

**AcrossBorders**  
**Fieldwork 2016 on SAI ISLAND (NORTH PROVINCE, SUDAN)**



**2016 SEASON REPORT**

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## 1. General

The 2016 mission of AcrossBorders on Sai Island was carried out from 31<sup>st</sup> December 2015 to 12<sup>th</sup> March 2016. AcrossBorders is conducted with the approval and in cooperation with the concession holders, Prof. Didier Devauchelle, UMR 8164 HALMA-IPEL (University Charles-de-Gaulle Lille 3, France) and Dr. Vincent Fracigny (SFDAS, responsible for the Sai excavations since 2015). Permission to work in the field is kindly granted by the National Corporation for Antiquities and Museums of Sudan (NCAM), sincere thanks go in particular to Dr. Abdelrahman Ali Mohamed (Director General) and El-Hassan Ahmed Mohamed (Director of Fieldwork).

Fieldwork with workmen under the supervision of Hassan Dawd was carried out from January 02 to March 11. Excavations were conducted in three areas of the Pharaonic town (SAV1 East, SAV1 West and SAV1 Northeast, fig. 1) and in the New Kingdom cemetery SAC 5 (fig. 8).

Besides the archaeological fieldwork, kite aerial photography of the town area was undertaken by Martin Fera and a geological survey was conducted (by Sayantani Neogi, Sean Taylor, Dietrich Klemm and Rosemarie Klemm).

The inspector for NCAM in the 2016 season was Huda Magzoub—we would like to express our sincere thanks for her kind cooperation and support throughout all of the season. AcrossBorders also welcomed Roa Abdelaziz as trainee from NCAM (January 1 to 24 2016).

### Team members

Julia Budka, Field director, Principal Investigator of ERC project AcrossBorders, Ludwig-Maximilians Universität München, Germany and FWF project, Austrian Academy of Sciences, Austria

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Funds for fieldwork in 2016 were granted to Julia Budka by the European Research Council (ERC Starting Grant no. 313668) and the Austrian Science Fund (FWF START project Y615-G19).



**Fig. 1: Location of AcrossBorders excavation areas within the New Kingdom town, Sai Island  
(status 2016; map: M. Fera).**



## 2. Excavations at SAV1E, fieldwork report (by Julia Budka)

### Objectives

Fieldwork in sector SAV1 East continued based on the results from 2013-2015.<sup>1</sup> The remains pre-dating the Building A in the southern part of the site were investigated in detail, especially to establish an absolute date for them. For this we extended our excavation trenches towards the south and especially towards the west. The western part of Building A was one of the targets for the 2016 season; furthermore, the excavations of Feature 15 had to be completed. Work focused in 2016 on remains unearthed in the new squares 4B, 4B1 and 4C (Fig. 3).

### SAV1 East, Squares 4B, 4C and 4B1

The upper levels of these squares were dominated by a destruction layer of mud brick fragments, charcoal, slag, pottery and worked stones. This layer was up to 40–50cm thick and yielded abundant stone tools, lots of ceramics and other materials. The material is of a mixed character and the latest finds date to the Ottoman Period. The large percentage of 18<sup>th</sup> Dynasty ceramics indicates that the later destruction sits directly on the Pharaonic remains.

In the southwestern corner of Square 4C, a large sandstone block was found dumped between mudbrick debris. Adjacent to the east of this block, the last remains of a large mudbrick wall were unearthed, running almost north-south and thus with a similar alignment to Building A. Still attached to the small section of this wall, there is a plate of schist and large quantities of plaster—*in situ* remains of a large room with a schist pavement.



**Fig. 2: Square 4B1 from north, with remains of mud brick wall foundations, a schist pavement and a column drum.**

<sup>1</sup> See most recently J. Budka, *The Pharaonic town on Sai Island and its role in the urban landscape of New Kingdom Kush, Sudan & Nubia* 19, 2015, 40–53.

This assemblage finds a correspondence in Square 4B1 (Fig. 2): in an area of dense mud brick debris, the still standing remains of a schist floor were unearthed. The schist plate forms an “island” within the square, as all four sides were hacked off during later pitting of the area. The formerly adjoining 18<sup>th</sup> Dynasty mud brick wall runs again almost north-south. A re-used sandstone column drum was found to the west of this wall.



**Fig. 3: Overview of working areas in SAV1 East in 2016. Map: M. Fera.**

### **Square 4, Feature 15**

The most interesting find in SAV1 East continues to be the subterranean room, Feature 15. Partly excavated in 2013 and 2014–2015, it was completely exposed in 2016 (Fig. 4). A section of wall 44 was set into Feature 15 in a building phase during the mid-18<sup>th</sup> Dynasty. This wall was sitting on top of the lowermost deposit of Feature 15 and was left standing in 2015. In the 2016 season, we removed the wall and the deposit below it. Pottery and seal impressions found below wall 44 of Building A prove the dating of the corresponding building phase to the later reign of Thutmose III—further confirmation of our previous assumption based on the eastern part of Feature 15 and other walls of Building A.<sup>2</sup>

The pavement of Feature 15 was documented in detail by SFM, orthophotos and a drawing in 1:20. Several of the red bricks show finger marks, which find parallels in the mudbricks used in the northern and southern part of the town of Sai Island.

<sup>2</sup> See Budka, *Sudan & Nubia* 19, 2015, 43–45.



**Fig. 4: Feature 15 after removal of wall 44 in 2016. Orthophoto: M. Fera.**

### **3. Excavations at SAV1W, fieldwork report (by Julia Budka)**

#### **Objectives and method**

One of the goals this season was to investigate the New Kingdom remains on the inner side of the enclosure wall of the New Kingdom town in SAV1 West. In order to study a representative area, a new eastern extension to the 2015 Square 1S was opened—Square 1SE (6 x 10m).

Based on our experience from the last years, we continued our excavation method with a single surface documentation, conducting a stratigraphic excavation. Each stratigraphic unit was documented with a Structure from Motion surface model and GIS application.

#### **Square 1 Southeast**

This season, work focused on the new eastern extension of Square 1S. Upon removing the upper debris levels of Square 1SE, it soon became clear that it resembles the eastern part of Square 1 South. Large sandy pits with much 18<sup>th</sup> Dynasty pottery, loose mud bricks and many worked stone fragments were documented in detail.

A small rectangular structure along the southern edge, stretching from Sq. 1S to Sq. 1SE (Feature 123) was completely exposed. Its layout differs from the other structures along the “wall street” and an



infant burial was discovered in its westernmost compartment—probably from a later phase of use, most likely the Christian period.

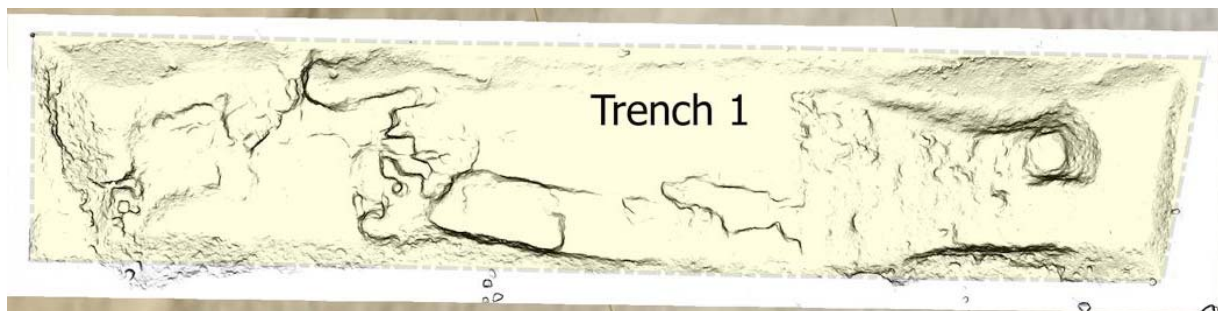
In Square 1NW, a test trench was opened in front of the 18<sup>th</sup> Dynasty enclosure wall. After a solid pottery layer of later date, 19<sup>th</sup> and 18<sup>th</sup> Dynasty levels were documented. No tower feature was found but rather a solid, sloping mud surface that resembles a glacis.



**Fig. 5: Overview of working areas in SAV1 West in 2016 (Map: M. Fera).**

#### **4. Excavation at sector SAV1 Northeast (by Julia Budka)**

As reported in 2014, the eastern part of the New Kingdom enclosure wall was presumably running along the sandstone cliff, as indicated by the SIAM magnetometric survey (from 2011), geological observations (from 2014–2015) and our current digital elevation model. To test this assumption, a 15 x 3 m trench was excavated to the east of the site SAV1 North (called Trench 1 of SAV1 Northeast). Remains of brickwork associated with mid-18<sup>th</sup> Dynasty pottery can be interpreted as the town enclosure wall and enable us to calculate the Pharaonic town's exact east-west width: 116 to max. 118 m. Thus, the new overall size of the New Kingdom town is 238 m NS x 118 m EW, with a total of 27600 sqm (2.76 ha).



**Fig. 6: Test trench 1 in the new sector SAV1 NE with remains of the enclosure wall (M. Fera).**

## **5. Excavation in the cemetery SAC5, areas 2 and 3 (by Julia Budka)**

For AcrossBorders' planned detailed comparison between the material found in the New Kingdom town and in the Pharaonic cemeteries of Sai Island, work was continued in the large New Kingdom cemetery SAC 5 (13<sup>th</sup> February to 11<sup>th</sup> March).

Work focused on Area 2 and the surroundings of Tomb 26, discovered in 2015. In a large area towards the south and east of Tomb 26, a complete surface cleaning was conducted, proving that this part of the cemetery is void of tombs, possibly stressing the elaborate position and importance of Tomb 26. The surface material covers all the periods attested for the use of SAC5 as a burial site: mid-late 18<sup>th</sup> Dynasty, Late Ramesside, Pre-Napatan and Napatan.<sup>3</sup>

One particular highlight is the heart scarab with a human head **SAC5 268**, made in steatite (Fig. 7). Based on Quirke<sup>4</sup>, Meg Gundlach reconstructed the text as chapter 30B of the Egyptian Book of the Dead. At present, no secure dating of this piece is possible—it was found associated with mid-late 18<sup>th</sup> Dynasty, Ramesside and Napatan pottery.

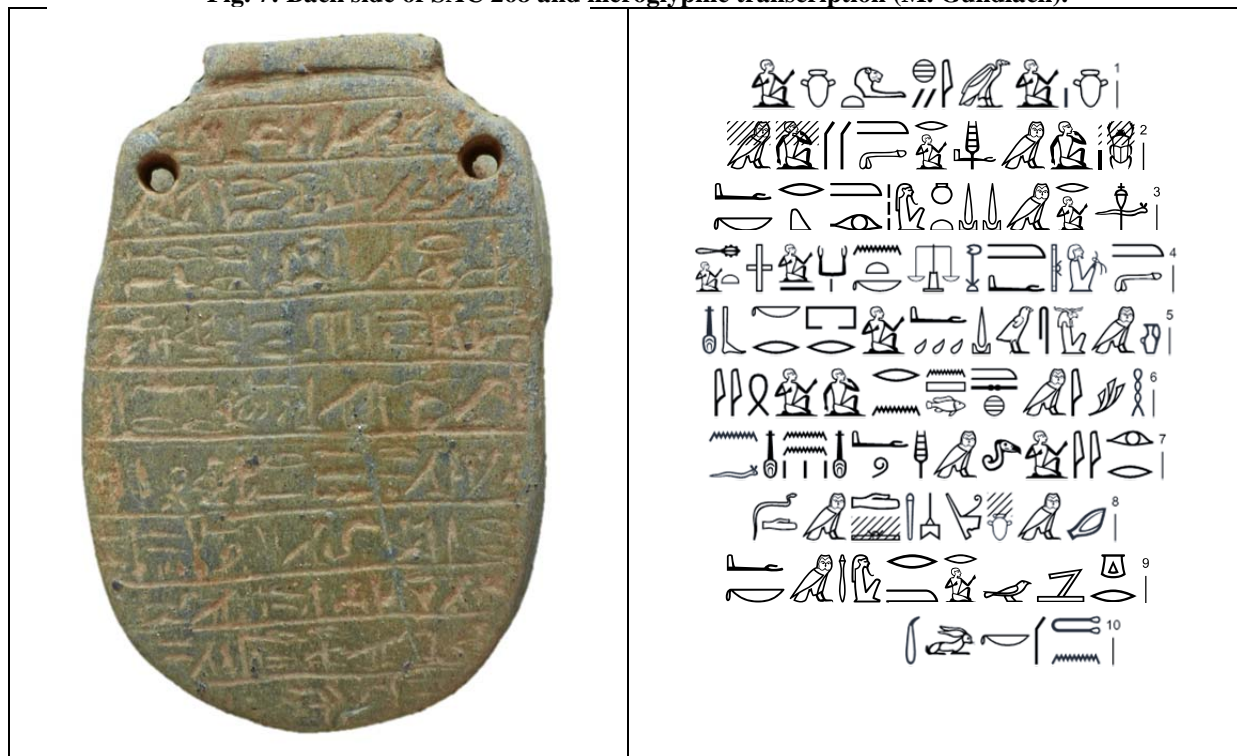
A new area 3 was opened to the west of Tomb 8 (Fig. 8). No mud brick features were found and almost no pottery sherds, but the natural ground surface featured a number of irregular pits of unclear function. They are varying in dimensions and depths and might be connected to the Pharaonic building activity at SAC 5. Interestingly, in the courtyard of Tomb 11 (further to the west) very similar pits were observed, directly within the mudbrick architecture.

<sup>3</sup> Cf. F. Thill, Les réoccupations "(pré)napatéennes" dans la cimetière égyptien 8B5/SAC5 de Sai, in: *Mélanges offerts à Francis Geus*, *CRIPPEL* 26, 2006-2007, 353–369.

<sup>4</sup> St. Quirke, *Going out in Daylight - prt m hrw: The Ancient Egyptian Book of the Dead - translation, sources, meanings*, Egyptology 20, London 2013.



Fig. 7: Back side of SAC 268 and hieroglyphic transcription (M. Gundlach).



Transliteration:

- (1) *ib.i n mwt.i sp sn h3ty.i*
- (2) *(n) hprw.i m 'h' r.i m mtrw m*
- (3) *shsf r.i m d3d3t m ir rk.k*
- (4) *(r.i) m-b3h iry mh3t ntk k3.i imy ht.i*
- (5) *hnmw swd3 'wt.i pr.k r bw nfr*
- (6) *hny (n.n) im m shnš rn.i šny(t)*
- (7) *iryw rmt m 'h'w nfr n.n nfr (n)*
- (8) *n sdm 3w ib n wd' mdwt m dd*
- (9) *grg r.i r-gs ntr '3 mk*
- (10) *tnt.k wn.ti*

Translation:

(1) My heart of my mother, my heart of my mother, my fore-heart (2) of my forms, do not stand against me as witness, do not (3) oppose me in the tribunal, do not lean (against me) (4) in the presence of the balance-keeper. You are my ka-spirit that is in my body, Khnum who makes my limbs whole, you go out to the good place (6) appointed (to us) there, do not make my name stink for the entourage, (7) those who make people in (tribunal-)sessions. May it be good for us, as it is good (8) for the hearer, and joyful for the decision maker. Do not say (9) falsehood against me beside the great god. Behold, (10) the decision on you (too) is in play here.

(Hieroglyphic transcription, transliteration and translation by Meg Gundlach)



**Fig. 8: Working area 2 in SAC5 with the location of the shaft of tomb 26 and the test trench in area 3 (map: Martin Fera).**


### *Tomb 26*

Tomb 26 was found looted at the beginning of the season—the backfill of the shaft was removed during April/May 2015, the burial chamber was entered and some deposit towards the east of the chamber was removed—but the damage was not severe. Excavation work focused on the cleaning of the burial chamber (feature 2) and a minimum of 10 individuals were documented from different levels, reflecting the long time-span of use of the tomb from Thutmoside times to the Napatan era.





**Fig. 9:** Side view (orthophoto) of subterranean part of Tomb 26, east side (Martin Fera).


### **Selected finds from 2016 season in burial chamber (feature 2)**

	<b>SAC5 266</b>
	Material: Fayence
	Dimensions
	L: 1.9cm W: 1.4cm H: 0.8cm



	<b>SAC5 281</b>
	Material: Fayence
	Dimensions
	L: 2.1cm W: 1.5cm H: 0.9cm


	<b>SAC5 302</b>
	Material: Stone
	Dimensions
	L: 7.2cm W: 4.5cm H: 11.9cm

	<b>SAC5 313</b>
	Material: Fayence
	Dimensions
	L: 1.6cm W: 1.2cm H: 0.7cm

## 6. Processing finds and pottery from the New Kingdom town (by Julia Budka)

### Registration of objects from SAV1 East and SAV1 West

The registration of the objects and finds from the ongoing excavations in SAV1 West and SAV1 East was continued in 2016.<sup>5</sup> Over 400 finds have been registered, photographed, and entered into the FileMaker database, which now comprises 4634 entries. The objects range in date from the Palaeolithic Period to Ottoman times. The most abundant genre of objects needing to be registered is stone tools: grindstones, hand mills, hammers, pounders, and whetstones. Among the highlights of this season were a mud model boat (SAV1W 1574), some clay animal figures, few clay sealings and a scarab from SAV1 East (SAV1E 1595).

	<b>SAV1E 1595</b>
	Material: Steatite
	Dimensions
	L: 1.2cm W: 0.5cm H: 1.6cm

<sup>5</sup> By Kenneth Griffin and Meg Gundlach, with the assistance of Bartlin Schöpflin.

### **Pottery from the New Kingdom town**

The study of the ceramics (conducted by Julia Budka, assisted by Daniela Penzer, Michaela Janker and Lucia Sedlakova) was focusing on two main working steps this season: 1) documenting the statistics & establishing the dating for newly excavated material from SAV1 East and SAV1 West (more than 1100 baskets were processed); 2) detailed documentation of diagnostic pieces excavated in SAV1 North for the final publication of this site. In addition, some pottery vessels from SAV1 East and SAV1 West were drawn. In total, more than 300 drawings of ceramics were produced in 2016.

### **7. Geoarchaeological investigations in and around the New Kingdom Pharaonic town in Sai Island**

(by Sean Taylor and Sayantani Neogi)

Geoarchaeological investigations focused on questions raised from the survey of 2015 and have been undertaken in the environs of the New Kingdom town and offsite from 30<sup>th</sup> January–19<sup>th</sup> February 2015. The objectives were specifically focused to questions relating to the New Kingdom (18<sup>th</sup> Dynasty): to sample on-site archaeological contexts to better understand the use of space and site formation processes; to place the archaeological site in its environmental context; and to provenance the sandstones found within the Pharaonic town and to locate the New Kingdom sandstone quarry. This survey took the form of hand auger profiles, as well as opportunistic prospection of exposed and available sections and quarry outcrops.

### **Sandstone Quarries**

#### ***Location***

One of the main foci of this year's fieldwork was locating the source of building stone for the New Kingdom stone buildings. A detailed survey was carried out on the rock outcrops in the vicinity of Gebel Abri, to investigate if this was the location for the sandstone used on the island for building material. The results of this survey confirmed that although there are abundant sandstone outcrops in these locations, no quarry sites from Pharaonic times were identified, because the stone was lithologically dissimilar.

Having ruled out the possible quarry source from outside the island, several quarries in the sandstones were identified adjacent to the New Kingdom town itself. These extended from the French dig-house to the village of Adou in the south (Fig. 10). A particular whitish sandstone source used in some of the temple was identified just below exposed sections of the cliff which were perceived as soft and not of high quality on the surface. The temple stone was of variable quality in terms of hardness, colour and other properties, which were in concordance with the lithological variation seen in the adjacent quarries. These were due to the sedimentary environment of deposition for each particular facies. Chisel marks (see below) and a cut-out for a column base provided compelling evidence for Egyptian quarrying (Fig. 10).

### ***Chisel marks***

Another unsolved issue arising from last season's fieldwork relates to the location and date of the identified quarries on the island. Analogous chisel marks have now been identified on the sandstone outcrops of the quarries and on the blocks of stones used in the temple. This therefore correlates the quarries with the New Kingdom architecture (in addition to furnishing corroborative evidence for the location the ancient source of building stone). Two types of chisel marks have been identified, sometimes on the same block of stone. The first of these is c.1cm in width, with systematic and regular linear parallel marks, confirmed by Professor Klemm as characteristic of the Thutmoside period. The other is chaotic, slightly haphazard, c.2–2.5cm wide marks in which the angles can be seen quite easily. These two distinct marks suggest different stages of the *chaîne opératoire* for the rendering of stone to building blocks.

### **Harbour/Landing ground**

A coring survey in transect was undertaken in the riverine alluvial platform adjacent to the town during the field season of 2015, in order to investigate whether any traces of a harbour had been preserved in the Nile sediments. The survey did not reveal the presence of any potential built harbour, but based on the topography it seems likely that a simple landing ground sheltered by the steep sandstone cliff was in operation, similar to those seen along the Nile today.

### **Placing the Pharaonic town into the wider landscape**

Six boreholes were dug towards the western side of the Pharaonic town (Fig. 11). This has revealed that where sampled, no trace of an extramural settlement has been identified. In addition to this, a thorough landscape survey has been undertaken to understand the nature of the deposits, especially towards the northern part of the island. This has enabled the authors to collect data to develop a surface map of the vicinity of the town. Along with the data from the hand auger profiles, exposed sections, soil micromorphology and the surface map, a better understanding of the site setting and geomorphology of the location can be integrated within the GIS for various purposes.

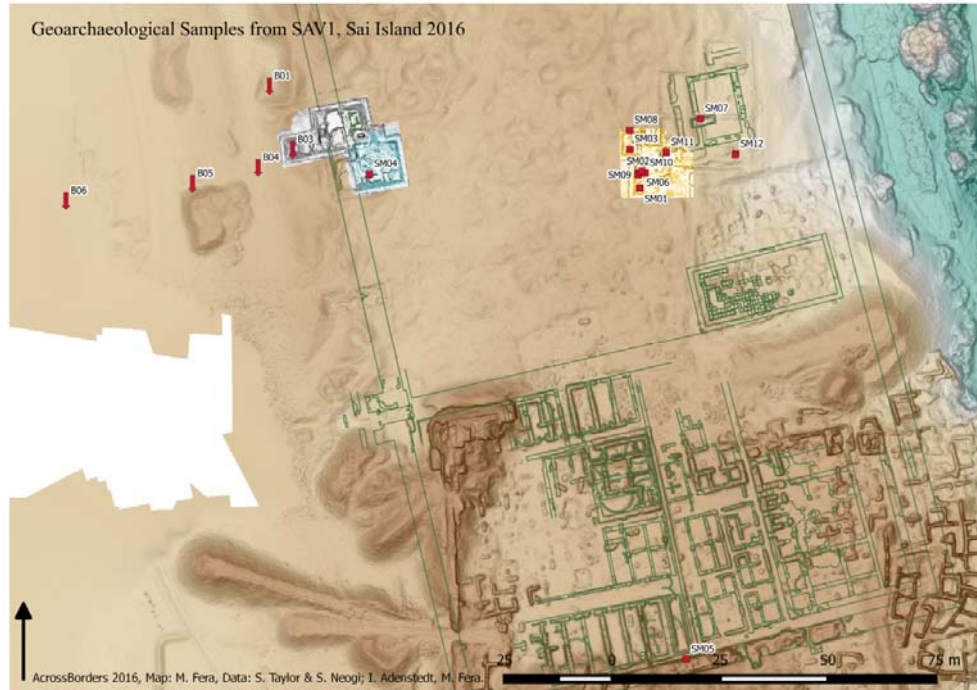




**Fig. 10: Locations of sandstone quarries (Map: M. Fera).**

## Sampling

A total of twenty-one block samples (soil/sediment) have been collected in 2016 (Fig. 11). Some of these have been taken to better understand the complex stratigraphy of the New Kingdom settlement. A priority is to characterise the anthropogenic sediments in order to comprehend the use of the structures during the New Kingdom. Fifty-five rock samples have been collected for further scientific analysis from different sandstone and amphibolite outcrops of the island and from on-site debris. These will positively give the provenance of sandstones found within the Pharaonic town.



**Fig. 11: Location of auger holes and on-site block samples collection.**

## 8. Summary (by Julia Budka)

To conclude, the 2016 field season resulted in important new insights and diverse observations about the landscape and the harbour situation. Most importantly, excavations in the town and cemetery added information about the evolution of Sai Island in Pharaonic times and here especially during its heyday in Thutmoside times.

(1) **Dating SAV1 West:** the earliest phase of occupation at SAV1 West seems to be contemporaneous to the building of the town wall and dates to the mid-18<sup>th</sup> Dynasty. There is clear evidence for several phases of use within the 18<sup>th</sup> Dynasty.

(2) **Architecture at SAV1 East:** All in all, further proof was gathered that sector SAV1 East has much in common and shows many parallels to the southern area of the town, SAV1, excavated by M. Azim in the 1970s. In particular, *in situ* schist pavements of large magazines located to the west of Building A indicate a similar layout as in the southern part.

(3) **Landing place and quarries:** Further proof was collected for the landing place along the sandstone cliff at the east side of the town and for 18<sup>th</sup> Dynasty quarries between the town and cemetery.

(4) **Burial chamber of tomb 26:** Tomb 26, with a very complex use-life and high quality finds, stands almost isolated in the southern part of SAC5—surface cleaning provided negative evidence for neighbouring tombs. Work in Tomb 26 will be continued in 2017.

All in all, the new information provided by the latest, very successful field season of AcrossBorders will allow us to 1) contextualise further the setting of the Pharaonic town within the landscape during New Kingdom times; 2) elaborate the city map of the Pharaonic town; 3) improve the stratigraphic sequence in all sectors; 4) connect the findings in the town with fresh evidence from the cemetery SAC5.