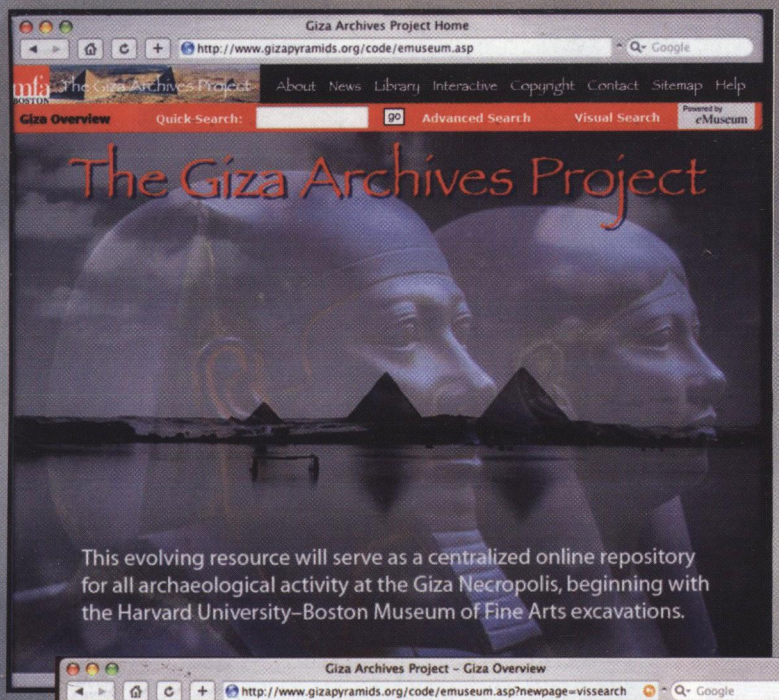
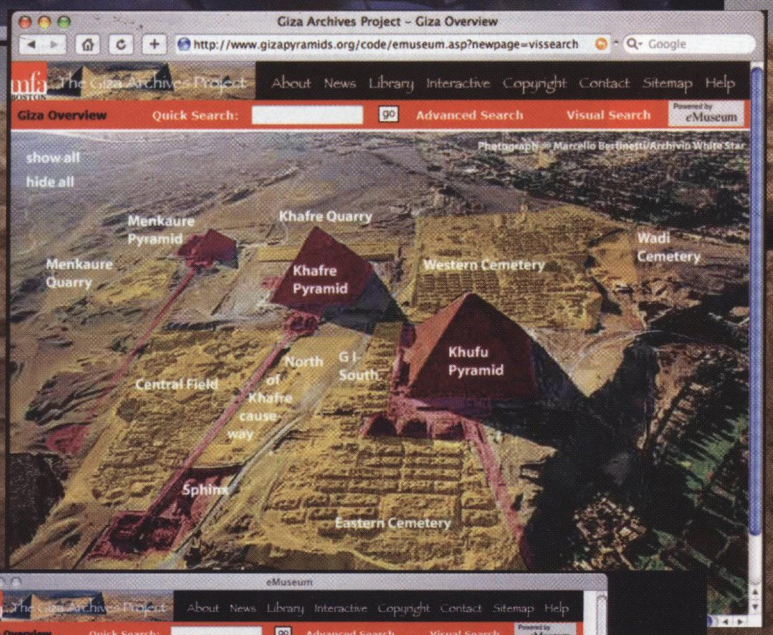
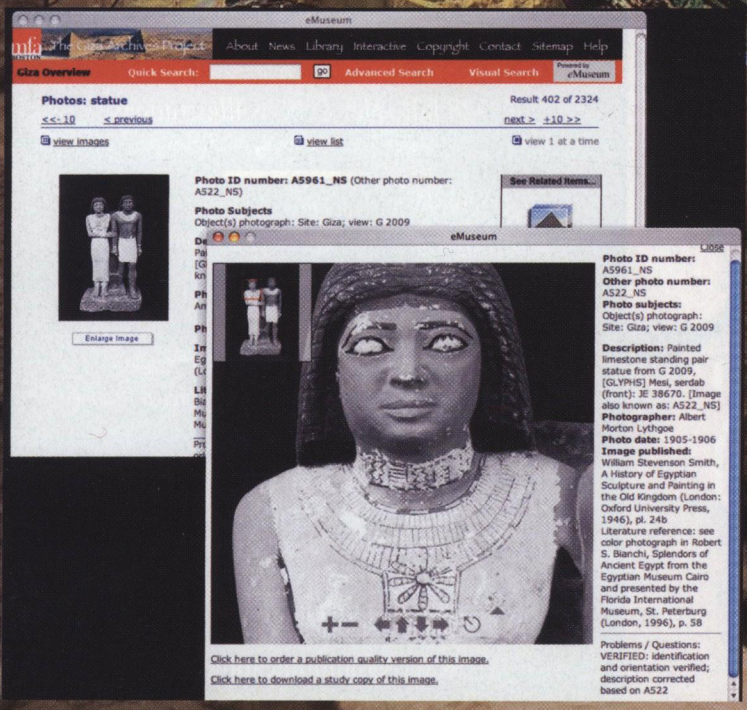
VIRTUAL PY







Representative "pages" from the Giza Archives Project website on the Internet: http://www.gizapyramids.org

Background photo by the Aurhor

RAMIDS - REAL RESEARCH:

THE GIZA ARCHIVES PROJECT Goes Live Online

by Peter Der Manuelian

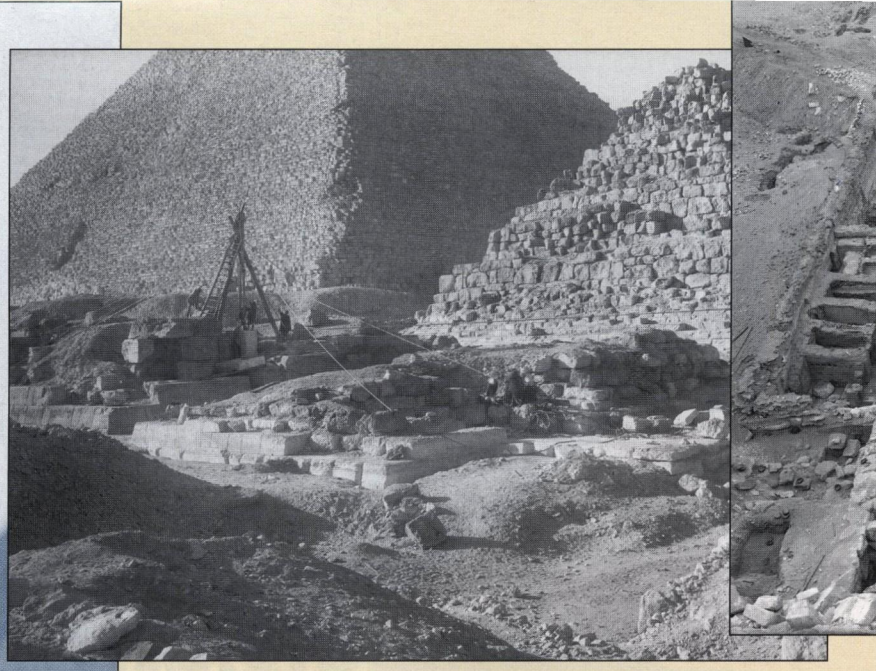
Photos courtesy the Author & Museum of Fine Arts, Boston

Air travel and time travel. Two of the greatest obstacles to productive Egyptological research. Too often scholars are separated from the antiquities they need to study by miles, even continents and oceans. A still greater challenge is being forced to interpret the ancient monuments from just a single point in time. Imagine how we could enhance our knowledge of ancient Egyptian material culture if we could study antiquities at different points in their histories, from their creation to their discovery, right down to their present state of preservation.

Egyptologists have yet to conquer time travel to be able to view the Sphinx in the process of being carved, or the usurpation of an Old Kingdom tomb during the Late Period. And no one has yet invented the "transporter rooms" of science fiction, to whisk a student from a remote university library to the tombs and temples of the Nile Valley. However, the information and technology explosion of the past decade has opened some exciting new research opportunities. In the case of the Giza Necropolis, a small step has now been taken towards this new era of scholarly access and research.

Although Giza is perhaps the most famous archaeological

Director of the Harvard/MFA excavations at the Giza Plateau (1902-1947) George A. Reisner, photographed at Harvard Camp, Giza, in 1938.



A major part of the archival material resulting from the Harvard/MFA work at Giza are some 21,000 glass-plate negatives recording the excavations, a sampling of which is seen above & opposite: From the left, Raising the sarcophagus from tomb G 7060 in 1929; the Menkaure Pyramid Temple after excavation, 1907; the triads of Menkaure in the Valley Temple, 1908; & a 1936 in situ *general view of tomb G 2407, with a statue in shaft D, as found. The Giza Archives Project has converted all 22,000 glass-plate images to digital format.*

Photos: MFA, Boston

site in the world, it has never had its own research institute, scholarly journal or other type of center dedicated to its preservation, documentation and publication. With over a century of modern archaeological activity at the site — revealing thousands of tombs, burials, statues, wall carvings, ceramics, stone vessels and other artifacts — Giza is critical to unlocking almost every aspect of Egyptian culture during the classical Old Kingdom, or Pyramid Age. It is time to gather this overwhelming body of material. A new endeavor called the "Giza Archives Project," represented by a scholarly research website, now allows for in-depth study of the pyramids, temples and mastaba tombs at the site. To quote from the Project's mission statement, *"this evolving resource will serve as a centralized online repository for all archaeological activity at the Giza Necropolis, beginning with the Harvard University-Boston Museum of Fine Arts excavations (1902-1947)."* Users may consult this website from the comfort of their homes, and they can view Giza at various periods in its long history. Best of all: unlike most content-rich websites, the Giza images and documents are all available for free.

Scholars utilize a variety of sources in their work: the "ground truth" of the archaeo-



logical sites themselves; the objects discovered and now spread throughout the museums of the world; and, finally, the vast secondary source of archival documentation resulting from previous fieldwork. Our efforts could be significantly streamlined if all these disparate data were available from one central source, regardless of their physical location today.

At Giza several major expeditions from the early Twentieth Century amassed artifacts, notes, photographs, plans, drawings and manuscripts. This irreplaceable documentation is now housed primarily in museums and university archives in Egypt, Europe and the U.S. In the fall of 2000, the Andrew W. Mellon Foundation (www.mellon.org), recognizing that the largest single corpus of Giza data was in the Museum of Fine Arts, Boston, awarded the MFA a $750,000 archives grant. The initial goal of the Giza Archives Project was to begin the digital conversion and presentation of Giza materials to scholars and the interested public over the Internet. Since the Project began, 200 people in the Boston area have contributed their time and talents to the diverse tasks at hand.[1] These include MFA curatorial and collections-management staff, Egyptology graduate-student interns, undergraduates from Harvard, Tufts and Brown universities, hired data-entry consultants, MFA Museum Associates staff and a wide variety of volunteers. Throughout the entire Project to date, much of the often-challenging original expedition's data has been masterfully organized and enhanced by Giza Research Associate Dr. Diane Flores. After four years of work, and a second Mellon Foundation award of an additional $545,000 (2004-2007), Phase 1 of the Giza website is now available online at http://www.gizapyramids.org — or http://www.mfa.org/giza.[2] Without the support of the Mellon Foundation, the Museum of Fine Arts, Boston, and Harvard University, the Giza Archives Project would never have come into existence. The Project is also indebted to its Scholarly Advisory Board, whose guidance and support have greatly assisted its progress.[3]

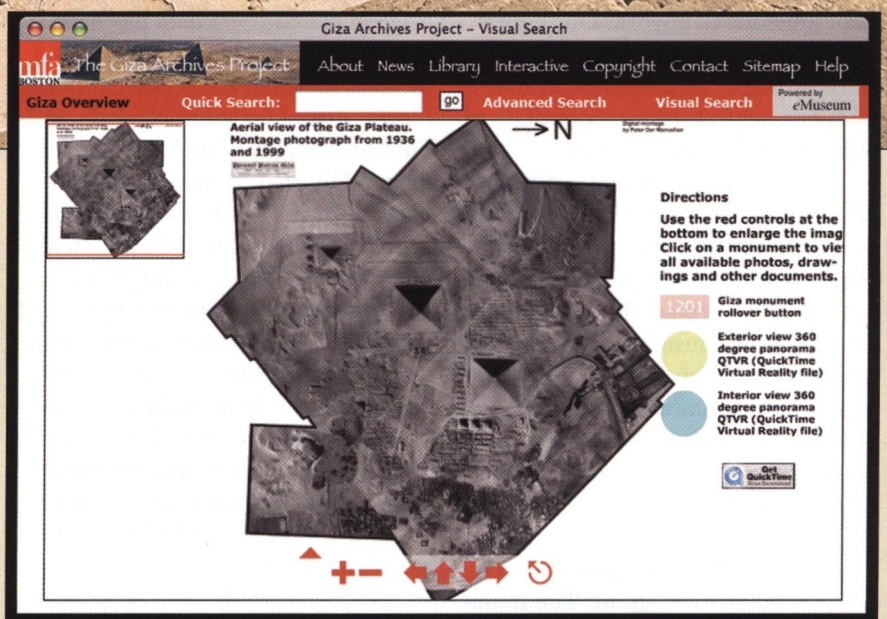
American Archaeological Activity at Giza

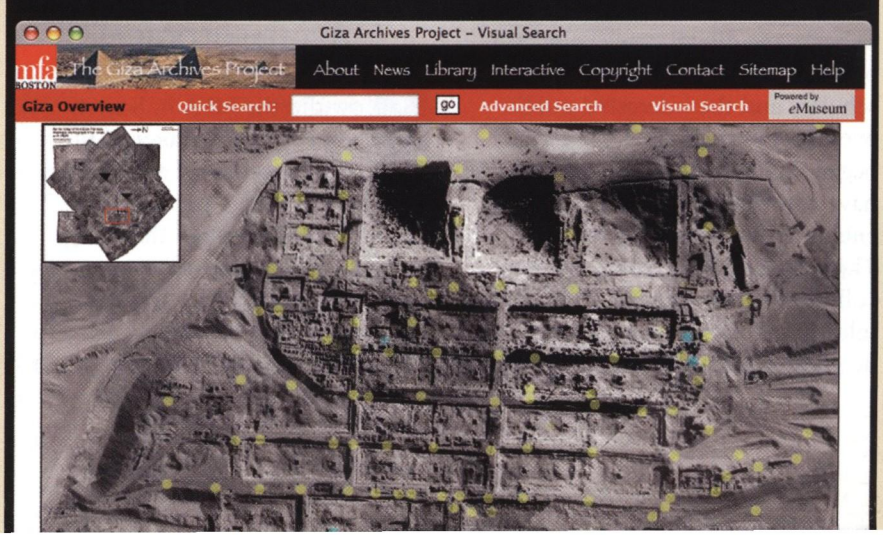
How did the MFA in Boston come to be caretaker of the largest collection of archaeological material from the Giza Necropolis? The answer is, through the energy, industry, archaeological acumen and sheer force of will of a single individual: George A. Reisner. Born in Indianapolis in 1867, Reisner began his academic life as a comparative Semiticist, earning BA, MA and PhD degrees from Harvard University (1889, 1891 and 1893, respectively), teaching at Harvard and then translating cuneiform tablets on a traveling fellowship to the Berlin Museum. It was there that he shared office space with two of the field's greatest Egyptian philologists, Adolf Erman and Kurt Sethe; and from them Reisner caught the "Egyptological bug."

A short stint cataloguing objects in the Cairo Museum (1897-1899) led to Resiner's career-changing introduction to American philanthropist Phoebe Apperson Hearst (1842-1919). Mrs. Hearst offered Reisner a five-year contract (1899-1904) to hone his archaeological skills in Egypt, in the service of the University of California, Berkeley. After working at several locations up the Nile, Reisner obtained permission from Gaston Maspero of the Egyptian Antiquities Service to excavate the Giza Necropolis, alongside German and Italian expeditions. The famous story of the division of the site, on the veranda of the Mena House hotel, has been told elsewhere.[4] As of November 1902, Reisner and his "Hearst Expedition" began to plan the strategy for clearing their portion of the vast Western Cemetery.

In 1904 Mrs. Hearst announ-

The Eastern Cemetery & (opposite) the Western Cemetery at Giza, both photographed by the Author from atop the Great Pyramid of Khufu. Below, the Giza Archives Project website Visual Search page & magnified detail view of the Eastern Cemetery, with yellow dots representing clickable standpoints for 360-degree rotating panoramas.





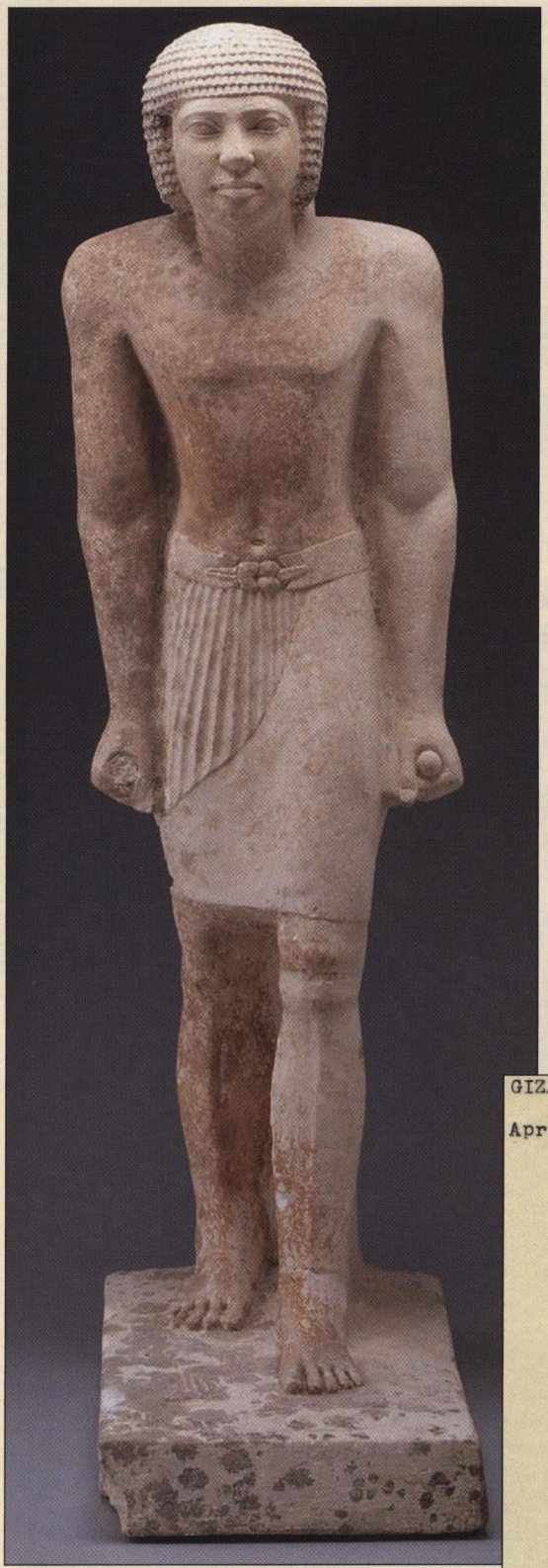
ced that she could no longer support the work; and so negotiations back in Boston during the summer of 1905 resulted in the creation of the Harvard University-Boston Museum of Fine Arts Expedition, which picked up right where the Hearst Expedition left off. Moreover, the HU-MFA Expedition later absorbed the Italian concession, obtaining two-thirds of the Western Cemetery, and all of the royal Eastern Cemetery.

Reisner's work at Giza resulted in the discovery of a steady stream of antiquities, from utilitarian objects to art-historical masterpieces. As a collection his finds constitute, arguably, the greatest assemblage of Old Kingdom material from any site in Egypt. The finds were legally divided under the jurisdiction of the Antiquities Service between the Egyptian Museum, Cairo, and — first — the University of California, Berkeley, (later the Hearst Museum of Anthro-

pology) and, from 1905 on, the Museum of Fine Arts, Boston, and Harvard University. Excavations were interrupted only by work at other sites along the Nile, by two seasons in Palestine (1909-1910) and by many seasons spent far to the south in Nubia.

Owning no home in Boston, Reisner lived most of his life at "Harvard Camp," a collection of simple huts west of the Khafre pyramid, with

Two examples of computer technology being utilized by the Giza Archieves Project: Above, an experimental composite image of the Chapel of Wepemnefret (G 1201), with a recent color photo of the stela repositioned within the original excavation photo (negative B 11810), which has been colorized; Left, A digital line drawing by the Author of the same stela (no ink used), demonstrating the possibilities of digital epigraphy.



With Giza Archives Project online resources, researchers can access the above MFA, Boston's studio photograph of the statue of Khuienkhufu (MFA.37.638), as well the Expedition Diary entry (p. 301, April 18, 1936), right, recording the statue's discovery, & also its entry in the Expedition Objects Register (not shown). Its excavation photo is at right, p. 71.

only a few semesters spent at home teaching at Harvard University and curating the ever-growing collection of the MFA. Both at Boston and in the field, he had the help of several gifted young colleagues, among them Dows Durham (1890-1984) and, later, William Stevenson Smith (1907-1969). Blinded by cataract problems in the last decade of his life, but toiling on nonetheless, Reisner remained at Giza, even after sending his wife and daughter home to the States in the middle of the Second World War. He died in June 1942 at his beloved Harvard Camp.

It was not until 1947, well after the end of the war, that Dunham and Smith were able to travel to Egypt to assess the situation at Harvard Camp. They knew that Reisner was ahead of his time in methodically documenting every aspect of his excavations. Thus, what awaited them were a daunting number of photographic negatives on glass plates, thousands of expedition diary pages, object register books, maps, plans, sections, figural drawings, and miscellaneous notes and manuscripts. In fact, during World War II, the expedition staff temporarily buried all of these materials in selected tomb shafts at Giza, in anticipation of a possible German invasion from the west.

By the early spring of 1947, Dunham, Smith and the Museum authorities decided to close down Harvard Camp and ship all the documentation back to Boston. Nevertheless, the spirit of Harvard Camp lived on in the eventual establishment of the American Research Center in Egypt (http://www.arce.org), in a ceremony at the "Club of Odd Volumes" on Boston's Beacon Hill in 1948.

Over the years the Giza archives at the MFA have served countless scholars and students in their Egytological research. They enabled Museum curator William Kelly Simpson to establish the *Giza Mastabas* Series in 1974, with the publication of the extraordinary Fourth Dynasty subterranean tomb-chapel of Queen Meresankh III.[5] This monograph series represents the in-depth, tomb-by-tomb publications that Reisner originally envisaged but did not live to realize.

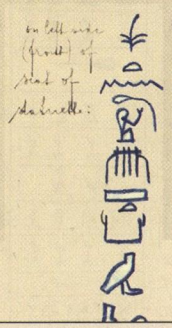
GIZA DIARY, 1936. p.301.

Apr.18: Saturday
Work on (1) G 2010 A2.
(2) G 2402b A.B.C.Z.
(3) G 2407.DØ.

(3) G 2407 : On the top of the mastaba. In exposing the building and the shafts of this mastaba on E and N: 1st.debris, dubsh, sand and some stones: ~~xxxxhaftxxxexpaxxdxxdayx~~ four shafts exposed today, and three shafts were excavated before, but not yet numbered, only we numbered shaft C.

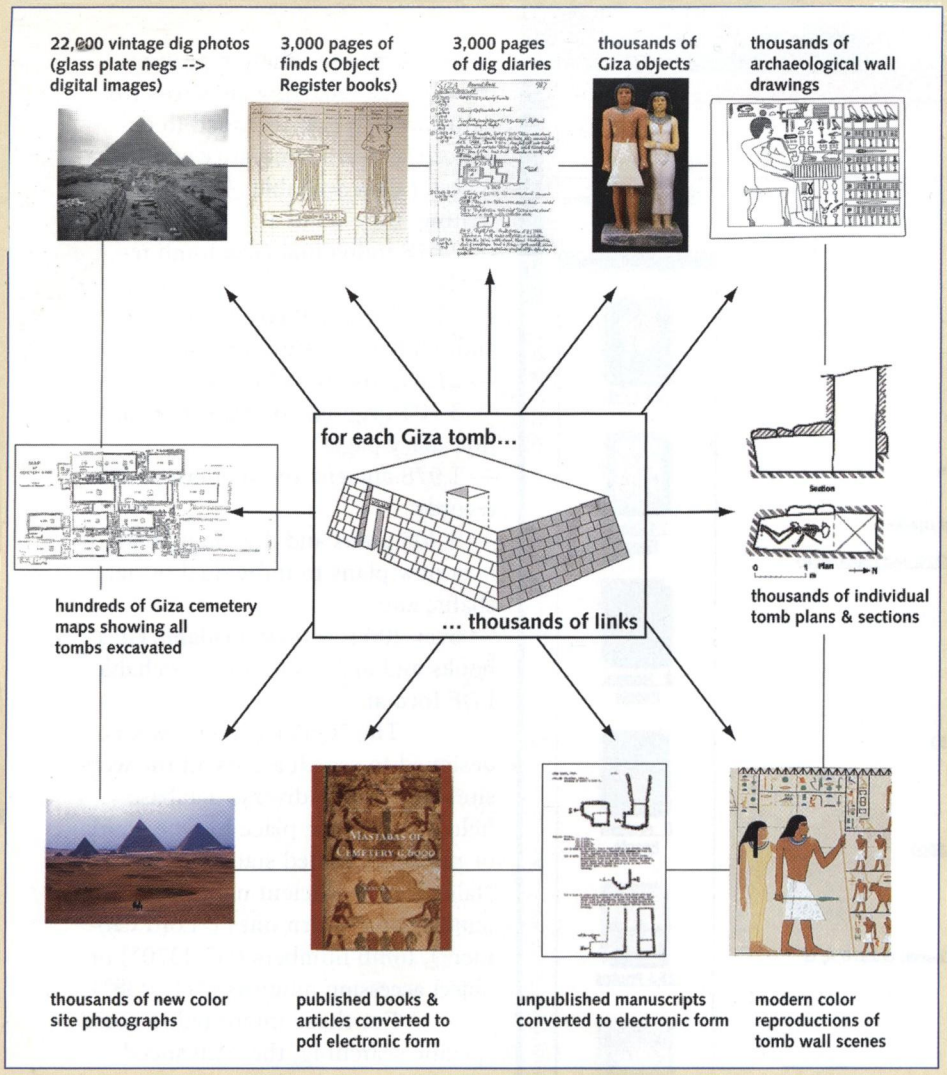
G 2407DØ: It is N of the serdab which is North of shaft CØ: lined with dubsh. On W, big stone, the same as a roof in shaft: down 90 cm. 1st.debris and dubsh. Found in the beginning of the shaft: big door lintel inscribed in relief and have a cartouche with the name of "Khufuw", broken into two frags. after photographed the door lintel we removed it from the pit: and underneath the linetl door we found:
Statue, standing half size broken in two pieces above knee. named ~~Ka-m-Iset~~; tip of right thumb and handkerchieh broken off. : Seated statuette tip nose and part over left eye and tip of middle toe chipped off; lower part of right hand corner of base broken off. named Ka-m-Iset.
the statue and the statuette are both photographed and removed to the Camp. Not reached the rock in shaft. chamber not yet reached.

Khufuw-henq



on base to right & in front of advanced left foot of statue

P 20 (A-20)



Schematic chart by the Author, showing the Giza Archives Project's diverse archaeological data linked to a specific mastaba tomb (center of diagram), all now available online.

To date seven volumes have appeared, by D. Dunham, W.K. Simpson, K. Weeks, A.M. Roth and E. Brovarski, and additional studies are in preparation.[6] Despite this progress, the sheer size of the MFA's Giza archives has overwhelmed and defeated many scholars in their quest for thoroughness. Without a protracted stay in Boston, it has proven impossible to locate and process all the materials needed for any particular research topic.

The 2000 Mellon Fundation grant was designed to address this inaccessibility.[7] The Giza Archives Project converted the handwritten diaries and object-register books to digital form (organized in databases and text files). The Project converted the Expedition's approximately 22,000 glass-plate negatives to digital images. Ten thousand maps and plans have been scanned so far, and thousands of pages of books and articles are now processed as text-searchable PDF files.

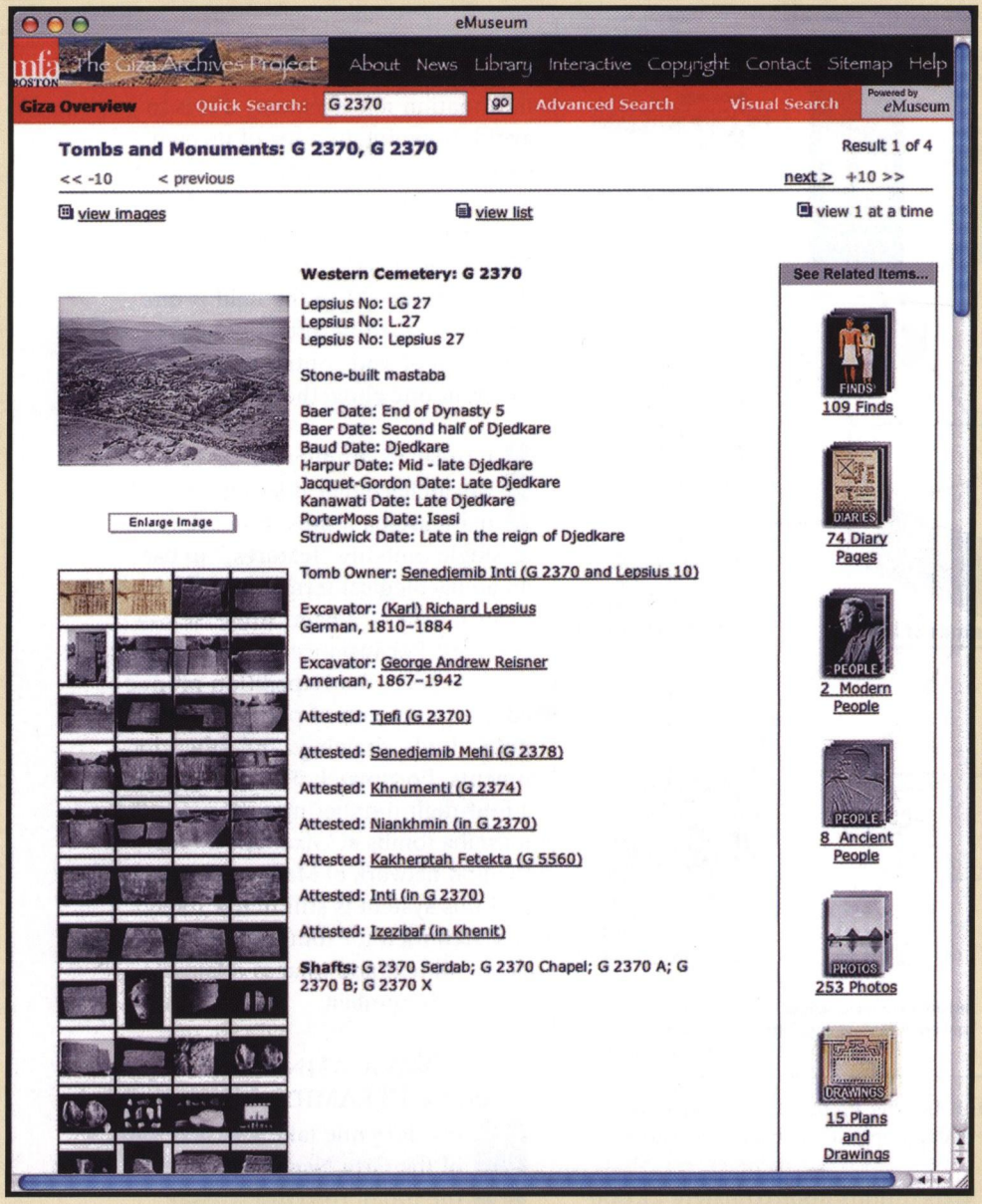
But the goal aimed to present this massive, unwieldy archive in not just a new medium but also in an integrated and cross-referenced collection, uniting and linking the diverse archaeological materials automatically. Imagine the difference between hunting through an unbound *Encyclopedia Britannica*, its pages strewn all over the floor, versus searching a website that links photos, notes, diaries, objects and maps together for a specific tomb. Archaeology, like so many fields these days, has to devote major resources just to information management, if it is to avoid drowning in a sea of its own data. If the massive amounts of archaeological data cannot be sifted, gathered and presented in a user-friendly manner, it serves no purpose. Producing "content" in the field is one challenge; the interpretation and presentation of said content is quite a different one altogether.

In order to simplify access to Giza's archaeological legacy, individual mastaba tombs were selected as single unifying "features," to use an archaeological term, around which diverse data — a data "universe" — revolves. For instance, for any given tomb at Giza, the Expedition produced a combination of photographs, notes, finds, drawings and other documents. Fortunately Reisner devised a four-digit numbering system for the mastaba tombs at Giza, not unlike the grid network of Manhattan streets, and this system is still in use today.[8] A search then for tomb "G 2000" produces all text and images related to that tomb number.

Navigating the Giza Pyramids Online

How does one take a virtual tour of the Giza Necropolis? Across the top of the Giza website homepage[9] (see top image, p. 68) are a number of basic subsection pages in a black navigation bar. These pages describe the Project, provide news and announcements, staff listings, instructions on copyright and fair use of the materials posted, a user feedback form, and a sitemap and "Help" page. The navigation bar also provides an "Interactive" page with zoomable aerial and satellite photos and overview maps and plans of Giza, and a "Library" page. This new digital library strives to offer a complete digital collection of Giza-related books and articles (see below).

Individual researchers tend to access information in different ways. Some prefer words, others pictures. Some know the subject matter



The Giza Archives Project website main tomb page for G 2370 (Senedjemib Inti), showing the totals of all the linked materials in the column at right. On the left are the photographic images of the tomb & contents taken at the time of the excavation .

intimately and have very specific search goals; while others, new to Giza, would prefer to browse and follow whatever catches their eye. The Giza website attempts to accommodate all these types of searches, from general to specific, from the textual to the visual.

All of these search methods are accessed by a red navigation bar, just below the black band at the top of the site. This navigation bar allows for three primary ways to sift through Giza data: "Quick Search," "Advanced Search" and "Visual Search." These will be described further below. For those who might first need an overview of the Giza Necropolis, and the common designations for the various areas surrounding the pyramids, the "Giza Overview" button at the far left of the red navigation bar produces the color aerial photo seen in the middle image on p. 68

What archaeological materials are available on the Giza website? The numbers are constantly changing, but if one simply clicks on the "Go" button in the red navigation bar, the total numbers appear in list form. Each type of documentation is represented by a generic "thumbnail" — photos, diary pages, plans, etc. These repeating thumbnails, recurring all across the entire website, are intended to enhance the user's familiarity with the types of data available. As of this writing, they stand at:

— 2,678 individual Giza tomb records;
— 22,757 original HU-MFA black-and-white excavation photos;
— 21,037 records of finds;
— 3,105 original HU-MFA Expedition diary pages;
— 1,978 ancient and modern people records;
— 9,905 plans and drawings, from overview plans to individual burial shafts; and
— over 200 free downloadable Giza books and articles in text-searchable PDF format.

The "Quick Search" box is designed to search across all the website's underlying diverse database fields. This is the place to type words or phrases ("seated statue," "Sphinx," "false door"), ancient names ("Senedjemib") or modern ones ("Lord Cromer"), tomb numbers ("G 2370") or object accession numbers ("11.1738").

For those interested in more specific searching, the "Advanced Search" button leads to more detailed categories and fields. Here users can search for specific types of photographs, diary pages, object finds, plans and drawings, or people. Examples might include all diary pages that mention the Menkaure Valley Temple, or all photos from 1912 taken by Expedition photographer Mohammedani Ibrahim that contain the word "skeleton" in their descriptive caption, or all plans and drawings of tomb G 7110.

These types of cross-referenced data represent somewhat typical, predictable ways to search archaeological materials from a database. A more revolutionary approach is taken with the "Visual Search" page. This shows a black-and-white aerial photograph of the entire Giza Necropolis, montaged together from different eras.[10] From this bird's-eye

view of the site, button controls at the bottom of the image allow for zooming in to a very high magnification; at closest range one can even see the tennis court at Harvard Camp and individuals walking about (on February 29, 1936).

Two features attempt to give maximum access to the site, with no specialized Egyptological or computer-programming knowledge required; just point and click. First, almost every tomb has become a red "button" that flashes when the mouse cursor rolls over it. Clicking on the tomb compiles for the user a list of all available photos, finds, maps and plans, diary pages and individuals relevant to that particular site. In place of typing — or requiring any Egyptological expertise on Giza tomb numbers — this graphical approach to Giza does all the sorting and gathering on the user's behalf.

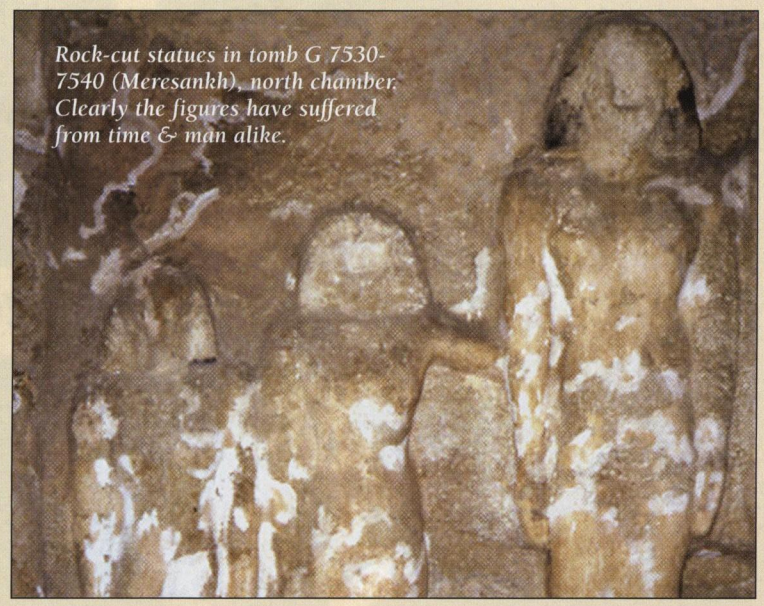
The second feature on the "Visual Search" page consists of round, pulsating yellow and blue buttons placed all over the site. These represent almost 700 different standpoints; click a button and a new browser window takes the user down to the ground at that very location showing a color image. Yellow dots represent outdoor (exterior) locations, while blue dots take the user inside a decorated chapel, pyramid or rock-cut chamber. However, these are no ordinary photographs, but rather 360-degree interactive panoramas (known as QTVRs, or "Quicktime Virtual Reality" movies), which the user can manipulate to survey the area in all directions. Until airfare to Egypt is drastically reduced in price, this is by far the cheapest way to visit Giza!

Taken together the red roll-over tomb buttons and the QTVR panoramas provide an efficient tool for studying the Giza monuments, both at the time of their original discovery and excavation, and as they appear today. Relative locations and relationships between scenes, walls, buildings and even pyramids become much clearer when viewed in 360 degrees, instead of with static two-dimensional detail photographs. One warning: fast Internet connections are required for this page, as are the (free) Flash and Apple Quicktime browser plugins (links provided on the Giza website).

Many websites offer hundreds or even thousands of images, but serious scholarly research is usually impossible due to the very limitations of the Internet. Bandwidth problems require images to be formatted too small for detailed analysis. In an effort to solve this problem and render the Giza archives useful for even the most detailed study, the Giza website employs a special technology[11] that takes very large image-files and digitally "breaks" them up into smaller "tiles." The result is that the user can zoom in very closely on a photograph, a small sketch on a diary page, or a faded number in an object register-book entry, while the computer shows only the portion or "tile" of the image detail desired. The bottom image on page 68 shows the zooming feature for a closeup view of the female head from a pair-statue found in tomb G 2009 (Cairo JE 38670). The Internet and computer are thus not taxed beyond their capabilities with downloading the entire large image file. This single feature transforms the Giza website from the realm of Internet curiosity to serious research tool. To date all 40,000 items on the site have been converted using this zooming technology.

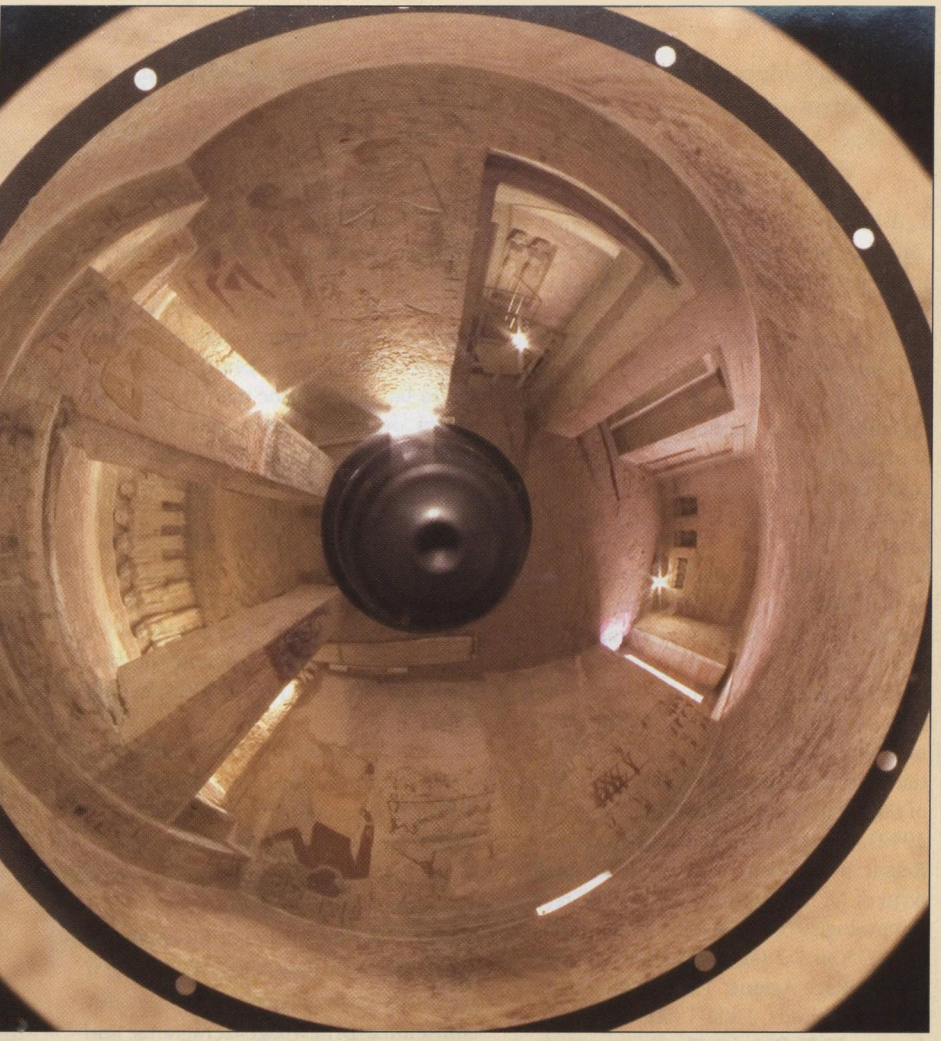
A "Digital Bookshelf" for Giza

Leaving aside the various search options for Giza archaeological data, one other large collection on the Giza website is worth mentioning: the "Giza Digital Library." To date about 200 works are posted for free downloading from the "Giza Library" page. These PDF files reproduce the original look and feel of the original publications' designs and layouts. But they also contain "added



Rock-cut statues in tomb G 7530-7540 (Meresankh), north chamber. Clearly the figures have suffered from time & man alike.

The Giza Archives Project enables researchers to compare tomb features as found (1930), above, with their present condition, right.



Opposite, Tripod, digital camera & parabolic mirror used by the Giza Archives Project to create 360-degree rotating (QTVR) panoramic images in the Tomb of Meresankh (G 7530-7540). Above, distorted digital photograph of the Meresankh tomb, which will be "unwrapped" by computer software into a 360-degree rotatable QTVR image.

value": a second, "hidden" layer underneath each page, where the text has been converted to searchable type. This means that one can search for terms (e.g., "G 2370" or "false door") within the PDF file of a complex book, such as Reisner's *History of the Giza Necropolis*, and receive a list of all the pages mentioning those terms. This is one of two major advantages of digital publications over print publications.

The second major advantage of online PDF publications is the potential support they offer to the field of Egyptology itself. Much of the basic Egyptological literature consists of rare and long-out-of-print works that were never produced in large print-runs to begin with. Those not fortunate enough to have access to a well-equipped Egyptological library constantly find themselves excluded from learning about ancient Egyptian civilization.

The online Giza Digital Library increases exponentially access to Old Kingdom Egyptological literature.[12] Traditionally printed, small print-run Egyptological books can reach hundreds of people; these new digital versions of those same publications can potentially reach millions. What's more, unlike university libraries, on the Internet the Giza Library page is always open. Digital publications streamline the research process, allow access where none was possible before, and even enable scholars to take entire libraries with them into the field — whether "the field" is the Egyptian desert, or another country's museum storeroom. The Giza website is intended to enhance the traditional research and publication process, not replace it.

The Giza Digital Library page currently contains every Giza-related book and article ever written by George Reisner, Dows Dunham and William Stevenson Smith. It also contains works by a host of other scholars, both past and present. All seven volumes of the MFA's *Giza Mastabas* Series are online. All 166 *Bulletin of the Museum of Fine Arts* articles are likewise available for free downloading. Where entire monographs require large PDF files, these have been broken into individual chapter-files for ease of downloading. The Giza Archives Project welcomes the opportunity to add individual works of serious scholarship to the lists,[13] and it is hoped that copyright negotiations will eventually allow for as complete an online Giza Digital Library as possible.

"Giza International": Eliminating the Archaeological "Swiss Cheese Effect"

Thousands of additional images and documents, old and new, remain to be processed in the archives of the Museum of Fine Arts, Boston, and added to www.gizapyramids.org (www.mfa.org/giza). Examples include the *History of the Giza Necropolis* volumes that Reisner left unpublished at his death in 1942; countless object and tomb wall-scene drawings; and thousands of on-site color images taken by various Giza expeditions between 1970 and 2005. A plan to introduce standardized thesaurus terminology, to allow for better searching, is also underway. And finally the MFA continues to add new color photography of its own Giza objects, as part of an ongoing documentation strategy, funded by the National Endowment for the Humanities and the Mellon Foundation Giza grant. These high-resolution color images will link to their black-and-white discovery photographic counterparts on the Giza website.

Critical as these additional materials are, they concern primarily the Harvard University-Boston Museum of Fine Arts Expedition and its derivative field seasons. Other important excavations at Giza include the work of the German/Austrian expedition, directed by Georg Steindorff and later Hermann Junker, and the Egyptian expeditions of Selim Hassan and Abdel-Moneim Abu Bakr. We hope in the coming years to fill the "holes" in the Giza data, by including the several major "Giza collections" housed in museums around the world, such as those in Cairo, Vienna, Leipzig, Hildesheim, Berkeley and Turin. Perhaps recent excavations by Zahi Hawass for the SCA and Mark Lehner of AERA,[14] will also one day feature prominently in the Giza online repository.[15] And there are always new technologies to test and include, such as digital epigraphy, or the production of computer-aided facsimile drawings of wall reliefs and inscriptions.

By pooling resources and treating Giza in its entirety, we stand to gain an accurate picture of the development of the ancient necropolis and, by extension, one of the most important eras of ancient Egyptian civilization. With his site-management program, Zahi Hawass has done more than anyone else in recent years in terms of preserving Giza in a *physical* sense; now it is time to gather all the derivative materials (artifacts, photographs, drawings, plans, manuscripts, etc.) in a *virtual* sense. Should this approach prove successful, it might serve as a model for the amalgamation of archaeological materials for other sites, as well.[16]

The ancient site of the Giza Plateau is neither stable nor permanent, and it is now imperative that international efforts be coordinated to document, preserve and publish it in the widest possible sense of the words. Never before has technology offered such far-reaching solutions to one of the world's greatest cultural preservation problems, while simultaneously providing an exciting and revolutionary educational opportunity for scholars and students of the Pyramid Age.

Notes

1. A listing of the Giza Archives Project staff may be found at http://www.gizapyramids.org/code/emuseum.asp?newpage=staff.
2. The production of the website would not have been possible without the support of many individuals at the MFA: Malcolm Rogers, Katherine Getchell, Arthur Beale, Rita E. Freed, Lawrence Berman, Denise M. Doxey, Maureen Melton, Linda Pulliam, Jeff Steward and Kay Satomi.
3. The Scholarly Advisory Board consists of: Zahi Hawass, James P. Allen, John Baines, Rita E. Freed, Peter Jánosi, Mark Lehner; and Lawrence Stager.
4. For an account of the division of the Giza excavation concessions between German, Italian, American and, later, Egyptian missions, see G.A. Reisner, A *History of the Giza Necropolis* I (Cambridge, MA, 1942), 22-26; selected discussions of Reisner's Giza work may be found in this writer's "A Month in the Life of a Great Egyptologist" George Reisner in March, 1912," *Kmt* 7:2 (summer 1996), 60-75; and "A Race Against Time in the Shadow of the Pyramids, 1902-1990," *Kmt* 1:4 (winter 1990-91), 10-21.
5. D. Dunham and W.K. Simpson, *The Mastaba of Queen Merysankh III*, Giza Mastabas I (Boston, 1974).
6. The Giza Mastabas Series, along with a list of tombs in preparation is available at: http://www.gizapyramids.org/code/emuseum.asp?newpage=gizamastabas.
7. The staff of the Mellon Foundation who have lent their support and encouragement for the Giza Archives Project include: Angelica Zander Rudenstine, and Donald Waters; and from ARTstor" James Schulman, Neil Rudenstine and Nancy Allen.
8. Tombs with numbers 1000 to 6000 are located west of the Great Pyramid of Khufu (Western Cemetery); those numbered 7000 and higher are in the Eastern Cemetery.
9. The Giza website was created using "eMuseum," the website interface for a very powerful collections-management system known as TMS, "The Museum System." TMS is in use by some 500 museums worldwide, including several with important Egyptian collections: The MFA, Boston; the Metropolitan Museum of Art, New York; the Hearst Museum, Berkeley; and the Kunsthistoriches Museum, Vienna. For further information on TMS and eMuseum, see http://www.gallerysystems.com.
10. Why combine such disparate pictures? There is no single point in time when all of Giza is exposed to maximum clarity, thus it was necessary to include as much of the site as possible by montaging multiple images. Even a high-resolution, color-satellite image taken this year would fail to show the many tombs reburied, denuded or otherwise altered since they were first exposed back in the early decades of the Twentieth Century.
11. http://www.zoomify.com
12. Similar digital-library endeavors already well underway are: the ETANA "Electronic Tools and Ancient Near Eastern Archives") Project at http://www.etana.org/; and the vast archives at the subscription-based JSTOR website: http://www.jstor.org/.
13. Giza Archives Project staff may be contacted from the Library page (http://www.gizapyramids.org/code/museum.asp?newpage=library) or the feedback form (http://www/gizapyramids.org/code/emuseum.asp?newpage=contact).
14. For the Ancient Egypt Research Associates and their newsletter, *AERAGRAM*, see: http://www.gizapyramids.org/code/emuseum.asp?newpage=aeragrams; and http://www.fas.harvard.edu/~aera.
15. Additional current or recent expeditions to Giza — such as those of William Kelly Simpson, Kent Weeks, Edward Brovarski, Ann Macy Roth, Günter Dreyer, Eleonora Kormysheva, Mansour Boreik, Mohamed Shiha and Mahmoud Afifi — are also holders of key information on the site.
16. The Giza Archives Project welcomes suggestions, feedback and support, and can be contacted at: http://www.gizapyramids.org/code/emuseum.asp?newpage=contact. In addition those with knowledge of or documents pertaining to the history of George Reisner's archaeological career, or that of his immediate colleagues, are urged to contact Project staff.

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