



**FRENCH-EGYPTIAN
CENTRE FOR THE STUDY OF THE TEMPLES OF
KARNAK
MSA-CNRS USR 3172**

ACTIVITY REPORT 2013



LUXOR, 2014



*Ministry of State for Antiquities
Centre National de la Recherche Scientifique
Ministère des Affaires Étrangères et Européennes*

**FRENCH-EGYPTIAN
CENTRE FOR THE STUDY OF THE TEMPLES OF
KARNAK
MSA-CNRS USR 3172**

ACTIVITY REPORT 2013



TABLE OF CONTENT

FOREWORD	4
1. SCIENTIFIC PROGRAMMES	6
1.1. Power and marks of Power at Karnak	6
1.1.1. Epigraphic survey of the columns inside the Hypostyle hall.....	6
1.2. Peripheral areas	8
1.2.1. The Ptah Temple area	8
The gate to North-Karnak.....	9
Temple of Ptah, Gate F.....	12
Southern area	15
Ceramic studies	23
Epigraphic survey.....	24
Hieroglyphic and hieratic graffiti	25
Conservation-restoration programme.....	26
Reconstruction programme	35
1.2.2. The Treasury of Shabako	37
1.3. Cults and places of worship	41
1.3.1. The Monuments of Amenhotep I	41
1.3.2. The Osirians sanctuaries	50
1.3.3. The bark-shrine of Philipp Arrhidaios	55
1.3.4. The central sanctuaries of the <i>Akh-menu</i> and the “northern storerooms”	56
1.4. Ceramic studies.....	61
1.4.1. Late Egyptian ceramic studies programme.....	61
1.4.2. Excavations in the Court of the Ninth Pylon	62
1.5 The <i>Karnak</i> project.....	63
2. RECONSTRUCTION PROGRAMMES.....	65
2.1. The <i>Netery-menu</i>	65
2.2. The calcite chapel of Tuthmosis III.....	67
3. ARCHIVES AND SCIENTIFIC DOCUMENTATION.....	71
3.1. Archives and databases	71
3.2. Photographic department.....	72
3.3. The scattered blocks survey	72
3.4. Architecture and topography department	72
4. TRAINING PROGRAMMES.....	75
5. PUBLICATIONS AND LECTURES	75
5.1 Selected publications of the CFEETK members and associated missions (2013).....	75
5.2. Lectures.....	77
6. MEMBERS OF THE CFEETK.....	78
7. ACADEMIC COLLABORATIONS	78

FOREWORD

The work of the French-Egyptian Centre for the Study of the Temples of Karnak in 2013 mostly took place on schedule and in accordance with the decisions of the Scientific Committee which took place in June 2013.

Inside the temple, the activity of the Center was mainly devoted to two programmes, as an extension of work of the last season. The first concerns the study of the temple of Ptah. Having completed collation of the epigraphic facsimiles and the architectural survey, the main activity focused on the excavation of the southern area of the temple (area of the second gate of the 25th Dynasty). A huge programme of conservation-restoration was completed, especially inside the chapels and on the gates of the main axe. With a new flooring, the temple is now open to visitors.

The epigraphic survey concentrated on the north area of the *Akh-menu* of Tuthmosis III: the solar room and the “northern storerooms” were mostly completed. This work is linked with a huge restoration programme of all this area. A complete cleaning of the Alexander the Great’s chapel was realized and the easternmost northern storeroom is currently restored.

At the entrance of the Open Air Museum, the *Netery-menu* was officially opened to visitors in June 2013. The main reconstruction programme then focused on the calcite chapel of Tuthmosis III.

Constant work has concerned the documentary database of Karnak, which was enhanced by the addition of new archives (Piere Lacau’s archives kept at EPHE, Paris, and those of Francis Amin, Luxor). The website of the Centre reached one million visitors during summer 2013.

The online edition of all the hieroglyphic texts from Karnak (the *Karnak project*) started in January 2013; it is funded by LabEx Archimede (CNRS UMR 5140-Univ. of Montpellier III-Univ. of Perpignan), which funds two post-doctorate fellows and an epigraphist based at Karnak. The project was opened through the CFEETK website and many hieroglyphic texts and photographs are already accessible on-line.

All the work led at Karnak has benefited from the constant help of Ibrahim Soliman, General Director of Upper Egypt Antiquities, Amin Ammar, Director of the Karnak temples, Abdel Satar Badri, Director of the missions of the Karnak Temples, Fawzy Helmi and Mona Fathi, Chiefs inspectors, Abd el-Nasser, Chief conservator, Tarek Milad Zikri, Chief architect of Upper Egypt, all the inspectors, the Raïs Mahmoud Farouk and the workers of the MSA. It is a pleasure to thank all of them for their kindly and constant support.

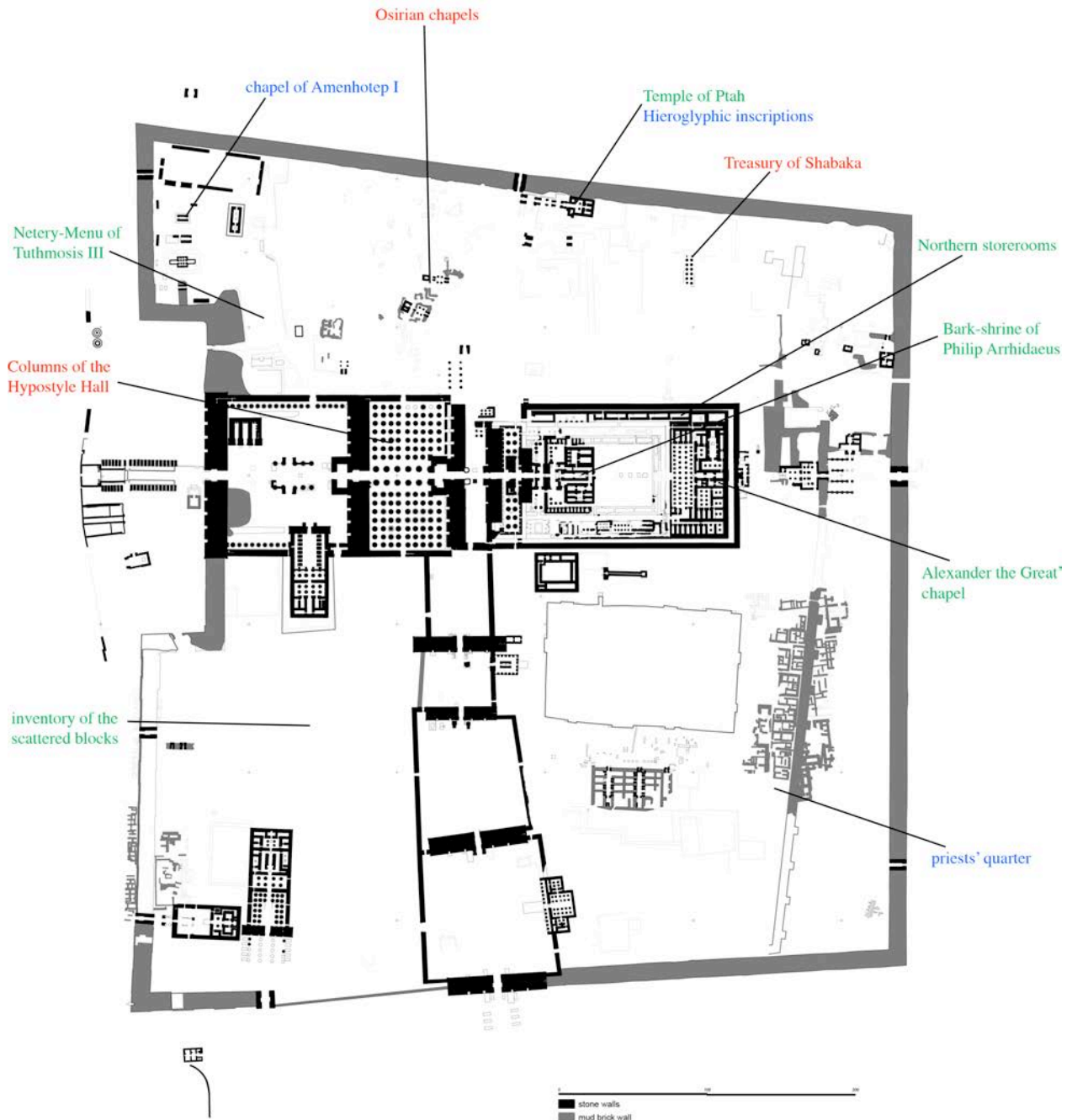
We would like to extend our grateful thanks to the French authorities of the *Centre National de la Recherche Scientifique* and of the *Ministère des Affaires Étrangères et Européennes* for their constant financial support and interest on the programmes led by the CFEETK.

We are always delighted with the excellent relationships between the French-Egyptian Centre for the Study of the Temples of Karnak and the *Ministry of State for Antiquities* led by H.E. State Minister for Antiquities Pr. Dr. Mohammed Ibrahim Aly Sayed.

Abdel Hakim Karar
General Director of Luxor and Upper Egypt (MSA)
Co-director of the CFEETK

Christophe Thiers
Director of the USR 3172 (CNRS)
Co-director of the CFEETK

Amun-Re temple, main fieldwork in 2013



temple of Ptah : main CFEETK projects
 osirian chapels : projects hosted by CFEETK
 priests' quarter : projects currently in publication

1. SCIENTIFIC PROGRAMMES

1.1. POWER AND MARKS OF POWER AT KARNAK

The temple of Amun-Re at Karnak reveals the indisputable operation of royal power and its assertion over a long span of time. The main stages of construction resulted in the building of monumental gates and pylons, defining, for a while, the sacred area of the temenos. This research axis seeks to focus on the monuments inside Amun-Re's precinct which can be seen as marks of power, that is to say the power of royal builders and of priests.

Of particular interest are monuments which mark the entrances of the divine temenos like pylons, kiosks and gates inside enclosure walls. As favourite places for projects of theological and political visualization, the role of these buildings is clearly to show the limits between the world of the gods and the world of the human beings, and were thus particularly built and decorated to enhance divine and royal power.

The study of a major monument began in 2013: on the north-south axe the still unpublished VIIIth pylon which was built by Hatshepsut to magnify the southern entrance of the Amun-Re temple.

1.1.1. Epigraphic survey of the columns inside the Hypostyle hall (P. Brand, J. Revez)¹

The 2013 Joint University of Memphis-Université du Québec à Montréal Mission at Karnak took place in the Hypostyle Hall of the temple of Amun-Ra from May 20th to June 27th 2013. This second season (the first one was held in spring 2011) had various objectives to fulfil:

1) Season 1 was dedicated to exploiting two important set of archives, that of R. Caminos (abaci) and H. H. Nelson (main scenes carved on the middle registers of the columns); season 2's (the current one) goal was to exploit the W. J. Murnane archives devoted to the stereotyped decoration of the columns. These archives allowed us to define typologies for the description of each section of columns where stereotyped decoration is to be seen. By stereotyped decoration, we mean the plant motifs that grace the bottom parts of all the columns, and the numerous horizontal and vertical friezes of cartouches and royal epithets of Seti I, Ramesses II, Ramesses IV and Ramesses VI that are located under and above the main scenes of the middle register of each column.

A methodological approach was set up to analyse all these standard inscriptions. The content of these texts were collated in the field and the data entered into the computer during afternoon sessions. Some colours were nicely preserved inside many glyphs, which were recorded. The software program *Image J*

¹ We would like to extend our grateful thanks to Dr. Ahmed Eissa the Minister of State for Antiquities Affairs, Mr. Mansour Boraik, Director of Upper Egypt Antiquities, and Mr. Ibrahim Soliman, Director of the Temples of Karnak. We would also like to thank our inspectors, Mr. Mohammed Abdel Khelkh, Mr. Wahid Joseph and Mr. Emad Abdel Harris Nubi. We would also like to thank Dr. Christophe Thiers (CNRS-Cfeetk) and Mr. John Shearman (ARCE) for their kind support of our project during our work.

The team was made up of director P. Brand (University of Memphis) and co-director J. Revez (Université du Québec à Montréal), Cédric Gobeil (IFAO and adjunct professor at UQAM); Yves Egels (retired professor at the ENSG); Emmanuel Laroze (CNRS /Paris) and Owen Murray (photography); graduate students from both our universities were: J. Bouchard, C. Caron, E. Feleg, S. Ficalora, A. Shahat, M. Haight, G.B. Labonté, N. Moreau, D. Peasley, P. Poiron, A. Schilling, and M. Zayed. Workers at Karnak: Rais Mohammed Farouk and Rais Mahmoud, Farouk, M. Sayed, K. Fouad, A. Halmy, H. Abd el-Hamed and at our house: O. Farouk, A. Farouk, S. Abuzayed. The present mission would not have been possible without the financial support of the Social Sciences and Humanities Research Council of Canada (SSHRC), the National Endowment for the Humanities and the Department of History at the University of Memphis.

was very useful in detecting colours which would otherwise be extremely difficult to discern with the human eye.

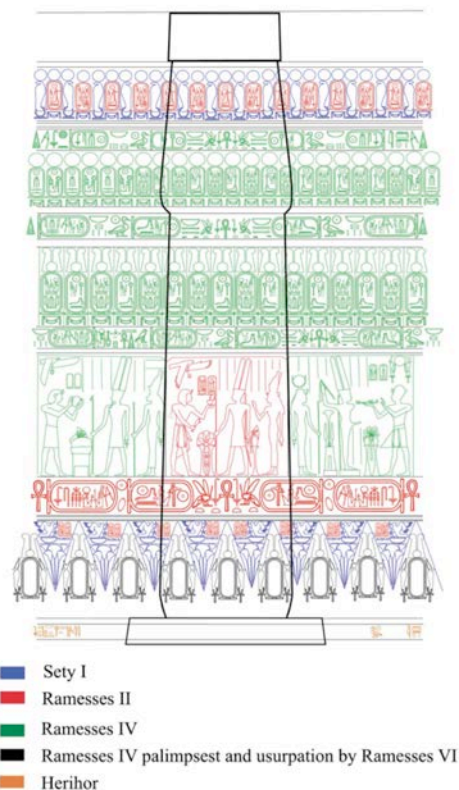
2) Another important goal was to test new methods of photography and photogrammetry in order to make full use of the technological advances in the field of orthophotographic *déroulés*, i.e. "unrollings" of column decoration, and its application to computer-drawn facsimiles. Especially important was the prospect of integrating new high-resolution images to the current 3D model of the Hypostyle Hall.

Our photographer took new high resolution pictures of certain scenes under various conditions of lighting in order to determine which one of them was deemed best: natural light, artificial light and artificial light with the use of a white canvas or awning for diffusing the light on the surface of the column to be shot with the camera.

Tests were also made to stitch pictures together in order to make an assemblage of some 50 shots of each scene. In an average day of work, it turned out that around 5 scenes could be taken in picture (the entire Hall contains about 400 such scenes) with the use of scaffolding. Most importantly, new pictures could be integrated in the 3D model developed in 2008 by ATM-3d and the *École nationale des sciences géographiques* (ENSG), so that one can benefit from the combined use of sophisticated technology (orthophotography) and high-resolution pictures taken under optimal lighting conditions.

3) A third major objective was to complete the photographic coverage of the abaci of the hall begun in 2011 and to resume taking georeferential points of these architectural features with a theodolite.

By the end of the season, all the abaci had been measured with the theodolite. The ensuing pictures were all straightened by means of the *Redresseur* software developed by Yves Egels (ENSG).



Unrolled diagram showing decoration of Seti I, Ramesses, II, Ramesses IV and Ramesses IV on a typical column.

1.2. PERIPHERAL AREAS

As a counterpoint to Topic 1 which is mainly devoted to buildings of the main axes of Karnak temple, this topic centres on specific relationships between different kinds of buildings established in the vicinity of the main Amun-Re temple with the temple proper. The northern area of Karnak will remain a particular area of focus, especially the Temple of Ptah and the Treasury of Shabako which were built outside the New Kingdom enclosure wall. The history of these monuments, which were later included within the enclosure wall of the 30th Dynasty allows worship, as well as administrative and topographic changes and continuities in this area to be assessed, as well as the close relationship with the Osirian chapels built on the way to Ptah Temple (Topic 3, below).

1.2.1. The Ptah Temple area²

The objectives of this fifth campaign aimed primarily to continue to survey and study the mudbrick enclosure wall which was started in the previous, to start to study the “kom” south of the temple, to conduct a sounding in the axis of the Gate F, to finalize the photographic surveys and the programme of restoration and enhancement of the temple (paving of the access through the gates and the “courtyard”).

Archaeological investigations have been led by two approaches:

- Soundings in order to search the western wing of the courtyard of the sanctuary of Thutmose III. Opportunities of excavations were very limited by the later architectural additions of Ptolemy III. These excavations (soundings 19 and 20) have been undertaken in the available spaces of the axial passage of Gate F and on the foundation of the south/west outside corner of the “pylon” of Ptolemy III (sounding 25).
- An exploration of the area south of the second gate (D) of Shabako in order to define the layout of its enclosure walls (surface cleaning and soundings 22, 23, 24).

South of the temenos of Ptah the quadrangular structure of mudbrick was also positioned, as architectural objects are to be also considered within their environment and urban context.

² With:

- epigraphic survey: Christophe Thiers (USR 3172, chef head de of mission), Elizabeth Froid (univ. Oxford), Mamdouh Abd el-Ghassul (MSA-Cfeetk) et Pauline Calassou (LabEx Archimede).
 - archeology and ceramology : Pierre Zignani (USR 3172), Audrey Aulus, Sébastien Maillot, Marie-Caroline Livaditis (Cnrs trainees), Romain David (LabEx Archimede), Catherine Defernez (UMR 8167), Stéphanie Boulet (FRS-FNRS-ULB), Mamdouh Abd el-Ghassul (MSA-Cfeetk), Chr. Thiers.
 - photographical survey : Jean-François Gout, Jessie Maucor (USR 3172), Karima Dowi Abd al-Radi, Ahmed Roubi, Mohamed Saïdi (MSA-Cfeetk). ;
 - conservation: Lucie Pieri (VI MAEE), Abdou Qoraïm, Mohamed Zaki (MSA-Cfeetk), Anaïs Aubry (Cnrs trainee), Mohammed Zaki Masoud, Adel Mohamad Radouan, Ghaad Nubi Hussein, Ahmed Hassan Fuli, Waffaa Abo El Hamed, Nagwa Abd El-Ghafour, Yasser Farraj, Abdel Nasser Mahmoud, Mahmoud Said Ahmed (MSA-Cfeetk).
 - MSA inspector: Ali Mohamed Erfan, et Abou al-Hassan Ahmed Ibrahim.
- Programme supported by LabEx Archimede « Investissement d’Avenir » ANR-11-LABX-0032-01, project « Céramiques tardives d’Égypte (IV^e s. av. n. è.-VII^e s.), entre tradition et acculturation. L’exemple des sites de Karnak et d’Ermant».

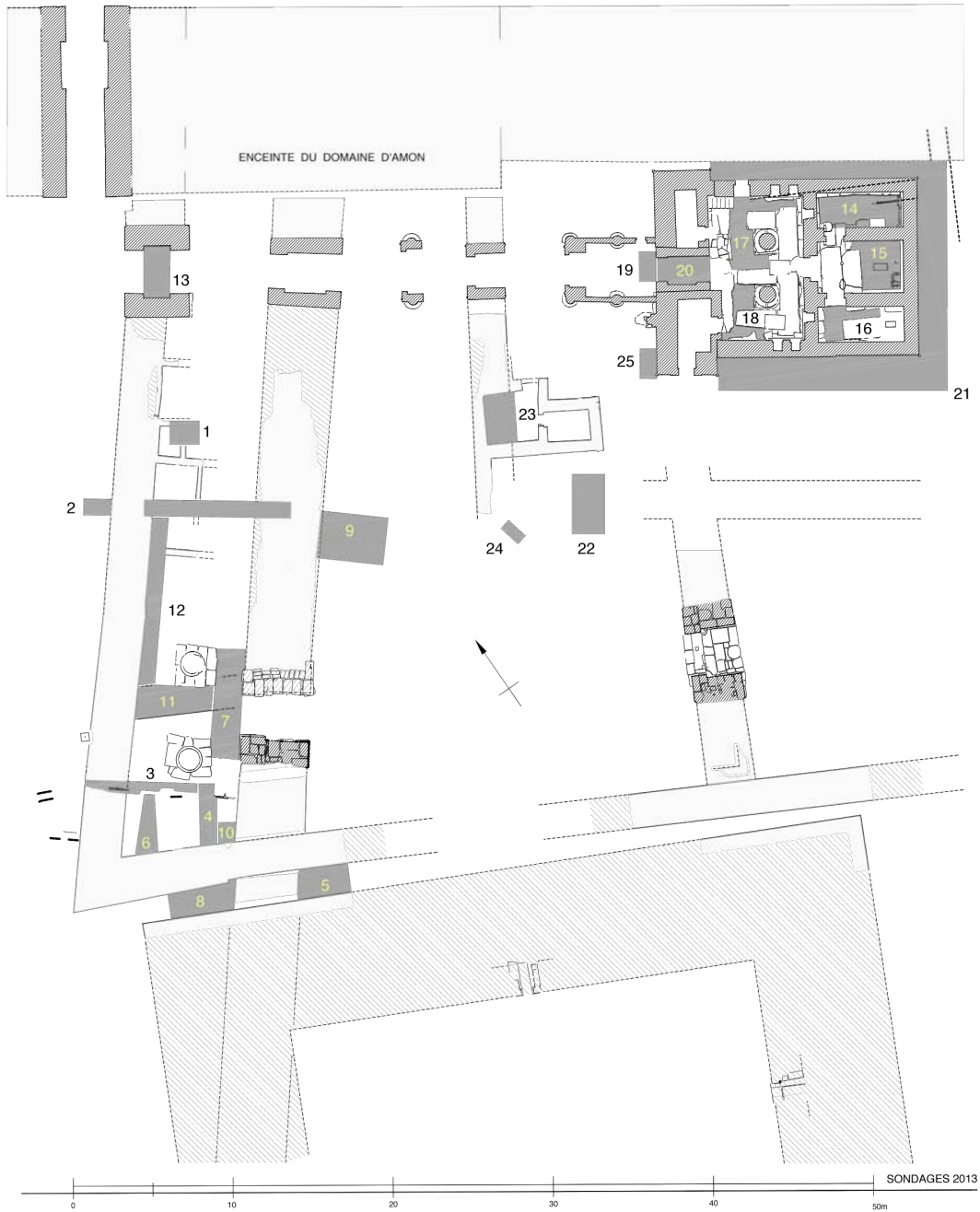
The gate to North-Karnak (P. Zignani)

Ongoing investigations allow us to highlight first substantial changes in the area of the Temple of Ptah throughout its history. Before the Graeco-Roman restoration and additions, substantial interventions were undertaken during the reign of Shabako, and after the extension of the main temenos of the temple of Amun during the 30th Dynasty.

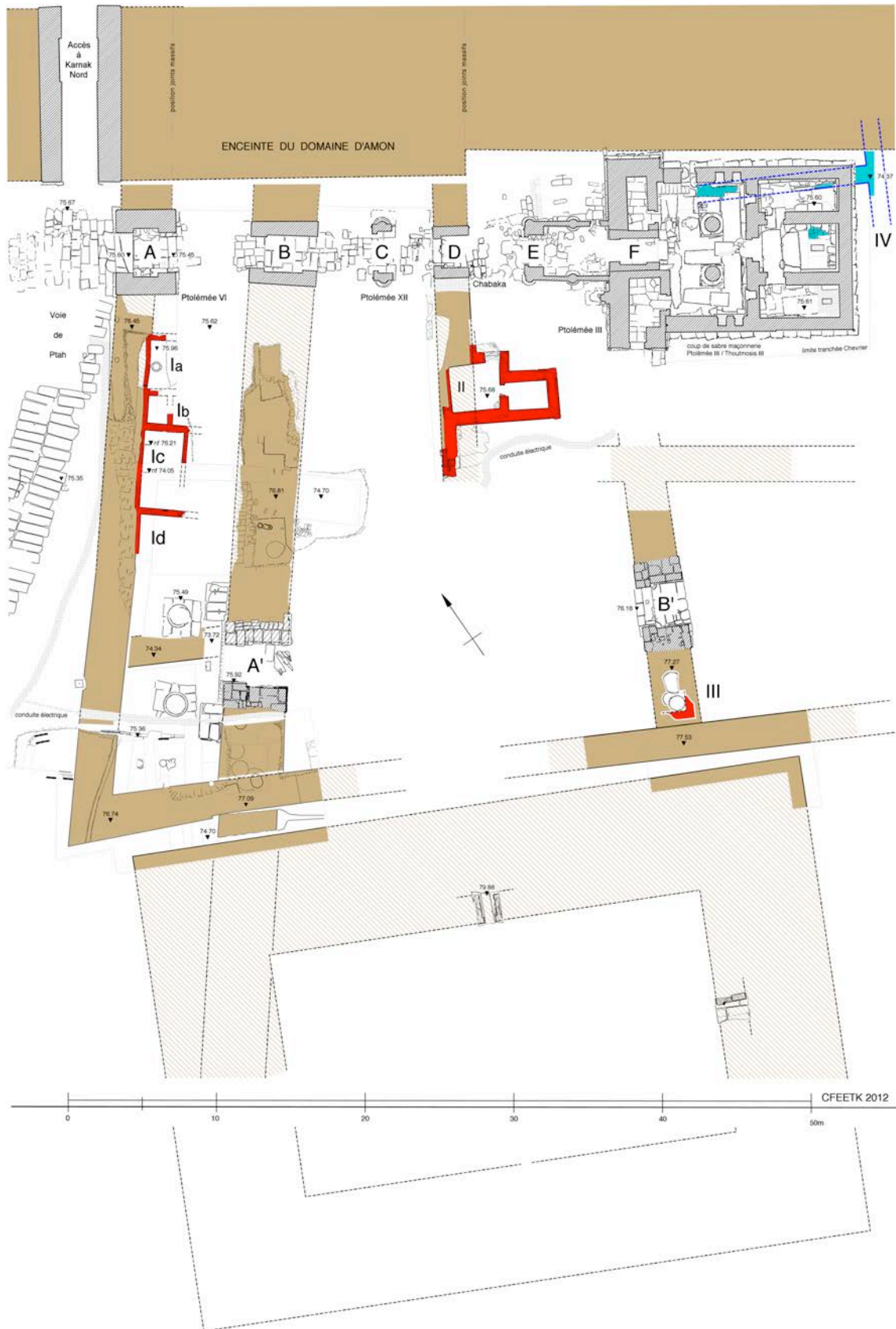
Thus the architectural documentation of the temple was completed with elements that interacted with the diachronic evolution of the temenos of Ptah. According to this purpose, the architectural documentation of the sanctuary was also completed with the survey of the temenos gate of the Temple of Amun opening toward the north and which is contiguous to the monumental entrance of the temple of Ptah dating to Ptolemy VI (Gate A). This last survey allowed us to observe some interesting technical details identical to those of the Eastern Gate of the great enclosure wall (dated to the reign of Nectanebo I).



Temple of Amun of Karnak, temenos wall, northern side: Section of the gate opening to the north, and elevation of Ptolemy VI's entrance (Gate A) of the temple of Ptah © Cnrs-Cfeetk.



Plan of the temple of Ptah with the soundings location © Cnrs-Cfeetk.



General plan of the temple of Ptah and the southern structure © Cnrs-Cfeetk.

Temple of Ptah, Gate F (M.-C. Livaditis, P. Zignani)

Western side of Tuthmosis III's courtyard

The passage of the kiosk in front of the monumental gate (F) of Tuthmosis III and the space between its doorposts were cleaned to check feasibility of excavations in the area in order to search remains of the western side of the New Kingdom courtyard. It was only possible to proceed with two limited soundings: one in front of the western elevation of the gate (sounding 19) and the second between the doorjambs of the passage (sounding 20). In the eastern half of the passage, five blocks belong to the pavement. Four are in sandstone, the last one in limestone joins the masonry on the south-west side. All stones show a degradation of their surfaces. Sandstones are those in worst conditions. To the north-east of the passage and at the bottom of the north wall, the upper surface of one of the blocks shows traces of tools. A small sandstone block at the center of this pavement was fitted together with plaster.



Gate F of Tuthmosis III: view of the passage from the West (in the foreground: soundings 19 and 20 behind)

In the other half of the cleared area, several elements of the pavement and foundations of the doorjambs were revealed. These foundations consist of two blocks of sandstone. One, to the north has an remarkable size (more than 1.5m x 0.90m x 0.80m height) and runs under the floor at the east of the sounding area.

- Sounding 19, west of the outer frame of Gate F

This sounding, between the elements of paving, was just at the foot of the exterior elevation of the gate of Tuthmosis III. It allowed to observe the foundation. The trench was 0.65 m and 2.20 m long and reached a depth of about 1.70 m (73.85 m). During the excavation, two blocks were found reused in the pavement.

The first located along the western side features part of a torus (0.84 m max length; 0.30 m max width).



Reused block in the paving on the western side of the sounding 19 © Cnrs-Cfeetk/M.-C. Livaditis.

The second, a sandstone slab found between the two doorjambs, shows a corner with two finely dressed surfaces. Several grooves of popular devotion are visible on the western side. A cavity below this block revealed the presence of other such grooves on the underside.

The underside of the large sandstone block used in the foundation of the southern doorjamb of Tuthmosis III could also be observed. It has 0.40 m wide cavity, identical in the details to cavity used to accommodate the levers for handling large structural elements (slabs and lintels). This denotes the cut and reuse of an older item.



Southern doorjamb of Tuthmosis III, detail of the hole for lever in the block of foundation © Cnrs-Cfeetk/M.-C. Livaditis.

Below the paving elements there is a thick layer of ceramic sherds and crushed brick fragments followed by several filling levels. The irregular and non-horizontal stratigraphy of these fillings indicates that this small area was interested by numerous activities of digging and filling. One layer was characterized by an abundance of fragments of mudbrick. A study of the ceramic in this very disturbed area would probably help dating the various interventions. Some faunal remains and a pearl were also identified. Down, on the south side, we met some gray river sand forming a south-north dip which also contained a few potsherds. The northern profile of the sounding allowed to clearly identify the foundation trench of the northern doorjamb of Tuthmosis III. We could observe grey river sand mixed with light brown silt and some chips of flints, while below the block receiving the jamb the sand has yellow undertones and is similar to the sand used for the Ptolemaic foundation.



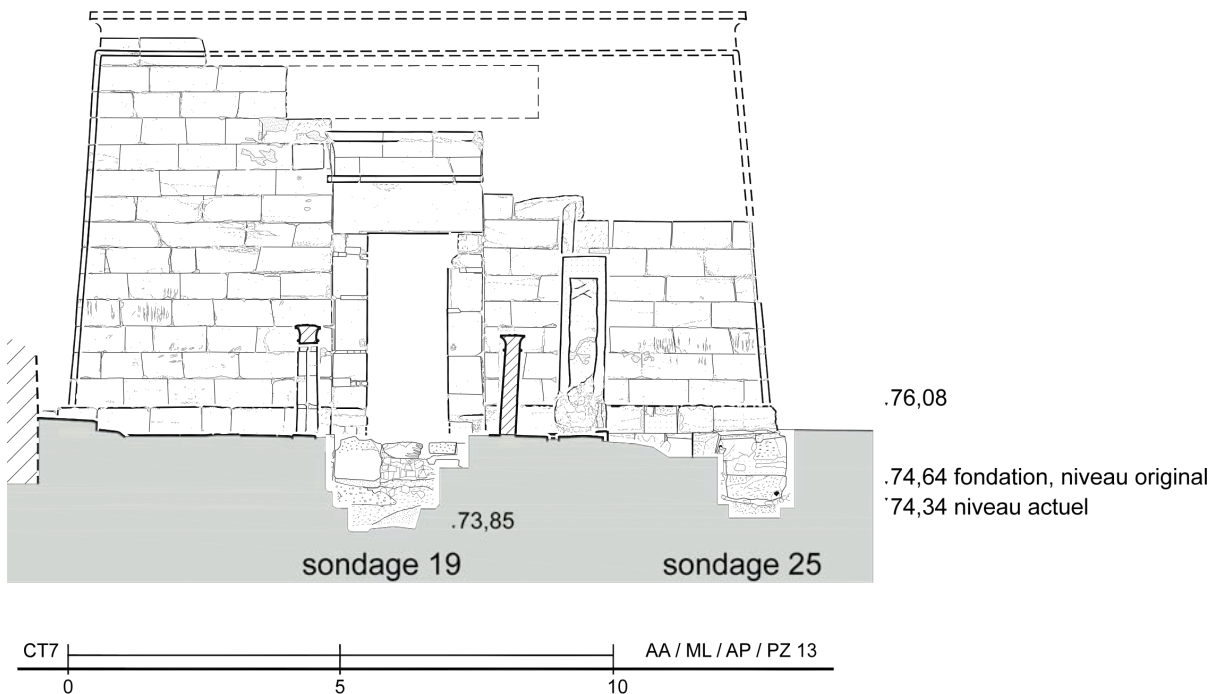
Sounding 19: north profile showing the foundation trench of the foundation block of the northern doorjamb of the gate of Tuthmosis III © Cnrs-Cfeetk/M.-C. Livaditis.

- Sounding 20

It is located between the two doorjambs of Gate F. The cleaning after the removal of the concrete surface offered few possibilities of digging. Only a small area (1.05 m x 0.30 m) between two slabs could to be excavated about one meter deep. This narrow sounding allowed only a few observations but it was possible to observe grey river sand under the foundation stone of the northern doorjamb nonetheless.

- Sounding 25

The area of the sounding on the southern corner of the “pylon” of Ptolemy III has been excavated by predecessors. They even had to restore the masonry as the cornerstone foundation was down about 0.30 m.



Western façade of Ptolemy III, with soundings 19 and 25 © Cnrs-Cfeetk.

Southern area (S. Maillot, Chr. Thiers)

The area excavated this season has been particularly complex, because of successive structures and destruction phases in a relatively small area, which made understanding of the plan and the chronology of the different structures difficult.

The Roman-Byzantine house

Partially installed on the wall of the gate (D) of Shabako, this house was formerly identified by G. Legrain, who added it to the plan of the temple of Ptah in 1903; a new cleaning was made in 2011 to draw a new plan. For the study of the mud brick enclosure of Gate D it was necessary to study this Roman-Byzantine house before its partial disassembly.



The Roman-Byzantine house during excavation, view to the East © Cnrs-Cfeetk/S. Maillot.

The mud brick wall of the gate (D) of Shabako

The mud brick wall associated with the second gate of Shabako is visible to the south and measures 3.90 m long, and 2.40 m width . The link with the gate itself is lost due to the work of G. Legrain, who built a buttress on the south side of the gate.

The implementation of the Roman-Byzantine building and the secondary occupations, largely destroyed the precinct wall, making a definitive interpretation difficult. A sounding dug in the eastern half of room A of the house has brought to light layers of mud bricks that could have belonged to the Kushite wall but their state of degradation does not allow any certainty. Ceramics collected is not homogeneous, some sherds dating to the Late Period, alongside with Ptolemaic and Byzantine periods; a coin is dated to the late second or first half of the Ist century BC. Only the removal of all or part of the Roman-Byzantine structure during the next season will allow a clearer picture of this sector.

There is little doubt, however, that this wall was restored in antiquity. Despite the pits and the late development, it was indeed possible to highlight an uneven thick layer (5-34 cm) of homogeneous sandy loam, sandwiched between the oldest bricks (13/14 x 37 x 19 cm) and the most recent construction phase (bricks: 10-11 x 33 x 15 cm).

Ceramological studies will probably distinguish these two phases, which date between the 25th Dynasty (Shabako) and the Late Period.

In its first state, the Kushite wall is identifiable to the south of the wall of the Roman-Byzantine house. The removal of this structure should allow a more accurate identification.

The second state of the wall used bricks “de chant” above the sandy loam backfill. Two rows of bricks arranged transversely are visible and were partly used as a foundation for the Roman-Byzantine house. Later, a large pit (4005) cut the southern half of the enclosure wall, disrupting and cutting all levels preserved. The filling of this pit has provided ceramic material mostly dated to the Byzantine period. We also found two intact *unguentaria* probably thrown there with the rest of the filling.

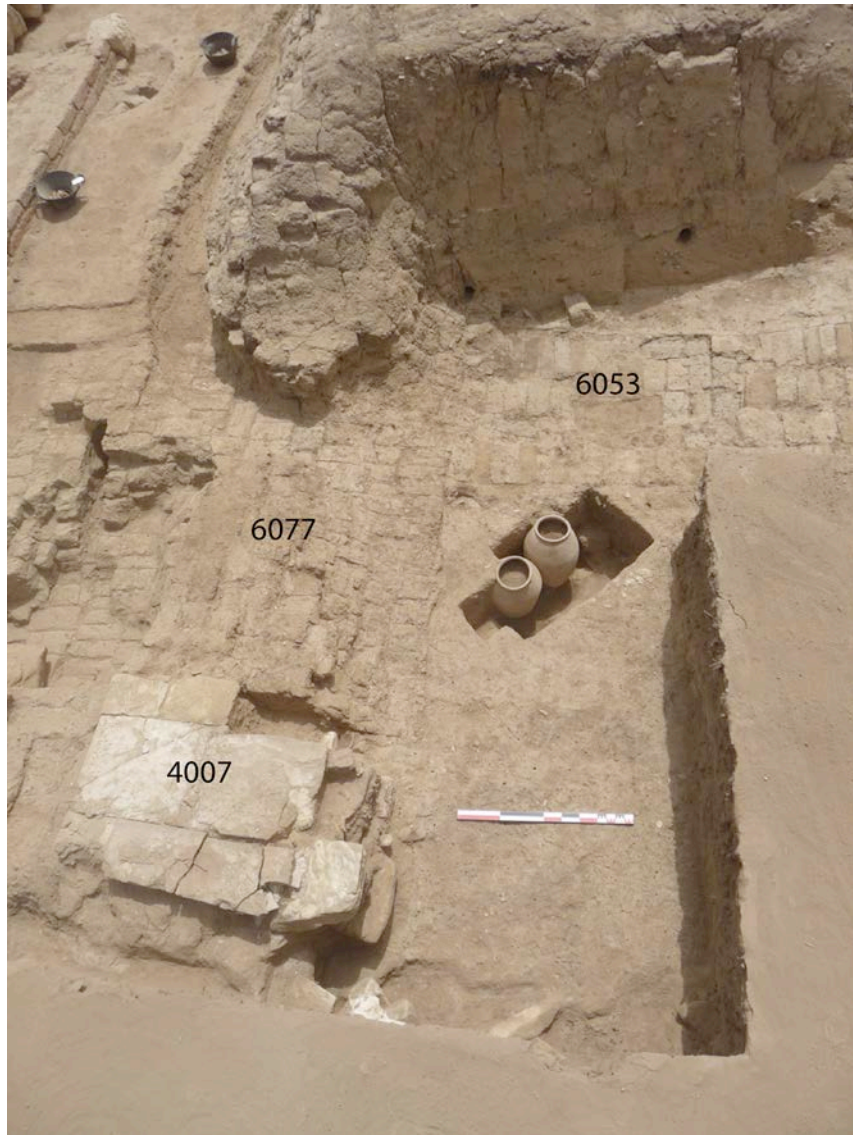
The general level of the first phase of the wall is located at about 75.50 m ASL. The second phase of the wall is at 75.80 m and ASL 75.84 m ASL north to south.



Northern part of the erased mud brick wall of Gate D, view to the east © Cnrs-Cfeetk/S. Maillot.



Unguentaria found in pit 4005 © Cnrs-Cfeetk/S. Maillot, K. Dowi.



Wall 6077, second stage of flooring 4007, and two Ramesside jars, view to the East © Cnrs-Cfeetk/Chr. Thiers.

A new gate ?

After clearing of the southern area and partial dismantling of the walls of the Roman-Byzantine house, a massive mud brick wall (6077) appeared, oriented east-west, and associated with the remains of a paving (4007) made of reused stones (including a ceiling slab decorated with a vulture). This level of paving lies at 75.84 m ASL, the same as that of the foundation of the second phase of the wall of Shabako mentioned above.

Wall 6077 is 2.41m wide and extends eastward. The size of the bricks is 34/35 x 17/18 x 10/11cm. Against its south side, another massive mud brick wall (6053) (bricks: 37/38 x 17 x 11.5cm), well levelled, was identified (5.80 m north-south x 1.80 m wide). Its southern end turns westward.

The north side of the foundation trench of wall 6077 was identified. It cuts an earlier mud brick structure (bricks size: 38 x 18 x 11-12 cm), with a southwest / northeast orientation. It is tempting to link

this wall with the mud brick walls found beneath the temple of Ptah in previous seasons, but more data are required before any conclusion can be drawn.

Paving 4007 lies on a backfill (35 cm thick) made of mud bricks, broken mud bricks and sandstone fragments. The bottom of this backfill (4014) contained a number of amulets and fragmentary objects including three particularly noteworthy: the lower part of a baboon statue sitting on a pedestal, embellished with red painting; Amun feathers in copper alloy covered with gold leaf; a fragmentary statue of a goddess in green glazed faience, sitting on a throne and decorated with snakes (with hands and legs) and leonine deities. This type of statue is well known during the Third Intermediate Period, specifically the 22nd Dynasty, but is attested until the Late Period (26th Dynasty). It may represent the lion goddess Sekhmet / Bastet / Oudjyt / Mut, associated with the decans represented in the form of snakes, and assimilated to the arrows demons of Sekhmet.

Note also that under the bricks of the second phase of the wall of Shabako, the backfill (4011) provided the base of a female figure in limestone, possibly to be attributed to Setchairetbinet, “daughter of Ahmose, divine father” (see below).

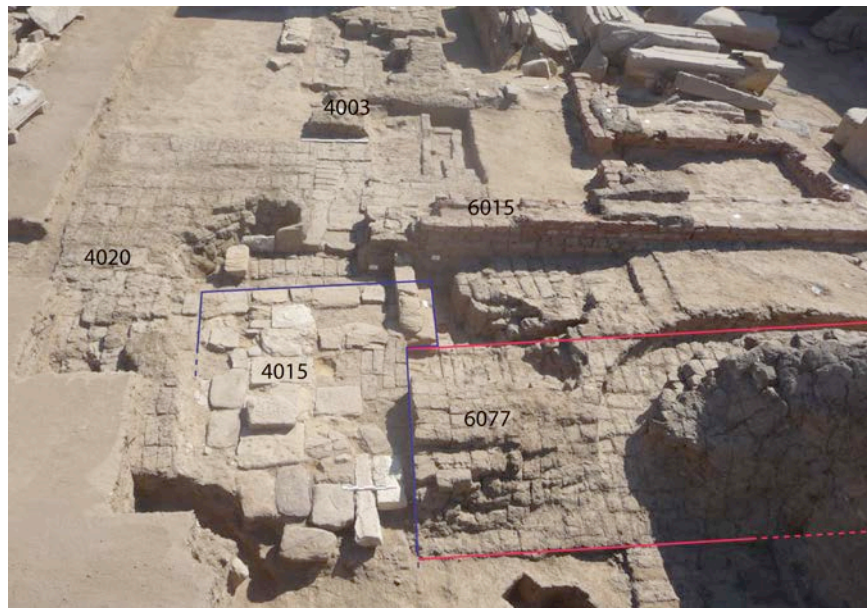
The earliest structure brought to light in this area is of the first phase of pavement 4015. Like the second one (4007), it was first bordered on its west side by wall 6077 and was made of various reused stones (sandstone, limestone, granite). Its southern side was lost probably at the time of G. Legrain.



Amun feathers, copper alloy with gold leaf © Cnrs-Cfeetk/K. Dowi.



Glazed faience statuette of a lion goddess © Cnrs-Cfeetk/K. Dowi, P. Calassou.



South of Gate D of Shabako: dallage 4015 linked with wall 6077, view to the north © Cnrs-Cfeetk/Chr. Thiers.

The structures 4015 and 4007 are two phases of a pavement with an elevation of about 35 cm. The question remains as to which building they were associated with. The link with wall 6077, which serves as a support to the two successive phases, suggests that we are in the presence of a gate or a chapel, along a north-south axis. The absence of remains of the door itself (foundation of the doorjambs for example) does not support such hypothesis however. Note also that a massive layer of bricks (4020) (size: 36/37 x 18/19 x 9.10 cm) is located west of these structures.

The analysis of the remains will be continued in the next season. It will be necessary to clarify two points: first the layout of the first phase of the wall of Shabako (Gate D) and, second, the chronostratigraphic relationship between phase 1 and the first phase of the pavement (4015). It is obvious that if these two structures were contemporary, the alignment of the first wall of Shabako could not extend southward. The search will also be extended westward to delineate layer 4020.

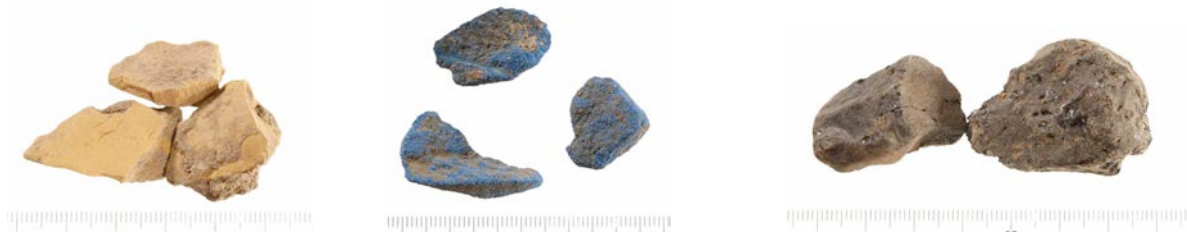
Two Ramesside jars

A sounding (24) was made close to two jars, after their upper part appeared near wall 6053. A first ceramological study dates them to the Ramesside period. A pit was identified around the jars. The pit and the jars have been probably filled at the same time because their fillings, at least in the upper part, are similar. The relative richness of the material prompted screening of each layer of the filling, as well as a collection of samples for further analyzes.

Many fragments of plaster painted blue, yellow, and red were found with textile or cartonnage prints on their backside. Some bones including some fish vertebrae, an imprint of a fragmentary seal, a copper alloy hook, and some pearls were also uncovered. The associated ceramic sherds could be Ramesside.

The many pigments that were found are particularly interesting both for their diversity and their quantity, and their analysis will probably enrich the current knowledge concerning the manufacture of color in ancient Egypt. Black pigments are the most abundant, vitrified coal, probably similar to all the examples discovered at Karnak before. The yellow pigments collected are also prominent in two forms: a mineral with a relatively dark color, probably yellow ochre; and other fragments of a lighter shade. Some fragments of red pigments were also collected. Finally, the blue pigment is probably an artificial product commonly called Egyptian blue, whose manufacture was widespread in antiquity.

Only a more extensive excavation will provide an archaeological context for these two jars and the numerous associated pigments.



Colour pigments found near the Ramesside jars © Cnrs-Cfeetk/K. Dowi.



Painted plaster fragments found near the Ramesside jars © Cnrs-Cfeetk/K. Dowi.

The “kom” to the south of the Ptah temple

Running on the southern edge of the temple of Ptah, a mound seemed to mark the presence of a west-east wall which, as hypothesis, could have matched with the wall of Shabako (Gate D). It was thus cleaned and a sounding (22) was made into its width.

The sounding (5.70m north-south x 0.80 / 1.65 m east-west x 1.40 m deep) cut through the “kom” showed a restoration of wall 6077, levelled and covered in its northern part by a layer of red bricks (6079); their size (32 x 16 x 8.7 cm) is the same as that of the bricks from the Ptolemaic baths located in the forecourt of the temple of Amun-Re. This layer of red bricks seems to have been used as foundation for a massive mud brick wall (6007), which occupies the northern slopes of the mound, with the same layout as wall 6077.

The bottom of the sounding showed a mudbrick layer (6080) (levelled wall or flooring ?), cut by the installation of a storage jar (silo), which was also cut by a wall further south. These levels seem to be of domestic nature and will be analyzed by expanding the survey.

In the eastern section, a red brick structure appeared, consisting of at least nine courses (0.74 x 0.86 m) of bricks. Nature and function remain unknown at the moment.

The higher levels reveal pits from a later occupation above a thick filling that obliterated the structures mentioned above. Ceramic is heterogeneous (Late Period and Ptolemaic period). These initial elements should be compared with the results of the extensive excavation of the sector planned for 2014.

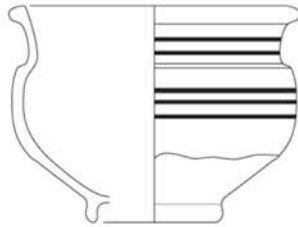


General view of the “kom” to the South of the Ptah temple and sounding 22, view to the west © Cnrs-Cfeetk/S. Maillot.

Ceramic studies (R. David)³

The ceramic material unearthed during the excavations lead by S. Maillot in the south area of the Ptah temple between January and April 2013 has been studied. More than 4000 samples have been examined and 160 fully documented. They mostly come from heterogeneous levels but they give evidence of an important activity during the 25th Dynasty and reuse of the area during Ptolemaic and Byzantine times as suggested by the analysis of the architectural remains. Material from other trenches made during the previous years allow to increase the typology attested at Karnak as well as to clarify the chronology of some phases of occupation within the area of the Temple of Ptah.

³ USR 3172, LabEx Archimede, programme « Investissement d’avenir », ANR-11-LABX-0032-01. With Mamduh Abd el-Ghassul (MSA-Cfeetk).



Pt 314 - M 04 - US 605



Pt 315 - M 04 - US 605



Pt 316 - M 04 - US 605



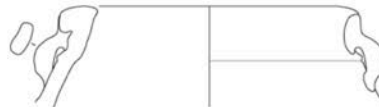
Pt 317 - M 04 - US 605



Pt 318 - NM 01 - US 605



Pt 319 - NM 01 - US 605



Pt 320 - N 07 - US 605



Pt 321 - N 07 - US 605



Pt 322 - N 07 - US 605



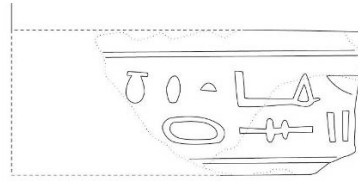
Sélection de céramiques ptolémaïques de l'US 179-605 © Cnrs-Cfeetk/R. David.

Epigraphic survey (Chr. Thiers)⁴

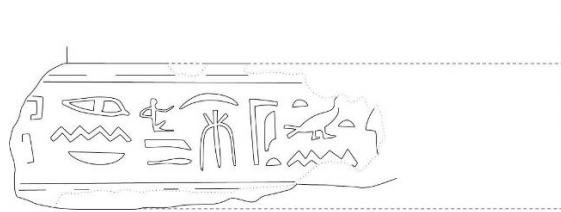
The epigraphic survey of the hieroglyphic inscriptions of the Ptah temple is now finished. The manuscript of *Le temple de Ptah à Karnak 1. Relevés épigraphiques et photographiques* has been submitted to the IFAO for publication at the beginning of 2014. During 2013-2014 season, very few checkings were realized to improve the manuscript, after the final cleanings realized by the conservators.

Some artefacts uncovered during excavations were also integrated into the epigraphic survey (abacus in the name of Shabako reused in the flooring of Gate D, blocks reused in the Roman-Byzantine structure and Late Period flooring, fragments of statues).

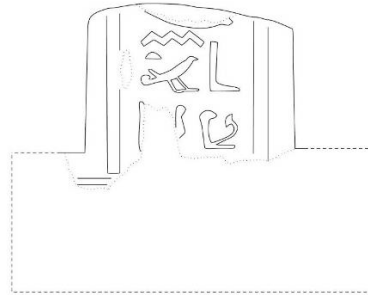
⁴ With Mamdouh Abd el-Ghassul (MSA-Cfeetk) and Pauline Calassou (USR 3172, LabEx Archimede, programme « Investissement d'avenir », ANR-11-LABX-0032-01).



côté droit



côté gauche



pilier dorsal



Ptah, bloc n° 179-411-01

Inscription on the base of the statue of a “daughter of Ahmes, divine father” © Cnrs-Cfeetk/Chr. Thiers.

Hieroglyphic and hieratic graffiti (E. Froid)⁵

A season was held from April 4–17 2013, focusing on epigraphic recording of the graffiti on the gates of the temple of Ptah, continuing the work of the September 2012 season. Almost all the graffiti on the gates were copied. This material is predominantly figural, ranging from unidentified but deliberate geometric shapes and possible ‘team-marks’ to images of gods and related symbols (e.g. crowns). Each gate offers a *terminus post quem*, and parallels for some of the forms are known from other temple contexts. A few examples, as in figure below, are integrated with the primary decoration, and were recorded during the epigraphic work in the temple. These drawings were checked as far as possible.

⁵ I would like to thank Ibrahim Soliman, Director of the Temples of Karnak, for his generous support of this project. My thanks also to Mohamed Bedaoui, Christophe Thiers, Sébastien Biston-Moulin, Pierre Zignani, and Raïs Awad Abdel Radi Mohamed for all their help in facilitating the work this season.



A cluster of graffiti integrated into scenes on the north jamb of the first gate of Shabako, showing an ibis within the throne of a seated figure of Min; two hieroglyphic captions are visible behind the chair (*Hnsw* and *Mntw*) and a small unidentified sign is visible in the *pt*-sign of the scene below (© Cnrs-Cfeetk/P. Batard).

A smaller proportion of the time was spent checking, drawing, and re-drawing some of the more challenging blocks on the south wall. Sections of some of these blocks were photographed using the Reflectance Transformation Imaging (RTI) technique which we tested last season, and these images have proved vital for the production of accurate drawings and for checking readings.

The Ptah temple graffiti project was presented in the latest number of *Egyptian Archaeology* (no. 42, 2013, co-authored with Chloé Ragazzoli) and a discussion of the application of the RTI technique to temple graffiti has been submitted to the proceedings of the conference held in Luxor in September 2012.

Conservation-restoration programme (L. Pieri)⁶

The conservation of the main building and gates of the temple of Ptah, located north of the enclosure of Karnak, was completed this season. Conservation of the building as well as the painted and sculpted surfaces was carried on alongside necessary repairs of the roof and enhancement works. The public opening took place in front of the members of the Commission on 9th June 2013.

Sandstone consolidation treatments focused on Gate B and Gate E. Disaggregated parts were treated with ethyl silicate; losses were filled with sandstone and lime mortar masonry, followed by a colored

⁶ Till September 15th 2013. With Abdou Mahmoud Qoraiem, Mohammed Zaki Masoud, Adel Mohamad Radouan, Ghaad Nubi Hussein, Ahmed Hassan Fuli, Waffaa Abo El Hamed, Nagwa Abd El-Ghafour, Yasser Farraj, Abdel Nasser Mahmoud, Mahmoud Said Ahmed (MSA-Cfeetk), Anaïs Aubry (Cnrs trainee), under the supervision of Lucie Pieri (VI MAEE) and Abdel Nasser Ahmed (MSA).

plaster. The outer walls and two rooms located in the courtyard (hallway and store) also received new fillings, plasters and repointing. Antoine Garric's team came at the end of the season to complete the project: replacement of two hazardous blocks of Gate E, installation of a new pavement in the access lane and refitting of 4 carved blocks in the courtyard.

Alongside these heavy structural operations, conservation and restoration of carved and painted surfaces was completed in the chapels (north and south chapel), the courtyard (lintels, west wall) and Gate F, whose ceiling has revealed two different decors. All painting layers were fixed and consolidated, the thick black layer cleaned. Powdering original plasters were also treated with a mineral consolidator, ammonium oxalate.

Structural treatments

Consolidation of sandstone, fragments gluing and securing, hazardous blocks replacing

Previous works on the Gates date back to 1933-1936 under the direction of Henri Chevrier. It consisted of brick fillings with black cement mortar, and occasionally cement grouting in the joints. Whereas it certainly helped preserve the Gates from collapsing, cement now blocks the salts inside and damages the stone.

A few dm² of plasters and fillings were first removed to investigate the alteration of the sandstone underneath. It presents different stages of granular disintegration (sanding): from a few slightly disintegrated centimeters under brick and cement fillings, to actual "sandpits" around cement grouting. Alteration is concentrated in the areas that were subject to groundwater rising and/or concentrated soluble salts: foundations, former landfill level, areas located under cement fillings.

Since 2006, the groundwater level is controlled and maintained at 2m below by a network of deep wells connected to a pump that reverse the overflow into the Nile. Capillary rise, the main source of external damage, is stopped, thus the symptoms can be treated.

All of the consolidation treatments were performed with ethyl silicate between November and late January, because the treatment requires a minimum of 30 to 40% humidity, the reaction being catalyzed by atmospheric water. They focused on the north jamb of Gate B in November and 4 zones of Gate E between mid-December 2012 and mid- January 2013: base of the southeast column (1), capital and shaft of the south-east column (2 interventions in 3 weeks apart for reasons of stability – 2a&b) shaft of the northwest column (3), shaft of the southeast column (4).

Wherever possible, cement joint and fillings were removed mechanically. The structures were carefully supported, especially the columns of Gate E. Gate B, north jamb: four stainless steel pins were placed to maintain the upper fractured blocks. Similarly Gate E, northwest column: two pins secure a block of the shaft. Disaggregated areas were purged. Occasional pre-consolidations of the surface were made using acrylic resin (Paraloid B72, 5%). In order for the stone to be deeply consolidated, ethyl silicate is diluted to 50% in White Spirit, a solvent with low toxicity, good penetration and slow evaporation. The product is then applied continuously for several hours: drip by drip with perfusions, and by spraying wet-on-wet. We observed a penetration of about 20 cm. After treatment, the areas are sheeted with plastic film and canvas or carton board to limit evaporation during the two to three weeks required for the initial polymerization of ethyl silicate.

All loose fragments were reassembled with dots of epoxy resin (Araldite 2015 or 2011), after consolidation of the contact surfaces with acrylic resin.⁷ Detachments were stabilized by injections of liquid epoxy resin⁸ at intervals of 5 to 10 cm to form bridges, then filling with lime mortar in the largest gaps. Fragments of significant weight were furthermore secured with stainless steel pins injected with liquid epoxy resin (for example the fragment of lintel above the door to the central chapel).

The base of the northwest column of Gate E appeared to be completely fractured and sanding under the filling. The whole structure was endangered, as could be observed by the 2 cm wide open joint behind the column. Given the important structural role of this architectural element, it was decided to replace it with a new block of sandstone carved by Antoine Garric. After building a supporting structure, the damaged block was removed, then the new block was slipped and sealed with lime. On the same doorjamb, the block forming the angle of the ledge, dating back to Chevrier's intervention, was also replaced for security reasons (fractured edge). The sandstone comes from modern quarries at Gebel Silsila; it has a slightly different color, so it received a patina of lime and pigments



Gates B and E: Removal of plaster and brick/cement fillings, supporting and consolidation with ethyl silicate © Cnrs-Cfeetk/L. Pieri.

⁷ Paraloid B44 5% in acetone/ethanol (1:1).

⁸ Araldite® AY103 with hardener HY 956 (5:1) or Kemapox RL214 with hardener RM 022 (10:1).



Gate B and E: After consolidation treatment, new fillings and plasters made of sandstone and lime mortar © Cnrs-Cfeetk/L. Pieri.

Formulation of lime mortar

Masonry fillings, plasters, repointing

Once the old cement fillings removed and the stone consolidated or purged, it remained to fill anew the gaps with breathable materials, in order to let water and salts go out.

Our aim since two seasons was to gradually reduce and if possible put an end to the use of cement mortar in the conservation works at the temple of Ptah. This goal was achieved after 2 years, starting from mortars prepared with 2 parts white cement to 1 part lime at first, to half and half in 2011, and finally completely free of cement from 2012.⁹

Although the restorations made at the beginning of the century certainly prevented a large part of the temple from collapsing, the dangers of cement are now well known: impermeability, rigidity, superior resistance to the original stone, source of soluble salts. It was important to remove the cement repairs to stop the deterioration of the stone nearby, but also to develop new lime-based mortars. Last season (2011-2012), we worked with imported French lime. It was nonetheless not sustainable, either financially or ethically. The local lime is, however, of a very poor quality, which requires to improve it or to make it yourself out of quick lime.

At the end of the first season, it was possible to launch the production of quality lime putty manufactured on site, partnering with the protocol established by ARCE (American Research Center in Egypt). Quicklime is laboratory tested to ensure its purity before buying, then it's slaked and left to soak 3 to 6 months minimum underwater. It is mixed regularly, then sieved 2 times to get a fine paste. This high quality lime is very suitable for finishing plasters (1 part lime to 3 parts sand). The surface is already

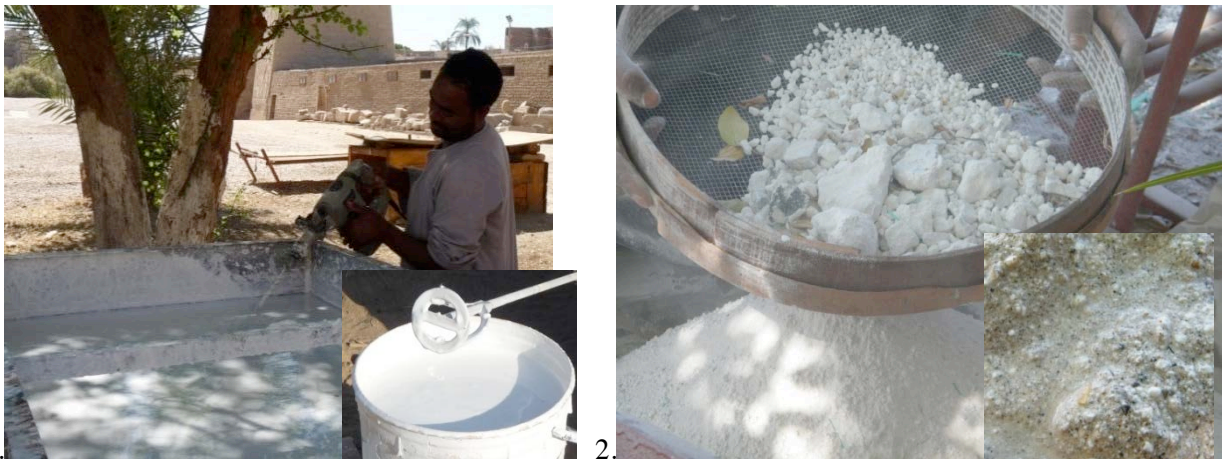
⁹ Composition of mortars in volumes [white-cement/lime/sand]: 2009-2010: 2/1/9; winter 2011: 1/1/6; from 2012: coating plaster 0/1/3, filling mortar 0/1/2 (except for south and east outer walls: 1/1/6, because of unavailability of good lime at fall 2012).

strong a few days after application, and as resistant to scratching and rubbing as cement mortars after a few months.¹⁰

In parallel, we were able to greatly improve the readily available local lime, by submitting it to the same treatment more quickly. It is a non hydraulic lime powder, coarsely crushed, which contains many impurities: unburnt limestone blocks, residues of quicklime, etc. Nonetheless after two to three weeks of soaking to complete slaking, and sieving to 2 mm, its properties are improved, although it still contains a great deal of impurities. Used slightly in excess (1 part lime to 2 part sand) in order to compensate its poor binding properties, it is ideal for coarser operations (masonry and fillings). Impurities act as a charge and strengthen the sand skeleton of the mortar.

The fillings have been made with a masonry of sandstone blocks with improved local lime mortar, prepared with 1 part lime to 2 parts sand. The same mortar is used for the under layer of plaster. The upper layer of plaster was then made with fine self-produced lime putty, prepared 1 part lime to 3 parts sand. Pigments are added to the lime putty and mixed before adding the sand. It is necessary to provide sufficient colored lime for a given surface in order to get a uniform color.

The finish itself is important: common practice was a finish with the edge of the trowel that leaved a powdery surface, due to poorly linked sand grains and lime milt oozing. By rubbing with dry foam after partial drying of the plaster, lime milt and poorly bound grains are removed, which gives a smooth and closed surface, much more resistant.



1. Manufacturing of lime putty: slaking of quicklime, mixing and soaking for 3 to 6 months, fine sieving.
2. Improving of local lime: sieving to remove unburnt limestones, soaking 2 to 3 weeks to complete slaking, sieving 2mm.

¹⁰ Simple scratching tests made with a wood stick and a ball pen point to simulate graffiti, on plasters containing from 0 to 100% cement and different types of lime.



Colored finish plaster: Left powdery finish with trowel; Right, close finish with dry sponge.

Cleaning and consolidation of murals

Work was completed this season in the north and south chapels, and the remaining surfaces of the courtyard: lintels, Gate F, west wall.

Chapels were widely covered with dust, with local mud-covering under the roof openings, as well as projections of cement due to old plaster campaigns. The paint layer is partly preserved in the upper parts, and covered with an embedded black soot layer due to use of the place as dwelling. When preserved, the paint layer seems quite strong, not much sensitive to water. Locally, some areas showed detachments.

Detached paint scales were glued back using 3% skin glue. Use of an aqueous adhesive helped soften the scales before reapplying them. Concerned areas were few: Gate B, north jamb; Gate F, ceiling; lintel of the door to the central chapel, north lintel of the courtyard.

Powdery paint layers were consolidated parallel to the cleaning in order not to fix residues. In the chapels consolidation was carried out as in previous seasons with acrylic resin (Paraloid B72 2.5% in acetone/ethanol 1:1). We observed slight color saturation, especially on yellows and reds. On the outer walls exposed to strong UV radiation, we did not want to use acrylic resin which may turn yellow and become insoluble. In search of an alternative, we turned to Arabic gum, 2 % in water. The consolidation is effective and causes no saturation of color. The question remains open on its use. Pros are its local availability, ease of use and presumed stability - being one of the most used ancient binders, and often well-preserved. On the other side using a product possibly similar to the original binder is an ethical problem.

Areas presenting no black layer were dusted and mechanically cleaned using different brushes and occasionally scalpel/chisel to remove projections of cement. Then a slight aqueous cleaning with brushes, immediately followed by rinsing with micro porous sponges, and finally absorption of the residual dust embedded in the pores by applying moistened absorbent paper.

North chapel and Gate F had significant remains of painting layers in the upper parts, barely visible under the black crust. Tests were made based on former treatments in the courtyard and in the temple of Opet. We chose a compress of ammonium bicarbonate 3% as an active ingredient in a base of 6% carboxymethylcellulose (CMC) and paper pulp. Absorbent paper or Japanese paper applied with 3% CMC was used as an interface, in order to avoid residues. The black layer was dissolved after a 2 hours application, covered with plastic film to reduce evaporation. The surface could then be cleaned using

brushes and sponges, and then rinsed with water. Finally, a layer of moistened absorbent paper was applied to pump the residual salts. Occasionally, some sensible painted areas were also cleaned mechanically with a scalpel.



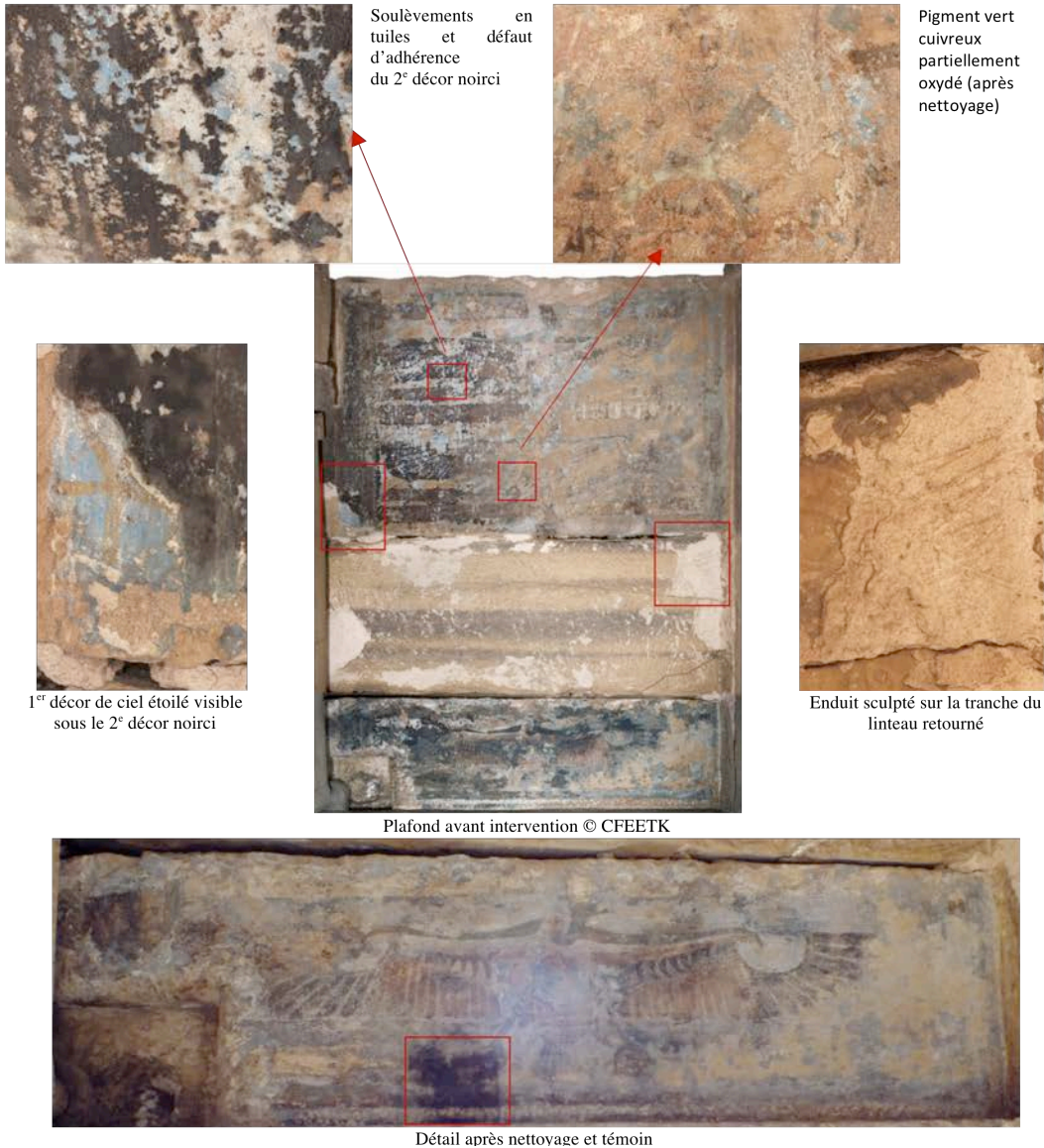
North chapel, north wall: during mechanical cleaning with scalpel © Cnrs-Cfeetk/L. Pieri



Gate F: Applying a compress of ammonium bicarbonate on Japanese paper interface © Cnrs-Cfeetk/L. Pieri

The ceiling of Gate F (entrance gate to the courtyard) revealed a very interesting discovery. The architectural study shows that this part of the temple has undergone major revisions. The door itself was raised by a row of blocks during the Basse-Epoque. As the jamb presents a fruit, the new ceiling is less wide, so one of the covering blocks was turned on the edge. The stratigraphy of the paint layers confirms it: we observe indeed two overlapping decors. A first decor of starry blue sky - included on the turned block where it is visible in the vertical joint; and a second decor of vultures with outstretched wings. The turned block was plastered with a thick mortar to level it, most of which has fallen, but the remaining fragments show a wingtip carved in the mortar. This later layer is covered with a black soot layer and is detaching itself in tile-shaped scales, revealing the blue sky of the first layer in the gaps. The green pigment used is sensitive to bases, which probably indicates a copper carbonate.

PORTE F - PLAFOND



Consolidation of limestone blocks and lime plaster

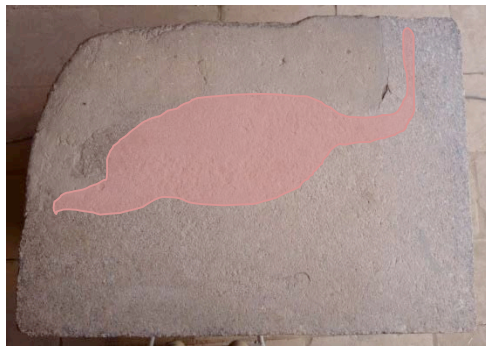
The ceiling of Gate F (entrance gate to the courtyard) revealed a very interesting discovery. The architectural study shows that this part of the temple has undergone major revisions. The door itself was raised by a row of blocks during the Basse-Epoque. As the jamb presents a fruit, the new ceiling is less wide, so one of the covering blocks was turned on the edge. The stratigraphy of the paint layers confirms it: we observe indeed two overlapping decors. A first decor of starry blue sky - included on the turned block where it is visible in the vertical joint; and a second decor of vultures with outstretched wings. The turned block was plastered with a thick mortar to level it, most of which has fallen, but the remaining fragments show a wingtip carved in the mortar. This later layer is covered with a black soot layer and is detaching itself in tile-shaped scales, revealing the blue sky of the first layer in the gaps. The green pigment used is sensitive to bases, which probably indicates a copper carbonate.

Consolidation and filling of two pink granite altars

Altar of Tuthmosis III

This pink granite monolith altar is located under the portico before the access door to the sanctuary. It is therefore subject to the use and frequent rubbing of visitors. The plateau and the southern and eastern sides showed significant alterations typical of granite: granular disintegration and extensive detachments. Two large plates of about 40 cm² on the plateau and the south side were detached and might eventually come off.

Pink:
detached
plate
consolidated
with epoxy
injection



During
cleaning



After consolidation and cleaning © Cnrs-Cfeetk/L. Pieri.

After mechanical removal of the old gray mortar, acrylic resin (Paraloid B72, 20% in acetone/ethanol 1:1) was infiltrated under small detached scales. The two large plates were infiltrated with low viscosity epoxy resin (Kemapox RL214/RM22, 10:1). It has been necessary to drill three additional accesses. The edges of the plates were then filled under level with a colored plaster. In agreement with Christophe Thiers, we have not remodeled the incomplete portion. As an archaeological object, this operation would have been invasive, especially since it would need to anchor several pins to support the filling. Mortar residues were removed, followed by a soft cleaning with compresses of triammonium citrate 1.5% (TAC). It revealed again the color of the granite, especially at the edges of the plateau, particularly subject to rubbing hands

Naos base of Amenemhat I

This naos base, one of the oldest in the temple, was restored in 2010. The operation followed the return of a fragment by the Metropolitan Museum, and had to be completed within tight deadlines. The plaster quickly started to powder, so it was necessary to redo it. This was an opportunity to test different formulations of mortar for small fillings on a very low porosity material: hydraulic lime and lime putty, cement, with or without addition of acrylic emulsion (Primal E330S) at different concentrations. This protocol was conducted by Anaïs Aubry, intern from the Avignon School of Art.

New filling was finally done with a simple mortar of lime putty and sand sieved to different sizes, 1 part lime to 2 parts sand in order to ensure better grip and durability. For the sake of visibility on an archaeological object and consistency with plain plasters nearby in the temple, we opted for a neutral grayish pink color, avoiding the illusionist retouching who had previously been chosen. A part still detached at the rear was also reconsolidated as before with injection of fluid epoxy resin (Kemapox RL214/RM22) through two new accesses.



Powdery filling



After treatment.

Archeological artefacts

The archaeological objects of the nearby excavation were treated progressively. Mostly it was fragments of limestone or ceramic statuettes. They were released from their matrix of earth with wooden tools; remains of painting layers were consolidated using acrylic resin. The layer of brown concretion on a statuette of glazed ceramic (see above) was removed mechanically to reveal the remains of green enamel.

Various objects and metal coins were treated by a team of Egyptian conservators.¹¹ Oxidation layers were removed with EDTA baths and mechanically using micro-motor and scalpel.

Reconstruction programme (Antoine Garric)

Removal and refitting of two blocks on one of the courtyard walls: a lintel and a corner stone. This operation allowed to observe the epigraphic remains against which the lintel was placed (courtyard south wall, Thutmose III) and properly adjust these blocks before performing the installation of upper blocks. These were found during the excavations and have been replaced in their original location. We also had to built (with masonry) part of two missing layers to achieve the required installation height.

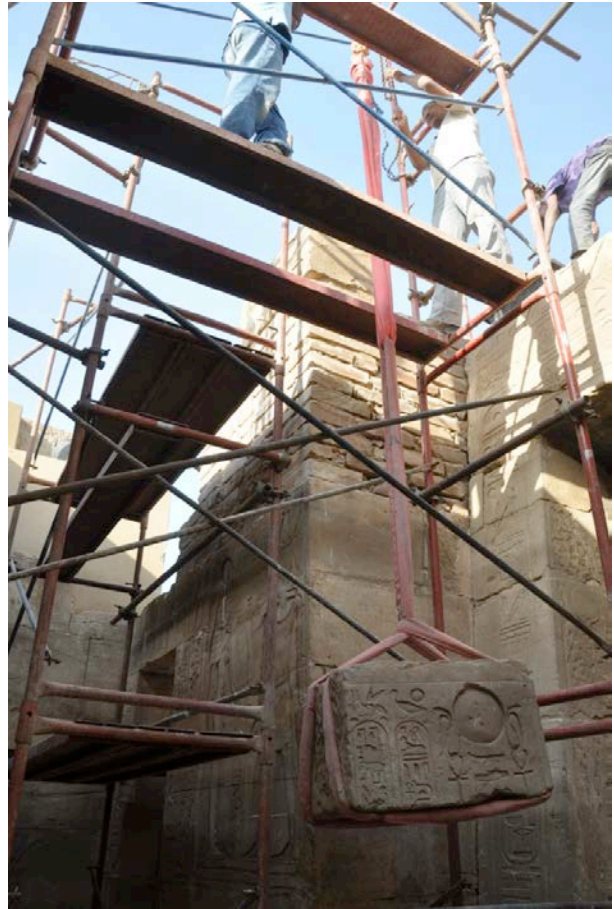
New stone elements were also cut and placed on the north jamb of Gate E: a column base and a corniche corner.

A new sandstone paving was laid in the courtyard and all along the central axis of the temple (about 250 m²). This highlights the restoration work done on elevations. It also allows easy and secure circulation of visitors in the temple and completes the work.

¹¹ Mahmoud Samir Hussein, Mohamed Abdel Hakiem et Fatma Mohamed Ahmed, formed by Thomas Faucher (numismatist, IFAO).



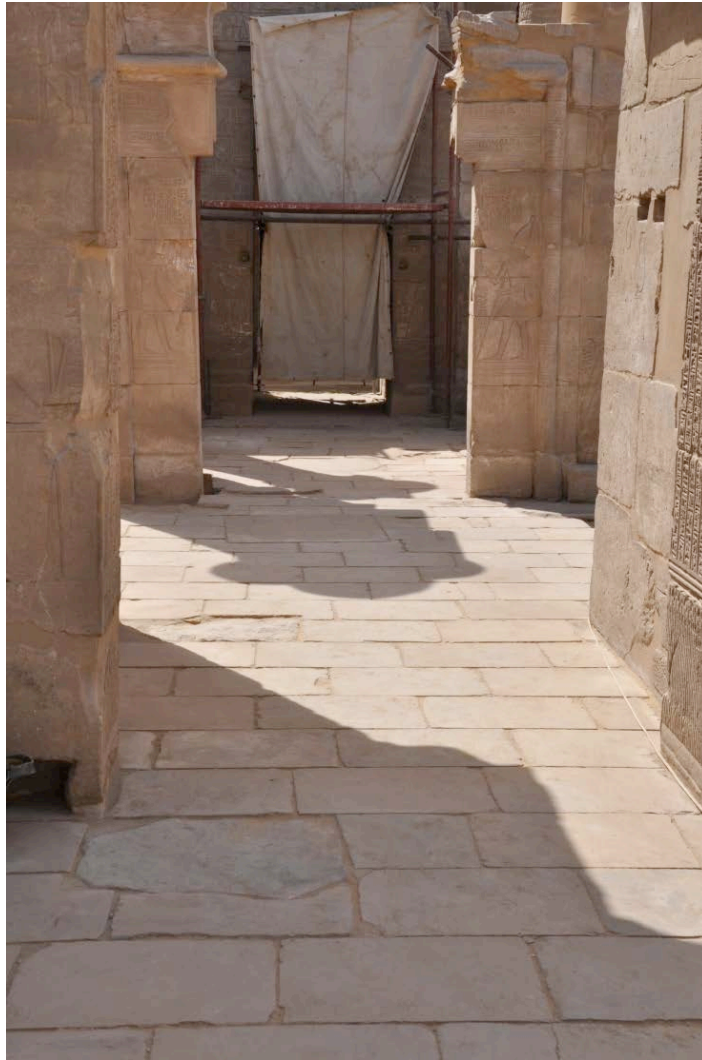
New cornice block at the top of the Gate E.
© Cnrs-Cfeetk/A. Garric.



A loose block returns to its original location.



New column base on Gate E © Cnrs-Cfeetk/A. Garric.



New pavement on temple central axis and new cornice on Door E © Cnrs-Cfeetk/A. Garric.

1.2.2. The Treasury of Shabako (N. Licitra)

The tenth season of fieldwork on the site of the Treasury of Shabako has been a study mission which took place from April 1st until June 13th 2013. The campaign has been directed by N. Licitra PhD student at Paris- IV-Sorbonne University (UMR 8167) and supervised by D. Valbelle et Ch. Bonnet.

The study season has been carried out with the participation of S. Marchi, N. Favry and J. Laroye (drawings of plans and sections, finds and pottery), Hassan Mohammed Ahmed (conservator, Ifao) and Mahmud Mustafa Abd el-Hafez (restoration of pottery).

The main campaign aims were:

1. Ending the sections drawings.
2. Drawing some finds discovered during the previous campaigns.
3. Carrying on with the study of a ceramic closed context uncovered in April 2012 in the peripheral courtyard of the Treasury.

4. Restoring a bronze plaque discovered in the same courtyard of the closed context in April 2012.

In April, the drawings of some sections have been achieved as well as several verifications on-site. A north-south transversal section through the room of the niche and of the room of the benches has also been drawn.

In May, the work focused on the study of the pottery. The restoration of broken vessels started during last season has been kept on by Mahmud Mustafa Abd el-Hafez. Several torpedo amphorae as well as Egyptian jars and kegs have been reassembled and drawn. All the fabrics have been described and a macroscopic picture of each has been taken.

At the same time, Hassan Mohamed Ahmed, conservator of Ifao, focused his work on a bronze plaque discovered last year on the floor of the peripheral courtyard of the Treasury (southern area of excavation). Before the restoration, the plaque was completely covered by a thick layer of oxidation.

After a long and careful cleaning by scalpel and Dremel, it was possible to discover the original decoration and inscriptions.

One side shows the sacred staff of Amun: a ram head with sun disk and uraeus set on a staff is placed on a socle. On the right, a short inscription gives the name of this sacred image: « Amon-Ra, the sacred staff ». On the other side of the plaque, on the top, there is a depiction of the sacred bark of Amun with a shrine in the middle. In front of the shrine, the goddesses Maat and Hathor and the sphinx with human head protect the travel of the bark.

Below the bark, a line of inscription mentions the High Priest of Amun Menkhepera (21st Dynasty). The text continues under the line in three columns giving the ancestry of the *uab*-priests Horkhebi. The publication of the plaque is in preparation.



The bronze plaque before the restoration © Cnrs-Cfeetk.



The bronze plaque after the restoration © Cnrs-Cfeetk.

During the campaign, about ten finds discovered during the previous campaigns have been drawn and studied. It was also possible to reassemble a green glazed composition depicting an *ankh*-sign and a *uas*-scepter found completely broken on the floor of the southern courtyard of the Treasury.

Some details have been painted with black ink on both sides of the sceptre: on one side, the staff of the *uas* is decorated with eight points and in the middle of the head the eye is portrayed. On the other side, a line is traced on the loop of the *ankh*-sign and on the *uas*-sceptre staff. On the bottom, the name of Shabako “beloved of Amun-Ra-Kamutef” is painted in black. These kinds of objects are a typical production of the 25th Dynasty; some similar objects have been discovered at Elkab by J. Capart.

During this study mission a great quantity of data collected during the digging has been handled. The study of the pottery as well as the finds allowed obtaining a better knowledge of the abandonment of the Treasury, dating to the first half of the 26th Dynasty. As the drawing of plans and sections has been completed, the publication of a preliminary report is in preparation. Research on-site could will be resumed in 2014.



The glazed composition bearing king Shabako's name © Cnrs-Cfeetk.

1.3. CULTS AND PLACES OF WORSHIP

As the largest place of worship during antiquity, the precinct of Amun-Re at Karnak preserves a huge amount of data related to monuments and cult tradition during a long time span. Four programmes will address this topic, devoted to different kinds of monuments dating to different periods, mostly based on epigraphic survey. The study of the monuments of Amenhotep I, Philipp Arrhidaeus' bark-shrine and of Osiris sanctuaries will allow to result in final publications treating these different places of worship at Karnak. The epigraphic survey of the northern part of the *Akh-menu* will allow this part of the Karnak temple, which was very important during the New Kingdom, to be recorded.

1.3.1. The monuments of Amenhotep I (J.-Fr. Carlotti, L. Gabolde)

The mission which took place from from February 2 to March 2 2013 focused on the monuments of Amenhotep I. It severely suffered from the absence of J.-Fr. Carlotti (UMR 8164, univ. Lille 3) who had to cancel his journey for health reasons. M. Gabolde (UMR 5140, univ. Montpellier 3) had to interrupt work between 20 to 24 February in order to take part in a symposium in Germany.

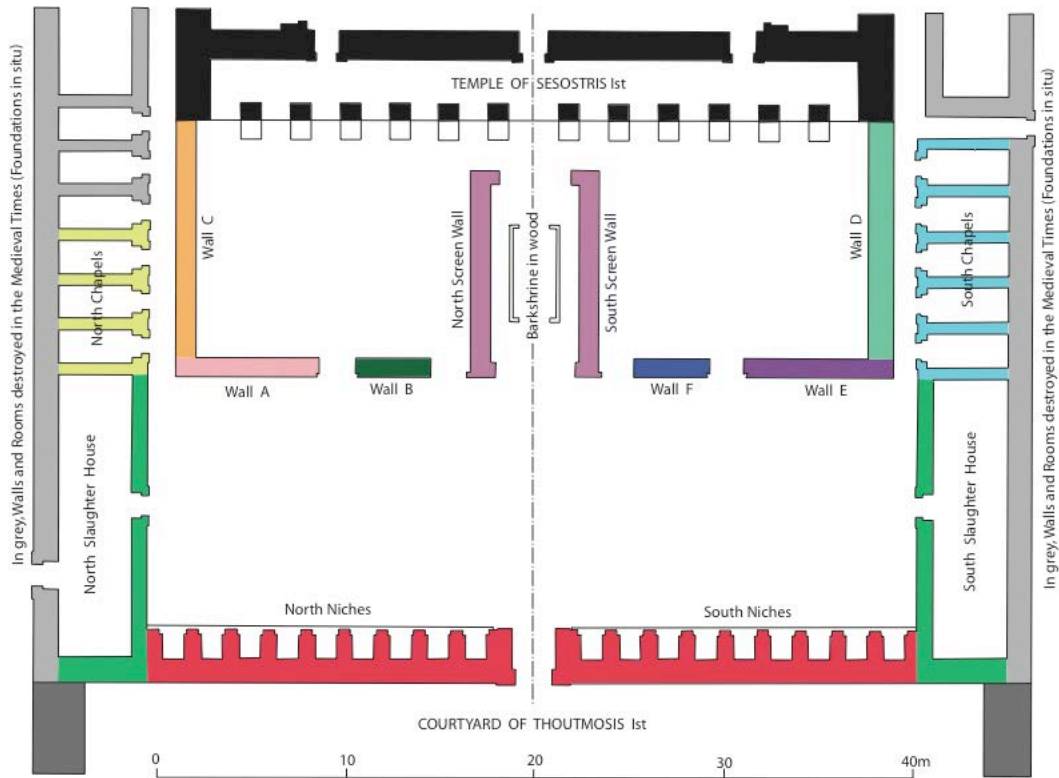
The work on the blocks was therefore necessarily much more limited than initially scheduled.

— The measurement and surveying of architectural elements which probably had belonged to enlargements of the buildings of Amenhotep I, as a gate of Thutmose II later reused at the entrance of the “couloir de la jeunesse” was accomplished.

— An important amount of work was devoted to the achievement of the publication of the first volume of the series *Les monuments d'Amenhotep I à Karnak*. The manuscript *La chapelle de calcite aux noms d'Amenhotep I^{er} et de Thoutmosis I^{er}* has been submitted for publication to the CFEETK: texts, plates, photos, hieroglyphs, lexical index. This first volume is divided into two parts: one for the text (135 p.) and one for the plates (81 plates). A publication in 2013 is planned.

— The work on the database continued. The database of the blocks (Filemaker) comprises now all the great walls of the monuments (A,B,C,D,E,F and the two screenwalls). The rest of the blocks shall be inserted step by step in the database. A version of this database in its present state has been given to the MSA and another exemplar to the CFEETK. I will be updated regularly.

— Some blocks have been measured and checked for joints in assemblages.



Provisional plan of the monuments of Amenhotep I in the central part of Amun-Re's temple © J.-Fr. Carlotti, L. Gabolde.

Additional remarks for the projects of reconstruction

Presentation of the monuments of Amenhotep I at Karnak

The blocks

The monuments in limestone of Amenhotep I at Karnak, dismantled in antiquity and reused as filling material in the foundations of the IIIrd Pylon, in the soil of the “cour de la cachette” and in some substructure of the Montu temple (among others), totalize nowadays an amount of around 800 blocks and 770 extra fragments (the exact amount of blocks and fragments in the data bank is 1573 blocks not counting the 78 blocks of the great precinct gates. It should be noted that many fragments have been fixed to the blocks they belonged to in the process of restoration undertaken these past years).

A fragile limestone

The limestone used by the architects of Amenhotep I. is a local limestone of poor quality hewn out of the quarry at El-Dababeya. It was so fragile that it was never used for foundations, for lintels or for architraves.

Several monuments linked to each other

The blocks belonged to different architectural units, which, though separate, are not independent. These are linked to each other by common wall, featuring a double extension, to the west, of the temple of Sesostris I.

The place they occupied in antiquity extends from the present “Middle Kingdom court” up to the present VIth pylon and, after their dismantling, they have been replaced by monuments of Hatshepsut and Thutmosis III (see plan below).

Not one single chapel at all

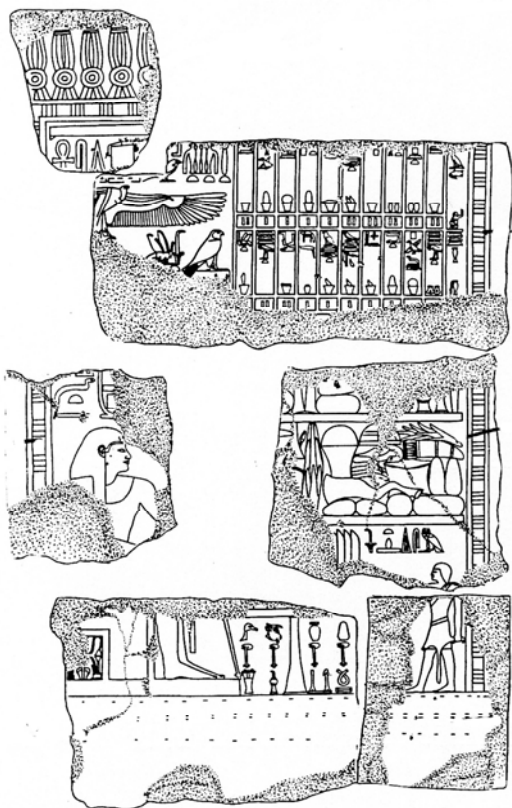
In that respect, the idea — heard here and there — that there exists at Karnak a “*Maqsurat Amenhotep el awel*” almost complete and ready to be rebuilt is totally disconnected from reality and has to be revised.

Description of the different units of the limestone structures of Amenhotep I

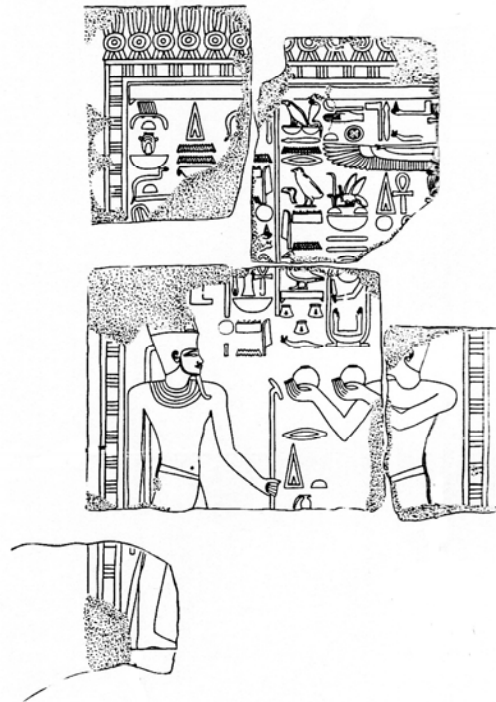
These units were spread around two courtyards and can be listed as follows (see the plan):

Surrounding a western courtyard

— To the west: a serie of 18 **niches for the cult of royal statues**, 9 to the north and 9 to the south of a central gate (of which fragments have also survived). (Preserved proportion: $\approx 50\%$). At their ends they were flanked by two slaughter-houses.



Side wall of one of the niches.

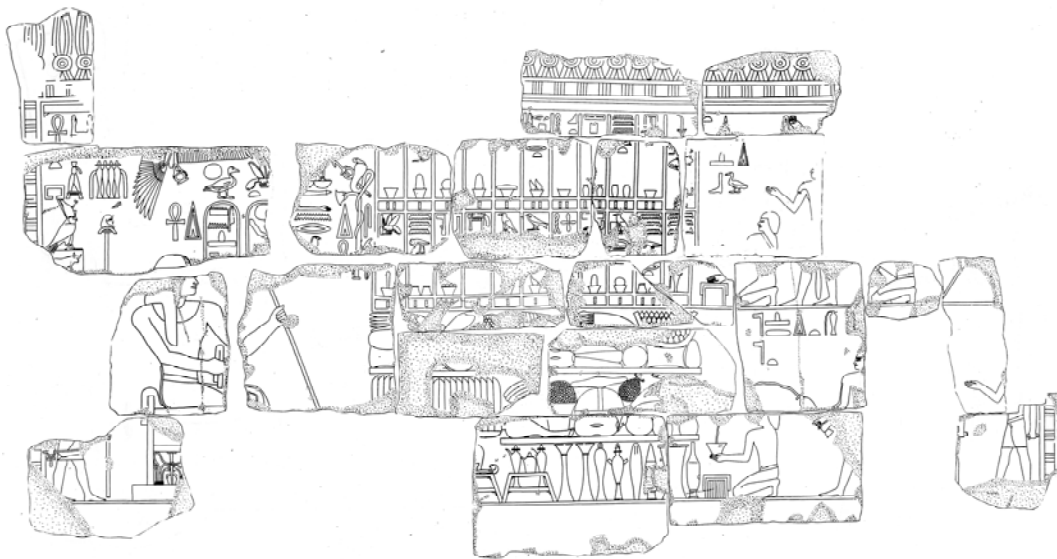


Rear wall of one of the niches © J.-Fr. Carlotti, L. Gabolde.

— Two **slaughter-houses** one to the north and one to the south of the western courtyard. Only few fragments of the façade and of the side-walls (common with the adjoining chapels) are preserved and

their outer walls, left *in situ* and destroyed in the medieval age, are missing. (Preserved proportion: \approx 5-10%)

- A **series of short chapels**, originally to the north of the first court of the temple in the continuation of the northern slaughter-house (and with a common wall). Portions of the façade and of the side walls are partly preserved whereas their complete rear (= northern) wall, left *in situ* and destroyed in the medieval age, is missing. (Preserved proportion: \approx 35 - 40%)
- A **series of long chapels**, originally to the south of the first court of the temple in the continuation of the southern slaughter-house (and with a common wall). Portions of the façade and of the side walls are partly preserved whereas their complete rear (= southern) wall, left *in situ* and destroyed in the medieval age, is missing. (Preserved proportion: \approx 30 - 35%)



One of the walls of one of the long chapels. Provisional assemblage © J.-Fr. Carlotti, L. Gabolde.

Surrounding the eastern courtyard and placed against the temple of Sesostris I

- A series of walls (A, B, C, D, E, F) decorated on both sides, and from place to place, interrupted by (wooden ?) gates:
 - **Wall A**, to the north of the western wall
 - *Outside*, the king smiting the enemies (Preserved proportion: \approx 30-35%)



Wall A outside (west): Amenhotep I smiting the enemies. Provisional assemblage © J.-Fr. Carlotti, L. Gabolde.

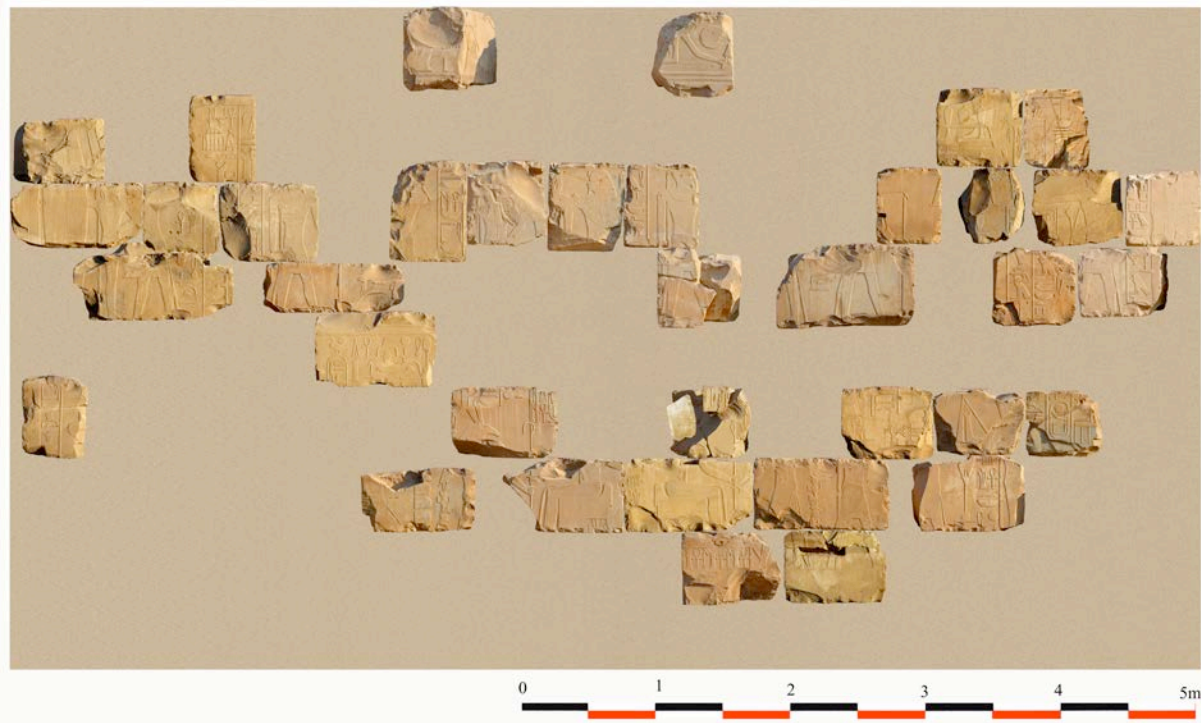
- *Inside*, proceeding into the temple, purification of the priests in the basin, ceremonial dressing of the statue of the god. (Preserved proportion: $\approx 35\%$)
- **Wall B**
 - *Outside*: coronation scenes and running with vases and flail. (Preserved proportion: $\approx 55\text{-}60\%$)
 - *Inside*: royal ascent (*bs-nswt*) to the temple and jubilee rituals. (Preserved proportion: $\approx 55\text{-}60\%$)
- **Wall C**
 - The *northern side (outside)* of wall C was only decorated with a long dedicatory inscription at the top and small scenes arranged vertically (copied from Sesostri I) at its vertical edges. Only a few elements have survived. (Preserved proportion: $\approx 3\text{-}5\%$)
 - The *inner side* showed the continuation of the ritual of the dressing of the statue of Amun continuing from the inner face of wall A. Only 22 blocks can be assigned to this wall, 8 of which cannot be precisely replaced. (Preserved proportion: $\approx 5\text{-}10\%$)
- **Wall D**
 - Like its northern mate, the *outer (south) side* of the south wall was only decorated with a long dedicatory inscription at the top and small scenes arranged vertically (copied from Sesostri I) at its vertical edges. Here too, very few elements have survived. (Preserved proportion: $\approx 7\%$)

- The *inner side* of wall D contains a version of an ancient ritual addressed to the gods and to the Ennead, mentioning the night offerings and specific use of cardinal altars. The wall is rather fragmentary and the exact placement of some of the scenes remains uncertain. (Preserved proportion: \approx 20-25%)
- **Wall E**
 - The *outer part* of wall E (which was originally opened by a door) is poorly preserved (4 blocks) (Preserved proportion: \approx 2-3%)
 - The *inner part* shows the king initiating the ritual of wall D ; two blocks belong for sure to this portion, and possibly three others. (Preserved proportion: \approx 2-3%)
- **Wall F:** only one block of the *outer side* has survived. (Preserved proportion: \approx 2-3%)

Screen walls

In the center of the eastern courtyard were standing “screen walls”, i.e. walls of a sort of a limestone chapel without door-leaf, sheltering a wooden shrine for the sacred bark of Amun. Most of these walls are rather well preserved.

- **Northern screen-wall, northern (outer) side.** Rather well preserved, it contains great offering scenes, attribution of *regalia*, legitimation by Amun and Geb, etc. (Preserved proportion: \approx 45%)



Preliminary assemblage of the blocks of the outer north screen-wall © J.-Fr. Carlotti, L. Gabolde.

- **Northern screen-wall, southern (inner) side.** This wall shows a great offering to the bark of Amun sheltered in a wooden shrine and scenes of driving the four calves, running with the oars, consecration of the offering tables. (Preserved proportion: \approx 45%)



Preliminary assemblage of the blocks of the inner north screen-wall © J.-Fr. Carlotti, L. Gabolde.

- **Southern screen-wall, southern (outer) side.** This wall bears, among others, scenes of purification of the king, foundation ceremony episodes, great offering and *zehenet*-mast raising feast. (Preserved proportion: $\approx 40\%$)



Preliminary assemblage of the blocks of the outer south screen-wall © J.-Fr. Carlotti, L. Gabolde.

- **Southern screen-wall, northern (inner) side.** The inner side of the south wall shows another representation of the wooden shrine housing the portable bark, as well as a scene of the guidance of the king by Amun to his sanctuary. (Preserved proportion: $\approx 40\%$)



Preliminary assemblage of the blocks of the inner south screen-wall © J.-Fr. Carlotti, L. Gabolde.

The total surface of the limestone structures added by Amenhotep I to the central part of Karnak occupy a rectangle of 31 m x 53 m.

The so-called “copy” by Amenhotep I of the “chapelle blanche”

The reconstitution of the so-called copy of the “chapelle blanche” (in fact a peripteral chapel with 6 pillars in façade and 7 in the length) can be considered as fixed: very few blocks are preserved and there is no possibility to reconstruct it. (Preserved proportion: less than 10%)

Other monuments of Amenhotep I at Karnak

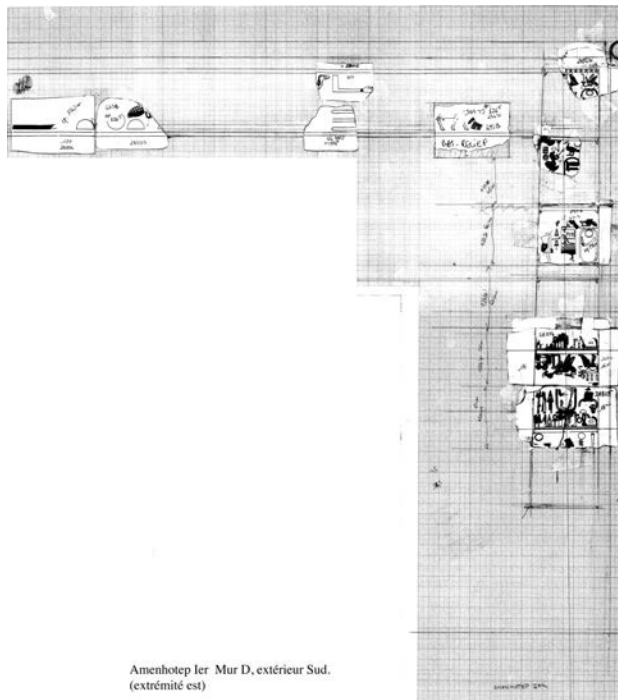
Four other monuments of Amenhotep I have not been taken into account in the series above mentioned but are, nevertheless, worth to be mentioned here (they are also included in the publication programme):

- A *calcite chapel* for the portable bark of Amun, achieved by Thutmose I, which, most probably, once stood in the south-west corner of the “festival court” of Thutmose II at Karnak. It has been already rebuilt in the Open Air Museum.
- *Two monumental gates*, 10,50 m high, which had marked the south and the west entrance in the mud-brick precinct wall of Karnak:
 - Of the western gate, only the outer lintel has survived (the 22 fragments have been assembled and rebuilt in the open air museum).

- Of the southern gate have survived the inner lintel and extensive portions of the inner door-jamb, as well as remains of the reliefs in the passage-way. The remaining lintel has been rebuilt in the Open Air Museum, except for the doorjamb and the passage-way of which the preserved proportion is $\approx 45\%$.

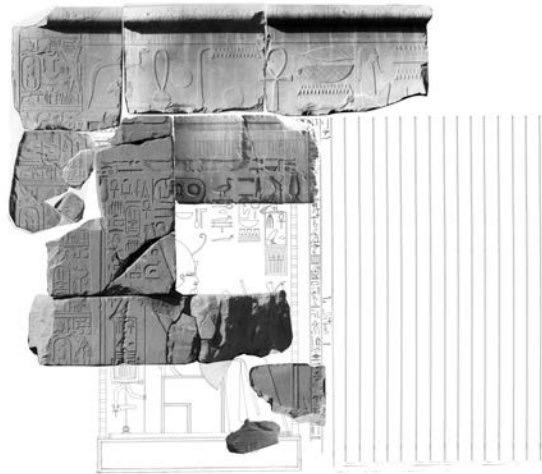
Remains of the façade portico of Sesostris I

The monuments of Amenhotep I were leaning, to the east, against a portico of Sesostris I of which several elements have survived. These surviving elements cannot be rebuilt on the site as other buildings of Hatchepsut nowadays occupy their original location. It would be, hence, quite appropriate to rebuilt the remains of the portico of Sesostris together with the monuments of Amenhotep at a close distance. This would require to leave 2 m between the two buildings and 4 m for the width of the portico.



Amenhotep Ier Mur D, extérieur Sud.
(extrémité est)

South face of wall D of Amenhotep I leaning against the portico of Sesotris I.



Sésotris Ier Portique de façade.
(mur d'ante sud, face sud)

South face of the portico of Sesostris I
(Preserved proportion: $\approx 40\%$).



Reconstituted façade of the temple of Sesostris I (from L. Gabolde, *Le « Grand château d'Amon » de Sésotris Ier à Karnak*).



Façade of the temple of Sesostris I, northern (to the left) and southern (to the right) Eeds (colossus Luxor, pilar Cairo JE 48851 and blocks from Karnak) (Preserved proportion: less than 15%).

1.3.2. Osirian sanctuaries (L. Coulon)¹²

The twelfth campaign of excavation and restoration of the chapels of Osiris to the north of the Great Hypostyle Hall was undertaken with the support of the French Institute in Cairo (IFAO), the CFEETK, HiSoMA (Maison de l'Orient et de la Méditerranée, Lyon), Orient & Méditerranée - Mondes pharaoniques (Paris-Sorbonne) and INRAP, between 28th January and 6th March 2013.

Excavations and epigraphic work at the chapel of Osiris Wennefer Neb Djefau

The foundations

The systematic study of the foundations of the building was continued this season in front of the first gate, in the hypostyle hall, in front of the naos and to the north of the precinct wall of the chapel, under the direction of Cyril Giorgi. These soundings have allowed a better understanding of the platforms supporting the chapel as well as the previous occupation phases in this sector.

¹² The members of the team were Laurent Coulon (egyptologist, University of Lyon 2- CNRS), Cyril Giorgi (archaeologist, INRAP), Catherine Defernez (ceramologist, University of Paris IV-CNRS), Hassan El-Amir (conservator, IFAO), Frédéric Payraudeau (egyptologist, University of Paris IV), Valérie Pichot (archaeologist, CEAlex), Gaël Pollin (photographer, IFAO), Laurent Vallières (topograph, INRAP), Alexandre Rabot (archaeologist, University of Lyon), Thomas Faucher (numismat and archaeologist, IFAO), Anna Guillou (archaeologist and egyptologist, Amiens), Khaled Zaza (artist, IFAO), Stéphanie Boulet (Assistant ceramologist, FRS-FNRS-ULB Bruxelles) and Sylvie Marchand (ceramologist, IFAO).

Antoine Garric (stonecutter, CFEETK) has participated to the restoration of the chapel of Osiris Wennefer Neb Djefau.

Mr. Nubi Mahmoud and Mrs. Ghada Ibrahim were representing the Supreme Council of Antiquities under the direction of Mr. Ibrahim Soliman.



The chapel of Osiris Wennefer Neb Djefau after restoration of the mudbrick walls, the pavement and the naos © L. Coulon.

The soundings undertaken during the previous seasons and this season have shown that the chapel was built on different mudbrick platforms, independent of each other. The sounding undertaken in 2012 at the foot of the first gate, in the ramp, was resumed this year. It allowed a more precise identification of the granite threshold on which the two doorjambs of the gate are built, and the foundations of the two sides of the mudbrick pylon, already observed in 2012. The gate and the pylon are settled on a large platform of four or five layers of mudbricks, reinforced with additional layers under the granite threshold and at the corner of the south pylon.

In the hypostyle hall, the columns are settled in pairs on two four-brick high platforms parallel to the chapel's axis. The soundings undertaken this season allowed to ascertain that their total surface comprised between the first and the second gate is 12 m².

The structure of the walls surrounding the second gate were determined through two additional soundings: their foundations are made of five layers of mudbrick, some of them in raking



The jar buried as a deposit at the north-eastern corner of the mudbrick platform of the naos © C. Giorgi.

bond, as in almost every wall of the chapel.

In addition, as made clear by four soundings undertaken at the south-eastern and north-eastern corners of the naos and along its northern wall, this naos is settled on a 25 m² platform as wide as the naos but longer than it on its eastern side. At the south-eastern corner of the platform, a large jar was discovered, associated with several bronze fragments which were probably part of Osiris statuettes.

A new chapel ?

At the north-western corner of the chapel, the enclosure wall is founded on a stone pavement which belongs to an older building. It is made of mixed sandstone and limestone paving stones. On the pavement, several objects were found, including an inlay cobra head (to be set in an architectural frieze of uraei), a finely incised pottery made of faience, a flint blade and fragments of gold leaves. A mudbrick wall was found on the eastern side of the area, but the other limits are still unknown. Those remains may be temptatively assigned to a previous Osirian sanctuary of the first half of the 26th Dynasty ; previous work has shown that several elements from an a chapel of Nekao II were reused in the area, which may belong to that building.



The north-western part of the chapel of Osiris Wennefer Neb Djefau. In the foreground, the pavement of a building anterior to the construction of the precinct wall
© C. Giorgi.

Cooking areas of the Third Intermediate Period

A sounding undertaken to the north of the naos during the previous seasons was reopened to pursue the excavation of a working area discovered previously, which is datable to the end of the Third Intermediate Period/beginning of the 25th Dynasty. Sealings and scarabs were found. This area looks very similar to the one excavated at the entrance of the hypostyle hall in 2009: the area contains a large oven and several pits built with low mudbrick walls and reused inscribed blocks.

The large amount of ceramic material found in this sounding, this year as during the previous seasons, is currently studied from a chrono-typological point of view by Catherine Defernez and Stephanie Boulet.

The precinct wall of the High Priest of Amun Menkheperre (21st Dynasty)

To the south of the naos, a wall made of stamped bricks had been uncovered in 2012, which could be interpreted as a part of the precinct wall of the High Priest of Amun Menkheperre (son of the Theban king Pinedjem Ist, High Priest at Thebes around 1039-990). This season, the wall has been more extensively cleaned in order to extract one of the brick, to study the wall more thoroughly and to establish a conservation protocol. During this cleaning, several other types of stamp were identified by Frédéric Payraudeau.

The entrance of the chapel

A sounding was undertaken between the lower levels (XXVth-XXVIth dynasties) of the berm located to the south of the square in front of the chapel and the alley leading to the temple of Ptah. The aim was to identify circulation levels and put them in relation with the ramp of the chapel. This operation offered also an opportunity to bring further information concerning the foundation levels of the Ptah alley, already identified during the 2007 and 2008 campaigns, through the completion of a longitudinal trench.

Although a large quantity of material was collected and an occupation level was determined, only limited part of the original circulation levels could be identified, as the area had been strongly disturbed at a later date. Nevertheless, remains of ovens and large pits containing sherds datable to the XXVth-XXVIth dynasties were recorded.

The Ptolemaic quarter

Outside the chapel, between the alley of Ptah and the south-eastern façade of the building, Ptolemaic structures, interpreted as the remains of a monetary workshop had been excavated in 2008. As a continuation of this work, excavations were carried out by Thomas Faucher in the southern part of the berm in an area of 20 m². A large complex of mudbrick constructions (walls and pavement) occupies the whole area between the alley and the temenos, with many different occupation levels, rich in ceramic material, metallic artefacts and scoria ; remains of furnaces were also identified. The excavation protocol (including silt sampling) has revealed, through careful sieving process and study in laboratory with microscope, the presence of copper particles which may be put in relation with the bronze craftsmen's working area. In addition, a metallographic study of the remains found in the monetary workshop has been undertaken by Valérie Pichot, who has carried out a preliminary analysis of the finds.

The ceramic material found in the area of the monetary workshop during the previous season has been studied by Sylvie Marchand. Most of the pieces belong to the Ptolemaic repertoire (IInd cent. B.C.), whereas some elements show a late hellenistic facies. The material is made of domestic vases produced locally or at least in Egypt. No imported pottery was identified. Most of the forms are to be ascribed to the "cooking/serving dishes" category, including bowls, plates, serving dish, krater and even a table amphora. In addition, several storage jars, some of them being painted, ointment flasks made of marl clay, and a small number of Egyptian amphoras were also recorded. Additional intrusive sherds of the Pharaonic

period, from Middle Kingdom to New Kingdom ones and from Third Intermediate Period to Late Period ones, were also found in the archaeological levels connected with the workshop. A preliminary chronotypologic catalogue of the Ptolemaic pottery from this area has been completed.

Epigraphic work

In order to prepare the full publication of the chapel of Osiris Wennefer Neb Djefau, the final corrections of the drawings have been made; the final plates are under completion.

Restoration

The restoration of the 26th Dynasty mudbrick enclosure wall of the chapel was continued. The south-west and north-west parts of the enclosure wall of the chapel have been rebuilt. In addition, the pavement have also been largely restored. Antoine Garric, stonecutter at the CFEETK, has restored the side cornice of the naos. New blocks have been added to complete the front part.

Epigraphic survey of the chapel of Osiris-Ptah Neb-ânk

The epigraphic recording of the chapel of Osiris-Ptah Neb-ankh, built by kings Taharqo and Tantamani (25th Dynasty) in the southern area of Karnak, has been completed this season. The drawings of the reliefs and inscriptions made last years have been checked twice after their inking by A. Guillou. The study of the twelve blocks of King Tantamani in the Cheikh Labib Magazine has also been completed by Fr. Payraudeau. These blocks, when sorted, allow to reconstruct at least two doorjambs and three lintels. They could have been part of a first door of the chapel, as they display the same style and architectural technics. Moreover, the content of the decoration may confirm this hypothesis, as one of the lintel seems to show the King offering incense to Isis and wine to Osiris.

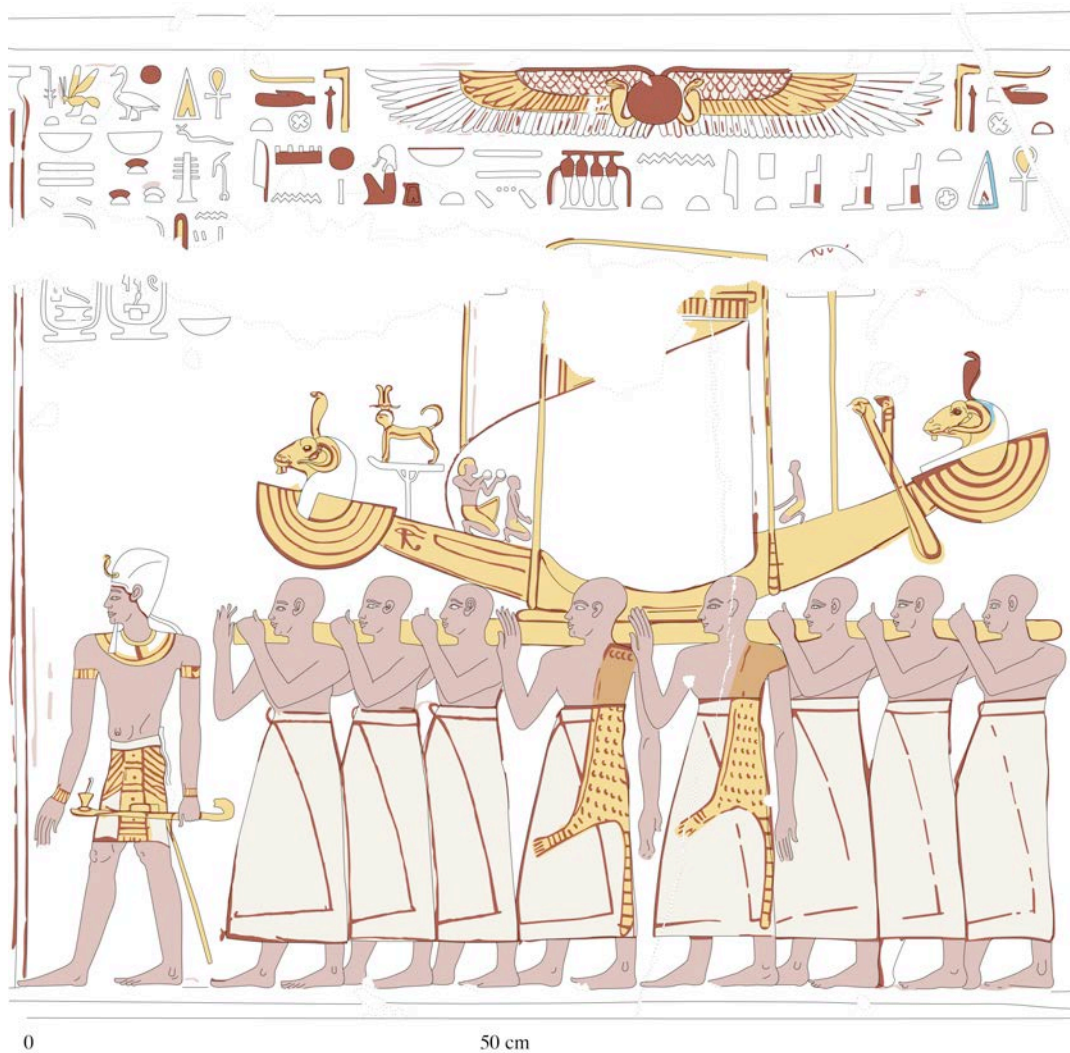


Lintel Karnak 93CL658 with King Tantamani in front of Isis and a momified god, perhaps Osiris © Ifao/G. Pollin.

1.3.3. The bark-shrine of Philipp Arrhidaeus (Chr. Thiers, A. Tillier)¹³

Initiated in Fall 2010, the epigraphic survey of the Philip Arrhidaeus' bark-shrine, located in the central area of the Amun-Re temple, has been completed during the 2013 season. The digitized drawings of the bark-shrine itself have been checked, especially to make visible the numerous remains of paint. The sandstone vestibule at the entrance of Min-Kamutef's chapel, located on the north side of the bark-shrine, has been completed. Some photographs were realized to complete the survey done in 2011-2012, especially for the western entrance and the Min-Kamutef's chapel.

Checkings will have now to focus on the inner walls. The publication of the monument will provide facsimiles, hieroglyphic texts along with a critical apparatus as well as key plans. All the hieroglyphic texts will be integrated into the *Karnak* documentation programme available on the CFEETK website.



Fac-simile of a scene of the outer southern wall of Philipp Arrhidaeus' bark-shrine © Cnrs-Cfeetk/S. Facon-P. Calassou.

¹³ With M. Abd el-Ghassul (MSA-Cfeetk), Biston-Moulin (USR 3172-Cfeetk), P. Calassou (LabEx Archimede, programme « Investissement d'avenir », ANR-11-LABX-0032-01).

1.3.4. The central sanctuaries of the *Akh-menu* and the “northern storerooms” (Chr. Thiers, Chr. Leitz, S. Biston-Moulin)¹⁴

Epigraphic survey

Submitted in April 2012 to the Scientific Committee, this programme started with the northern corridor, the solar room and the northern storerooms. Two methods were used. The first one uses traditional techniques commonly employed at Karnak, with facsimiles drawn on the walls by the French-Egyptian team later digitized on computer. The other method involves use of high-resolution orthophotographies to draw directly on computer. J. Maucor (photographer USR 3172) and A. Peyroux and K. Guadagnini (topographers VI MAEE) provided the orthophotographies to Chr. Leitz and his colleagues at Tübingen. A short mission in October 2013 allowed to check the first drawings.

During 2013-2014 season, the epigraphic recording of the still unpublished northern storerooms was completed, along with some rooms of the central sanctuaries.

Restoration and conservation programmes which are linked to this epigraphic survey are funded by a Brunner Foundation grant.



Scene from northern storeroom (MN 5) © Cnrs-Cfeetk/P. Calassou.

¹⁴ With Mamduh Abel Ghassul, Marie-Paule Jung, Jennifer Romion, Vessela Anatasova, Silke Cassor-Pfeiffer (Cnrs trainees), D. Mendel and P. Calassou (LabEx Archimede, programme « Investissement d’avenir », ANR-11-LABX-0032-01).

Restoration-conservation programme

The Alexander the Great's sanctuary (Agnès Asperti)¹⁵

At first, the cement coatings were removed with burin and hammer. The operation revealed that the sandstone support and the old coatings were powdery.



Removal of cement mortars, and consolidation of altered sandstone support © A. Asperti.

The sandstone support was, therefore, consolidated with injections of a 2.5% Paraloid B44 solution diluted in acetone and the ancient coating with a 5% ammonium oxalate (Amox) solution diluted in water.



Consolidation of original coatings, and bonding of a detached sandstone fragment © A. Asperti.

Some stone elements had to be replaced. We used a 2.5% Paraloid B 44 solution diluted in acetone then Araldite 2015 as a protection layer. The antic mortar was stuck with Primal.

Cleaning was made first mechanically with brush and scalpel then with a 5% ammonium bicarbonate solution diluted in water. Some areas required only a simple brush application, in other cases this solution was mixed with cellulose powder. After 5 or 10 minutes, the compress was removed and cleaned with water.

¹⁵ With Ashraf Mostafa Ali, Atef Hetlar Youssef, Mohammed Gamal Mourad, Somaya Zaky Ahmed Ali and Mahmud Samir Hussein.



Cellulose powder compress applied to treat a darkening of polychromy, and detail of the painted reliefs before cleaning
© A. Asperti.

The painting layer also needed consolidation; we used a 2.5% Paraloid B72 solution diluted in acetone. The new coatings were made with lime, sand (1.3) and mineral pigments.



The north wall after the complete restoration © Cnrs-Cfeetk/J. Maucor.

The northern storerooms (C. Bourse)¹⁶

During the epigraphic campaign, emergency interventions were needed. The stone pieces which had fallen down were replaced and fixed with Araldite 2015.



These pieces had to be fixed. To the left, we used Araldite 2015 because we could remove it. To the right, we made infiltrations © Cnrs-Cfeetk/C. Bourse.

We also made infiltrations with a 15% Paraloid B72 solution diluted in acetone-ethanol (1.1). To do so, we had to build a temporary flashing with PLM-M, which was removed at the end of these operations.

We started the conservation of the 7th storeroom. For the paintings, a pre-consolidation was made regarding 2 kinds of alterations: scales uplift and (powdery) dustiness. For the scales, we made injections with a 20% Paraloid B72 in acetone-ethanol (1.1) and for the powdery surfaces we used 10% Klucel solution diluted in ethanol.



A cleaning and a pre-consolidation of the painting were made in order to silicate the damaged stones © Cnrs-Cfeetk/C. Bourse.

¹⁶ With Mahmoud Said Ahmed, Adel Mohamad Radouan, Ghaad Nubi Hussein, Ahmed Hassan Fuli.

The sandstone of the foundation presented major alterations caused by salts which couldn't get out due to old cement masonry.



The old cement and brick masonry



The new lime and stone masonry © Cnrs-Cfeetk/C. Bourse.

For the high blocks covered with inscriptions and drawings, we used silicate in white spirit (50/50). We made some holes in order to inject the silicate. Then the blocks were covered for 3 weeks. As for the bottom part, we removed all the damaged stones and the old cement masonry and replaced it with a new one made of stone, lime and sand (1.3).



General view of the northern storeroom 7 during the work © Cnrs-Cfeetk/Chr. Thiers.

1.4. Ceramic studies

1.4.1. Late Egyptian ceramic studies programme (R. David)

In 2013, the CFEETK benefited from a grant for a postdoctoral position in the frame of the programme “Investissement d’Avenir” (ANR-11-LABX-0032-01 Labex ARCHIMEDE) to develop research projects connected to Late Egyptian Ceramics studies. The presence of a permanent staff member specialized in the analysis of such material has made possible the installation of structures for the study of the pottery from the Karnak temple excavations and for training programmes for both Egyptian inspectors and French speaking students.

In accordance with LabEx Archimede research topic “Identity”, in which this project fits, research will focus on the process of acculturation and phenomena of survival of the Egyptian culture while the country was under Greek and Roman dominations.

As part of a two years post-doctoral fellowship, ceramic studies from Ptolemaic contexts will be promoted. Recent excavations conducted at Karnak (Ptah temple, Treasury of Shabako, Ptolemaic and Roman baths and forecourt of the Amun-Re temple) and Armant have yielded exceptionally abundant material typical of these periods, which is currently under study. A first call for contribution has been launched in June 2013: it proposes to gather relevant bibliography related to the analysis of Ptolemaic ceramics found in the Theban region. It will also result in an international workshop at Karnak in 2014. This event, co-organized with Mohamed Naguib Reda (Ministry of State for Antiquities), aims to define a common system to sort out and classify different types of ceramic (fabrics).

This event will gather the scholars as well as post-doc and students from the institutions listed below:

Zulema BARAHONA (PhD candidate in Egyptology, University of Barcelona)

Anna CONSONNI (Graduate Student, University of Pisa)

Romain DAVID (Post-doc USR 3172 du CNRS, CFEETK - LabEx Archimede)

Catherine GRATALOUP (European Institute for Underwater Archaeology)

Guy LECUYOT (CNRS-UMR 8546/ENS)

Nadia LICITRA (PhD candidate in Egyptology, University of Paris IV-Sorbonne)

Antigone MARANGOU (Lecturer, Université of Rennes II)

Sylvie MARCHAND (IFAQ)

Mohamed NAGUIB REDA

Aurélia MASSON (Project Curator, British Museum)

Gábor SCHREIBER (University of Budapest 2)

Aude SIMONY (PhD candidate in Egyptology, University of Poitiers)

Development of ceramic studies

The development of ceramic studies within the CFEETK involves a close collaboration between the French and Egyptian staff members. A joint office dedicated to the study of ceramic artefact was assigned. In the field, an ancient fieldwork house was entirely devoted to them. It can accommodate several missions at the same time while ensuring sufficient working space. The CFEETK was also equipped with new equipment and around thirty books about ceramic study enriched the library this season.

Diffusion of knowledge and training

The realisation of a pottery sample box (“tessonier”) gathering samples of all types of ceramic observed in the temple of Karnak is underway. This will eventually be an important tool for the recognition of productions encountered at Karnak, and more broadly throughout the Theban region.

This year, an Egyptian inspector began training in the study of ceramic artefacts that will continue further by joining various missions. A training programme for computer software used in ceramic studies (Illustrator®) took place in January. Eight Egyptian inspectors have followed theoretical and practical courses during one week. On that occasion an English tutorial especially written for that occasion has been provided.

1.4.2. Excavations in the Court of the Ninth Pylon (Ch. Van Siclen)

Work in the court between the Eighth and Ninth Pylons began on 14 November and ended on 4 December 2013. This was a study season in preparation for the publication of the excavations in the court. The work consisted of examining and recording as necessary pottery stored on the concrete slab to the north of the west tower of the Ninth Pylon. As usual, the pottery examined at this time came from most periods present in the excavations: from the Second Intermediate Period and early Dynasty 18, from the Late Period and early Ptolemaic Period, and from the late Roman Period. The study season was resumed in January 2014.

1.5 *Karnak project* (S. Biston-Moulin, Chr. Thiers)¹⁷

Initiated in January 2013, the *Karnak project* (CNRS, USR 3172 - CFEETK / UMR 5140, Équipe ENiM - Programme « Investissement d’Avenir » ANR-11-LABX-0032-01 Labex ARCHIMEDE) aims to organize and make available online textual documentation from the temples of Karnak.

This work is based on a comprehensive inventory of documents and inscriptions from Karnak collated in the field. Each document is given a unique identifier number (KIU: Karnak Identifiant Unique) after its integration in the database. All related documentation within the CFEETK archives (photographs, facsimiles etc.) is directly connected to the *Karnak project* through the ArchéoGrid Karnak database and the online bibliography of the CFEETK.

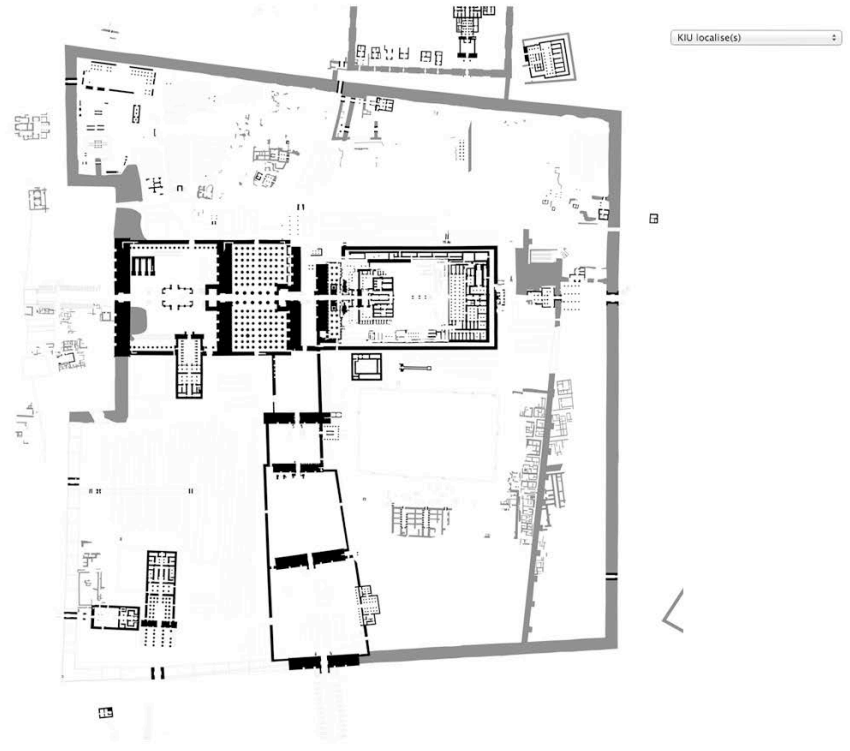
This online tool allows direct searches of the contents of the hieroglyphic inscriptions through their transliteration. It will also provide indexes and various multi-criteria searches (divinities, divine epithets, toponyms, places of worship, ethnicity, kings, anthroponyms, prosopographical elements and general vocabulary).

This project also facilitates the second phase of the reorganization of the CFEETK archives connecting the *Karnak project*’s scientific information directly with the photographic database “ArchéoGrid Karnak” – legacy of the documentary work done at CFEETK since its foundation. The inventory work of the Karnak Temple inscriptions also allows completing the archives by identifying objects and scenes of monuments for which the photographic documentation kept in the archives of the CFEETK is insufficient. A programme of photographic campaign based on this inventory was therefore established with the CFEETK’s photographic service.

On 9 June 2013, during the Joint Committee of the French-Egyptian Centre for the Study of Temples of Karnak, a first version of the *Karnak project* was opened to the public. In nearly four months, the *Karnak project*’s site received just over 100 000 visitors.

This first version (0.1) included a limited number of documents and only part of the functions of the final tool were available. A second set of documents was added to the first group in September 2013 doubling the amount of documents accessible. New documents will continue to be added regularly. With the increase of the content of the project, the development of the interface also constantly moves toward a more complete version (index, additions other archives, etc.) based on this first step of the *Karnak project*.

¹⁷ LabEx Archimede, programme « Investissement d’avenir », ANR-11-LABX-0032-01: Anaïs Tillier, Cédric Larcher, Pauline Calassou; Cnrs trainees: Émeline Pulicani (November 2012-January 2013), Gabriella Dembitz (January-March 2013), Renaud Pietri (March-June 2013), Jérémy Hourdin (April-June 2013).



RESPONSABLE DU PROJET : Sébastien Biston-Moulin (sebastien.biston-moulin@cnrs.fr)

COLLABORATEURS : Christophe Thiers / Anaïs Tillier / Cédric Larcher

CONTRIBUTIONS : S. Biston-Moulin (100) G. Dembitz (139) E. Froid (1) J. Hourdin (440) Ch. Labarta (549) C. Larcher (90) R. Pietri (78) E. Pulicani (301) L. Rouvière (160) Chr. Thiers (13) A. Tillier (85)

© 2013 – CFEETK – Centre Franco-Égyptien d'Étude des Temples de Karnak – MEA / USR 3172 du CNRS
Équipe ENIM – Égypte Nilotique et Méditerranéenne – UMR 5140 – CNRS / Université Paul Valéry – Montpellier III

2. RECONSTRUCTION PROGRAMMES (A. Garric)

2.1. The *Netery-Menu*: a limestone monument dated to the reigns of Thutmose II, Hatshepsut and Thutmose III

As reconstruction is completed, work this year has focused on the development of this anastylosis. The area is now completely levelled and paved paths have been installed around the building to ease circulation and allow the public opening. They consist of "small" sandstone slabs (60x40x15cm) set in the continuity of the opus-incertum main paving on which is built the *Netery-Menou*. Missing walls are marked on the ground by raised surfaces cut into the main paving. Thereby, the original plan is clearly visible.

A massive stone staircase was also built along the main access to the Open Air Museum. This path has a slope of about 8%. So, the staircase creates an easy transition between the horizontal surface of the site and the access path.

An old mastaba, or bench, close to the monument was consolidated and coated with the same mortar that was used to finish the walls. It will expose the unlocated stones belonging to the same architectural ensemble.

The monument has been officially opened to the public at the Commission, on 09 June 2013.



General view of the *Netery-menu* at the entrance of the Open Air Museum © Cnrs-Cfeetk/A. Garric.



General view of the *Netery-menu* at the entrance of the Open Air Museum © Cnrs-Cfeetk/A. Garric.



Flooring access © Cnrs-Cfeetk/A. Garric.

*Final cleaning*¹⁸

The *Netery-Menu* was rebuilt in the last few years. Our objective was to complete the cleaning. At first, we tested and established a protocol.



- 1- Water + teeth brush
- 2- Water-ethanol compress
- 3- Bicarbonate 3% + Attalpuqique 5min
- 4- Solution of bicarbonate 3%
- 5- Triammonium Citrate 2% + Attalpuqique 5 min
- 6- Bicarbonate 3% + EDTA 3%

The cleaning started mechanically with brush, scalpel and then with sponge and water. The salts were removed with *hiba* and water. In order to remove the brown spots, we used *hiba* with acetone. For an advanced cleaning, we used a 5% ammonium citrate solution diluted in some parts of water. The gluing was made with Araldite 2015. The surplus of old Araldite was removed with DMSO in Attapulic and cleaned with acetone compress.



The surplus of old Araldite, before and after cleaning © Cnrs-Cfeetk/C. Bourse.

2.2. The calcite chapel of Tuthmosis III

After the *Netery-Menu* anastylosis and arrival of the ceiling stone on site, we were able to resume work on the monument. The chapel walls were completed in 2010 in the Open Air Museum. It now remains to achieve the most delicate operation of the reconstruction which is setting the ceiling stones: a 17 tons lintel and the main ceiling slab, broken into six fragments the largest among which weighs 51 tons.

¹⁸ Waffaa Abo El Hamed, Nagwa Abd El-Ghafour, Lucie Pieri and Camille Bourse (VI MAEE).

The assemblage of the fragments is in progress, two of them (a 6.7t fragment and another one of 2t) have already been assembled. The process is to approach the connecting fragment against the main element with the crane then adjust it using wedges and hydraulic jacks until perfect contact is reached. The fragment is held in place with metal beams and straps. Then, the fracture is filled by injection of epoxy resin. Finally, a drilling allows the installation of a 20 mm fiberglass bar (sealed by resin injection) which strongly secures the fragment to the main element.

The ceiling slab after completion of the assemblage will reach about 75 tons mass. It will be lifted up to the chapel top, at about 4 m height, and finally translated to its final location. The CFEETK crane is not powerful enough to lift such weight. The lifting will be done manually using powerful hydraulic jacks and temporary walls built progressively under the ceiling slab.



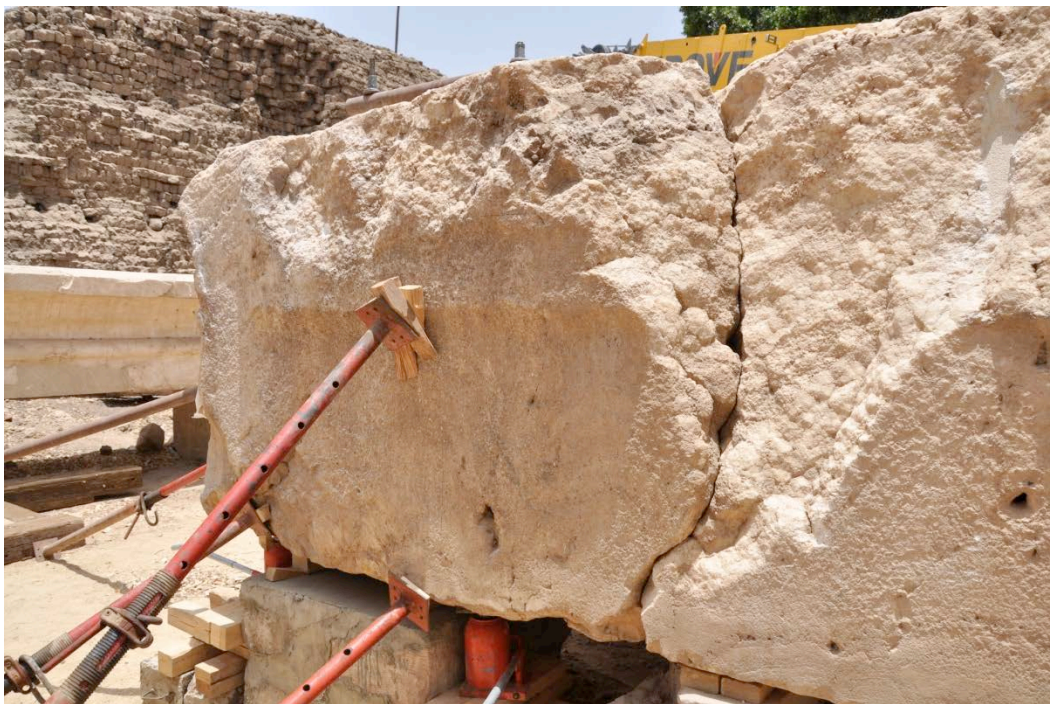
Main fragment (50 tons) of the ceiling slab lifted with hydraulic jacks © Cnrs-Cfeetk/A. Garric.



The decorated surface of the ceiling stone © Cnrs-Cfeetk/A. Garric.



Fragment n° 1 lifted by the crane and approached close to the main fragment © Cnrs-Cfeetk/A. Garric.



Fragment n° 1 adjusted “manually” until it matches perfectly, and ready to be secured with stainless steel bars and resin injections © Cnrs-Cfeetk/A. Garric.

Technical expertise on Osiris Neb-Djefau's chapel (mission directed by Laurent Coulon)

The upper corner of the south chapel has been reassembled: two ancient blocks found during previous excavations, a cornice, a corner block and four modern blocks reproducing the missing parts.

Finishing: the missing parts restored by masonry have been coated with a coloured mortar and all new blocks have been weathered to standardize their colour with that of the monument.



Chapel of Osiris Neb-Djefau: reconstruction of the cornice © Cnrs-Cfeetk/A. Garric.

Final corrections and achievements of figures, drawings, etc. for an article about ancient construction technique: A. Garric, E. Laroze, “The technique of sawing joints in sandstone Ptolemaic masonry”, to be published.

3. ARCHIVES AND SCIENTIFIC DOCUMENTATION

3.1. Archives and databases (S. Biston-Moulin)¹⁹

Photographic archives database of the CFEETK

Work on the photographic archives continued in 2013. The annual photographic documentation of the Center was integrated into the archives, with more than 5.000 new documents added this year. Work on the *Karnak* project (*supra* 1.5) facilitates the reorganization of the CFEETK's archives connecting the *Karnak* project's scientific information directly to the photographic database "ArchéoGrid Karnak" – legacy of the documentary work done at the CFEETK since its foundation. The inventory work of the Karnak Temple inscriptions also allows to complete the archives through identification of the objects and scenes of the monuments for which the photographic documentation kept in the CFEETK's archives is insufficient. A programme of photographic campaign based on this inventory was therefore established with the CFEETK's photographic service.

Valorisation of the Archives of the CFEETK and search for new archives funds

Reprocessing of data stored in the ArchéoGrid Karnak database continued this year. It should be completed before the end of 2013. The process of associating photographs from the ArchéoGrid Karnak database to the records of the *Karnak project* has started. The technical development of ArchéoGrid Karnak (Archeovision UMS 3657 of Cnrs) was interrupted in 2012. We hope this can return to normal in 2014.

The new scan of the glass photographs from Henri Chevrier's archives (from 1926 to 1954) kept at the CFEETK and their documentation continued this year as planned.

The documents in Pierre Lacau's Karnak archives kept at the École Pratique des Hautes Études (EPHE) were scanned in 2010-2011 and are now integrated in the *Karnak project*. An agreement is being finalized with EPHE to open these documents to the public.

A new set of negatives belonging to a photographic archive stored in Luxor, whose first part was scanned last year, has been treated this year. The digitization of this very important archive still requires several campaigns.

Online Bibliographical Project

The CFEETK's bibliographical project, which opened to the public in May 2012, was enriched by approximately 300 references this year (200 directly accessible as PDF files). The online bibliographical project now includes more than 1000 digitized open access resources and will be gradually expanded.

The PDFs available on the website have been downloaded more than 400,000 times since May 2012.

This online bibliographic management system is the foundation for bibliographic quotations in the *Karnak project* and gives direct access to the content of the references directly from the KIU records.

¹⁹ Magdi Louis (MSA-Cfeetk); LabEx Archimede, programme « Investissement d'avenir », ANR-11-LABX-0032-01: Anaïs Tillier, Cédric Larcher, Pauline Calassou; Cnrs trainees: Émeline Pulicani (November 2012-January 2013), Gabriella Dembitz (January-March 2013), Renaud Pietri (March-June 2013), Jérémy Hourdin (April-June 2013).

Library of the CFEETK

Approximately 200 books enriched the library of the CFEETK this year.

Website of the CFEETK

The opening of the *Karnak project* to the public in June 2013 led to a significant increase in visits to the CFEETK website which hosted over 300,000 visitors this year with more than 1 million visitors since the site was launched in March 2009.

3.2. Photographic department (J. Maucor)

Our main objective this year was to finalize our survey of the Ptah temple. In parallel with the advancement of the restoration work, we updated the photographic surveys of the previous years.

We also followed the progress of the excavations, by taking photos in-situ and in our studio of the objects that were found.

In the same way, we accompanied the MSA excavations in front of the first pylon. In particular, we closely collaborated with the ceramologist M. Naguib for the photographic inventory of the potteries found on the site.

Concerning the excavation of the Treasury of Shabako, several series of photographic surveys were carried out in 2013. These concerned objects and ceramics, and a survey of the inscriptions of the columns.

Finally, we have undertaken a survey of the walls of the *Akh-menu*. It has allowed us to work with photogrammetric processes of survey, which we hope to develop in forthcoming projects.

Internally, we are continuing to digitize the photographic archives of the CFEETK. Moreover, we have been able to enrich our archives with private collections, like that of Fr. Amin, which are also being digitized.

3.3. The scattered blocks survey

The inventory work of the loose blocks lying upon benches continued, using the same protocol as in the previous years: numbering on a piece of metal, schematic drawings, photography and incorporation into a database.

3.4. Architecture and topography department (P. Zignani)²⁰

In addition to the archaeological programme of the Temple of Ptah presented above, the department has been active in several programmes, specific to the Centre but also to support other missions.

Ptolemaic gate of the second pylon

The complete drawing of the architectural survey (scale 1:50) was completed in order to prepare the publication of the largest gate ever built during Mediterranean antiquity.

²⁰ During the 2013-2014 season, the members of the CNRS team were: Pierre Zignani (architect-archaeologist), Sébastien Maillot, Benjamin Durand (archaeologists), Marie-Caroline Livatidis (archaeologist, Cnrs trainee), Marion Perot, Audrey Aulus (architects, Cnrs trainees), Aurélien Peyroux and Kevin Guadagnini (surveyors VI MAEE).

Topography

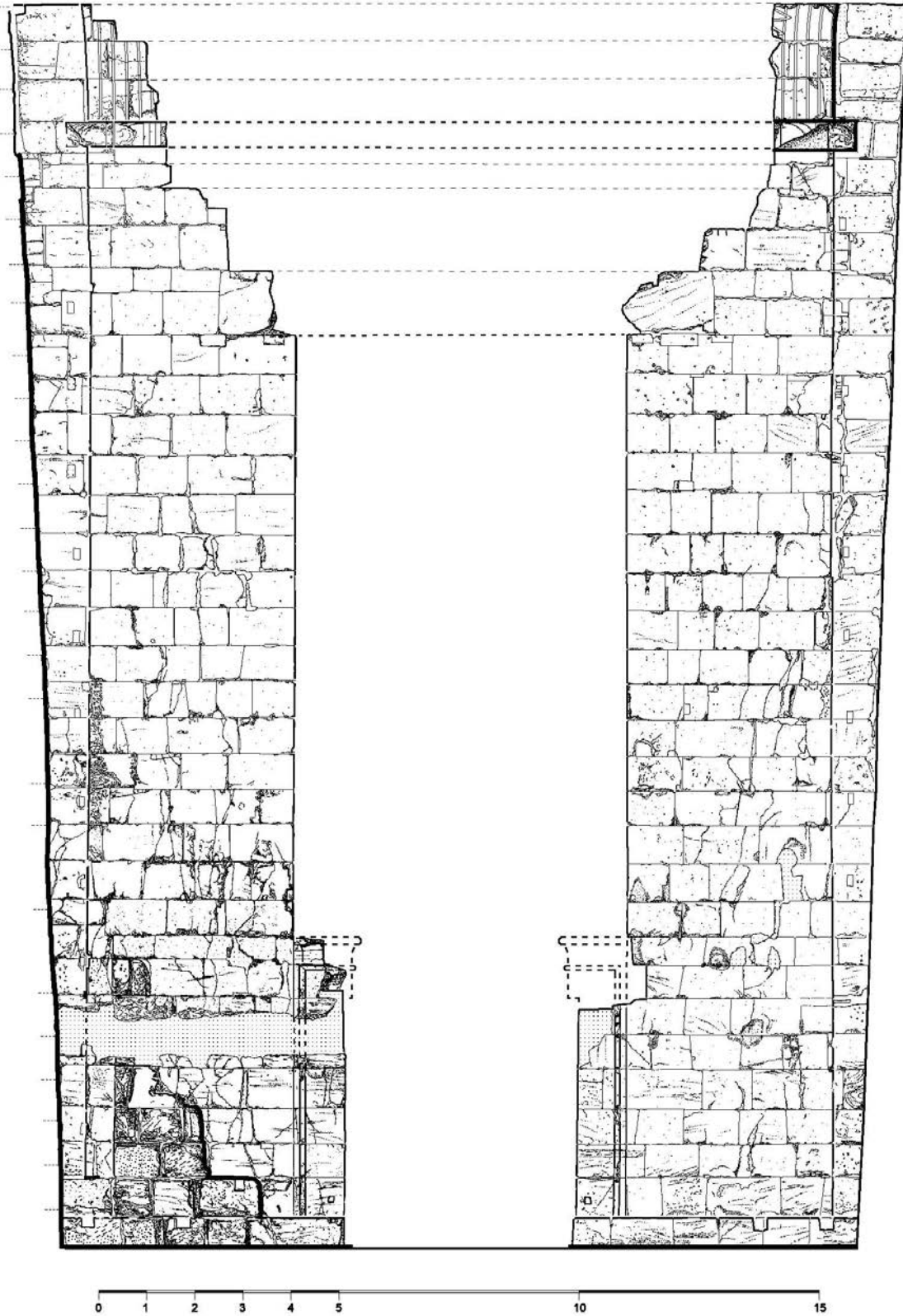
A. Peyroux (surveyor, VI MAEE) worked at different methods and software enable to produce orthophotographs, especially for the northern gate of the precinct of Amun and the VIIIth pylon. He spent one week in France (February 1 to 8, 2013) for a course at the École nationale des sciences géographiques (with Pr. Marc Pierrot-Deseilligny ; MicMac software). A. Peyroux also trained people from the Ministry of State for Antiquities to use the theodolite.

Treasury of Shabako

As every season, the topographic service gave support to the archaeological work at the Treasury of Shabako led by N. Licitra (univ. Paris IV).

Cooperation with the Ministry of State for Antiquities

The architectural and topographical department provided support for archeological works led by MSA at Luxor, under the supervision of the former MSA Luxor Director Mansour Boraik (currently Associated Researcher), and especially for the excavation of the Roman baths.



Gate of the second pylon © Cnrs-Cfeetk.

4. TRAINING PROGRAMMES

Epigraphy training in the field was also provided (facsimile of scenes at scale 1:1 on plastic film), under the supervision of Pauline Calassou (LabEx Archimede) and Mamduh Abd el-Ghassul. Such 10-days sessions will be repeated in the course of 2014.

A training programme for computer softwares used in ceramic studies (drawing, database) was provided by Romain David in fall 2013 (see above).

Due to unexpected administrative delay, it was not possible for the French Cultural Center in Cairo to provide financial support to fund French courses at the CFEETK's office.

A training programme in archaeology is planned for end-2014/beginning-2015.

5. PUBLICATIONS AND LECTURES

An semestral brief report is published in the "Digging Diary" pages of *Egyptian Archaeology*.

5.1. Selected publications of the CFEETK members and associated missions (2013)

- AZIM M., CABROL A. (†), DOBRAKOWSKI A., GABOLDE L., « Les mystères d'un sphinx », *Cahiers de Karnak* 14, 2013, p. 1-11.
- BORAİK M., « A Private Funerary Stela from the Excavation in front of Karnak Temples », in P.P. Creasman (ed.), *Archaeological Research in the Valley of Kings and Ancient Thebes. Papers Presented in Honor of Richard H. Wilkinson*, WES 1, Arizona, 2013, p. 89-99.
- BORAİK M., « A Roman Bath at Karnak Temples. A Preliminary Report », *Cahiers de Karnak* 14, 2013, p. 33-46.
- BORAİK M., « The Sphinx Avenue Excavations. Second Report », *Cahiers de Karnak* 14, 2013, p. 13-32.
- BORAİK M., EL-EL-MASEKH S., GUIMIER-SORBETS A.-M., REDON B., « Ptolemaic Baths in front of Karnak Temples. Recent Discoveries (Season 2009-2010) », *Cahiers de Karnak* 14, 2013, p. 47-77.
- BORAİK M., NAGUIB M., « Ceramic Material from the Ptolemaic Baths Excavations in front of Karnak Temples », *Cahiers de Karnak* 14, 2013, p. 79-191.
- BRAND P.J., REVEZ J., KARKOWSKI J., LAROZE E., « Karnak Hypostyle Hall Project, Report on the 2011 Field Season for the University of Memphis & the Université du Québec à Montréal », *Cahiers de Karnak* 14, 2013, p. 193-229.
- CARLOTTI J.-Fr., MARTINEZ Ph., « Nouvelles observations architecturales et épigraphiques sur la grande salle hypostyle du temple d'Amon-Rê à Karnak », *Cahiers de Karnak* 14, 2013, p. 231-277.
- CINCOTTI S., « "Les fouilles dans le Musée" : la collection égyptienne de Turin et le Fonds Rifaud », *Cahiers de Karnak* 14, 2013, p. 279-285.
- DAVID R., « La céramique d'un habitat du V^e siècle à Karnak », *Cahiers de Karnak* 14, 2013, p. 287-297.
- DEFERNEZ C., « Remarques à propos de quelques vases Bès découverts à Karnak », *Cahiers de Karnak* 14, 2013, p. 299-331.
- DEVAUCHELLE D., WIDMER Gh., « Un *hiereus* en écriture démotique à Karnak », *Cahiers de Karnak* 14, 2013, p. 333-336.

- FROOD E., « Sensuous experience, performance, and presence in Third Intermediate Period biography », in R. Enmarch, V. Lepper (ed.), *Ancient Egyptian literature: Theory and practice. Proceedings of the British Academy 188*, Oxford, 2013, p. 153–184.
- FROOD E., « Egyptian Temple Graffiti and the Gods: Appropriation and Ritualization in Karnak and Luxor », in D. Ragavan (ed.), *Heaven on Earth Temples, Ritual, and Cosmic Symbolism in the Ancient World, OIS 9*, 2013, p. 285-318.
- GABER A., « Aspects of the Deification of King Sety I », *Cahiers de Karnak 14*, 2013, p. 337-382.
- GABOLDE L., « Remarques sur le chemisage des obélisques de la Ouadjyt et sa datation », *Cahiers de Karnak 14*, 2013, p. 383-399.
- GALLET L., « Karnak, the Temple of Amun-Ra-Who-Hears-Prayers », in W. Wendrich (ed.), *UCLA Encyclopedia of Egyptology*, Los Angeles, 2013.
- GARRIC A., LAROZE E., « La technique du sciage des joints dans la maçonnerie ptolémaïque en grès », *BIFAO 113*, 2013, p. 239-282.
- GOYON J.-Cl., « Thèbes, Thot et la monarchie pharaonique après la III^e Période de transition. Fête de Thot du 19 du premier mois de l'année et rites de confirmation du pouvoir royal à Karnak, Edfou et Philae (I) », in Chr. Thiers (ed.), *Documents de Théologies Thébaines Tardives (D3T 2)*, CENiM 8, Montpellier, 2013, p. 33-94.
- HOURDIN J., « À propos de la chapelle d'Osiris-Padedankh de Chapenoupet II. Un apport à sa reconstitution épigraphique et architecturale », *Cahiers de Karnak 14*, 2013, p. 401-423.
- LABARTA Ch., « Une stèle de Ramsès II au magasin Cheikh Labib à Karnak », *Cahiers de Karnak 14*, 2013, p. 426-436.
- LAROZE E., GARRIC A., « La technique du sciage des joints dans la maçonnerie ptolémaïque en grès », *BIFAO 113*, 2013, p. 239-282.
- LETELLIER B., LARCHÉ Fr., *La cour à portique de Thoutmosis IV*, ÉtudÉg 12, Paris, 2013.
- LICITRA N., « La réfection de l'enceinte du temple d'Amon sous le règne de Ramsès III : une nouvelle stèle découverte à Karnak », *Cahiers de Karnak 14*, 2013, p. 437-445.
- LORAND D., « Une "Chapelle des Ancêtres" à Karnak sous Sésostri I^{er} ? », *Cahiers de Karnak 14*, 2013, p. 447-466.
- MASSON A., « Domestic and cultic vessels from the priests' quarter in Karnak: the fine line between the profane and the sacred », in B. Bader, M.F. Ownby (ed.), *Functional aspects of Egyptian ceramics in their archaeological context: proceedings of a conference held at the McDonald Institute for Archaeological Research, Cambridge, July 24th - July 25th, 2009*, OLA 217, Leuven, 2013, p. 141-164.
- PRÉVÔT N., « The digital puzzle of the talatat from Karnak: a tool for the three-dimensional reconstruction of Theban buildings from the reign of Amenhotep IV », in St. Polis, J. Winand (ed.), *Texts, languages & information technology in Egyptology: selected papers from the meeting of the Computer Working Group of the International Association of Egyptologists (Informatique & Égyptologie)*, Liege, 6-8 July 2010, 2013, p. 129-138.
- PREYS R., DÉGREMONT A., « Cléopâtre I et la couronne d'Arsinoé. À propos des scènes de culte royal sur la porte ptolémaïque du 2^e pylône de Karnak », in Chr. Thiers (ed.), *Documents de Théologies Thébaines Tardives (D3T 2)*, CENiM 8, Montpellier, 2013, p. 95-110.

- RAGAZZOLI Chl., FROOD E., « Writing on the wall: two graffiti projects in Luxor », *EgArch* 42, 2013, p. 30-33.
- THIERS Chr., « La chapelle d'Ipet la Grande / Époëris sur le parvis du temple de Louqsor. Relecture d'une stèle kouchite », in Chr. Thiers (ed.), *Documents de Théologies Thébaines Tardives (D3T 2)*, *CENiM* 8, 2013, p. 149-176.
- THIERS Chr., « *Membra disiecta ptolemaica* (II) », *Cahiers de Karnak* 14, 2013, p. 467-491.
- THIERS Chr., ZIGNANI P., « Le domaine de Ptah à Karnak. Premières données de terrain », *Cahiers deKarnak* 14, 2013, p. 493-513.
- TRAUNECKER Cl., « Thèbes, été 115 avant J.-C. : les travaux de Ptolémée IX Sôter II et son prétendu "Château de l'Or" à Karnak », in Chr. Thiers (ed.), *Documents de Théologies Thébaines Tardives (D3T 2)*, *CENiM* 8, Montpellier, 2013, p. 177-226.

5.2. Lectures

- 15/03/2013: École Polytechnique Fédérale de Lausanne, Unité d'enseignement Architecture et archéologie (Prof. Ortelli), P. Zignani, « Études architecturales en archéologie, enjeux scientifiques et d'aménagements ».
- 22/03/2013: École Polytechnique Fédérale de Lausanne, Unité d'enseignement Architecture et archéologie (Prof. Ortelli), P. Zignani, Séminaire intermédiaire des travaux d'étudiants sur la conservation des vestiges.
- 17/05/2013: École Polytechnique Fédérale de Lausanne, Unité d'enseignement Architecture et archéologie (Prof. Ortelli), P. Zignani, Séminaire conclusif des travaux d'étudiants sur la conservation des vestiges.
- 24/07/2013: Palacio de la Magdalena, Santander, Espagne, S. Biston-Moulin, « The architectural activity of Thutmosis III and Hatshepsut in the temple of Amun-Ra at Karnak ».
- 10/11/2013: *Heritage Tourism: Prospects and Challenges*, Louqsor (Univ. Héliouan-Égypte, Brandenburg University of Technology, Deutsche Archäologische Institut), Chr. Thiers, « Karnak. Restoration and Heritage Valuation Programs. Results and Prospects ».
- 10/11/2013: *Heritage Tourism: Prospects and Challenges*, Louqsor (Univ. Héliouan-Égypte, Brandenburg University of Technology, Deutsche Archäologische Institut), P. Zignani, « The Contribution of the Understanding of the Pharaonic Construction Design in the Scenarios of Touristic Visitation ».

6. MEMBERS OF THE CFEETK

MSA permanent members

- BORAİK M. Co-director of the CFEETK, general director of Luxor and Upper Egypt (till July 2013)
- KARAR A. H. Co-director of the CFEETK, general director of Luxor and Upper Egypt (from July 2013)
- SOLEIMAN I. General Director of Antiquities of Upper Egypt
- AMMAR A. Director of Karnak temples
- MILAD ZIKRI T. Chief architect of Upper Egypt
- ABD EL NASSER Chief conservator
- HALMI F. Chief inspector
- ABD AL SATTAR B. Chief inspector
- FATHI M. Chief inspector
- SA'AD M. Inspector
- GHARIB T. Inspector
- DOWI A. Inspector
- AHMED HASSAN M. Inspector
- AHMED MAHFOUD A. Inspector
- SOUBI S. Inspector
- EL-BALAL F. Inspector
- KADRA I. Inspector
- ABD EL GHASSUL M. Draftsman
- ZAKI R. Draftsman
- LOUIZ M. Documentation officer
- DOWI ABD AL-RADI K. Photographer
- SAIDI M. Photographer
- RUBI A. Assistant photographer
- FOUAD E. Secretary

Non permanent Egyptian inspectors

- ABU EL FADEL A.
- AL NUBI M.
- AL TAWAB H.
- EDREES B.
- EL MASEKH S.
- ESSAM N.
- YOUSSEF BELAL W.
- SHAFI H.

CNRS permanent members

- THIERS Chr. Director of the USR 3172, co-director of the CFEETK, Egyptologist
- BISTON-MOULIN S. Documentalist-egyptologist
- GARRIC A. Stone-cutter
- PUELLE V. Administrator
- MAUCOR J. Photographer
- ZIGNANI P. Architect

USR 3172, LabEx Archimede, programme « Investissement d'avenir », ANR-11-LABX-0032-01

- CALASSOU P. Epigraphist

- DAVID R. Ceramologist
- LARCHER C. Egyptologist
- TILLIER A. Egyptologist

International Volunteers (French Ministry of Foreign and European Affairs)

- PIERI L. Conservator till September 15th 2013
- BOURSE C. Conservator from September 15th 2013
- PEYROUX A. Topographer till September 1st 2013
- GUADAGNINI K. Topographer from September 1st 2013

CNRS trainees and missions 2013

- ASPERTI A. Conservator
- ATANASOVA V. Egyptologist
- AULUS A. Architect
- CAGNARD L. Egyptologist
- CASSOR-PFEIFFER S. Egyptologist
- DEMBITZ G. Egyptologist
- HOURDIN J. Egyptologist
- JUNG M.-P. Egyptologist
- LIVADITIS M.-C. Archaeologist
- MAILLOT S. Archaeologist
- PIETRI R. Egyptologist
- ROMION J. Egyptologist

Associated researchers (field mission 2013)

COULON L.	Egyptologist, Lyon	Osirian chapels
DEFERNEZ C.	Archaeologist-ceramologist, Paris	Osirian chapels
FROOD E.	Egyptologist, Oxford	Hieratic graffiti
GABOLDE L.	Egyptologist, Montpellier	Monuments of Amnehotep I
PAYRAUDEAU Fr.	Egyptologist, Cairo	Osirian chapels
LICITRA N.	Doctoral candidate, Egyptologist, Paris	Treasury of Shabako
VAN SICLEN Ch.	Egyptologist, San Antonio	Courtyard of the IX th pylon

7. ACADEMIC COLLABORATIONS

- UMR 5140 – Univ. Montpellier III (LabEx Archimede)
- American Research Center in Egypt (ARCE)
- Chicago House (Luxor)
- Univ. of Oxford
- Univ. of Tübingen
- USR 3134 – Centre d'études alexandrines (CeAlex)
- Institut français d'archéologie orientale (IFAO)
- École Pratique des Hautes Études (Sciences religieuses), Paris
- UMR 5189 – HiSoma Univ. Lyon II
- UMR 8167 – Univ. Paris IV Sorbonne
- UMR 8164 – Halma-Ipel Univ. Lille III
- UMS 3657 – Archeovision Univ. Bordeaux III