

## NUBIAN EXPEDITION

### **Geoff Emberling and Bruce Williams, with Contributions by Justine James**

The Oriental Institute Nubian Expedition (OINE) was revived in 2007, with a season of excavation in the Merowe Dam salvage project in northern Sudan, co-directed by Geoff Emberling and Bruce Williams. The last fieldwork of the OINE ended thirty-nine years ago in 1968.

The Merowe Dam, located just upstream of royal Kushite pyramids at Nuri and Jebel Barkal, will form a lake one hundred miles long and two miles wide when it is finished in the summer of 2008. It will flood virtually all of the Fourth Cataract (fig. 1), a region in which virtually no archaeological research had been conducted before the dam project began. That alone is a

remarkable fact — there are few such blank spots on the archaeological map of the Near East and its margins. It is even more remarkable considering that the Fourth Cataract is within the heartland of the Napatan dynasty, which eventually conquered Egypt and ruled as its Twenty-fifth Dynasty in 750–650 B.C.

Surveys of each bank and the many islands in this stretch of the Nile Valley suggest that as many as 2,500 archaeological sites will be flooded by the new lake. Work in previous years by as many as eleven international teams recovered evidence of abundant occupation of the Neolithic, Kerma, post-Meroitic, and Christian periods in particular. The archaeological remains have included abundant rock drawings, burial sites, a very few settlements, the foundations of a small Napatan pyramid, and a number of Medieval fortresses (fig. 2).

Among the most surprising results was the extensive occupation of the later Kerma period (Middle to Classic Kerma, ca. 2000–1500 B.C.). The polity centered at Kerma, known as Kush in antiquity, has long been known to have posed a military threat to Egypt during the Second Intermediate Period (1650–1550 B.C.). Settlement throughout the Fourth Cataract of the Middle Kerma period, however, raised the possibility that Kush was far more extensive (and powerful), over a longer period of time, than previously recognized.

With the support of Oriental Institute Director Gil Stein, we began to investigate the possibility of an Oriental Institute project in this region that would aim to contribute broadly to the salvage effort while also focusing to the extent possible on the Kerma period.

We made a reconnaissance trip in spring 2006, accompanied by the journalist Andrew Lawler who wrote an excellent story for *Archaeology* about the dam salvage project. It was immediately clear that the crisis in Darfur presented no practical obstacles to our work — Darfur begins about 400 miles across the Sahara from the Nile Valley, and in an area with very few roads, this represents a significant barrier to travel and communication.

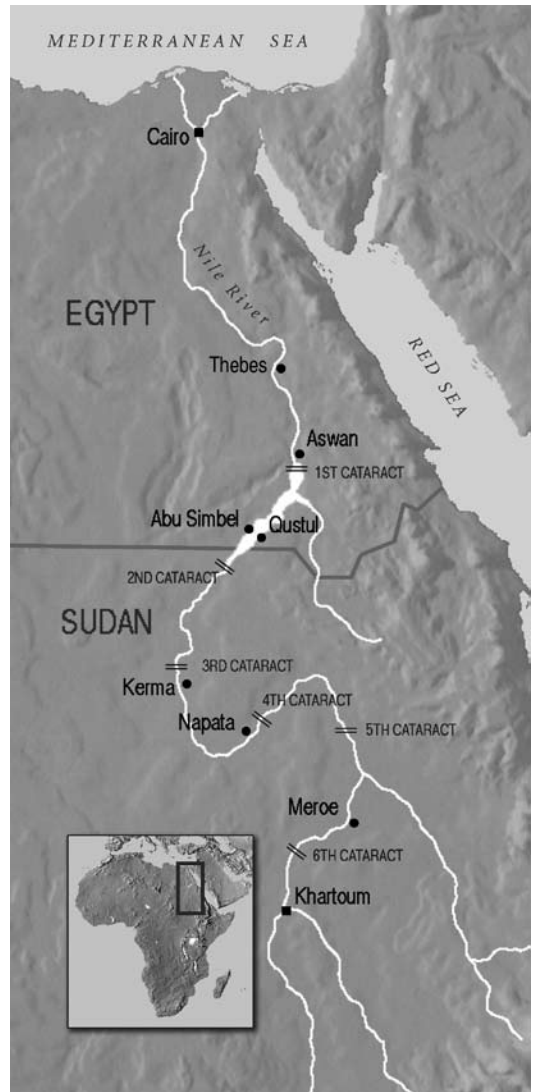


Figure 1. Map of the Nile Valley



Figure 2. Tom James looks for rock art on the island of Umm Gebeir, Fourth Cataract

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We found that there were other local issues, however. The construction of the dam will displace approximately 50,000 people from their homes. The government of Sudan is compensating them for the loss of their houses, fields, and palm trees and has also constructed new settlements for displaced people. The new settlements are not located on the Nile, however, and there is considerable tension between the government and one of the local tribes in particular — the Manasir — that has resulted in a Manasir ban on archaeological work in their territory.

## 2007 Season

The National Corporation for Antiquities and Museums (NCAM) offered us a concession area in the middle of the Fourth Cataract that consisted of Shirri Island and a stretch of the west bank opposite the island. Although Shirri was in the center of Manasir territory, we made plans for a survey of both areas along with limited excavation of Kerma period sites. We recognized that it was very possible that we would not be able to work in this area, so we contacted several other teams to see if we could help out in other concession areas as a backup plan.

We were fortunate that the Packard Humanities Institute contacted us, along with the other projects working in the Fourth Cataract, to offer their generous financial support. The National Geographic Society also supported our plans.

Another hurdle was obtaining permission from the American government to travel to Sudan at all. Because of current American sanctions, we needed to apply for a permit to work in Sudan from the Office of Foreign Assets Control (OFAC), which we obtained just one week before we were scheduled to travel.

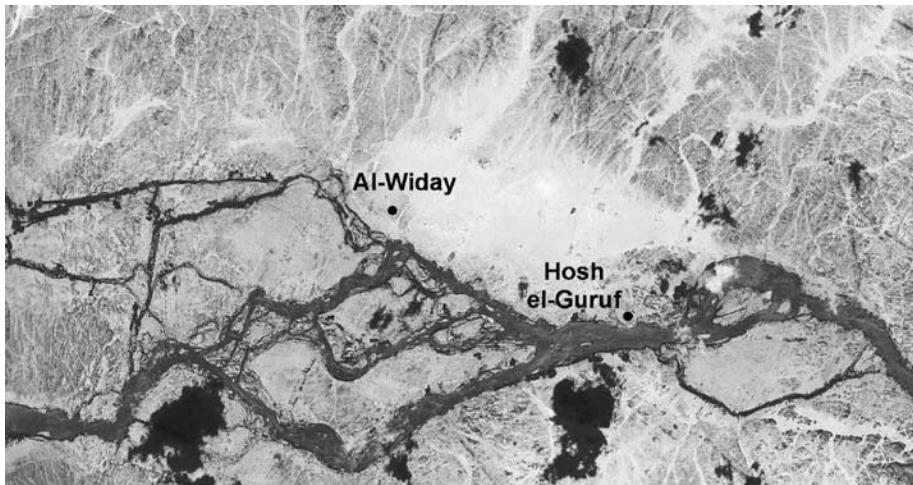
As it turned out, when we arrived in Khartoum on January 26, the Manasir were in active talks with the Governor of Nile Province. We had to wait a few extra days in Khartoum before we could hear the results of these talks, which was that we could not work on Shirri. Fortunately, the team from the Gdansk Archaeological Museum, headed by Henryk Paner, had just arrived in Khartoum and was willing to let us work on Kerma sites in their concession.

The Gdansk team offered us a chance to excavate a Kerma-period settlement site known as Hosh el-Guruf, located at the edge of Manasir territory, and we were eventually able to find a house in a nearby village that we could rent. The following day, we loaded a truck with all our equipment and set out for the house, which was in a Manasir village. Our truck got a flat tire on the desert track, and we decided to send half the team ahead to begin preparing the house. The team that went to the house found that the Manasir village elders had decided to overrule the owner of the house we had rented, but the Gdansk team again kindly intervened, providing a house, food, and beds for the night. Those of us that stayed with the truck were stranded in the desert for about twelve hours and arrived at the Gdansk team's house in Abu Haraz village near midnight. With the help of the local Omda (a local leader), we located another house in al-Widay village and moved there the next day. We were finally able to begin excavations on the following day, February 7.

## Excavation Results: Hosh el-Guruf

The Gdansk team had identified a site near the modern village of Hosh el-Guruf as a possible Kerma settlement site (figs. 3–4). It is located in a rocky area that is not well suited to agriculture, but nevertheless next to the river. It is a large site by local standards, with the ceramic scatter covering an area of 9.5 hectares, but concentrated on a single low mound of 1.5 hectares.

The surface of the site was covered with large and small stones in addition to ceramics of the Neolithic, Kerma, and Napatan periods. The concentration of stones, in contrast to the sand and



*Figure 3. Corona satellite image showing location of Hosh el-Guruf and Al-Widay*



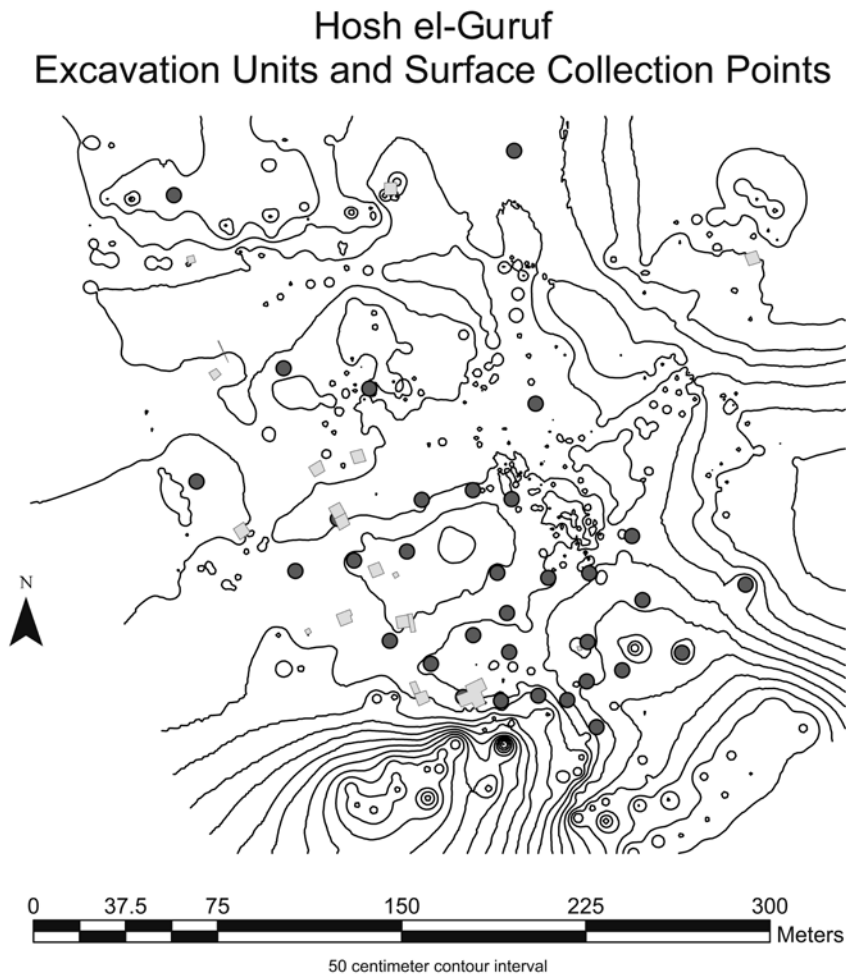
*Figure 4. Hosh el-Guruf (looking south; the Nile is to the left)*

gravel surfaces that are more typical of the area, suggests that the site was once covered with structures built of stone and mud.

Our initial investigation involved a topographic survey (fig. 5) and controlled surface collection in thirty-three collection units each with a radius of 3 m. In addition to ceramic finds, a single partial inscribed seal impression (fig. 6) was discovered in the course of surface collection.

Following the controlled surface collection and using the preliminary analysis of the collection as a guide we opened a series of twenty-one excavation units throughout the site in an attempt to locate in situ architectural remains. Unfortunately, we found that the entire site had been disturbed; only one trench provided possible evidence for architecture, and that was not well preserved (fig. 7). The reason for this disturbance only became clear through further investigation (see below).

Further surface survey revealed that there were fifty-five large grindstones or mills made of gneiss (a metamorphic rock composed, in this case, of granite) on the surface of the site (figs. 8–9). None was in its original position and almost all were broken. Some were re-used, and some had received such heavy wear that they had worn through. Up to 60 cm long, they were significantly larger than the domestic grindstones used to grind grain, and there were many more of them than would have been required for domestic use on a site of that size. A more systematic survey showed that there were also large numbers of stone hammers and grinding stones on the surface of the site, some in concentrations that suggested that they were in situ (fig. 10). We



**Figure 5.** *Topographic survey, surface collection units, and excavation squares at Hosh el-Guruf*

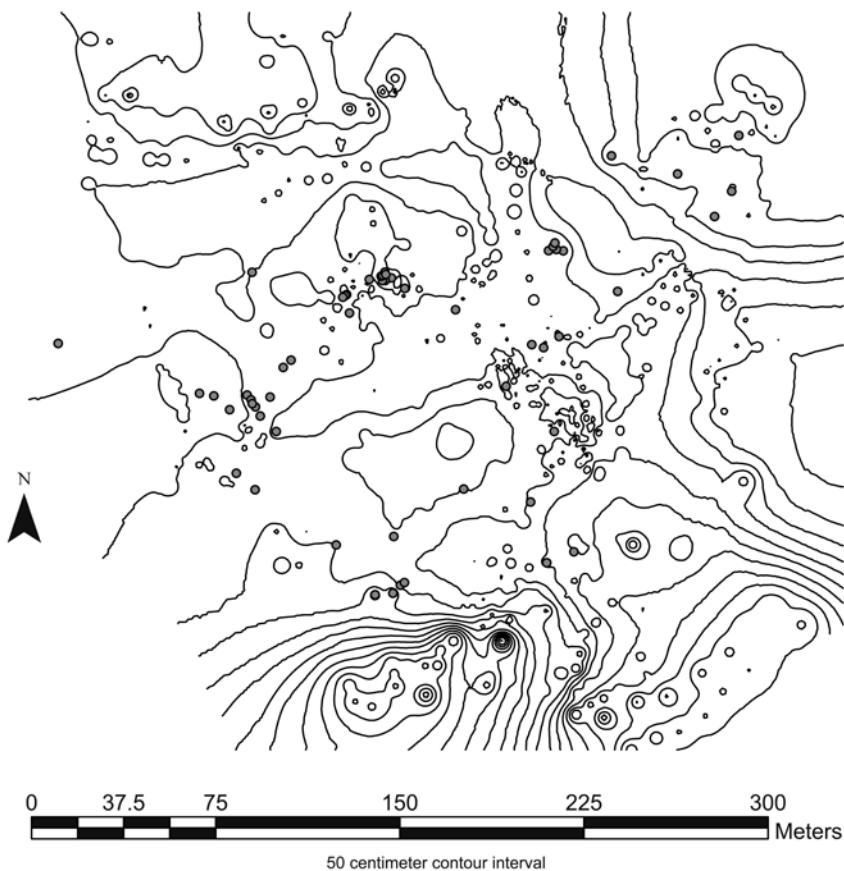


**Figure 6.** *Impression of an inscribed seal of the Napatan(?) period found on the surface at Hosh el-Guruf*



**Figure 7.** *Possible remains of a stone structure, Hosh el-Guruf*

## Hosh el-Guruf - Grinding Stones



**Figure 8. Topographic map showing location of large grindstones at Hosh el-Guruf**

propose that the most likely explanation for this concentration of grinding technology is that it was used in gold extraction.

There are two possible sources of gold at the site. One is veins of quartz that are part of the bedrock at the site (fig. 11). In this case, the grindstones or mills, grinding stones, and hammers would have been used to crush the quartz into dust which would then have been “washed” or



**Figure 9. Concentration of five large grindstones on the northeast edge of Hosh el-Guruf**

panned to extract gold. We took samples of quartz and intend to analyze them for gold content when they arrive in the U.S.

It is also possible that the alluvial sediment of the site itself, whether washed in from the Nile or by wadis from the Eastern Desert, may also have contained gold. In this case, the grindstones would have been used to crush gravel and the alluvial deposits themselves in order to increase the yield from washing the sediment.

Ancient authors support this latter possibility. Diodorus of Sicily (*History*

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**Figure 10.** Assorted stone hammers and grinding stones from Hosh el-Guruf

5.27.1–3) in talking about gold in the rivers of Gaul says: “For in their courses the rivers have sharp bends, and since they dash against the mountains which fringe their banks and erode away great hills, they are full of gold dust. Those who occupy themselves with this business collect it and grind or break up the lumps containing the dust, and washing away the natural earthy elements, they hand it over for smelting in furnaces.” Strabo (*Geography* 11.2.19) in talking about some tribes of Colchis on the Black Sea, says: “It is said that ... mountain torrents swollen by melting snow carry gold down, and the locals catch it with perforated troughs and fleecy hides, and that this is the origin of the myth of the golden fleece ....”

We have taken samples of sediment from the site and will also analyze them for gold content. But even if the ancient search for gold involved crushing quartz, it is likely that some of the gold would have fallen to the ground and become part of the sediment in the site itself.

This may explain why numerous local people told us that they had found gold at the site within living memory. This may also explain why we found so much disturbance to architecture in the site and why Neolithic sherds were freshly exposed on the surface of the site (unworn by wind as they would have been if they had been exposed for thousands of years) — there has been a recent gold rush at the site. Certainly local people know how to pan for gold (fig. 12). Presumably this kind of disruption has gone on at the site since its main period of use.



**Figure 11.** Quartz vein in bedrock at Hosh el-Guruf

Only one grindstone appears to have been found in situ, although mine sites that have previously been discovered in the Eastern Desert of Lower Nubia are also generally not clearly stratified. The predominance of Kerma period sherds at the site strongly suggests, however, that this was the main date of the extraction. The grindstones themselves are similar to grindstones found at Egyptian sites that have been dated to the New Kingdom. The site was also reused on a smaller scale in the Napatan period.



*Figure 12. Hassan Ahmed Ali panning for gold in Al-Widay village*

These finds are significant at two levels. First, they suggest an involvement of the ruling elite at Kerma in stimulating economic production in the Fourth Cataract. The large concentration of mills and other equipment may further imply centralized arrangements for supply, control, and security of a commodity of strategic value. Very few gold objects have been found in the Fourth Cataract itself, so it seems likely that the gold was destined for export rather than local use.

Second, they suggest that gold was a more important source of wealth (and power) in the Kingdom of Kush than previously recognized. Nubia had long been known as a source of gold, with most of the known sources being in the Eastern Desert accessible from Lower Nubia (or Wawat, as it was known in antiquity). Gold from Upper Nubia is mentioned in inscriptions of Middle Kingdom Egypt, but no source has previously been identified. When our work was presented at the Annual Fourth Cataract Conference in Lille this year, it catalyzed a discussion around gold extraction that revealed that most missions in the Fourth Cataract had recovered some installations related to gold extraction, many of them apparently dating to the Kerma period. Gold extraction continued in later periods, however, and is strongly in evidence during the Christian period. As noted above, panning of placer deposits continues today, but prospecting for veins of ore also continues as noted by one of the teams in the Fourth Cataract this past year.

### **Excavation Results: Al-Widay**

The Oriental Institute also undertook the excavation of two cemetery areas near the village of Al-Widay (figs. 13–14). Al-Widay I had previously been identified by the Gdansk team as a cemetery, and clustered tumuli were clearly visible on the surface of the site. Al-Widay II, on the other hand, was completely denuded at the surface and was identified and excavated on the strength of information provided by a local informant who told us that a bronze mirror had been discovered there by villagers in years past. The graves at Al-Widay II contained little in the way of material culture and for the present we are unable to securely date them.

Al-Widay I is located on a natural rise approximately 500 m north of the nearest Nile channel. Of an estimated ninety graves, we excavated thirty-one. Superstructures, when preserved, were in the form of rough stone circles approximately 1.0 to 1.5 meters in diameter, the larger stones sometimes piled as high as three layers (fig. 15). Both infilled circles and tumuli with empty centers were observed. Burial shafts tended to be between about 20 and 80 cm deep, typically closer to 50 cm, excavated through a layer of crumbly stone and compressed red clay. On



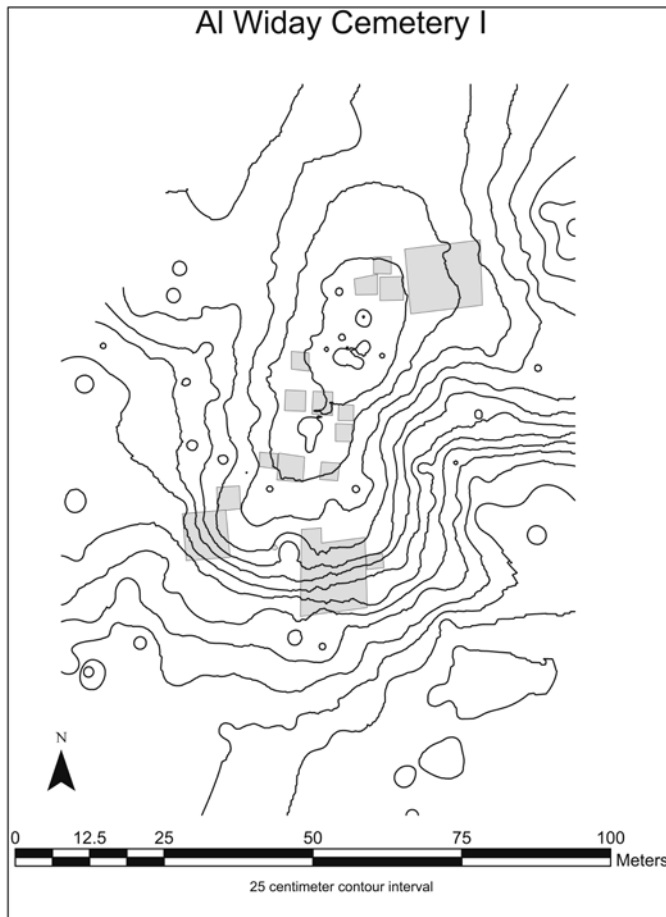
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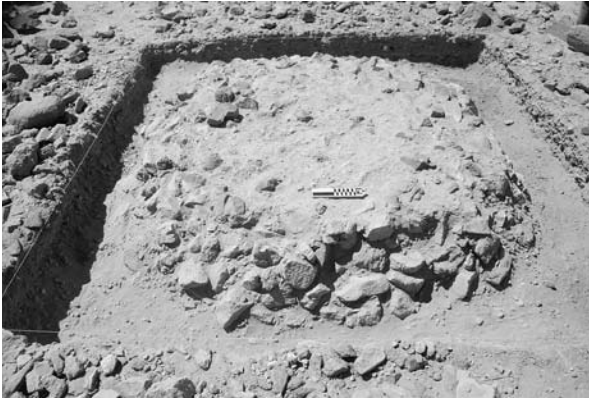
*Figure 13. Al-Widay I (looking north)*

the strength of associated tomb goods, and comparison to other cemeteries in the Fourth Cataract region, we have dated the cemetery to the Middle and Classic Kerma periods. During the Middle Kerma period, the burial pit tended to be round and outlined with widely spaced stones (fig. 16). During the classic Kerma period, the burial pit tended to be rectangular and stone lined and occasionally also filled with stones (fig. 17).

The majority of the tombs were looted in antiquity (fig. 18), a common occurrence in the Fourth Cataract. Frequently the cranium was disturbed, which has led other excavators in the region to conclude that the majority of portable burial goods were in the form of jewelry or other adornment concentrated around the head and neck, but the lower torso and arms were also disturbed in a number of burials. We frequently encountered cranial fragments and other human skeletal fragments and small beads



*Figure 14. Topographic survey and excavation squares at Al-Widay I*



**Figure 15. Tomb superstructure (Al Widay I, Area I)**



**Figure 16. Middle Kerma burial (Al-Widay I, Area G)**



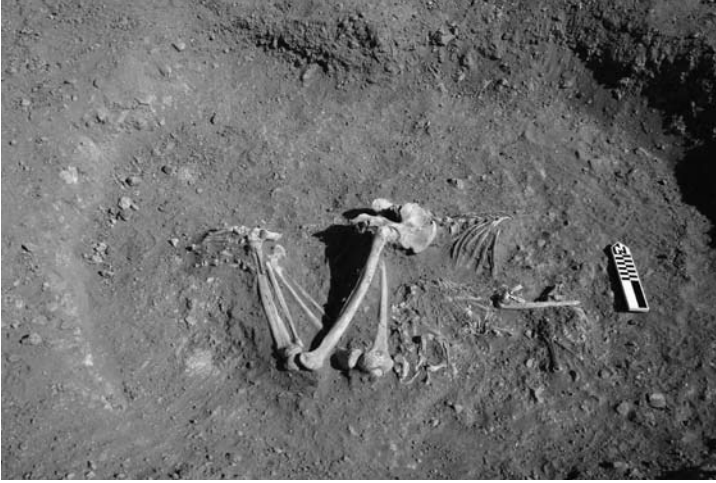
**Figure 17. Classic Kerma burial (Al-Widay I, Area H, tomb h)**

in the secondary fill of robbed graves as well as sherds, including a few pieces that may be interpreted as digging sherds likely used by the looters themselves (fig. 19).

Preservation of skeletal remains in the graves was variable. In addition to damage caused by ancient robbers, water from the infrequent rains in the area was able to pool in the grave shafts, frequently leaving us with extremely friable skeletal remains. A preliminary analysis of the human remains by our team's osteologist, Megan Ingvoldstad, has indicated an age range from infants to middle-aged individuals. This is consistent with the demographic patterns indicated in other preliminary analyses of human skeletal remains from the Fourth Cataract. In a few cases, tentatively identified as young males, the individual was accompanied by a quadruped, probably a ram, laid on its side in front of and parallel to the body. This has been noted in other Kerma period graves in the Fourth Cataract. Interestingly, cattle are not represented as offerings in burials — a practice well attested at the site of Kerma and other sites closely associated with the Kerma state — rather, rams seem to have been favored in the Fourth Cataract. A range of burial positions were noted, though in the majority of cases the body was in a flexed position on its right side with the crown of the head pointing north. In a few cases, multiple individuals were interred in the same tomb (fig. 20). A preliminary analysis of the stratigraphy and variable preservation of such co-occurring burials suggests that the individuals were unlikely to have been buried at the same time.

Nearly all the graves included a standard set of ceramics (fig. 21) including a jar, bowl, cup, and rough cup that often contained ash, perhaps from burning incense as part of the funerary

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**Figure 18.** *Burial in which head was removed by ancient looters (Al-Widay I, Area E)*



**Figure 19.** *Worn sherd used for looting tomb in antiquity (Al-Widay I, Area H, tomb g)*

ritual. A few graves contained as many as eight ceramic vessels, but none could be characterized as wealthy graves by comparison with those of Kerma itself. In addition to ceramics, a variety of beads were present, most frequently made of faience, though ostrich shell, carnelian, and a single example of a gold bead are also represented (fig. 22). Beads included simple, small disk beads made of faience or ostrich shell, larger spherical, typically carnelian, and rectangular-tube beads, often with geometric designs in sunk relief made of faience. Beads in situ were typically located around the neck, wrists, or hips. In some cases the bodies seem to have been placed on or under leather mats. Ochre was also sprinkled on the body just prior to interment in many cases, leaving a stain on bones and leather mats (fig. 23). In one tomb, an ancient razor blade was found wrapped in textile and placed near the foot of a wooden bed or bier (fig. 24).

Of the thirty-one graves excavated, about eight dated to the classic Kerma period, and these show a greater degree of connection with Kerma itself than is notable in the earlier burials. A number of these burials contained remains of wooden beds or biers (fig. 25), as often practiced at Kerma. These burials also contained the distinctive classic Kerma fine ware beakers — black-topped redware with an ash band — which was likely a high-status item made in the capital itself.



**Figure 20.** *Double burial with ram in right foreground; note that the head of the lower burial was robbed in antiquity (Al-Widay I, Area M)*

This ware was also used in a variety of other forms, including a spouted “teapot” (fig. 26). The value of these vessels is indicated by the extensive ancient repairs made to some of them (fig. 27). These burials also contained scarabs, two made of faience and undoubtedly imported from Kerma and one local imitation carved in stone (figs. 28–30).

The evidence for contact between the Fourth Cataract and Kerma thus appears to be concentrated in the classic Kerma period. Evidence from Al-Widay suggests that, in exchange,

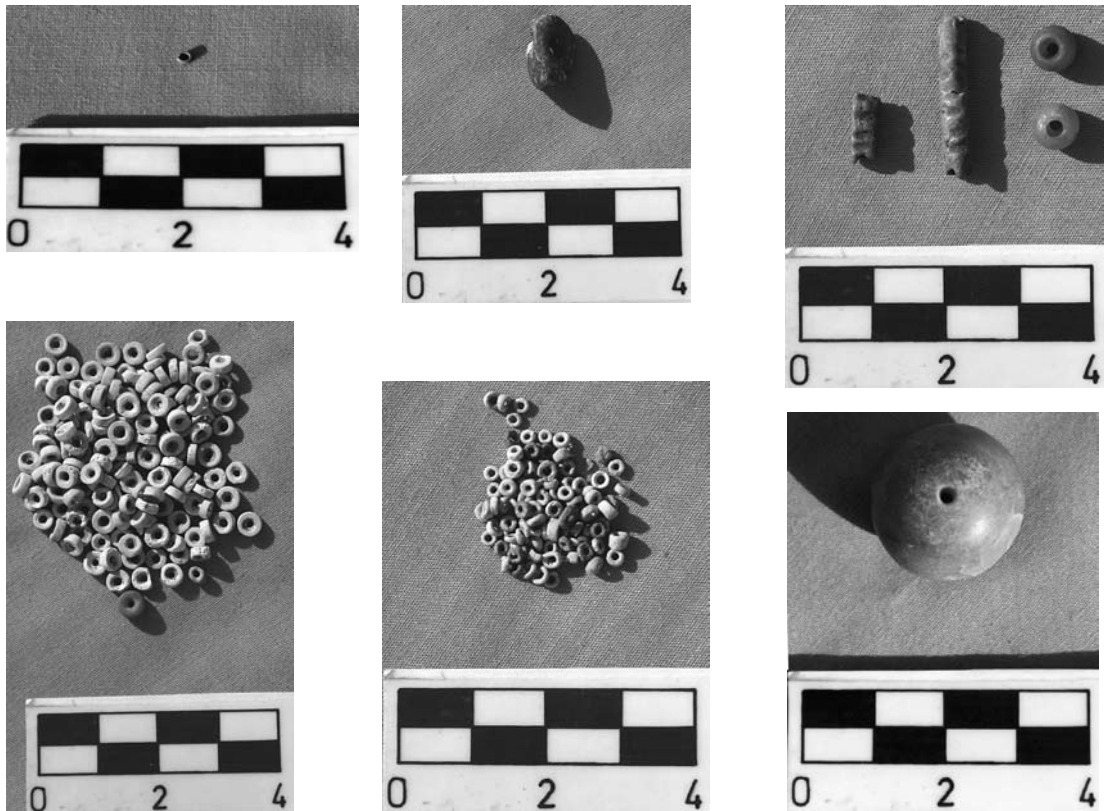


*Figure 21. Set of ceramic vessels from a single burial (Al-Widay I, Area H, tomb j)*

for coordinating the extraction of gold, local elites were sent high-status gifts that included elite ceramics and occasional scarabs. That is, the Kerma state appears at present not to have been integrated by extensive economic connections between the capital and its peripheries, but more by gift exchange and tributes.

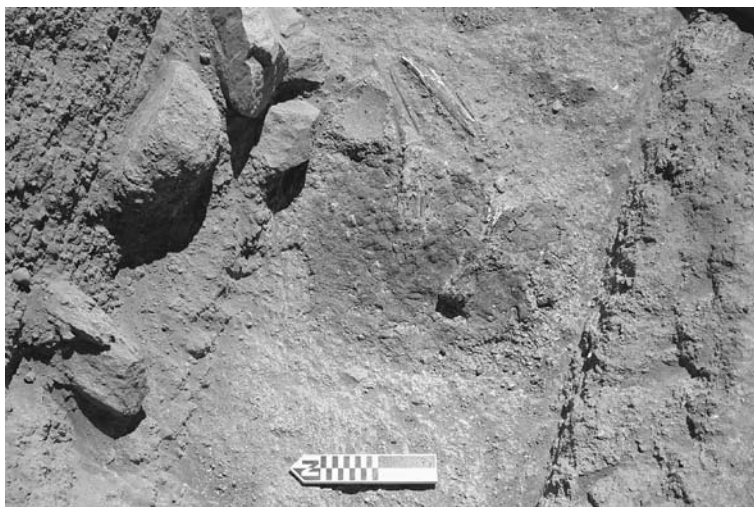
### Future Work

We plan to return to the Fourth Cataract for a final season of excavation in the winter of 2007/2008 to learn more about the Kerma period occupation in this region. We will hope to be able to work on Shirri Island, and if that is not possible, the Gdansk team has kindly extended an invitation to work once again in their concession if it proves impossible to work in our own.



*Figure 22. Carnelian, faience, ostrich shell, stone, and gold beads from various burials (Al-Widay I)*

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**Figure 23.** Ochre-stained leather mat underneath lower legs of burial (Al-Widay I Area H, tomb i)



**Figure 24.** Razor blade from classic Kerma burial (Al-Widay I, Area L, tomb a)

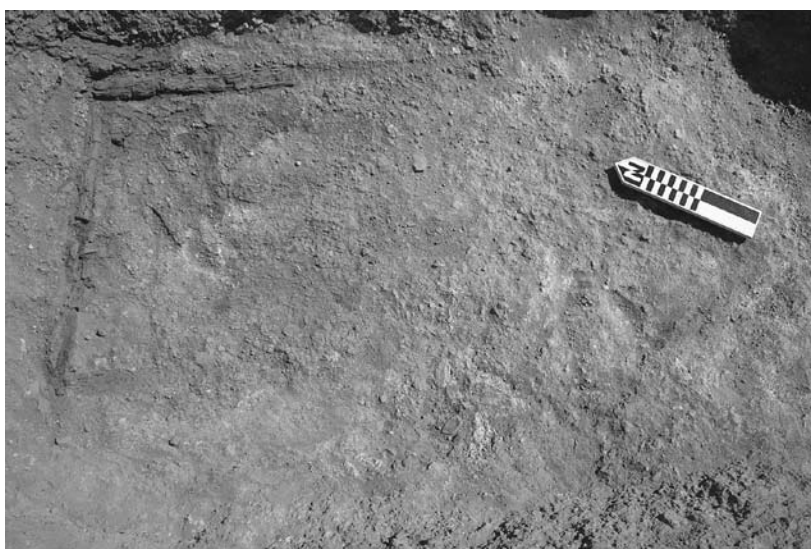
## Thanks

It is a pleasure to thank all those who made this season a success. Gil Stein, Oriental Institute Director, made the project possible with his support. An emergency grant from the National Geographic Society enabled us to make plans to go into the field, and extremely generous financial support from the Packard Humanities Institute allowed us to concentrate all our efforts on the excavations.

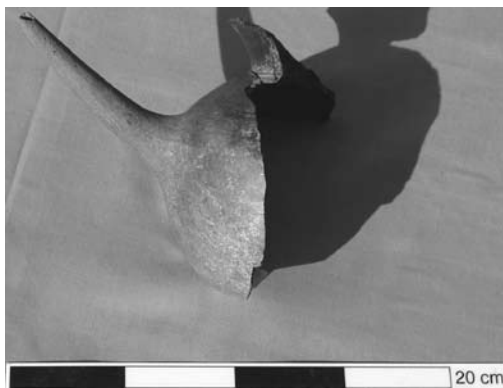
The team included Oriental Institute Research Associates Carol Meyer and Lisa Heidorn; Oriental Institute Museum Curatorial Assistant Tom James; University of Chicago students Debora Heard, Justine James, and Randy Shonkwiler; New York University student Megan Ingvaldstad; and University of Toledo Professor of Geology James Harrell. Our inspector, Mahmud

Suleiman Bashir, was a truly outstanding archaeologist and colleague in addition to being extremely helpful with all the logistical issues that arose during our work. We thank them all for their good humor and hard work in sometimes trying circumstances.

It is a pleasure to thank Director General Hassan Hussein Idris and Director of Excavations Salah



**Figure 25.** Remains of a bed in a classic Kerma burial (Al-Widay I, Area L, tomb d)



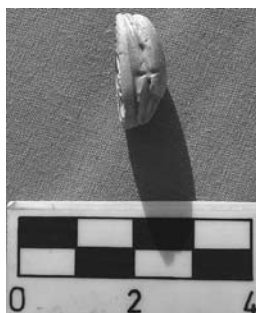
**Figure 26. Classic Kerma “teapot” (Al-Widay I, Area L, tomb b)**



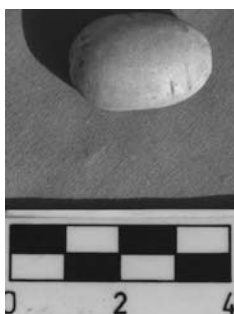
**Figure 27. Ancient repairs made to a classic Kerma beaker (Al-Widay I, Area L, tomb b)**



**Figure 28. Faience scarab with lotus design from a classic Kerma burial (Al-Widay I, Area D)**



**Figure 29. Faience scarab with design showing a Kushite man, a seated or rampant lion, and a protective Egyptian uraeus serpent from a classic Kerma burial (Al-Widay I, Area H, tomb g)**



**Figure 30. Stone (amazonite) imitation of a worn scarab from a classic Kerma burial (Al-Widay I, Area L, tomb c); note that there is no design carved on the flat surface of the scarab**

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*Staff of the Nubian Expedition*

Mohammed Ahmed of the National Corporation of Antiquities and Museums in Sudan for their hospitality and assistance.

The Acropole Hotel in Khartoum is a simple, comfortable but unassuming stop for archaeologists, journalists, and NGOs working in the country, but it is much more than that. George, Makis, and Thanasis Pagoulatos, the owners of the hotel, solved a myriad of problems efficiently and with unfailing good cheer. They helped with numerous administrative tasks, permits, and even equipment for the expedition, all of which were important to its success.

Scott Branting and Josh Trampier in the CAMEL lab helped us obtain satellite images and also gave us training on the Oriental Institute's Leica total station. Eric Rupley, graduate student at the University of Michigan, further processed the satellite images, greatly enhancing their usefulness in the field.

Here in Chicago, it is a pleasure to thank Mary Ellen Sheridan, of the University of Chicago's Research Administration, who guided us through both grant applications and the OFAC application process. It was not as simple as it sounds, and Mary Ellen was a great help.

Finally, Bill Harms of the University's News Office worked his magic and got our story out to the New York Times, Los Angeles Times, and eighteen other media outlets in eight countries (at last count). Many thanks!

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