PERSEPOLIS FORTIFICATION ARCHIVE (PFA) PROJECT

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The PFA Project's emergency priorities — to make a comprehensive record of the Archive and to distribute the record gradually and promptly — were shaped by a legal crisis that put the future of the Fortification tablets themselves in doubt. A recent U.S. District Court ruling in the case offers grounds for guarded optimism.

The Project's *Annual Report* for 2010–2011 already showed guarded optimism in saying that "the goal of a comprehensive record of the Archive [was] within reach." As Robert Browning's Andrea del Sarto (fig. 1) said "Ah, but a man's reach should exceed his grasp, or what's a heaven for?" Heaven can wait, but the court's ruling also offers an occasion to consider how the Project's grasp measures up now against its reach, that is, to assess what the Project has accomplished and reflect on the future of the Archive.

To begin with, Project workers continued to extend its grasp during the past year, compiling and processing the growing record of the Archive's tablets, texts, and seals in ways that will be familiar to followers of previous reports.

During the summer of 2013 students supported by a timely grant from the Roshan Cultural Heritage Institute assisted PFA Project editor Mark Garrison in recording the immense

Figure 1. Andrea del Sarto (self-portrait, left); Robert Browning (by M. Gordigiani, right) (both images via Wikimedia Commons)

Figure 2. Recording seals on Aramaic Fortification tablets: Project editor Elspeth Dusinberre verifies and completes collated drawing

and still-growing corpus of seals on Persepolis tablets. The grant supported both students from Chicago (Tytus Mikołajczak [NELC] and Emily Wilson [Classics]) and students from elsewhere (Christina Chandler [University of Colorado], Erin Daly [Notre Dame University], and Katherine Livingstone [University of Minnesota]). It also allows Chandler and Daly (who are about to begin PhD programs at Bryn Mawr and Chicago, respectively) to continue their Project work during the summer of 2014.

Garrison and student workers recorded seals on another 230 of the unpublished documents with Elamite texts first edited by the late Richard Hallock (PF-NN), yielding identifications of more than 160 new seals (PFS). They expect to process the last ca. 500 of these documents during the summer of 2014. They also documented seals on about seventy-five more uninscribed tablets (PFUTS), yielding identifications of more than 100 more new seals. Working with Garrison and Project editor Elspeth Dusinberre (University of Colorado), Wilson reviewed and updated online records of the seals on the monolingual Aramaic tablets (PFATS). Dusinberre updated the catalog of PFATS (fig. 2) to include impressions on eighteen newly identified tablets (yielding identifications of another twenty new seals), made final pencil drawings of about 195 seals, and final inked drawings of about twenty-five. All told, she has identified almost 600 distinct legible seals specific to the Aramaic tablets (PFATS), about sixty others also found on Elamite tablets (PFS), and about forty others also found on uninscribed tablets (PFUTS).

Of around 3,200 analytically legible seals that Garrison, Dusinberre, and student workers have identified until now, about 2,000 appear on Elamite tablets; the balance are divided about evenly between Aramaic tablets and uninscribed tablets. The wide range of style,

quality, compositional elements, motifs, and themes of these seal images often presents a combination of general similarities and specific differences that makes it tricky to identify individual seals, especially when impressions are damaged or incomplete. As the corpus grew, the thematic typology that Garrison and Margaret Cool Root developed when only about 1,100 such images needed to be classified was no longer detailed enough to facilitate finding particular known seals or comparanda for new seals. As last year's *Annual Report* mentioned, Garrison developed a new, detailed, and robust typology. Student workers read through the seal card fiches that are the primary visual documentation of seal imagery, to restructure the file according to the new typology; they checked to ensure that all seal numbers were accounted for; they checked that defunct seal numbers had been purged; and they reviewed or revised the sketch drawings for legibility. Using their results, student worker Megan Kruse (Trinity University) restructured the thematic typology and entered or updated the newly specified thematic types for entries of each of the seals for display in the Online Cultural and Historical Research Environment (OCHRE) (fig. 3).
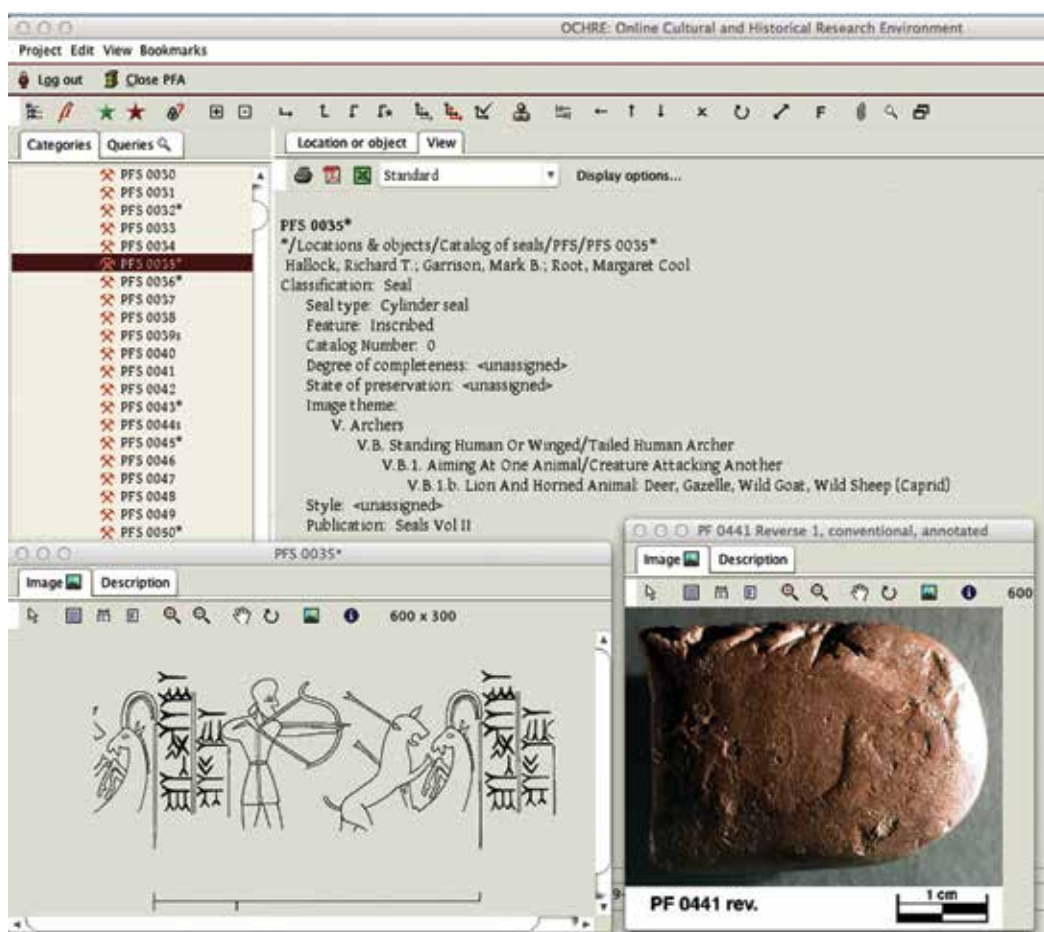

Figure 3. Constructing the whole image and breaking it down: OCHRE display of inscribed seal PFS 0035*, showing four-level thematic classification, collated drawing, and photograph of one of the preserved impressions of the seal. Compare the two-level thematic classification illustrated in the Annual Report for 2010–2011, p. 109, figure 7
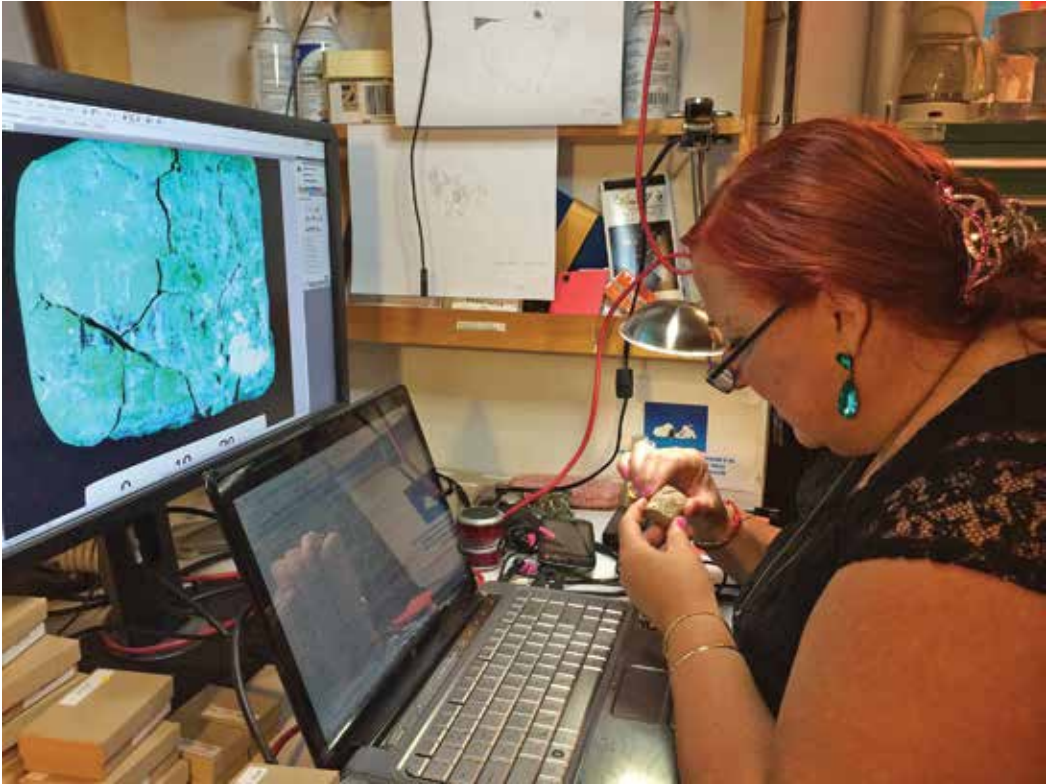
Figure 4. Editing Aramaic epigraphs: Project editor Annalisa Azzoni uses a false-color, high-resolution image to help read a partially preserved Aramaic text in ink

Project editor Wouter Henkelman re-collated more Elamite texts from Richard Hallock's *Nachlass* on tablets in Chicago as well as Elamite texts on tablets that were returned to Tehran in 1953. By now, Henkelman has collated ca. 2,700 tablets — or, as he calculates it, almost 3,300 texts (recording single transactions) and entries (in serial registers of single transactions) and he has re-collated almost 2,000 of these texts and entries to produce final, extensively corrected editions of them. Combined with final seal identifications and seal drawings, linked to images captured by other PFA Project workers, and provided with new translations and notes now in preparation, these readings will be the basis of definitive electronic and hard-copy publications of these documents. These authorized editions will discharge part of the responsibility that the Oriental Institute undertook when the PFA was entrusted on loan in 1936.

Similarly, Project editor Annalisa Azzoni (Vanderbilt University) continues to compile and edit the Aramaic components of the PFA for authoritative publication. During the last year she recorded fifteen more monolingual Aramaic tablets and fragments (PFAT) for a running total of 832, and eighteen newly identified Aramaic epigraphs (PFAE) on tablets bearing Elamite texts for a running total of 258 (fig. 4). What makes these terse, troublesome texts more consequential than their large numbers is their archival context. The PFA as a whole establishes the intimate connection of these Aramaic records with institutions that also recorded their operations in other languages and scripts. Traces of this polyglot and polygraphic environment appear not only in the many Aramaic transcriptions of Iranian and

even Elamite words or names, but also in oddities of grammar that seem to arise not from ignorance but from language interference. This observation, developed in Azzoni's paper at last May's conference on the PFA and the "imperial signature," could probably not have been accurately interpreted if the Aramaic tablets had been considered as a separate epigraphic corpus, apart from the integrated context of the PFA Project. Within that integrated context, it is possible to see in traits of Persepolis Aramaic some of the socio-historical circumstances that are also reflected in traits of Persepolis Elamite.

I sifted through about 800 boxes of tablets and fragments to select new items for conservation, image capture, cataloging, and editing, in a third and perhaps penultimate triage (fig. 5). I entered first-draft editions of about 150 more Elamite texts and fragments in OCHRE, for a running total of about 1,450 draft editions of previously unedited Elamite texts (Fort.). Combined with the texts that Hallock published in 1969 and the texts that Henkelman is editing for final publication, this brings cumulative Elamite corpus to ca. 6,250 documents and fragments, ca. 8,000 or more texts and entries, with at least a few hundred more tablets to come.
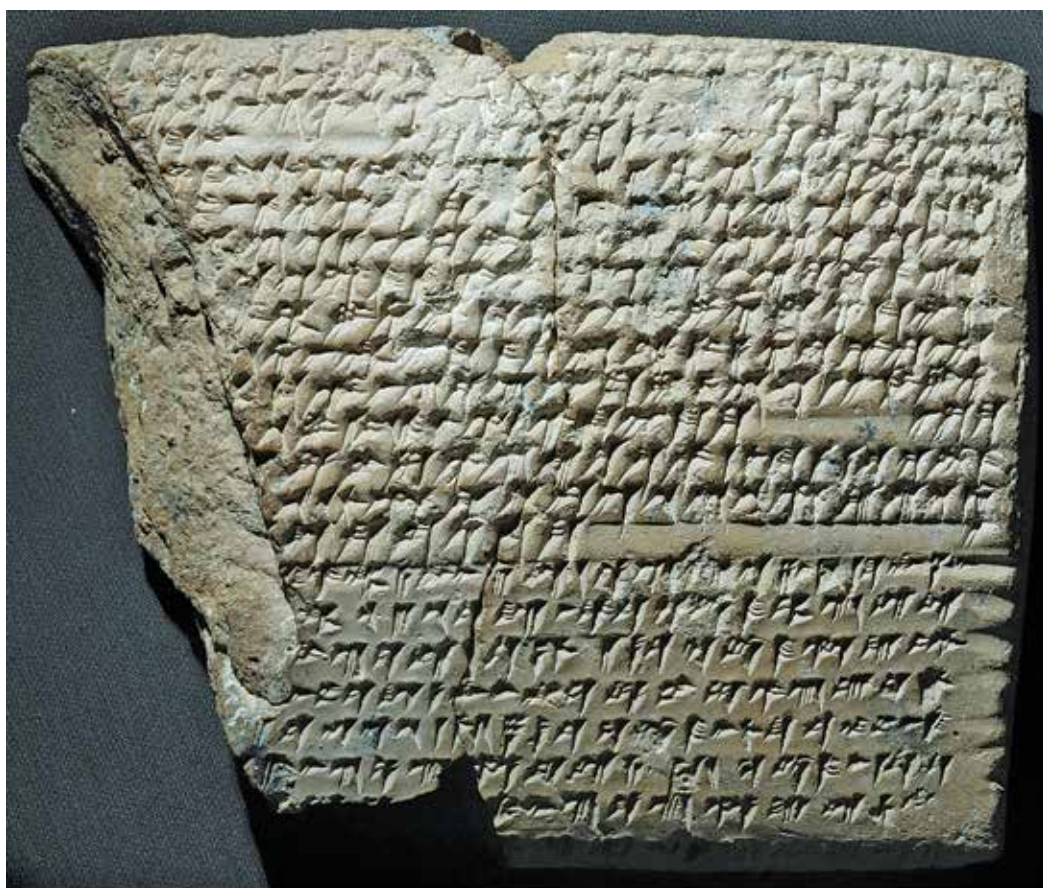
Fort. 1290-102+2177-101 Obverse   1 cm

Figure 5. Re-examining the fragments: a rare join between two fragments of an extraordinary text. Spaces in the text mark off sections in question-and-answer form. Change in the appearance of the signs indicates partial drying of the tablet during a pause in writing the text

Figure 6. Probing the material support of the Archive: conservator Simona Cristanetti scans a Persepolis Fortification tablet with the portable X-ray fluorescence apparatus

Sifting the boxes builds a backlog of work for conservator Simona Cristanetti, who was been working part-time on PFA Project materials since May 2013. She completed treatment of another thirty-six tablets, with about 100 more awaiting attention. The meticulous work of successive PFA Project conservators has cleaned and stabilized almost 1,200 tablets since 2006.

Laura D'Alessandro, Alison Whyte, and Cristanetti began a trial of the Bruker Tracer III-SD portable X-ray fluorescence device (pXRF) to identify clay composition of Fortification tablets (fig. 6), described in more detail elsewhere in this *Annual Report*. The pilot sample will look for distinctive material signatures of documents thought to have been made at Persepolis and from documents thought to have been brought to Persepolis from other places in the region. If the trial leads to clear results and a feasible workflow, it will be possible to add another dimension to the Project's comprehensive record of the PFA, by connecting the material evidence of the tablets with the places named in the texts, on the one hand, and with samples from local clay sources, on the other.

Staff turnover continued to slow image capture during 2013–2014 and the completion of the Project's third grant from the Andrew W. Mellon Foundation after March 2014 compounded the effect. Graduate student Ami Huang (NELC) trained undergraduate Theo Kassebaum (Anthropology) and graduate Jane Gordon (NELC) in making, editing, and uploading conven-

tional digital images of Elamite documents (fig. 7), and they processed about 120 tablets. In the high-quality imaging lab, postdoctoral workers Ben Thomas and John Nielsen and student workers Edward Fernandez and Teagan Wolter (both CMES) and Sarah Rowlands (Classics) made about 3,000 BetterLight scans of almost seventy tablets and fragments with Aramaic texts and about 5,500 Polynomial Texture Mapping (PTM) sets of about 830 objects, mostly uninscribed, sealed tablets. Student workers Bekir Gurdil, Clair Shriver, and Kristin Butler at the University of Southern California, and Amee Genova (History) and Robert Marineau (NELC) at Chicago, post-processed about 3,000 PTM batches of about 325 items. Our partners at InscriptiFact (http://www.inscriptifact.com), Marilyn Lundberg and Leta Hunt, uploaded more than 3,200 processed PTM batches to the staging server prior to release, documenting about 350 tablets. Currently public on InscriptiFact are almost 2,800 Persepolis Fortification tablets and fragments — almost

Figure 7. Photographing more Elamite tablets: Ami Huang at the photo station

all of previously unpublished kinds — presented with about 18,000 PTM images and about 26,000 BetterLight scans.

Longtime PFA postdoctoral project manager Dennis Campbell, now on the faculty of history at San Fransisco State University, continues to work part-time for the Project. Postdoctoral worker John Nielsen (about to join the faculty of Bradley University in autumn 2014) and graduate student Teagan Wolter continued much of Campbell's work of formatting Elamite texts for display in OCHRE, supported by student workers Özgun Sak (History) and Seunghee Yie (NELC), and by Douglas Graebner (Art History) who tagged photographs to link them sign-by-sign to editions. They entered 475 new Elamite texts, most of them belonging to large, complex, lacunose and time-consuming text-types. OCHRE Data Services (ODS) data specialist Miller Prosser and ODS director Sandra Schloen produced a set of automated text-processing routines — wizards — to streamline lexical analysis and parsing of Elamite vocabulary and identification of personal names and geographical names in Elamite texts. Graduate student worker Tytus Mikołajczak developed an Achaemenid Elamite cuneiform font that will allow parallel display of tablet photographs, transliterations, and conventional hand-copied sign-forms; revision will include updates to the extant Achaemenid Elamite syllabary and sign list, and OCHRE implementation still needs some debugging (fig. 8). About 5,500 editions of Elamite texts are now entered in OCHRE, about 3,800 of them public, almost all glossed, parsed, with linked seal information and attached images and a linked glossary that has more than 3,900 lemmata.

The Project weblog (http://persepolistablets.blogspot.com) maintained by Charles E. Jones (now the Tombros Librarian for Classics and Humanities at Pennsylvania State Univer-

Figure 8. Viewing an Elamite text in three aspects: roman-character transliteration, cuneiform-character representation, and photographic image. Glitches in the cuneiform font include the representation of the logogram for "king" (transcribed as EŠŠANA) and the representation of numerals

sity), with thirteen new postings in the last year, was viewed more than 5,600 times by more than 4,300 unique viewers. The associated newsfeed has ninety-one subscribers.

Notable among ten more PFA-related public lectures and papers at academic meetings during the last year were invited presentations by Henkelman and Garrison at a colloquium on Achaemenid religion at the Collège de France, Paris, in November 2013 (audio and video at http://www.college-de-france.fr/site/jean-kellens/seminar-2013-11-08-15h25.htm); my presentation, also at the Collège de France in November 2013, on the Achaemenid Elamite tablet fragment from Kandahar illustrated in last year's *Annual Report* (audio at http://www.college-de-france.fr/site/john-scheid/guestlecturer-2013-11-04-17h00.htm); and Prosser's presentation on applying OCHRE to managing digital imaging, archaeological and philological data at the International Congress on the Archaeology of the Ancient Near East in Basel, Switzerland, in June 2014. Notable among PFA-related articles submitted during the last year are Garrison's "The Figure in the Winged Disk in Persepolitan Glyptic: Select New Evidence" (Abdi [ed.], n.d.); Henkelman's "On the Road: The Travel Files in the Persepolis Fortification Archive" (Ma and Tuplin [eds.], n.d.); and Garrison and Henkelman's "Sigillophobe Suppliers and Idiosyncratic Scribes: Status, Administrative Profile and Glyptic Behavior of Storage Managers in the Persepolis Fortification Archive" (Dusinberre and Garrison [eds.], n.d.); and an issue of the digital/hard-copy magazine *Persian.ology*, edited by long-time Project friend and critic A. J. Cave, devoted to a description and appreciation of the PFA Project, its work and consequences (http://www.magcloud.com/browse/issue/732422). Of potentially greater long-term significance are Henkelman's intensive introductory classes on the language and structure of the PFA given in Europe (Münster, Paris) and Iran (Tehran, Shiraz), which prepare a younger cohort for informed use of the rich data in the PFA.

All told, until now the Project has made about 15,000 BetterLight scans of about 1,100 objects (including 800 Aramaic tablets and 300 Elamite tablets), and about 41,000 PTM sets of about 4,900 objects (including almost 3,000 uninscribed tablets, 820 Aramaic tablets, and more than 1,000 Elamite tablets), and more than 82,000 conventional digital images of about 6,750 Elamite tablets. Adding the 32-image sets of raw and intermediate TIFF files produced by PTM capture and processing raises the total to about 3,000,000 distinct images. Between 10,000 and 11,000 items have been recorded with one or more kinds of image, about half of them with very high-quality images. OCHRE now has records of some form — ranging from mere stubs that name and classify items to fully populated editions with linked images — of more than 11,000 fragments; records — ranging from mere identification to final editions — of more than 8,000 texts; and records of about 12,500 seal impressions, made by about 3,700 distinct seals, each impression identified by tablet surface and linked to seal identifications. So, returning to the matter of measuring reach and grasp, this comes creditably close to accomplishing the first of the Project's overall goals, compiling a comprehensive record of the PFA.

Miller Prosser finished a long hunt for all of these files in many volumes and subdirectories of the dedicated Project server (OIPFA) maintained by Humanities Computing, and transferred all of them to new server space provided by the University Libraries' Digital Library Development Center (DLDC), where they are backed up to library and industry standards and maintained permanently. This accomplishes another of the Project's goals, making the comprehensive record a permanent record.

High-quality images of more than 2,700 tablets and fragments available on InscriptiFact and public OCHRE records of texts and seals on more than 4,000 tablets and fragments are long steps toward the other goal, making the record fully and freely available, but a large fraction of the data compiled until now needs more processing to be distributed in useful forms, and more editing and clean-up to be published in definitive forms by the Project editors. In the next few years, the emphasis of the Project must move from salvage to consolidation, from recovery to presentation and analysis.

A spur to this shift is the ruling handed down in late March by the U.S. District Court in the lawsuit over possession of the PFA and other Iranian items (http://www.nacua.org/documents/Rubin_v_IslamicRepublicofIran_032714.pdf; discussion at http://culturalheritagelawyer.blogspot.com/2014/04/the-law-cited-by-plaintiffs-does-not.html). District Judge Robert Gettleman's memorandum and order concludes:

> The court recognizes the tragic circumstances that gave rise to the instant action, but finds that the law cited by plaintiffs does not offer the remedy they seek. … [N]one of the statutes cited by plaintiffs provide a basis for the attachment and execution against any of the artifacts in the Persepolis [and other] collections.

That is, the side of the Oriental Institute, the Field Museum, and the Islamic Republic of Iran won the case — almost. The plaintiffs have filed an appeal, so the legal situation is not yet resolved. But if this summary judgment is upheld on appeal the Oriental Institute will make plans to restore the tablets and fragments of the PFA to Iran, perhaps beginning in two or three years.

Judge Gettleman's order refers to the Oriental Institute's obligation to return the Persepolis tablets "after the academic study is complete," and to a 2004 agreement by the Oriental Institute to return the tablets "gradually and soon." In practical terms, to be sure, only a

gradual return can be envisioned. A large element of the PFA Project's agenda for the coming years will be to review, clean up, and complete its records, in order to enable a phased return of groups of tablets that meet the criterion of complete study. A corollary will be to prepare versions of Project data — images, editions, and catalogs — to accompany the tablets as they are returned, so that the final custodians of the tablets in Iran will not have mere objects that are the remains of Achaemenid Persia, but will also have tools that enable the contents of the objects to express and reveal the life of Achaemenid Persia.

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