the remaining Ur III tablets in the Oriental Institute collection (see the 2015–2016 *Annual Report*).

In addition to these visits, the staff of the Tablet Collection provided information and photographs of numerous tablets to scholars around the world, facilitating their research from afar. In one of the more unique requests, a photograph of an Ur III tablet from the Oriental Institute collection was provided to the US government for inclusion in employee training materials related to federal contracts.

The faculty and staff of the Oriental Institute once again made frequent use of materials in the Tablet Collection to enhance their teaching both in the classroom and to the museum-going public and the training of the new docents. John Wee used several astronomical tablets from the collection for a presentation on ancient science to the James Henry Breasted Society at an event in April.

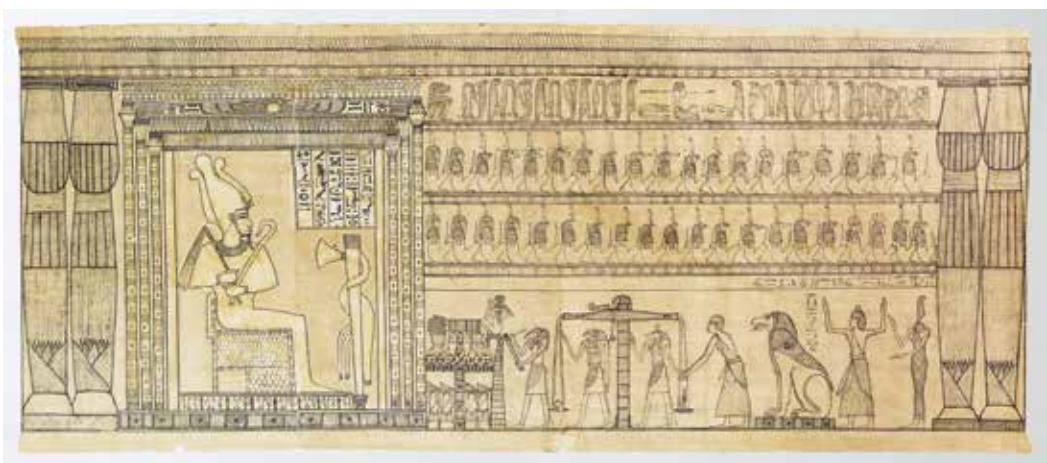
Report on New Acquisitions

Walter Farber

This year also saw the completion of two important donations to the Tablet Collection, by Edith Bingham of Louisville, Kentucky, and by Vytautas Virkau and Henrietta Vepstas of Chicago, Illinois. Both donations had been underway for some time, pending the documentation of pedigree required by the Oriental Institute and final approval by the Acquisitions Committee and the director. The procedures in both cases had been started in 2015 by Walter Farber, then still Curator of the Tablet Collection, and we are very happy that the tablets in question (ten Ur III tablets of varied contents from Ms. Bingham, and one very well-preserved Ur III list of offerings from Mr. Virkau and Ms. Vepstas) have now found a new home and good care in our collection. All eleven tablets are currently being published by Gertrud and Walter Farber. We also want to thank the donors once more for their generosity and thoughtfulness in making their treasures available to the scholarly community and the public as part of the Oriental Institute's collection.



MUSEUM



Overleaf: Book of the Dead (Papyrus Milbank). Cairo, Egypt. Ptolemaic period, fourth-first century BC. Egyptian Collection. E10486j (D. 15802)

MUSEUM

Jean Evans

The staff of the Oriental Institute Museum had a productive year of activity increasingly focused on realizing the aims of the Gallery Enhancements Project (GEP), which is on schedule to be completed for the celebration of the 2019 centennial of the Oriental Institute. I began my position here last September, jumping into the prototype display case phase of the GEP, which had been proceeding apace under the leadership of Jack Green, until his departure in December 2015, and afterwards in the able hands of Kiersten Neumann and Emily Teeter. Many thanks to everyone for such a warm welcome to the Oriental Institute Museum. It is an honor for me to lead the Museum, both to curate its renowned collection and to consider as my colleagues so many talented individuals. I am grateful to all of them for bringing me up to date on this amazing project. As a result of the GEP, we have reduced activities in some of our main areas, including special exhibitions and object loans . The results, however, will be well worth these present sacrifices as we prepare the galleries for the next century in the life of the Oriental Institute.

Museum Attendance

The total number of visitors to the Museum in the past fiscal year (July 1, 2016 – June 30, 2017) was 54,186. Although our number of visitors remains steady, essentially having recovered from the large dip that had occurred in the 2014 fiscal year due to the closing of the 58th street between Woodlawn and University Avenues and the resulting restricted access to our main entrance. The total number of visitors this past year was about 2% less than the 2015–2016 fiscal year. In reality, however, our number of visitors remains steady. While annual reports earlier in the decade often remarked on the total number of visitors hovering around 50,000, it is more accurate to say in the last couple of years that our numbers hover around 55,000 annual visitors. Nevertheless, it is difficult to understand whether the lack of a new special exhibit this past year had an effect on visitor numbers since it had been decided to hold over Persepolis: Images of an Empire for a second year in the special exhibitions gallery. At the same time, the reception of the exhibition has been overwhelmingly positive, and the difference in visitors is small enough to defy quantification. Many thanks to Adam Finefrock for recording and circulating visitor numbers to Museum staff. Our thanks also to Victor Cruz who succeeded Adam as Director of Visitor Services and Security.

Gallery Enhancements Project

In 2014, the Oriental Institute Museum initiated the Gallery Enhancements Project, the principal aim of which is to improve the visitor experience in the galleries through updated displays, improved lighting, and the replacement of free-standing cases, many of which date to the 1931 opening of the Museum in its current location — and earlier. The project has been made

possible through the generosity of an anonymous donor — our “*Gilgamesh*” — with additional funding to be raised.

Upon my arrival this past September, plans were well in place for realizing the enhancements now on view in much of the Nubian Gallery as well as in some of the cases in the Egyptian Gallery. I would like to thank Emily Teeter for coordinating the efforts of the team consisting of Kiersten Neumann, Erik Lindahl, Josh Tulisiak, and Erin Bliss with support from Conservation and Registration and the expertise of Bruce Williams.

This past year, we placed our order for new display cases with Helmut Guenschel, Inc. While other vendors had been considered, the consensus was that Guenschel offered superior craftsmanship and fundamentally understood our aim to have cases that would wed modern advances such as those in glass technology and lighting with our intention to preserve the 1931 aesthetic of our galleries as a historical space.

The placement of the order officially marks the end of the prototype display case phase of the Gallery Enhancements Project. Some fifty-five cases were ordered based on the designs produced by Elizabeth Kidera, exhibit designer and architect, initially in collaboration with Kiersten Neumann, Emily Teeter, and Jack Green. The display cases will be divided into five deliveries beginning this winter and continuing through early 2019. We received the first technical drawings from Guenschel this past summer.

Upon my arrival at the Museum, the GEP entered another phase of planning. With many of the matters regarding the design of the cases themselves resolved, it was necessary to turn to a consideration of how the objects should be displayed inside them. It was therefore necessary to build upon a graphic hierarchy established during the earlier phase of the project. The design team is in place. Elizabeth Kidera continues as our Exhibition Designer, and I have also hired Franck Mercurio as Exhibition Developer and Lori Walsh as a senior Graphic Designer. All three individuals have backgrounds that overlapped at various professional points at the Field Museum. Lori still works there, with contributions most recently to the special exhibition entitled *Specimens: Unlocking the Secrets of Life*.

The main focus of the GEP this past spring was in the Henrietta Herbolsheimer, M.D. Syro-Anatolian Gallery. Kiersten Neumann and I provided curatorial expertise, working with the design team on establishing in that gallery certain standard features that we could then implement in each of the Museum galleries. For example, we developed a new gallery orientation area panel (fig. 1). We standardized its features so that every gallery will have a general



Figure 1. Newly developed gallery orientation area panel



Figure 2. Stone cleaning and painting in the Joseph and Mary Grimshaw Egyptian Gallery this past January

Work also continued on a general level. The Joseph and Mary Grimshaw Egyptian Gallery was briefly closed this past January for stone cleaning and painting (fig. 2). The Robert and Deborah Aliber Persian Gallery, the Dr. Norman Solkhah Family Assyrian Empire Gallery, the Syro-Anatolian Gallery, and the Haas and Schwartz Megiddo Gallery were closed in June for painting, the installation of track lighting, and other electrical work. While the Persian and Egyptian galleries remained the same color — a credit to these hues having aged well aesthetically — the other galleries were painted in new colors that are calm and muted, harmonizing well with the stone walls, terrazzo floor, and painted ceiling of our historic 1931 gallery spaces.

Rob Bain joined us this past February as our new Lead Preparator, replacing Erik Lindahl. He has settled in and is doing a great job, leading Prep Shop in the new construction work for the Syro-Anatolian gallery and other installation projects. Rob brings some twelve years of experience as Chief Preparator at The Renaissance Society to this position. Without a Lead Preparator as experienced and talented as Rob, we would not be able to realize many of the aims of the GEP. Also in the Prep Shop, producing our exhibition mounts, most recently Olivia Gallo joined Josh Tulisiak, Erin Bliss, and Kate Cescon, and Andrew Talley. Josh Tulisiak continues to ably lend his talents to our overall graphic design needs. We also have a group of graduate students, including Alexandra Erichson, Nisha Kumar, and Catie Witt, as well as our

introduction with floors plans indicating for the visitor both their overall location in the Museum as well as the layout of the individual gallery and the theme of each of its cases. A map includes sites mentioned in the gallery, and a timeline will give an overview of the region.

Similarly, Kiersten and I introduced other features that will recur throughout the Museum, such as the OI Excavates panels highlighting the history of Oriental Institute archaeology. The elimination of graphic repetition and the consolidation of graphics have also been a focus of our work. New display case designs were realized for the existing cases and are being produced in anticipation of the new case deliveries. Aspects of the Syro-Anatolian gallery were also replanned, including most significantly the new Tayinat monuments area. All these enhancements were completed in time for the 10th International Congress of Hittitology. We thank all our Syro-Anatolian experts for their enthusiastic participation in our efforts to improve the galleries, including Theo van den Hout, Petra Goedegebuure, James Osborne, Richard Beal, and Oya Topçuoğlu.

volunteer, Gaby Cohen, working on label research. Emilie Sarrazin is our exhibition mapmaker working out of CAMEL lab, and Shannon Martino has been drawing and inking ceramics for our label graphics.

The Conservation Laboratory plays a prominent role in the GEP, checking the condition of objects destined for exhibition, performing treatments when necessary, and advising on mount requirements and other proper display techniques. The movement of ancient artifacts for installation work would not be possible without the oversight of Registration led by Helen McDonald as our Registrar and Susan Allison who this past year became an Associate Registrar.

In particular, thank you to Laura D'Alessandro, Head Conservator, who has brought a renewed rigor to our labeling in the galleries, indefatigably providing the accurate identification of the materials of the objects on display using a combination of handheld x-ray fluorescence spectroscopy and chemical tests and with the assistance our Conservator Alison Whyte. Our new GEP Assistant Conservator, Stephanie Black, began in July. Stephanie is a graduate of the University College London MSc program in archaeological conservation and has been working at University College London's campus in Doha, Qatar, carrying out analysis, practical training, and laboratory supervision for the past four years.

We also thank Rich and Sue Padula for providing us with the Encurate Content Management System that has allowed us to create the first ever mobile app for the Oriental Institute Museum (fig. 3). We currently have a highlights tour available on the app as well as a special tour in which our OI volunteers talk about their favorite objects. We look forward to developing the content of our Encurate app and seeing its possibilities. Thank you to Nancy Harmon for coordinating our use of the app and patiently teaching us all about it.

Finally, thank you to so many of members of the OI community who have shared their enthusiasm for the project with us. It is both a privilege and an awesome responsibility to oversee the Gallery Enhancements Project, and I hope you will continue to be delighted by the ongoing changes over the next two years.



Figure 3. First ever mobile app for the OI Museum

Museum Acquisitions

On May 10, 2017, the Oriental Institute Voting Members approved the following acquisitions policy for the Oriental Institute Museum:

The Oriental Institute of the University of Chicago purchases on the market only infrequently and will only acquire items that can be shown to have left their country of origin before 1972, the year the UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property entered into force, or to have been otherwise legally exported from their country of origin and legally imported into the United States. Legally-exported items include, but are not limited to, those that are part of a state-sponsored division (*partage*), scientific samples (faunal remains, carbon, plant, soil and wood, among others), and

study collection materials, for which an export license has been granted by the country of origin or is not required under the laws of the country of origin.

In cases where the national ownership laws of an object's country of origin can be shown to predate 1972, objects must have been exported before the date of that country's law. The term "country of origin" here refers to the country within whose boundaries, as recognized by the United States Government, the object was discovered in modern times.

The provenance of acquired items shall be a matter of public record. Once an object has been vetted and approved by the Acquisitions Committee and it is accessioned into the collection, the Oriental Institute will publish an image and any associated provenance information related to acquisition in the Annual Report and on the Collections section of the Oriental Institute's website.

I would like to thank Morag Kersel for contributing her expertise towards the drafting of our Acquisitions Policy.

The Museum acquired one item this past year — a ceramic pot (A180969) donated by David and Ina Woolman (fig. 4). The pot has an interesting history. It had been excavated at Megiddo by the Oriental Institute and presented as a gift to David's parents, Janet and Laurence Woolman. Laurence had been an architect hired by the OI to design and supervise construction of the expedition house, among other work, at Megiddo. The pot was gifted in recognition of the Woolman's contribution on the occasion of their departure from the site in June 1930.

Collections Research Grant

We were honored to be able to continue the Oriental Institute Collections Research Grant programs in 2015–2016 thanks to the generous support of O. J. Sopranos. Three applicants were funded to carry out research on the collections:

Kathryn Bandy (PhD Candidate, Department of Near Eastern Languages and Civilizations, University of Chicago, project entitled "The Stela of the Chief Lector Priest of Edfu, Ibi, at the Oriental Institute [OIM E9346]"), Rachael Dann (Associate Professor, Egyptian & Sudanese Archaeology, Department of Cross-Cultural & Regional Studies, University of Copenhagen, study entitled "Original materials from the OINE excavations at X-Group Period Qustul and Ballana"), and Magnus Widell (Senior Lecturer in Assyriology, Department of Archaeology, Classics and Egyptology, University of Liverpool, study entitled "Oriental Institute Ur III Tablet Project").



Figure 4. Ceramic pot A180969, the only acquired item by the Museum this past year

Other Projects and News

An all-Museum highlights volume edited by myself, Jack Green, and Emily Teeter was completed and will be on sale this fall.

Kiersten Neumann spearheaded a project to establish permissions procedures for outside researchers to both our object collections as well as our Archives.

This past November, Anne Flannery joined the Museum as Head of Museum Archives and Digital Content Specialist and, in December, John Larson retired after thirty-six years of service as our Archivist. We send John every thanks for his service and all our best wishes, and we welcome Anne to the position. Anne brings ten years of experience working in libraries, archives, and digital services and was most recently the IMLS-funded Project Manager for the OI Integrated Database Project under the leadership of Foy Scalf.

I leave you with one final exciting event to report. In May, Google Cultural Institutions who visited our galleries in order to collect data to create a Street View. We expect this to be available in the coming year, allowing anyone interested to visit our Museum and enjoy and learn from our collections, wherever they may be.

SPECIAL EXHIBITS

Emily Teeter

Because the Museum staff needed to focus on the renovation of the permanent galleries, it was decided to hold *Persepolis: Images of an Empire* over until September 3, 2017. The show

has weathered well, and we still get very favorable comments about it. We hope that it may be shown in other cities.

Although there were no changes in our special exhibits gallery, we have been able to use the lower level for several smaller shows. This is a high traffic area, and we often see people lingering over the material that we install there. *Don't Take My Stuff; Tell My Story* (see details in *Annual Report 2015–2016*, pp. 238, 270) continued to October 31, 2016. On November 22, 2016, we opened *Drones over the Desert*, focusing on the work of the Eastern Badia Archaeological Project headed by Yorke Rowan (fig. 1a–b). The show is composed of impressive aerial photographs taken by drone, a discussion of how such data can be used to analyze a site, and a brief panel about aerial photography at the Oriental Institute including Breasted's flights over Giza in a RAF plane in 1920 and the Megiddo expedition's

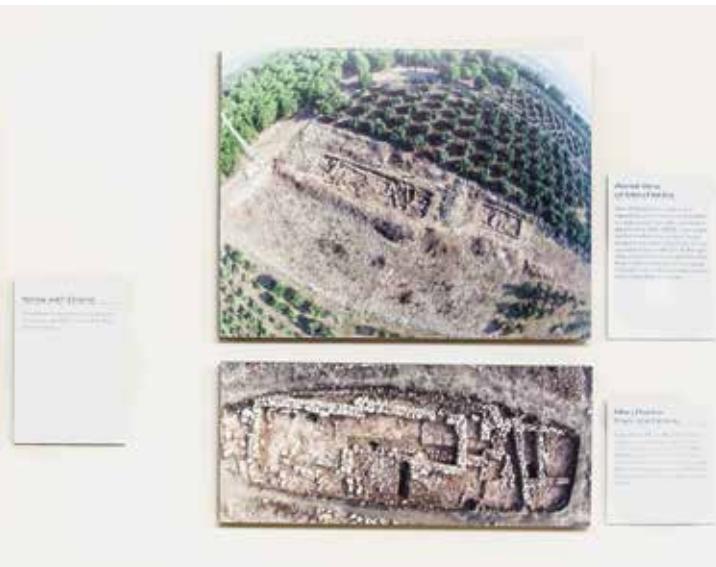


Figure 1a–b. Views of the exhibit, *Drones Over the Desert*; D. 29271 (above) and D. 29283 (below) (photos: Bryce Lowry)

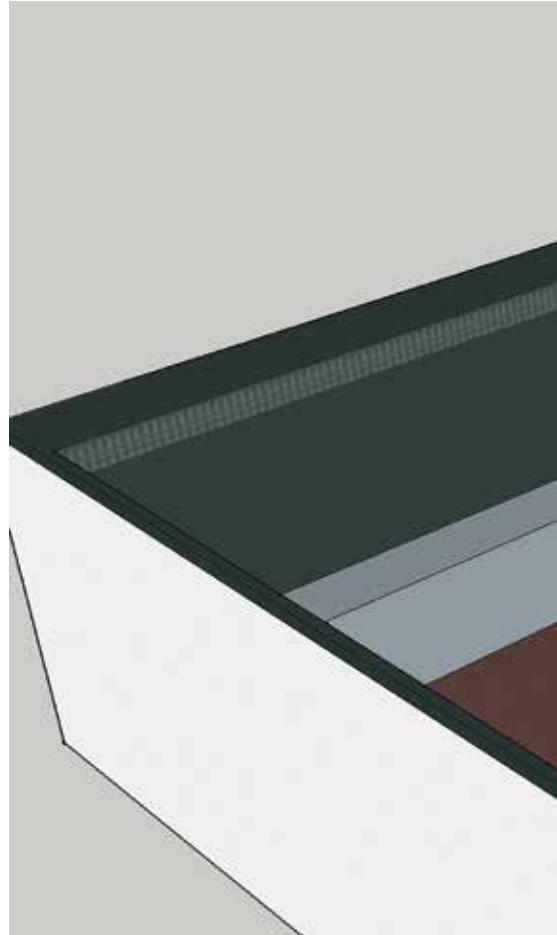
experiments with a camera held aloft by a weather balloon. A looped video on a monitor has spectacular views of the area and amazing scenes of Yorke and his co-director Chad Hill catching the incoming drone. The show continues through August 13, 2017. The exhibit staff also assisted Research Associate Morag Kersel and Fiona Rose-Greenland, Research Director of the Past for Sale project, with the conceptualization and design of The Past Sold: Cast Studies in the Movement of Archaeological Objects that was presented at the Neubauer Collegium from April 3 to May 12, 2017.

As reported in last year's *Annual Report* (p. 246), the Museum installed a small case of photos and memorabilia in the lobby to commemorate the 50th anniversary of the Volunteer Program. The exhibit, Doing Business in the Ancient World, on view in the lobby of the Booth School, has been renewed for another term.

Planning is in high gear for a variety of shows. The major one, Becoming God in Ancient Egypt: The Egyptian Book of the Dead, is curated by Foy Scalf. The show opens for our members October 1, 2017, and will run through March 31, 2018. It will be a more typical special exhibit with many objects from our collection as well as three loans from the Field Museum. It will be the first opportunity in almost a century to show our two Books of the Dead, *P. Ryerson* and *P. Milbank*, in their entirety. As with other special exhibits, it also provides the opportunity to include objects from the reserve collection. Another important benefit of the show is the two papyri have been photographed in color by Bryce Lowry. We are happy to be working with Robert Weiglein, a highly regarded exhibit designer, who has developed a very attractive floor plan divided by printed scrims (fig. 2). Josh Tuliasak has been an important member of the design team, helping turn Robert and Foy's ideas into reality. Our new head preparator Rob Bain hit the ground running, and with other members of his team, Erin Bliss and until recently, Kate Cescon, they have been building exhibit furniture and using their contacts to source the elements needed for the show. As is usual for our major shows, a fully illustrated catalog (edited by Foy) will be available. It contains essays by Book of the Dead experts throughout Europe and the US, and it is sure to become a standard reference for the topic. We owe Tom Urban of our publications office a tremulous debt for making the publication a reality.

Another upcoming show to be presented in the lower level traces the history of Hittitologist at the Oriental Institute. It will open on August 24, 2017, in conjunction with the 10th International Congress of Hittitology.

Looking ahead to our centennial commemoration in May 2019, the Museum is meeting with the Centennial Committee made up of faculty, members, and members of our Visiting Committee to discuss what themes or aspects of the history of the Oriental Institute should be the focus of the exhibit. In addition, we will have a show at the Joseph Regenstein Special



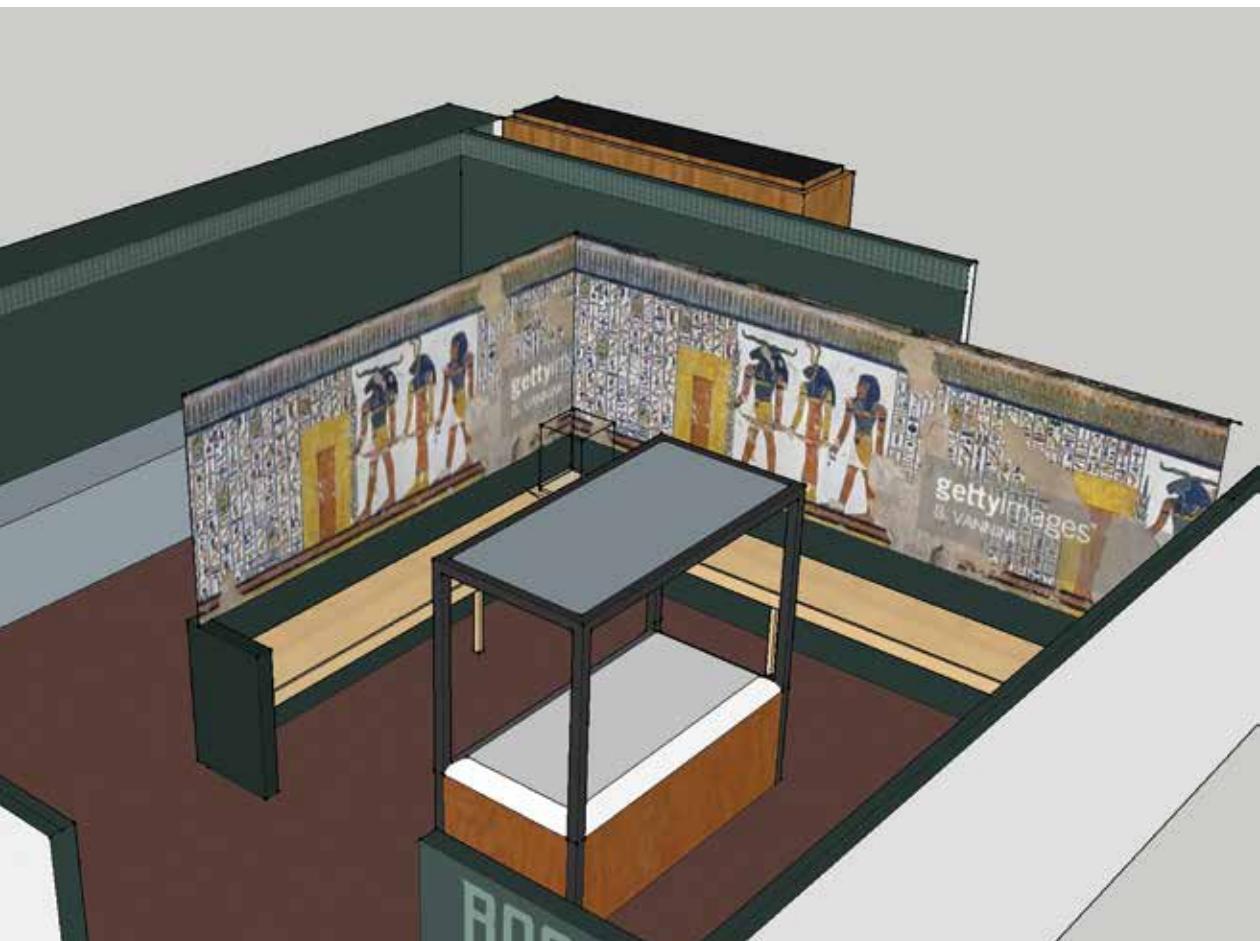


Figure 2. Schematic plan of the Book of the Dead show to open to members on October 1, 2017

Collections Research Center to be curated by our archivist, Anne Flannery. The design and installation of the remote show will be done by Joe Scott who, years ago, was a member of the OI exhibits team.

We are having only modest success in sending any of our shows to other museums, largely because of the staffing that it requires. A good model was an abbreviated version of Our Work: Modern Jobs, Ancient Origins, photos by Jason Reblando, that was loaned to the Badé Museum at the University of California at Berkeley where it was on view to the end of 2016. Photo-based exhibits present many fewer complications with security, conservation, and insurance.

The special exhibits program continues to fulfill its goals — promoting research on the collections, expanding our library of new photography, giving faculty, staff, and students the opportunity to curate an exhibit, and of course, to encourage the public to return to our galleries to see what is “new.”

PUBLICITY

Emily Teeter

With the Persepolis show being held over until early September 2017, there was not as much opportunity to generate press coverage associated with a new exhibit. Yet, we continue to receive media attention and to reach out to visitors and potential supporters through social media and conventional advertising.

Paid advertisements appeared in: the *Hyde Park Herald*, *Footlights* (the program for Court Theater); the Black Harvest Film Festival Program, *New City Guide*; the *UChicago Arts Magazine*; and we placed ads in the orientation issues of the *Maroon* and *Herald*. We also did a series of sponsorship spots on WBEZ that always get attention. We continue to rely upon rack cards for general information, although distribution has gotten difficult and there are doubts in museum publicity circles in regards to how effective they are for other than in-house and immediate neighborhood use. We replaced some of the worn and faded street pole banners in Hyde Park, ensuring that we have visibility through the neighborhood.

We arranged for a series of email blasts to Chicago Concierges through Concierge/preferred starting in August 2016. Our overall social media is managed by Moriah Grooms-Garcia of Social Media Moo, and our online presence continues to be a vital part of our communications program.

We were designated one of the “50 Most Impressive College Museums” in the country by collegevaluesonline.com, and we received another commendation of excellence from TripAdvisor. Chicago Parent cited us as being, for better or worse, a “Hidden cultural gem around Chicagoland.”

Denise Browning, manager of the Suq, and Suq Assistant Jennifer Castellanos have been taking merchandise and information about the Institute to local fairs. This year, they had a booth at the 57th Street Book Fair (June 3–4), the Green Music Fest (June 10–11), the Logan Square Fest (June 25–6), and the Wicker Park Festival (July 23–4), all of these allowing us to reach a younger demographic.

Online planning and information sites (such as TripAdvisor), continue to play a large role in the visibility of the Oriental Institute. The reviews, and according to some studies, are even more effective and influential than traditional print advertising. Among recent postings: “We absolutely loved this little gem. The Museum has such an amazing display of artifacts from the Near East. We had a lot of “a-ha” moments since we had just returned from a trip to Jordan and we could see a lot of similarities and influences in the art from the region...” (June 2017); “Thoroughly enjoyed this museum. Saw many items that I never thought I would be able to see personally” (April 2017); “Most people don’t realize that there is ancient art that is even more beautiful and interesting than Ancient Egyptian art, and you don’t even have to go the Middle East to see it. Make sure you see it right in the center of Chicago at the Oriental Institute!!” (March 2017).

Thanks to Knut Boehmer, the Museum has a new computer-based visitor survey, located off the lobby at the entrance of the special exhibits gallery. Although we do not get a large

sampling, the results are quite interesting (the following percentages are incomplete because often fields were not competed):

- Of 240 respondents, 37% were first-time visitors, 68% were planned visits, while 24% were spontaneous
- Reasons for visiting ranged from “just for fun” (30%); a school project (13%); a family activity (10%); and to see a specific object or to see the special exhibit, both about 2%.
- 31% responded that they would visit again, while only 3 people of the 240 responses said that they would not visit again (unfortunately without further detail, but still an extremely low level of dissatisfaction with their visit).
- 11% heard about the Museum from a teacher; 8% from a friend; 2% responded that they came because they saw a street pole banner or read about us in a guide book.
- Most of the visitors who took the time to use the comment book understandably came in small groups of one to three which accounts for the few who participated in a docent-led tour.

Some people left more extensive comments about their visit or their favorite object: “I enjoyed every artifact that I had the pleasure to see with my own eyes. I have seen many of these artifacts in many documentaries, but it doesn’t compare to the personal experience of actually being [in] their presence and magnificence. Thank you”; “Khorsabad statues are amazing! So are the Persian pieces. My first time seeing pieces from these locations and eras, quite a treasure for me”; “The winged bull, statue of Tutankhamun, Persepolis were all awesome. Egypt was brilliantly curated”; “The Hittite pottery, the Anatolian section.” And of course, there are jokers. One commented that their favorite pieces were “the ones I touched,” and another liked the “old dead people.” Looking through the comments, it is very clear that people appreciate the Museum and are fascinated with the exhibits.

Our challenges for increasing our visitor numbers continue to be unrelated to what we present, but rather issues of parking, public perception of the neighborhood, and the lack of a unified plan for publicity. Some of these issues, especially the perception of the neighborhood, are being addressed by the Museum Campus South group (a consortium on cultural institutions in Hyde and Washington Parks) that is working to bring more visitors to the area. Certainly, the Obama Presidential Center, due to open in 2021, will have a dramatic positive impact on visitorship to the Oriental Institute.

SOCIAL MEDIA

Moriah S. Grooms-García



Figure 1. The Oriental Institute was featured as one of the best college museums in the US. Our Facebook post about the article was shared over 200 times



Figure 2. Our tweet about this artifact was retweeted over 150 times

The Oriental Institute has grown an even stronger social media presence, this past year sharing information about our research, Museum, and events to a broader and more diverse audience. This growth has been possible over the past year thanks to the efforts of Social Media Moo, LLC, a marketing company run by former Oriental Institute education staff member Moriah Grooms-García.

The OI has a strong presence on Facebook, Twitter, and YouTube. Our Facebook fan base has risen 16% (a 2% greater increase than last year), bringing it to nearly 22,000 fans from across the globe. Our top Facebook post this year was an article in which we were featured as one of the “50 Most Impressive College Museums 2017–2018” by College Values Online (fig. 1).

On Twitter, we now have 8,754 followers — a 30% increase over last year. We reached over 4.3 million unique Twitter users with our tweets, demonstrating the immense power of social media to help build awareness about the OI. Our top tweet was a feature of one of our artifacts — a lexical list that transliterates Sumerian into Akkadian (fig. 2).

On YouTube, we nearly doubled our base of subscribers. We gained 5,488 new subscribers, bringing us to a total of nearly 10,500 subscribers. Our top YouTube video continues to be a recording of the Eric Cline lecture “1177 BC: The Year Civilization Collapsed.” We boast nearly 130 videos on our Channel, including archival audio of lectures from past decades, the new Oriental Institute Oral History Project, current lectures, and more. Check out our YouTube Channel at www.youtube.com/jameshenrybreasted to see the videos for yourself!

The centralization of the Oriental Institute’s social media and email marketing efforts has helped the OI’s staff significantly both with their workflow and in the increased effectiveness of their social media presence. Social Media Moo, LLC looks forward to continuing work with the OI!

REGISTRATION

Helen McDonald and Susan Allison

The Gallery Enhancement Project has continued this year and was covered in more detail in the general Museum Section of the *Annual Report*. Depending on time and object availability we are trying to take the opportunity to measure and take record shots of some of the objects from display while they are off display.

We continue to add more data to the object related parts of the Integrated Database (IDB) and to improve the data already there. This year we have continued to take digital photographs of newly registered material for inclusion in the IDB. We have also started the long process of taking images of previously registered material starting with the smaller Egyptian objects. Some 13,000 images have been added to the IDB in the last year; 4,000 of newly registered items, the rest of already registered material. Once again Museum Registration would also like to express its gratitude to Foy and his volunteers in scanning the original registration cards and the accession records. All of the object registration cards are now scanned and added to the IDB, as well as all of the accession cards and files.

The Axiell company (responsible for the software used for the OI's Integrated database) is offering a new module to hold information on objects being used for a particular exhibit; information that is additional to the usual catalog information. Last year a few of us went to



Figure 1a-c. A tale/tail with a happy ending — a fragment of stone was being imaged as part of the project to assign temporary numbers to a small number of unidentified Egyptian collection pieces (top) when work study student Catie Witt noticed that it had scales painted on it. Doing a search for all Egyptian crocodile figurines, she found that one had a note in its description field referring to a missing tail and both pieces were fitted together (bottom); Catie with the figurine (left) (photos: Helen McDonald)

the Field Museum to see how they were using this new module. It was then decided that the OI would use it too, and so we would need our own specific modifications. The Associate Registrar has worked closely with the different sections of the Museum involved in special exhibits to come up with tab designs for the different departments and has consulted with Foy Scalf, the administrator of the IDB. Susan has written a narrative to explain the tab designs which is now being read and modified by Foy. It is hoped to submit both tab designs and narrative to Axiell later this year.

The Associate Registrar has also completed the registration the textiles from Semna South (Nubia) after their rehousing by Conservation last summer. Research associate Kathryn Bandy has been digitizing some of the drawings of Semna seal designs and the Registrar has drawn a small selection of sealing backs. All of this information will be making its way into the Semna South final report currently in preparation by Joan Zabkar (widow of Louis Zabkar, excavator of Semna South).

Preparations for the next special exhibit on the Egyptian Book of the Dead, with guest curator Foy Scalf and special exhibits curator Emily Teeter, is well underway and will include an incoming loan from the Field Museum.

The barrel cylinder (A17587) on loan to the UPenn Museum for the exhibit The Golden Age of King Midas returned in November with the Registrar acting as courier. A long term loan of Egyptian pots to The Field Museum was returned to us in August. We lent a selection of pots from the Bronze age site of Bab edh-Dhra (Jordan) to the Neubauer Collegium on campus for an exhibit titled, The Past Sold: Case Studies in the Movement of Archaeological Objects, curated by OI Research Associate Morag Kersel (April/May). Also on campus we renewed a loan to the Chicago Booth School of Business for a case in their lobby on Business in the Ancient World for a further year. In February the Registrar and the head of Conservation attended a training event on fine arts loss and prevention organized by the Risk Management department of the University. At the time of writing Registration and Conservation are busy preparing over 100 Nubian beads for an analysis loan to the Field Museum later this year. The beads will be analyzed using laser ablation (LA-ICP-MS) by Laure Dussubieux and the information will be included in the OINE volume on Nubian beads currently in preparation by Joanna Then-Obłuska.

The Registration department has moved or inventoried over 22,000 objects this year (making a total of over 37,500 object movements). Just over 9,300 objects had their locations changed, updated, checked or corrected, and a further 6,000 were put away (we are making an effort to empty transit cabinets to make room for objects from display as the Gallery Enhancement Project intensifies). Around 3,500 objects have been registered and 9 temporary storage boxes were unpacked, registered and rehoused. 50 drawers of sherds and just over 470 individual objects and were the subject of research of all kinds. Around 2,300 objects were moved for photography of various sorts and nearly 450 objects were moved as part of the gallery renovations.

Visiting Researchers

- Hanna Sosnowska (UCL Institute of Archaeology, London) visited in summer 2016 to study obsidian tools from Jarmo (Iraq) for her PhD research. She has returned in summer 2017 to study flint tools from Jarmo (June to September)
- Yoshifumi Yasuoka (University of Tokyo) scanned a couple of our Egyptian trial pieces (July)

- Delphine Poinsot (PhD candidate, École Pratique des Hautes Études, Paris, France) studied Sasanian seals which were also scanned by the PTM lab (August)
- Aleksandra Hallmann (Polish Academy of Sciences) visited August 2016 to study textiles on Egyptian wood models and statues
- In September Jamie Szudy came to study the few Khorsabad arrowheads in our collection for the publication of his PhD on archery equipment in the Neo-Assyrian period (PhD from the University of Vienna, Austria in 2015)
- Amy Richardson (Wainwright Post-Doctoral Research Fellow based at the Oriental Institute, Oxford, UK) visited to study beads from Braidwood excavations including Jarmo (October/November)
- Fiona Haughey (draughtsperson of the current Tayinat excavations) came to draw Tayinat material for the final report on the Middle Bronze and later levels (November/December)
- Alexander Illin-Tomich (Johannes Gutenberg University-Egyptian scarabs) studied Middle Kingdom scarabs (December)
- Sabiha Gölögü (Department of Archaeology and History of Art, Koç University, Istanbul, Turkey) came to study a few Arabic manuscripts in the collection that relate to the subject of her PhD: Eighteenth- and Nineteenth-Century Representations of the Islamic Pilgrimage Sites in the Ottoman Empire. (March)
- Sarah Clegg (Post-Doctoral Researcher at the Weight and Value project at Copenhagen University, Denmark) came to study weights from the Diyala sites (March)
- Émilie Pagé-Perron (PhD Candidate, Near and Middle Eastern Civilizations University of Toronto) visited the OI to study Bismaya tablets in the tablet room, also joined us in Museum Registration to study other inscribed objects from the site (April)
- Petra Sijpesteijn (University of Leiden, Netherlands) visited to study various Arabic papyri in April
- Mitra Panahipour studied sherds from the Schmidt aerial survey of Iran in June (PhD candidate, Department of Anthropology, University of Arkansas)
- Lauren King visited to study objects with bull imagery from Persepolis in June (Southern Methodist University, undergraduate thesis).

Classes and Special Events

- Rozenn Bailleul-LeSuer (in house-animal mummies for high school class, summer 2016)
- Natasha Ayers used Mendes sherds for a drawing class (March).
- Foy Scalf, an evening visit for the class he was teaching at Dominican University on “History of the Text: Early Books and Manuscripts Up to the Age of the Printing Press” to look at a variety of texts (February)
- Susanne Paulus’ class came down to look at an inscribed stone vessel fragment (January)

- Fred Donner Arabic papyri class (spring term). As well as the class itself various students took the opportunity to come in and spend time with their chosen papyri
- Catharine Kearns (Anthropology Department) and some of her students came in to look at Cypriot sherds in preparation for a summer excavating in Cyprus (May)
- Museum registration was in attendance for the Breasted event as it included a fragment of a water clock from storage for Prof. Robert Ritner's talk on water clocks (April 13)

Oriental Institute Faculty, Staff, Researchers, and Students

- Lynn Welton (post-graduate) continued to study Early Bronze Age Amuq sherds from summer 2016 and on into summer 2017
- Grégory Marouard (Research Associate) examined a small selection of objects from Dendara in May
- Lisa Heidorn (Research Associate, Dordinarti publication, ongoing)
- Karen Wilson (Research Associate, Nippur and Abu Salabikh, ongoing)
- Bruce Williams (Research Associate, Serra publications, ongoing)
- Carol Meyer (Research Associate, drawing Serra and other Nubian material for publication and studying glass objects, ongoing)
- Tasha Vorderstrasse, (Research Associate, registering and working on Islamic material and the publication of the Islamic collection, ongoing)
- Susanne Paulus (Tablet curator) studied *kudurrus* for publication (August)
- Heidi Hilliker studied Egyptian spinning bowls in January and May
- Akiva Sanders looked at Amuq phase H and Alishar Chalcolithic sherds (February)
- Catie Witt has studied Egyptian headrests
- Drew Berlingame examined a variety of inscribed material (March)

Our volunteers, interns, and work study students have all been busy this year. Rozenn Bailleul-LeSuer has been adding bibliographic references from the Registration offprints collection. Terry Friedman has carried out inventory and labeling of recently registered material. Toni Smith finished the registration of Nippur tablet casts for the tablet collection and has moved on to Iron age sherds from Alishar. Jim Sopranos continues with the registration of Tell es-Sweyhat sherds (Syria) from Tom Holland's published excavations at the site. Tasha Vorderstrasse has continued to register Islamic material. In the summer of 2016 we had two summer interns. Tine Rassalle (The University of North Carolina at Chapel Hill) who registered Megiddo human bone and photographed Megiddo small finds among other projects. Georgia Dixon (University of Chicago) registered an assortment of obsidian tools and Middle Bronze age sherds from Alishar. In the present academic year Museum Registration has had the assistance of work study student Catie Witt. She has carried out an assortment of tasks including the photography of small objects in the Egyptian collection and completed the registration of the Behbehan survey sherds (Iran). Once again it has been a busy and productive year.

ARCHIVES

Anne Flannery

During the 2016–2017 fiscal year the Oriental Institute Archives went through a major transition. In December 2016, John Larson retired after thirty-six years as Museum Archivist. John's work over almost four decades as archivist made him an invaluable repository of institutional knowledge. As of January 2017, I began heading up the Museum Archive and its digital counterpart after working closely with John for two years as Project Manager of the Integrated Database.

The archive is an essential resource when delving into any topic related to the Oriental Institute. Over the years, the archive has grown substantially. It contains not only essential materials for research related to excavations, dictionaries, documentary photographs and negatives, as well as the Epigraphic Survey, but also the history of the institution through its people in the form of directors' correspondence and faculty papers. At this time the archive is undergoing a long-term organizational process that will result in the incremental cataloging of collections and the production of their finding aids, as well as increased and improved accessibility online. This is only possible with the help of dedicated volunteers, students, faculty, and staff.

Access

As an archive, the OI's is not immune to the practical concerns of proper access to its resources. The most wide-reaching method being used to create access to the archive is cataloging items into the integrated database. These records are available online through the Search our Collections page of the Oriental Institute's website. Recently cataloged items include box records of the collections of Robert and Linda Braidwood, Helene Kantor, and the Oriental Institute Negatives Collection — a collection that contains thousands of images of excavation sites and objects.

Additionally, the archive is taking part in a negative card scanning project. There are thousands of these cards which contain essential information for researching additional details about our negative and photograph collections. Having these cards online and their metadata searchable is a great resource, since image requests are a significant part of our work flow. Considering this, we have also started linking images to our catalog records whenever possible. Part of the mission of the Integrated Database is to create records that give you access to as much information as possible and this is one step towards that goal.

IMLS Grant and Acquisitions

In accordance with the requirements of our latest IMLS grant to catalog and digitize collections under threat of war and terrorism, we have focused on the records of Chogha Mish, Jarmo, Khorsabad, and Diyala. We have also acquired internal and external collections that are currently undergoing processing, such as: Amuq materials, some correspondence of Robert Biggs, and the Woolman Papers.

Archival Space and Born-Digital Materials

In addition to organizing the central archival space, efforts have been made to create an additional storage space and work area for the archives on the third floor. Room 321 has been transformed with the help of many people including: Nate Francia, Brendan Bulgur, D'Ann Condes, Jimmy Gurchek, and Foy Scalf. Additionally, digital spaces are now a large part of the archival process and include an overhaul of the digital archive. This is being done by transferring these materials into the database with the help of volunteers, as well as focusing on the proper preservation of born-digital materials. Most importantly for my work at this moment is the preservation of correspondence and in particular the directors' correspondence of Gil Stein, who is the first director of the OI to have the majority of his correspondence in digital form.

New Projects

In conjunction with digital preservation and access, the archives began two new projects this year in order to bring more attention to the people that made and make the OI what it is today. These projects not only preserve OI history, but connect OI researchers and visitors with the people who made and continue to make that history possible. These projects are the Oriental Institute Oral History Project (in partnership with the Research Archives and IT) and the Oriental Institute Member Lectures Digital Conversion Project.

The goal of the oral history project is to collect and preserve information about the Institute, its people, and their experiences. These interviews represent a unique perspective on institutional history rarely captured by conventional research and publication methods. In order to collect these histories, the project conducts interviews with various members or former members of the Oriental Institute community. These interviews allow faculty, staff, and volunteers to share their knowledge and experience of the OI in a recording that is uploaded to the Oriental Institute's YouTube channel. We have already posted interviews with John Larson (Museum Archivist, 1980–2016); and Professor Emeritus of Assyriology Robert Biggs. The Archives Team plans to release two more before the end of this year.

Similarly, the digital conversion of member lectures provides access to the voices that worked to create the Institute by digitizing lectures that were previously stored only on cassette tapes. On these tapes is a thirty-year history of Oriental Institute Member Lectures and they cover an astounding variety of topics from Erica Reiner's lecture on Hallowed Herbs to Matthew Stolper's lecture on the Ksar Text and Achaemenid Babylonia. These lectures highlight some of the most influential research of Oriental Institute scholars. Both of these projects are available on the Oriental Institute's YouTube channel

Visiting Scholars

With the help of curator Kiersten Neumann, a more streamlined approach to our research requests process has been created. This allows researchers and staff to organize their visits to the OI more efficiently. The archives has seen a number of new and returning researchers this year. They include, but are not limited to:

Visiting Researchers

- Kemal Baran (PhD Candidate, Department of Archaeology and History of Art, Koç University), researching the Papers of Robert and Linda Braidwood
- Emma Piper-Burkett (Independent Scholar and Filmmaker), researching the Jarmo Collection and Papers of Robert and Linda Braidwood
- Will Carruthers (Fellow at the German Historical Institute, London), researching the Nubia Collection
- Rachael Dann (Associate Professor of Egyptian and Sudanese Archaeology, Department of Cross-Cultural and Regional Studies, University of Copenhagen, Collections Research Grant Recipient), researching the Nubia Collection
- Remi Hadad (PhD Candidate, University of Paris-Nanterre), researching the Papers of Maurits Van Loon
- Lauren King (BA Student of Art History, Southern Methodist University), researching the Persepolis Collection
- Peter Lacovara (Director of the Ancient Egyptian Heritage and Archaeology Fund), researching Past Gallery Redesign Projects
- Peter Raulwing researching the Papers of Hans Güterbock
- Mira Schwerda (PhD Candidate, CMES, Harvard University), researching Persepolis Photographs
- Ariane Thomas (The Louvre), researching the Khorsabad Collection
- Barbara Breasted Whitesides researching the letters of Breasted

Oriental Institute Researchers

- Richard Beal: Researching Hittitology at the Oriental Institute
- Joey Cross: Researching the Amherst Papyrus
- Tasha Vorderstrasse: Researching Nineteenth Century Photographs
- Foy Scalf: Researching the Coffin Text Project and Egyptian Photographs
- Emily Teeter: Researching the Directors Correspondence
- Oya Topcuoğlu: Researching Hittitology at the Oriental Institute
- Grégory Marouard: Researching Dendera Photographs
- Morag Kersel: Researching Bab edh-Dhra.

Acknowledgments

Last but not least, I must acknowledge the help of everyone who makes the archive function as smoothly as it does. Without the help of volunteers and students, work would move very slowly. Thank you to the archive's team past and present: Kat Antonelli; Emily Cambias; Alyssa Doot; Kat Jarboe; Carole Yoshida; and Amy Zillman. And students: Joe Hermiz; Rosemary Ott; and Emma Madden.

Special thanks goes to many people, but in particular to a few: to Foy Scalf and his team in the Research Archives for all the work they do on these projects; to Jean Evans and Kiersten Neumann for their curatorial support. And, of course, many thanks and best wishes and health to John Larson.

CONSERVATION

Laura D'Alessandro

As the Museum moved into the second year of the Gallery Enhancement project, the activities of the conservation staff continued to revolve around the gallery renovations. One of the major new activities this year centered on the painting of five of the Museum galleries. Conservation was kept busy working with the Museum team to de-install display cases and prepare the galleries for painting and electrical work. In order to protect the freestanding sculptures from paint and fumes, the entire Museum worked together to get them under cover (fig. 1a–b). During a point in time when the Persian Gallery had three scissor lifts in play simultaneously, the Gallery became the setting for a mechanical ballet of construction equipment moving delicately among the sculptures and display cases.

Work continued over the course of the year with the de-installation of display cases, carefully removing the objects to allow for their condition assessment in order to determine if



Figure 1a–b. E14088, statue of Tutankhamun, wrapped in plastic in preparation for painting of the Egyptian gallery (left) and during cleaning by museum staff after removing protective plastic layer (right)



Figure 2: Museum staff de-install objects from cases in preparation for painting of the Egyptian gallery walls

conservation treatment would be required before their return to display (fig. 2). Work also continued on the identification of materials in the collection. The use of the Oriental Institute's handheld x-ray fluorescence spectrometer continued to play a significant role in the non-destructive testing of artifacts in the collection, allowing for material identification and often correcting decades of misidentification (fig. 3). This issue is not unique to our institution. Before the advent of non-destructive testing techniques, most museums were in the same situation and had limited ability to carry out sampling on their collections.

Since our new Chief Curator, Jean Evans, took the helm of the Museum in the fall, the pace of the Gallery Enhancement Project has picked up exponentially. In recognition of the increased burden on conservation, the lab will gain a new staff member to help maintain the project's momentum. Stephanie Black, the new Assistant Conservator for the Gallery Enhancement Project, will be joining the conservation lab in July. She has been working for the last four and half years as conservator and laboratory technician for UCL Qatar's MSc Conservation Studies training program. Stephanie is a graduate of the UCL London-based conservation-training program and has a BA in conservation from the University of Delaware. We look forward to her arrival.



Figure 3. E7177; cartonnage head cover is analyzed using the Bruker Tracer III SD XRF spectrometer as part of the Gallery Enhancement Project

Alison Whyte, Associate Conservator, has had another busy year. She continued to serve as Lead Conservator for Special Exhibits and spent a good portion of the past year assessing and preparing objects for the upcoming fall exhibit *The Book of the Dead: Becoming God in Ancient Egypt*. She was also hard at work carrying out testing of all the new materials that will be used in both the renovated and new display cases, including fabrics, paper-based products, and adhesives.

Alison took part in several projects and courses during the year. She presented at the University of Chicago's career Lunch & Learn program, providing a lunchtime lecture to university students about the profession of conservation. She also developed and taught an OI adult education course in the fall: Art and Science of Museum Conservation. In October, Alison attended a weeklong glass conservation workshop at the Canadian Conservation Institute in Canada for which she was able to obtain external funding with two successful grants. In January, Alison traveled to Kabul, Afghanistan, for a week to assist the Lead Conservator, Fabio Colombo, with the initiation of a new venture at the National Museum of Afghanistan — the Hadda Sculpture Conservation Project. In June, Alison presented a paper, co-authored with Simona Cristanetti, at the 2nd Vatican Coffin Conservation conference in Rome on the ARCE-funded treatment of the painted wooden coffin of Ipi-ha-ishutef.

The press of work for the Gallery Enhancement Project did not allow for as active a loan program as in past years. The Oriental Institute contributed a small group of ceramics to Morag Kersel's exhibit at the Neubauer this past spring: *The Past Sold: Case Studies in the Movement of Archaeological Objects*. Conservation staff prepared condition reports, packed and couriered the objects to the Neubauer Collegium, providing the same level of care as an external loan to another museum.

Last year was also a busy year for the CT scanning facilities on campus. As part of a larger project to properly image all of our human remains, we brought two adult mummies over to the hospital to take advantage of their full body CT scanners. One of the “patients” was the female mummy (OIM E271) soon to be on display in this fall’s Book of the Dead special exhibit. She is extremely fragile and required extensive packing by Terry Dowd, a fine arts packer, and a conservation staff, in order to prepare her for the trip. An independent researcher also requested permission to CT scan several of our bird mummies for her research. One of the bird mummies was small enough to fit inside the chamber of the UChicago PaleoCT high resolution scanner. Alison prepared a custom mount for the mummy that snugly held it in position throughout the two-hour scanning procedure (fig. 4a-b).



Figure 4a-b. E119, bird mummy, in its custom made mount (top) and inside the PaleoCT high resolution scanner at Biological Sciences Division (bottom)

Two conferences were held in Chicago this past year that were of interest to conservation: the Synchrotron Radiation and Neutrons in Art and Archaeology (SR2A), and the 2017 Annual Meeting of the American Institute for Conservation (AIC). Conservation was pleased to be able to attend both conferences. The SR2A conference, held in Chicago for the first time in its history, brought together researchers from all over the world who use synchrotron radiation in the study of cultural heritage. The papers covered a wide range of topics, ranging from studies of hidden texts and inks in rolled papyri, corrosion products and pigments to an experimental Flemish-Dutch tabletop synchrotron light source for conservation science. Laura served on the planning committee for the conference and chaired the session on pigment degradation. She also attended an all-day workshop on lighting at the annual AIC meeting that presented information on new types of museum lighting and their attendant implications for the preservation of collections. Laura spent two days at a seminar at the Smithsonian Institute on the mechanics of art materials and their future in heritage science which covered a variety of topics including a study of environmental parameters for different types of collections, potential energy sources for climate-control systems, and research that scientifically measured the stresses that artifacts undergo as they travel on loans between museums.

This past year has flown by as we were all kept busy keeping up with the flow of work. Particular thanks go to Alison for her assistance with this report. We are looking forward to the start of the arrival of the new display cases next year as the galleries are slowly transformed.

PREP SHOP

Robert Bain

I'm very pleased to have joined the excellent staff of preparators at the OI this year! I would like to thank Josh Tulisiak, Erin Bliss, and Cate Cescon for being excellent at their work and making my transition here so pleasant.

We are currently in the midst of several major projects. The Gallery Enhancement Project involves extensive redesign and reinstallation of galleries throughout the Museum. Josh, Erin, and Cate managed the enhancement of the Nubia Gallery before my arrival, and since then we have seen the Persia Gallery completely repainted and added additional ceiling light tracks. The East Gallery has also been repainted, with additional lighting in the Syro-Anatolian and Megiddo Galleries.

The Prep Shop also worked closely with Jean Evans, Kiersten Neumann, and our outside design team to completely rebuild and reinstall the Alishar and Amuq display cases including all new case furniture and many new object mounts. We also built a new plinth, pedestals, and walls for the Tayinat stones in the Syro-Anatolia Gallery and designed and built new text-panel displays.

As our Gallery Enhancement Project is ongoing, we have also been working with Foy Scalf and Emily Teeter to design and build our next special exhibition, The Book of the Dead. This involves extensive building, and we're very excited to see it finished.

As we finish Book of the Dead, we look forward to a busy year reinstalling much of the Museum as we begin to take delivery of all new exhibition cases.

Finally, I would like to thank everyone here for welcoming me into the OI family. Thank you!

SUQ

Denise Browning

This year we finally saw the implementation of our new POS System which arrived just in time to help us with our holiday sale. It has been long awaited and greatly appreciated. It might not be very romantic, but it is so important to the management of the Suq. It is our backbone and helps us keep track of our thousands of items that filter through the Suq in any given year. Since almost all of our merchandise is one-of-a-kind or limited editions, it cannot be mass ordered and their records are vitally important. Even though this is what keeps us unique, the sheer numbers are mind boggling! It is a database system so these thousands of items must be entered individually into the system, which has kept us very busy this year. The POS system has been fairly user friendly and works on an iPad which uses far less space and gives us some mobility and off-site access.

We had the good fortune to welcome a new volunteer this year: Andy Austin. She has adapted quickly, and has been attending the New Docent training classes to increase her knowledge of the ancient Near East. What a great addition to the Suq!

Unfortunately, Jane Meloy has left us for a full-time paid position. She will be greatly missed. Her positive attitude and willingness to chip in and help are irreplaceable. Plus, her great knowledge of Egypt, having grown up there, was a huge advantage.

We also lost Megaera Lorenz. She has been very helpful as she has worked on and off for the Suq for a number of years while she was working on her PhD in Egyptology, which she now completed. Congratulations! We wish her great luck in her endeavors!

We branched out this year and had a booth at four different neighborhood festivals: Green Music Fest June 18–19; Logan Square Fest June 25–26; Wicker Park Fest July 23–24; and the Hyde Park Book Fair September 11. Sales were not spectacular, but we handed out hundreds of brochures about the Oriental Institute. So hopefully that translated into many new visitors.

On October 10 we had our first trunk show for the volunteers. We were so very fortunate to have Peg Meyers donate some of her mother Mary Wilson's extensive collection of jewelry to the Suq. These were pieces that Mary purchased when her husband John A. Wilson, former professor of Egyptology and director of the Oriental Institute, succeeding James Henry Breasted, was working at Luxor. Many of these were ethnic pieces from the Siwa Oasis and many were beautifully hand-granulated pieces of jewelry.

Another accomplishment this year was the massive reorganization of the Jewelry Room in the basement.

We also got great donations from Jane Meloy, Sara Johnson, Holly Rap, Carlotta Maher, and Roberto Cepeda.

We were very sad at the passing of Jane Hildebrand who worked at the Suq for many years and was a dear friend.

Of course, the Suq would be nothing without our great volunteers, Ray Broms, Alice Mulberry, Louise DesPres, and Norma van der Meulen, who designs our beautiful jewelry.



PUBLIC EDUCATION



*Overleaf: Coffin of the Overseer of the Troops, Ipi-Ha-Ishetef. Saqqara, Egypt. First Intermediate Period, ca. 2160–2025 BC.
Egyptian Collection. E12072A-B (D. 16238)*

PUBLIC EDUCATION AND OUTREACH

Leila Makdisi

This year we focused on sharpening and refining programs that had previously received high level of public engagement. The overview for our program types and total attendance is as follows:

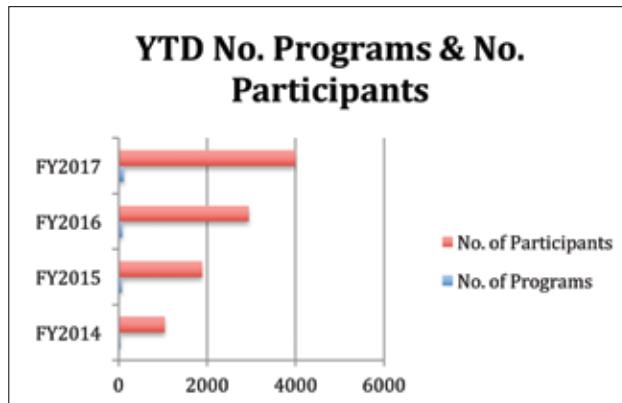


Figure 1. Year-to-date comparison of the number of programs and participants from FY2014 to FY2017

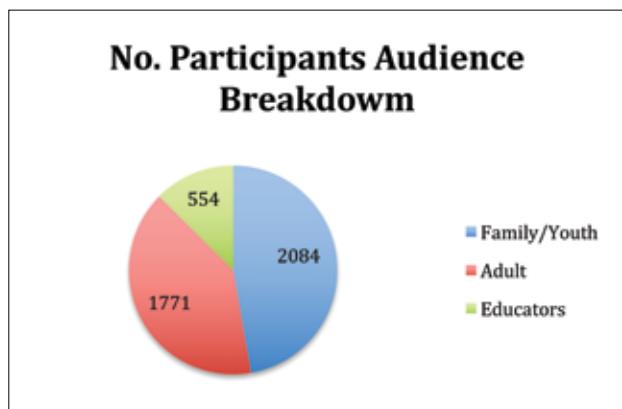


Figure 2. Number of Participants Audience Breakdown

Totals			Family & Youth		Adults		K-12 Educators & Students	
	Number of Programs	Attendance	Number of Programs	Attendance	Number of Programs	Attendance	Number of Programs	Attendance
Grand Totals	116	3,999	37	2084	62	1,771	21	554

Figure 3. An overview of the number of programs and attendance according to audience type

Adult and Community Programs

Carol Ng-He

Building on the success of select programs from last year, our adult and community engagement saw significant growth in geographic reach and enhancement in the program infrastructure.

Highlights of the Year

Community Scholars Program

Since its inception in spring/summer 2016, we have partnered with twenty-four local organizations and reached out approximately 1,800 individuals across the metropolitan Chicago area and beyond through this program (fig. 4). The organizations are listed as follows:

- Public Libraries: Acorn Public Library District, Aurora Public Library, Bartlett Public Library District, Benesenville Community Public Library, Bloomingdale Public Library, Blue Island Public Library, Glencoe Public Library, Homewood Public Library, Itasca Community Library, LaGrange Public Library, Lake Bluff Public Library, Matteson Area Public Library District, River Forest Public Library, Roselle Public Library District, Thomas Ford Memorial Library, Wheaton Public Library, Wilmette Public Library
- Senior Residence: The Admiral at the Lake, The Clare
- Religious Organizations: St. Paul's United Church of Christ, Temple Beth Israel, Zoroastrian Association of Metropolitan Chicago
- Cultural Organizations: Benedictine University Komechak Art Gallery, South Suburban Archaeological Society

Continuing Education Courses & Workshops

The continuing education courses and workshops achieved new records of attendance. We also offered courses of various lengths and delivery method to meet our audience's interest:

1. New hybrid (blending online and on-site) courses were launched with a record high of 32 students on average. These courses include:
 - Intensive Advanced Middle Egyptian Grammar (16 weeks)
 - Introduction to Sumerian Cuneiform (8 weeks)
2. Short seminars led by Museum staff and research associates were introduced, including:
 - Art and Science of Museum Conservation (4 weeks)
 - Technology in Ancient Egypt (4 weeks)
 - Dura Europos: Life on the Roman Empire's Edge and Its Discovery (3 weeks) in conjunction with a domestic trip — Dura Europos Discovery Trip to visit Yale University's collection in New Haven
3. Saturday afternoon workshops were conducted with hands-on experiences for students, namely:



Figure 4. Foy Scalf presenting at the Admiral at the Lake (photo: Toni Smith)



Figure 5. Atorina Zomaya of Assyrian Kitchen leading a cooking class at Whole Foods Market (photo: Carol Ng-He)

- Drinking in Antiquity Series — incorporating lectures, discussion, and beer tasting
- Ancient Cooking with Assyrian Kitchen Cooking Class (fig. 5) — incorporating ancient ingredients and stories about Assyrian cultures in an off-site cooking class

Curated Film Series

In summer 2016 and fall 2017 we offered the Vintage Egyptian Film Series with a pre-screening gallery tour, and the Classic Egyptian Film Series with a pre-screening scholars' introduction. The latter was co-sponsored by the Consulate of Egypt in Chicago, the Department of Near Eastern Languages and Civilizations, and the Center for Middle Eastern Studies.

Access/Low Vision Program

The content specialist/graduate student-led Multisensory Tour and docent-led Verbal Imaging Tour alternate every month as recurring free programs that serve primarily visitors who are blind or partially sighted through the use of object replicas. While the Verbal Imaging Tour gives visitors the highlights of the museum collections, the Multisensory Tour features specific themes, including: "Archaeology in Five Senses," "Making Sense(s) of the Past in Mesopotamia," "Stories of a Mummification Workshop," and "Faces, Forms, and Poses — The Egyptian Style" (fig. 6).



Figure 6. Museum visitors on the Multisensory Tour touching an artifact replica (photo: David Turner)

K-12 Educator Programs

Carol Ng-He

New K-12 educator resources were introduced to accommodate the various needs of classroom educators.

Highlights of the Year

New Curriculum Guidebook

Investigating a Neolithic Dwelling at Jarmo was released in fall 2016 (fig. 7) in collaboration with Project Archaeology. This investigation is not only the first prehistoric and international study in Project Archaeology's teacher curriculum database, but it also integrates the Oriental Institute's archaeological research materials and museum collections. In this investigation, students learn about the lives of the earliest people in the Middle East and the Neolithic Revolution by investigating a Neolithic dwelling and meeting Salma Samar Damluji, an Iraqi architect. The packet was also used for our new online teacher course "Knowing Shelter, Knowing People: Learning from Prehistoric Dwelling." A printed copy of the packet is available for sale on our website at: oi.uchicago.edu/curriculum

Grant Awards

We received two grants from private and corporate foundations, including:

- \$20,000 grant from the Elizabeth Morse Genius Charitable Trust to support the year-long Teacher Cohort Academy, which integrates STEAM (Science, Technology, Engineering, Art, Mathematics) education through the study of archaeological discoveries.
- \$25,000 grant from the Whole Kids Foundation to support the summer teacher program Leadership Legacy Institute in partnership with Project Archaeology (fig. 8).

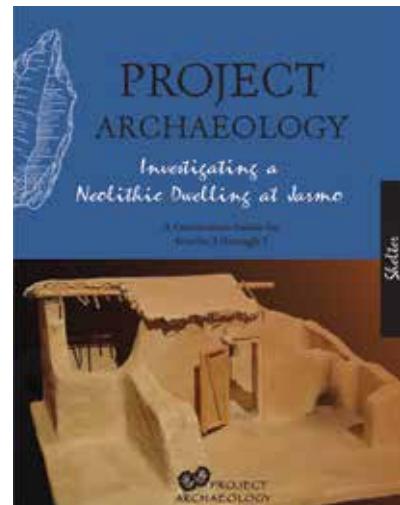


Figure 7. Cover of the curriculum book Project Archaeology: *Investigating a Neolithic Dwelling at Jarmo* (image: Project Archaeology)



Figure 8. Carol Ng-He receiving the grant award from the Whole Kids Foundation at Whole Foods Market Hyde Park branch opening (photo: Whole Foods Market)

Teacher Cohort Academy

We engaged sixteen teachers from across the Chicago metropolitan area through a series of rigorous training sessions and curriculum development based on the Oriental Institute collections and research. Participating schools include: Agassiz Elementary School; Arthur E. Carty Elementary School; Bateman Elementary School; Disney II Magnet High School; Franklin Fine Arts Center; Peace and Education Coalition High School (Sinclair campus); Skinner West Elementary School; and UChicago Lab School.

Educator Workshops by Request

Primarily designed for K-12 educators, librarians, and curriculum coordinators, this new initiative is made available during the school year Tuesdays through Thursdays at the Oriental Institute. Leaders or trainers of teacher education programs have the option to have a one-and-a-half or three-hour professional development experience with a content specialist in archaeology and/or Egyptology based on the participants' preferences.

UChicago Student Engagement

We teamed up with the Membership Department to develop strategies to deepen our engagement with UChicago students.

Career Lunch & Learn Series

With the sponsorship of UChicago Careers in Journalism, Arts, and Media (UCIJAM), this three-part series provided students a platform to meet with the OI staff to learn about careers in the field over lunch. Topics included: "Let's Put On a Show! How Curators Work," with Emily Teeter, Special Exhibits coordinator; "Conservation of Ancient Art & Artifacts," with Alison Whyte, associate conservator; and "Project Management in Humanities," with Foy Scalf, head of Research Archives.

New Offer for UChicago Arts Pass

Starting in fall 2016, we offered all active Arts Pass holders a 75% discount on their registration for all adult education courses and workshops.

Youth and Family Programs

Leila Makdisi

Leila Makdisi stepped out of her role as Youth and Family Programs Manager in March 2016. This report covers the programming through that time.

Highlights of the Year

This year we expanded programming in an attempt to reach bring new audiences into the fold of the Oriental Institute. To that end, we revived and renewed programming for toddlers and caregivers as well as increased access to those programs by removing the costs. We implemented multi-site field trip programs with the other UChicago arts organizations (known as Amplify, which includes the Smart Museum of Art, the Logan Center for the Arts, Court Theatre, the Oriental Institute, and Arts + Public Life), and saw increased visitorship from Chicago Public Schools and groups on the South Side. We also designed and tested pro-

gramming that creates an inclusive environment for individuals on the spectrum who need to approach topics from a sensory-based perspective. Never fear though, we did not forget about our repeat guests! This year saw the regular implementation of our archaeology discovery cart in the galleries. Predominately staffed by university students trained in best practices of museum engagement, our pottery activity was used by approximately 800 museum visitors this year (fig. 9).

After much anticipation and planning our newest field trip offering, Ancient Innovators, is up and running, allowing us to run facilitated programming for larger groups. With the continued success of Mummies Night and our ongoing partnerships with the Girl Scouts of America and the Zoroastrian communities in Chicago, visitorship in the youth and family programs exceeded 2,000 attendees this year, a 11% increase from last year. We plan to keep this momentum rolling!

Program Highlights

This year saw our first foray into sensory focused programming designed to meet the needs of children with Autism. The program was initially a prototype school field trip in conjunction with City Elementary in Hyde Park and a plan exists for it to run as a self-directed family program, yet to be implemented. For this program we developed a sensory station, which will be available to all visitors in the LaSalle Banks Room. Participants were able to use four of their five senses (nothing to eat this time!) to experience a connection with the cultures of the ancient Near East and our collections. We are very excited to test with the public in the future.

The Girl Scouts of America continue to bolster our numbers in fee-based programming with the lure of specially designed Fun Patches earned in our skill-centered workshops like Mummy Science and Junior Archaeologists.

Our quarterly family programs continue to exceed expectations. Mummies Night, the Halloween edition, brought over 500 visitors through our doors. For the first time this year, Nowruz, a Persian New Year Celebration event, was a stand-alone spring event with nearly 200 visitors in attendance (fig. 10).

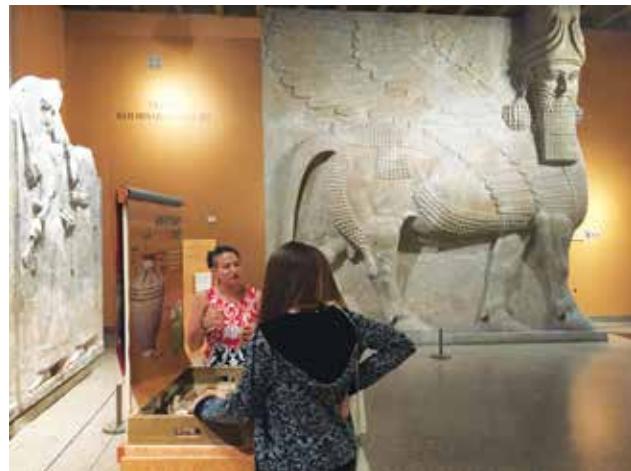


Figure 9. Leila Makdisi engaging a visitor with the Discovery Cart in the gallery (photo: Carol Ng-He)



Figure 10. Haft Seen Table at Nowruz (photo: David Turner)

On the Horizon

Calgary Haines-Trautman

After two years working as the Education Programs facilitator lead intern in the Public Education Department, I am thrilled to be taking on the role of Youth and Family Program coordinator as of mid-June. Having been immersed in museum education here for the past two years, I look forward to jumping right in and getting to work on our programming and new initiatives.

As part of the gallery enhancement project we are working with museum staff to update the educational materials in the gallery to better serve our visitors. This means replacing the current Family Activity Cards with newly designed Gallery Guides. These will provide an interactive component to the galleries, calling out specific objects (in conjunction with the upcoming 100 objects highlights museum catalog) and prompting visitors' thinking about the artifacts in a new way.

Now that we have launched the multi-site field trip collaboration with Amplify partners, the new year brings the promise of active planning in programmatic collaboration for youth and K-12 audiences that will allow us to expand our offerings and widen our scope. Making these collaborations a part of our regular field trip repertoire will help us reach new visitors from the neighboring communities and south side schools.



VOLUNTEER PROGRAM



Overleaf: Bowl. Iran, Istakhr. Abbasid period, AD 800–1000. Islamic Collection. A22760 (D. 15758)

VOLUNTEER PROGRAM

Sue Geshwender

The Volunteer Program is a vibrant and integral part of the Oriental Institute. We continue to attract intellectuals who are passionate about ancient history and committed to devoting time and energy to the Oriental Institute as either docents or in other volunteer capacities, or both. What follows are some highlights of the year.

Film Discussion Program

The summer had two enrichment programs called “Film, Faculty & Food.” We watched a film in Breasted Hall and then adjourned for a catered lunch with a faculty member discussing the film. Professor McGuire Gibson discussed the 1962 film *Lawrence of Arabia*. Professor Robert Ritner discussed the 1932 horror cult classic *The Mummy*.



Figure 1. Eating lunch and discussing Lawrence of Arabia

Roberto Cepeda, Larry Lissak, Janet Helman, Toni Smith, Mac Gibson, Carlotta Maher, Lee Herbst, and Joe Barabe



*Figure 2.
Volunteers were treated to lunch and a discussion of the film The Mummy by Professor Robert Ritner*

VOLUNTEER PROGRAM

Figure 3. Book club poses in front of the Rosetta Stone after discussing the book Cracking the Code with Professor Brian Muhs

Front Row: Janet Helman, Semra Prescott, Stephen Ritzel, Shirlee Hoffman, Nancy Baum, Christel Betz, Deloris Sanders, Toni Smith, Gabrielle DaSilva

Back Row: Larry Lissak, Jean Nye, Brian Muhs, Alfia Lambert, Lauren Friesen



Figure 4. OI Book Club

Front Row: Roberta Schaffner, Shirlee Hoffman, Yorke Rowan, Christel Betz, Debby Halpern

Back Row: Semra Prescott, Irene Glasner, Stephen Ritzel, Janet Helman, Nancy Baum, Anne Schumacher, Barbara Jillison



Book Club

The OI book club is now in its second year. Books are selected by the group and include old titles, such as the 1946 Agatha Christie *Come Tell Me How You Live*, to the very latest publications like the Eric Cline book *Three Stones Make a Wall: The Story of Archaeology*, which we got before they were available to the general public. A faculty member/research associate is invited to join the discussion, and this year we enjoyed the lively conversations of Brian Muhs, Abbas Alizadeh, Tasha Vorderstrasse, and Yorke Rowan. Opinions and interpretations on the books vary within the group, but everyone agrees they gain a better understanding and appreciation of the books through this communal analysis.



Figures 5-6. Pot Luck Luncheon

At Table: Polina Kasián, Amy Zillman, Kristin Leasia, Sherry McGuire, and Liz Green

Pot Luck Luncheon

The volunteers hosted a pot luck luncheon to welcome the new chief curator Jean Evans following the Volunteer Day lecture in October. Delicious food was brought in by volunteers, OI faculty, and staff. The turnout was excellent, over seventy-five people attended, with tables spilling out into the hallway! The tables had a mix of volunteers, faculty, and staff, and great conversations.

50th Anniversary Celebration

On December 4, 2016, we celebrated the 50th Anniversary of the Volunteer Program with a special program in Breasted Hall followed by a reception in the galleries. Over 200 hundred people turned up on this snowy day to honor all the volunteers. The first group of Oriental Institute Volunteers started in 1966. Two members of that original class are still active volunteers: Carlotta Maher and Jim Soprano, who were additionally honored with a letter from senator Richard Durbin. Special thanks to Terry Friedman who put together an incredible video tribute of all fifty years of volunteers at the OI.



Figure 7. 50th Anniversary Planning Committee

Front Row: Janet Helman, Carlotta Maher, Joan Barguhesen, Margaret Foorman

Back Row: Debby Halpern, Terry Friedman, Sue Geshwender, Gretel Braidwood, and Brittany Mullins

VOLUNTEER PROGRAM



Figure 8. 50th Anniversary — Gil Stein congratulates Jim Sopranos and Carlotta on fifty years of service



Figure 9. 50th Anniversary — Volunteer Managers: Janet Helman, Sue Geshwender, Carlotta Maher, Terry Friedman, and Cathy Dueñas



Figure 10. 50th Anniversary Celebration was attended by over 200 hundred people, December 4, 2016



Figures 11-14. Docent Training

Docent Training 2017

Docent Training started in June. The training program is an intensive eight sessions held over the course of two months. New Docent Trainees receive a full day of instruction, combined with class readings, essay and oral presentation assignments. OI faculty and museum staff provide the instruction. Our stellar line-up this year included lectures from: Jean Evans, Anne Flannery, McGuire Gibson, Jan Johnson, Brian Muhs, Kiersten Neumann, Susanne Paulus, Robert Ritner, David Schloen, Emily Teeter, and Theo van den Hout. PhD candidate Sam Harris provided in-gallery instruction. PhD student Joey Cross did a phenomenal job assisting in everything from selecting readings, reviewing homework, and providing in-gallery instruction. Susan Allison, Helen McDonald, Foy Scalf, Alison Whyte, and Chris Woods welcomed the new trainees in to their offices providing a behind-the-scenes access to Conservation, the Director's Office, Museum Archives, Research Archives, and Registration, and Storage. A key component of new docent training is docent-to-docent peer coaching. Veteran docents share their years of experience providing tips and feedback on developing engaging tours by



either coaching the in-gallery oral presentations or providing feedback on the essay assignments. Thanks to these outstanding mentors: Luella Adan, Joe Barabe, Nancy Baum, Roberta Buchanan, Roberto Cepeda, Lauren Friesen, Ralph Klein, Marilyn Murray, Jean Nye, Stephen Ritzel, Margaret Schmid, Toni Smith, and Carole Yoshida. Special thanks to Stephen Ritzel, who served as a reader, coach, and cake-baker extraordinaire. Advisor Janet Helman makes sure we maintain the highest of standards when training the newest ambassadors who are the public face of the OI. It takes a village to raise our docents! We continue to attract the brightest and most interesting people and are happy to welcome the Class of 2017 in to our volunteer community.

Goodbye and Hello

By the spring 2016 both of my Education Department colleagues Leila Makdisi and Carol Ng-he had left the OI for jobs at other places. It has been a pleasure to work with both of these talented people. Calgary Haines-Trautman has joined the Education Department as the Youth and Family coordinator. Calgary has worked as an intern in the Education Department for two years and we are happy to welcome her.

In Memoriam

The Volunteer Program lost two loyal friends and supporters this past year: Peggy Grant and Jane Hildebrand. Peggy Grant joined the volunteer program in 1971 and also served as the volunteer manager. She had a gift for spotting talent and recruited many volunteers. Jane Hildebrand was a stalwart Suq volunteer and docent for thirty years, always positive and full of energy.

These individuals exemplified the true spirit of volunteerism by devoting their passion, intellect, and support to help further the goals and mission of the Oriental Institute. We are so honored to have known and worked with them over the years and it is our good fortune that they chose to spend a portion of their lives with us.

Photo Gallery



Figure 15. Volunteer recognition



Figure 16. Mary Shea and Margaret Foorman



Figure 17. Nisha Kumar, Gaby Cohen, and Susan van der Meulen



Figure 18. Terry Friedman, Semra Prescott, Dee Speich, Sue Geshwender, Alfia Lambert, Marilyn Murray, Hilda Schlatter, Christel Betz, and Catherine Dueñas

VOLUNTEER PROGRAM



Figure 19. Carole Yoshida



Figure 20. Larry Lissak,
Shirlee Hoffman, Gaby
Cohen, Hilda Schlatter,
and Christel Betz



Figure 21. Education
Department, past
and present: Calgary
Haines-Trautman, Cathy
Dueñas, Carol Ng-He,
Terry Friedman, Moriah
Grooms-Garcia (and baby
Amaya), Sue Geshwender,
and Carole Krucoff

Volunteer Recognition

Congratulations to those who celebrated a milestone year in their volunteer service to the Oriental Institute:

5 Years	10 Years	30 Years
Dan Bloom	John DeWerd	Christel Betz
Wahied Helmy	Sherry McGuire	
Alfia Lambert	Ron Wideman	
Kate Leiber		35 Years
Marilyn Murray		Margaret Foorman
Roberta Schaffner		Stephen Ritzel
Dee Speich	Toni Smith	
15 Years	35 Years	50 Years
		Carlotta Maher
		Jim Sopranos

Museum Docents

** Denotes active docents who are also project or event volunteers*

Luella Adan	Lauren Friesen	Semra Prescott
Joseph Barabe	Dario Giacmononi	Stephen Ritzel
Nancy Baum	Michael Goodyear	Peg Romm
Susan Bazargan	Janet Helman	Deloris Sanders
Craig Bean	Wahied Helmy	Hilda Schlatter
Christel Betz	Lee Herbst	Margaret Schmid
Rebecca Binkley-Albright	Shirlee Hoffman	Joy Schochet
Daniel Bloom	Dennis Kelley	Anne Schumacher
Emily Boak	Ralph Klein	Stephen Scott
Roberta Buchanan	Stuart Kleven	Mary Shea
Myllificent Buchanan	Alfia Lambert	Dee Speich
Roberto Cepeda	Laurence Lissak	Craig Tews
Gabriella Cohen	Carlotta Maher	Darren Vilmin
Gabriele DaSilva	Sherry McGuire	Ron Wideman
John DeWerd	Marilyn Murray	Carole Yoshida
Fred Eskra	Jean Nye	
Margaret Foorman	Nick Posegay	

Volunteers

Laura Alagna	Irene Glasner	SoYoung Oh
Kathryn Antonelli	Elizabeth Green	Karen Righeimer
Eric Aupperle	Debby Halpern	Sasha Rohret
Andy Austin	Heidi Hilliker	Roberta Schaffner
Ray Broms	Katherine Hodge	Dalia Shefner
Rafaela Brosnan	Julia Jacobs	Toni Smith
David Brown	Katherine Jarboe	Hasti Soltani
Walter Burkat	Addison Jeske	O. J. Sopranos
Elizabeth Bush	Barbara Jillson	George Sundell
Emily Cambias	Alex Jimerson	Emily Tcheng
Grace Clements	Polina Kasian	George Thomson
Jenna Cordisco	Alanna Kish	Norma vanderMeulen
Kim Crawford	Carissa Knickerbocker	Rebecca Wang
Louise Despres	Nisha Kumar	Anastasia Weger
Mariola Dudzicka	Kristin Leasia	Alexis Wells
Cathy Dueñas	Catherine LePape	Ian Williams
Meghan Forajter	Katherine Lieber	Catie Witt
Terry Friedman	Jane Meloy	Amy Zillman
Bill Gillespie	Alice Mulberry	
Terry Gillespie	Marge Nichols	



MEMBERSHIP



Overleaf: Mirror. Qustul, Egypt. New Kingdom, ca. 1390–1352 BC. Nubian Collection. E21694 (D. 15831)

MEMBERSHIP

Kiran Webster

Oriental Institute membership remained strong in fiscal year 2017, with over 1,700 household memberships representing more than 3,500 members. The Oriental Institute is proud to have such a committed group of supporters, whose participation and generosity are integral to the Institute and who ensure the museum remains vibrant all year long. Members enjoyed discounts in the museum gift shop, on classes, programs, and special membership events. The Oriental Institute greatly appreciates all of its members for their support, advocacy, and commitment to the mission of the Institute.

Special Interest Groups

Membership also includes two special interest groups, which have their own special events and programs.

Young Professionals

The Oriental Institute's Young Professionals (YP) group is a vibrant community of young people who support the overall mission and programs of the Oriental Institute. This special membership category is designed to give emerging civic leaders a meaningful way to engage with the Oriental Institute, one of Chicago's leading cultural institutions. YP membership is intended for anyone between the ages of twenty-two and forty-five who want to learn more about the ancient Middle East while participating in exclusive educational, social, and volunteer activities with some of the world's foremost academics.

YP members use their creativity, knowledge, innovation, and professional skills to advance the Oriental Institute and serve as ambassadors, increasing awareness of the Institute's work and engaging new audiences through outreach events. The group hosted several successful YP member events throughout the year, including:

- **Curator's Table with Themed Cocktails in the Courtyard:** A private tour of the Oriental Institute with Kiersten Neumann, curator of the Oriental Institute's special exhibit Persepolis: Images of an Empire, along with ancient Near Eastern themed cocktails in the courtyard of the Oriental Institute and dinner in the Edgar and Deborah Jannotta Mesopotamian Gallery (Tuesday, August 9, 2016)
- **Discover Hidden Messages:** Mesopotamian Inscriptions for Gods and Men. This gallery tour focused on hidden messages in ancient Mesopotamian inscriptions, led by Assistant Professor of Assyriology Susanne Paulus (Saturday, October 22, 2016)
- **Young Professionals Hittite Roundtable:** Dinner-discussion of the ancient Hittite language and culture with Theo van den Hout, Arthur and Joann Rasmussen Professor of Hittite and Anatolian Languages and Executive Editor of the Hittite Dictionary Project, and Petra Goedegebuure, Associate Professor of Hittitology and Senior Editor of the Hittite Dictionary Project (Wednesday, February 15, 2017)

UChicago Arts Pass Student Membership

As part of the University of Chicago's Art Pass program, the Oriental Institute began offering free membership to all University students in May 2010. As of June 2017, the Institute had over 1,716 University of Chicago student members, more than any other campus organization. Through partnerships with the UChicago Arts Pass associates, the Membership office was able to host several successful student member events throughout the year:

- **Bulls 'n' Buns:** A tour of the Museum for new college students as part of O-Week activities (co-sponsored by Public Education, Museum, and Volunteer Program) (September 2016)
- **Study at the OI:** Late-night study hall hosted in the Museum galleries (December 2016, March 2017)
- **Screening of Indiana Jones and the Last Crusade:** Exclusive film screening hosted in Breasted Hall (February 17, 2017)

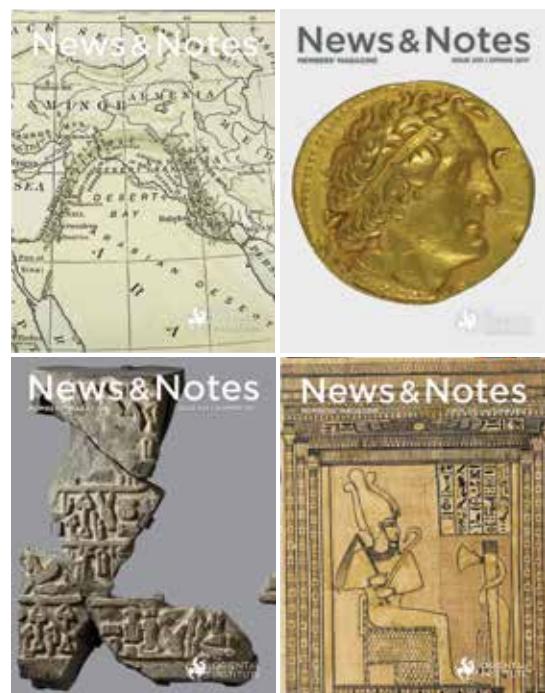
Member Publications

With the assistance of the Publications Office, the Membership Office continues to publish *News & Notes*, the quarterly Members' magazine. The Membership Office is greatly appreciative of the Publications Office for their hard work and guidance in producing *News & Notes*, as well as all of the authors and staff contributors who provide exciting and engaging articles and program notices each quarter for our Members.

Member Events

Oriental Institute members supported a comprehensive lecture series during the year with topics ranging from Gertrude Bell's Archaeological Discoveries and Research in Mesopotamia, to Akkadian and Sumerian love incantations and popular music.

- Lisa Cooper, "Encounters with Ancient Splendors: Gertrude Bell's Archaeological Discoveries and Research in Mesopotamia, 1909–1914" (October 5, 2016)
- James Osborne, "The Syro-Anatolian City-States: A Neglected Iron Age Culture" (November 2, 2016)
- Irene Winter, "The Stela and the State: Monuments and Politics in Ancient Mesopotamia" (November 30, 2016)



- Nadine Moeller, “The Origins of Two Provincial Capitals in Upper Egypt: The Two Sister-Sites of Tell Edfu and Dendara” (January 4, 2017)
- Michael Jursa, “Economic Growth and Growing Inequality in Times of Empire: The Babylonian Economy in the Sixth Century BCE” (February 1, 2017)
- Ali Mousavi, “Persepolis Through Images: The Impact of Visual Documents on the Study of Achaemenid Ruins” (March 1, 2017)
- Andrew George, “Be My Baby in Babylonia: Girl Meets Boy and Vice Versa” (April 5, 2017)
- W. Ray Johnson, “The Epigraphic Survey at 93: Changing the Face of Archaeology with New Digital Technologies at Chicago House in Luxor, Egypt” (June 7, 2017)

A very special thank you is in order for all our lecturers, co-sponsors, and members for participating in the 2016–2017 Oriental Institute Lecture Series. The series aims to bring a varied selection of the most recent work and scholarship on the ancient Middle East to our members and the local community. We look forward to an exciting and dynamic lecture line-up for the 2017–2018 series, which begins in October 2017. If you missed a lecture from the last season, please visit the Oriental Institute channel at youtube.com/jameshenrybreasted to view our lectures online.

Members’ events would not be possible without the hard work of many dedicated Oriental Institute staff members and volunteers, and the membership office is thankful for all of their assistance with a very successful 2016–2017 events season.

Member Travel

A group of twenty-six participants joined the Oriental Institute on the Ancient Land of Persia tour, led by OI Director (2002–2017) Gil Stein, and accompanied by Curator and Research Associate Kiersten Neumann, in October 2016. This exciting two-week journey included: exclusive, behind-the-scenes access to the famous “Gold Room” in the National Archaeological Museum in Tehran; visits to the ruins of the Palace of Darius in Ahwaz, one of the oldest settlements in the world, the UNESCO-listed site of Persepolis, a wonder of the ancient world, the famous Zoroastrian Fire Temple in Yazd, and the magical city of Isfahan.

The Institute offered the Wonders of Ancient Egypt tour in March 2017, led by Lanny Bell (Associate Professor Emeritus of Egyptology, AB’63). The group enjoyed: an exclusive two-week adventure through the history, archaeology, and culture of Egypt, including a private “after-hours” tour of the Egyptian Museum; an evening at the Oriental Institute’s Chicago House; a visit to the Valley of Kings; a leisurely cruise along the Nile while touring Luxor, Edfu, and Aswan; and access to the tombs of Ramesses II and his wife Nefertari at the temples of Abu Simbel. A total of fourteen members and patrons participated in the tour.

Oriental Institute travel programs are unique in that our passengers experience exclusive site visits and on-site learning privileges not enjoyed by other institutions or travel groups. Our members learn directly from some of the most eminent scholars in the world, at sites the Oriental Institute has been working on and researching for almost a century. For more information on Oriental Institute travel programs, contact the Membership Office at oi-membership@uchicago.edu or visit our website at oi.uchicago.edu/travel or visit our OI Members Travel page at facebook.com/OIMemberTravel.

SPECIAL EVENTS

Kiran Webster

During the 2016–2017 academic year, we hosted a variety of events at the Oriental Institute for our members, donors, and the general public. We celebrated our largest fundraising event, the biennial gala in addition to hosting the thirteenth year of our annual Postdoctoral Seminar, the fifth year of the annual David A. Kipper Ancient Israel Lecture Series, and celebrated fifty years of our Volunteer Program. In addition, we continued to develop unique programming, hosting the Adler Planetarium Webster Institute members for our James Henry Breasted Society event at the Oriental Institute.

We would like to thank our generous donors and members, whose support make our exhibits, programming, research, and special events possible.

50th Anniversary of the Volunteer Program

This year, the Oriental Institute celebrated the 50th Anniversary of the Volunteer Program on December 4, 2016. Volunteers, docents, and members from the last five decades attended



50th Anniversary of the Volunteer Program, held on December 4, 2017 (photo: Joel Wintermantle)



50th Anniversary of the Volunteer Program, held on December 4, 2017 (photos: Joel Wintermantle)

Emily Teeter. We would also like to recognize the generous volunteers who contributed to the Volunteer Program and to a publication dedicated to highlights in the Museum's collection.

Thirteenth Annual Postdoctoral Seminar

Postdoctoral fellow Ilona Zsolnay organized the thirteenth annual postdoctoral seminar, hosted at the Oriental Institute on March 2–3, 2017. This year's conference titled, *Seen Not Heard: Composition, Iconicity, and the Classifier Systems of Logosyllabic Scripts*, brought together domestic and international scholars to explore the various ways in which the earliest writing systems exploited visible language to express meaning beyond the spoken word. Conference speakers panelists received a curator-led tour of the Oriental Institute and attended a dinner hosted in the Director's Suite, former office of Oriental Institute founder James Henry Breasted. This provided the speakers and those participating in the conference with the opportunity to discuss their research with their colleagues. Each year these lectures, presented by experts on the conference topic, are free and open to our members and the public thanks to the generous support of Arthur and Lee Herbst. A publication of the conference proceedings is currently in production.

to celebrate the accomplishments of the program and recognize Carlotta Maher and Jim Sopranos for their fifty years of service to the Oriental Institute Volunteer Program. Following the program, guests enjoyed cocktails and hors d'oeuvres in the Edgar and Deborah Jannotta Mesopotamia Gallery. A special bench donated by an anonymous supporter commemorating the fifty years was presented to the volunteers.

As one of the first volunteer programs in the City of Chicago, the Oriental Institute has made numerous achievements, including: the introduction of a professionalized docent program, which truly helped to make the museum's collection accessible to the public; the creation of an education department, for the first time offering courses and programs to adults, families, and K-12 age children; and the inception of the OI Travel Tour Program.

Special thanks goes to our 50th Anniversary Committee: Joan Barghusen, Gretel Braidwood, Catherine Dueñas, Margaret Foorman, Terry Friedman, Susan Geshwender, Deborah Halpern, Janet Helman, Carlotta Maher, and

James Henry Breasted Society Event: A Night of Astronomy, Astrology, and Magic

On the beautiful spring evening of April 13, 2017, the Adler Planetarium's Webster Institute members joined the Oriental Institute's James Henry Breasted Society members under a full moon to learn about astronomy, astrology, and magic in the ancient Near East within the galleries of the Oriental Institute. The attendees viewed artifacts presented by Research Associate Tasha Vorderstrasse, Assistant Professor John Wee, and Professor Robert Ritner. Members were able to see objects never before displayed in the museum's galleries, including cuneiform tablets recording astronomical observations, and learned how the Egyptians kept track of time using a water clock. James Henry Breasted Society and Webster Institute members received a detailed and in-depth look at specific artifacts in the Oriental Institute's collections and the celestial stories behind them. This event was made possible by the members of the James Henry Breasted Society who provide an annual, renewable source of unrestricted support for the most pressing research projects of the Oriental Institute.



Assistant Professor John Wee discusses astronomical observations recorded on cuneiform tablets with James Henry Breasted Society Members at the Night of Astronomy, Astrology and Magic hosted at the Oriental Institute (photo: David Turner)

David A. Kipper Ancient Israel Lecture Series

Matthew J. Adams, Director of the W. F. Albright Institute of Archaeological Research, gave the fifth lecture in the annual David A. Kipper Ancient Israel Lecture Series on April 26, 2017 entitled, Armageddon and the Roman VIth Ferrata Legion: New Excavations at Legio, Israel. Adams focused on excavations at the site of Legio, the Roman military base in Galilee, near Megiddo.

During a workshop, Adams met with graduate students from the Near Eastern Languages and Civilizations Department, the Divinity School, and the Anthropology Department, as well as faculty and staff from the Oriental Institute, to discuss how new data and observations enable reinterpretations of monumental temples first unearthed by the Oriental Institute team in the early part of the twentieth century.

The David A. Kipper Ancient Israel Lecture Series focuses on the history and archaeology of ancient Israel and was established through a generous gift from Barbara Kipper and the Kipper Family. The program includes an annual public lecture as well as a workshop for faculty, graduate, and undergraduate scholars at the Oriental Institute.

2017 Oriental Institute Gala: Bringing the Past to Light

The 2017 Oriental Institute Gala, *Bringing the Past to Light*, was held on May 18, 2017, at the Four Seasons Hotel Ballroom in Chicago. While enjoying cocktails and conversation in a suq-inspired lounge, guests bid on specially curated treasures, including an antique drafting table once used by museum staff, and a steamer trunk used by James Henry Breasted, Robert Braidwood, and Nelson Rockefeller.

As the doors opened to the ballroom, guests entered through domes of crimson into a softly lit ballroom. Director Gil Stein presented the James Henry Breasted Medallion, the Oriental Institute's highest honor, to Lewis and Misty Gruber for their leadership and volunteer service as Visiting



Guests viewing silent auction items, including a trunk owned by James Henry Breasted (photo: John Zich)



Former Director of the Oriental Institute Gil J. Stein welcoming guests to the Oriental Institute 2017 Gala (photo: John Zich)



Epigraphic Survey Field Director W. Ray Johnson (on left) speaking with 2015 Breasted Medallion recipient Thomas C. Heagy at the Gala (photo: John Zich)



Misty and Lewis Gruber accepting Breasted Medallions for the 2017 Oriental Institute Gala (photo: John Zich)



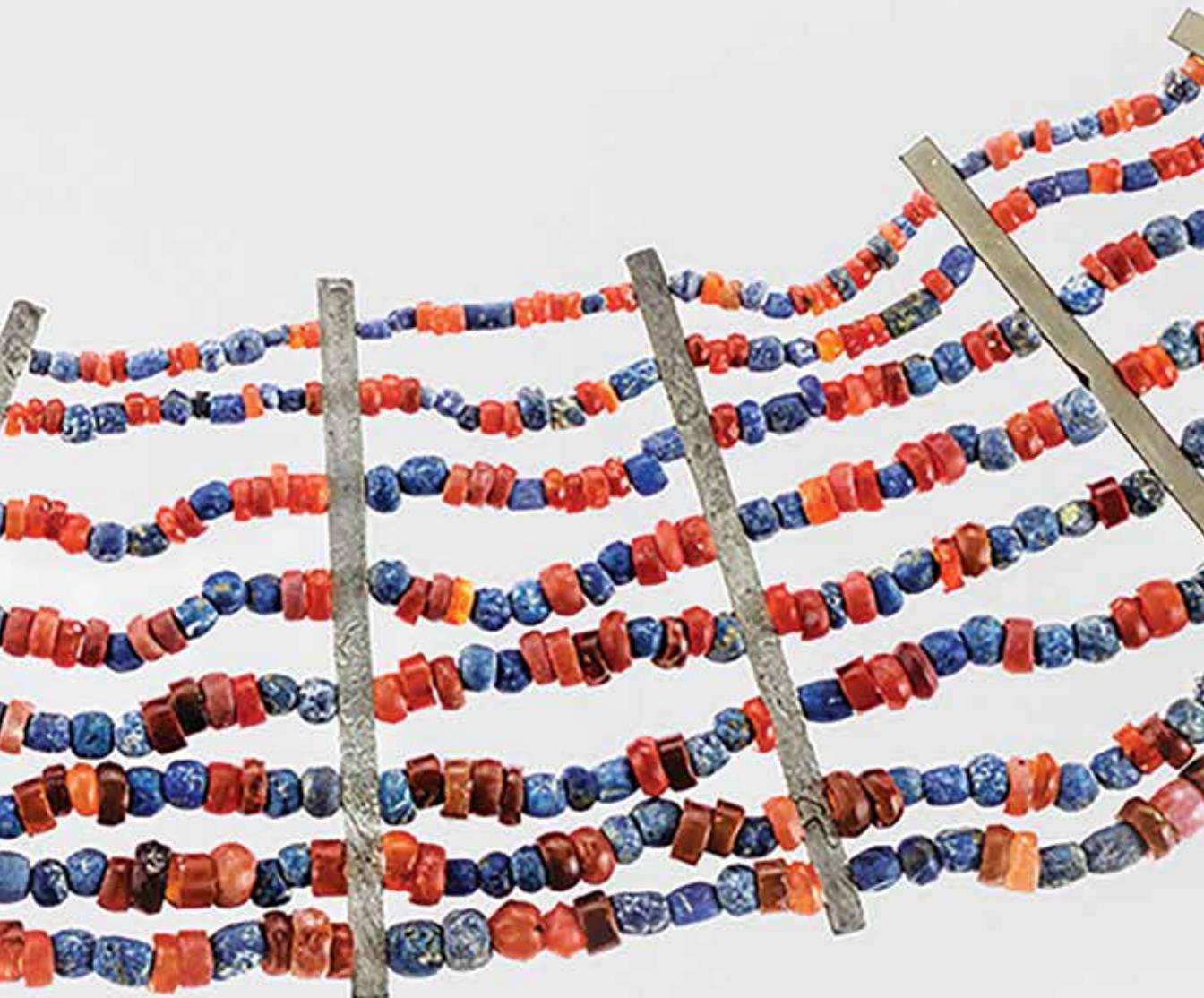
Luis Vazquez and Abby Ellison perform a rendition of the Arabian Dance from the Nutcracker (photo: John Zich)

Committee Members and for their outstanding support of the Oriental Institute and our mission. Following the presentation, guests were captivated by a modern dance rendition of the Arabian Dance from the Nutcracker, performed by Luis Vazquez and Abby Ellison.

Following the performance, guests bid on live auction items, which included pedestal cases original to the founding of the museum and a getaway to London with private tours of the British Museum and West End theater tickets.

The evening concluded in the lounge. Where guests dined, danced, and imbibed until late in the evening. We would like to thank all of our guests of and contributors to this fundraising event, which generated \$95,000 towards the Oriental Institute's Gallery Enhancements Project. We look forward to celebrating the completion of this project and our Centennial in 2019.

A special thank you goes to our Gala Advisory Committee: Andrea Dudek, Jill Carlotta Maher, Harvey Plotnick, Crennan Ray, and Rebecca Stein.



DEVELOPMENT



Overleaf: Necklace or Collar. Tell Agrab, Iraq. Early Dynastic period, ca. 2900–2800 BC. Mesopotamian Collection. A21505D (D. 15755)

DEVELOPMENT

Brittany F. Mullins

This past year, our generous friends and supporters aided us in our efforts to further our mission to heighten understanding of the ancient Near East through research initiatives, cultural preservation efforts, educational programming and, of course, our world-renowned museum. We experienced a record breaking fundraising year with over \$7 million in donor support. One gift, totaling \$3.2 million, came from a very generous anonymous donor who wished to include us in their estate plans and establish the Ancient Near East Research Fund. This endowed fund supports projects focused on the ancient communities and civilizations in Anatolia, Mesopotamia, Persia, and Syria during the Neolithic through Bronze Age. We are especially grateful for this visionary gift and the lasting impact it will have on the research of scholars working in these fields.

Remembering the Oriental Institute in your estate plans is an opportunity to create an enduring legacy. We are profoundly grateful to those who have provided for the Oriental Institute in their estate and, as you can see from the chart below, they have had an enormous impact on our fundraising and research efforts. We are honored by our dear friends who have decided to remember the Oriental Institute in this way including the Sharukin and Elizabeth Yelda and the Yelda Family, Alwin Clemens Carus, and Mary Geneva Finn. Thank you for ensuring the future of the Oriental Institute.

We are especially grateful to our friends and members for providing annual sources of support and to our government, corporate, and foundation partners. These diverse sources of funding allow us to remain flexible to respond to pressing institutional needs and sustain long-term projects, such as the Chicago Hittite Dictionary project. Thank you for your continued investment in the Oriental Institute.

<i>Current Income</i>	2017	2016	2015
Outright Gifts:	\$1,039,869	\$780,451	\$839,310
Realized Bequests:	\$3,679,535	\$267,629	\$1,595,689
Payments on Multi-Year Pledges:	\$2,325,367	\$1,819,112	\$4,221,727
Totals	\$7,044,771	\$2,867,192	\$6,656,726

<i>Future Commitments</i>	2017	2016	2015
Pledged Commitments:	\$100,000	\$763,400	\$2,004,400
Planned and Deferred Gifts:	\$947,120	\$887,500	\$125,000
Totals	\$1,047,120	\$1,650,900	\$6,114,620

Figures above do not include foundation and federal/nonfederal grants

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The Oriental Institute gratefully recognizes the many donors who have furthered the mission and impact of the Oriental Institute with a gift of \$100 or more from July 1, 2016 to June 30, 2017. The following pages list the many donors whose gifts help to inspire excellence at the Oriental Institute. We celebrate your commitment and are pleased to recognize publicly the impact of your generosity on the Institute and our community. We appreciate you!

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— NOTES —

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