

Sudan

(Re-)Investigating (indigenous) cult at Musawwarat es-Sufra (Sudan): Excavations and mapping at the Apedemak Temple and in adjacent areas during the 2018-2019 field season

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Introduction

Musawwarat es-Sufra, part of the [‘Archaeological Sites of the Island of Meroe’](#) UNESCO World Heritage site area, is located ca. 125 km to the northeast of Sudan’s capital Khartoum. The valley of Musawwarat is found at a distance of ca. 25 km from the Nile, and despite its distance from the next source of permanent surface water, it harboured one of the main cult centers of the Kingdom of Kush. The site boasts an impressive and unique ensemble of Kushite architecture. Among the built structures are the

earliest known temple dedicated to the indigenous lion-headed god Apedemak; the singular labyrinthine building complex of the Great Enclosure with its temples, rooms, courtyards, corridors and ramps; as well as the Great Hafir, Sudan’s largest ancient water reservoir (Figure 1).

While monumental architecture at Musawwarat dates back to the middle of the first millennium BCE (i.e. the Napatan period) most of the sandstone structures seen today were constructed during the Early Meroitic period, with major building activity taking place in the reign of King Arnekhamani (ca. 235-218 BCE). The Early Meroitic period was a time when the center of power in the Kushite kingdom had moved south to Meroe and when significant changes in the self-identification and legitimation of the Kushite elite took place. These include, for example, the development of a script for writing the local Meroitic language and the construction of monumental temples for indigenous gods, such as Apedemak, in addition to those for originally Egyptian gods. Musawwarat is one of the best preserved monumental sites from the Early Meroitic period and its study can thus provide a deeper glimpse into some of the transformations that characterized this period in the history of the Middle Nile valley.

Musawwarat has been extensively researched since the 1960s by Humboldt-Universität zu Berlin, which over the past six decades has conducted archaeological work on virtually all built structures at the site, conducted extensive conservation campaigns, built an on-site museum, and launched an ambitious programme of site management. Recently, a new research programme on Musawwarat was started, which is dedicated to the archaeology of (indigenous) cult topography, practice, and experience at this exceptional site. The project applies spatial and multi-sensorial approaches, among others. On the basis of a re-evaluation of the results of previous excavations, fieldwork during the 2018-2019 season focussed on generating combined mapping data and (re-)excavating in the area of two temples that were dedicated to local gods.

Mapping, excavations and archival work

Work undertaken during the 2018-2019 field season focussed on laying the foundations for the (re-) investigation of the site by developing a comprehensive GIS database that includes all available spatial data. In addition, the Apedemak Temple as well as several of the smaller

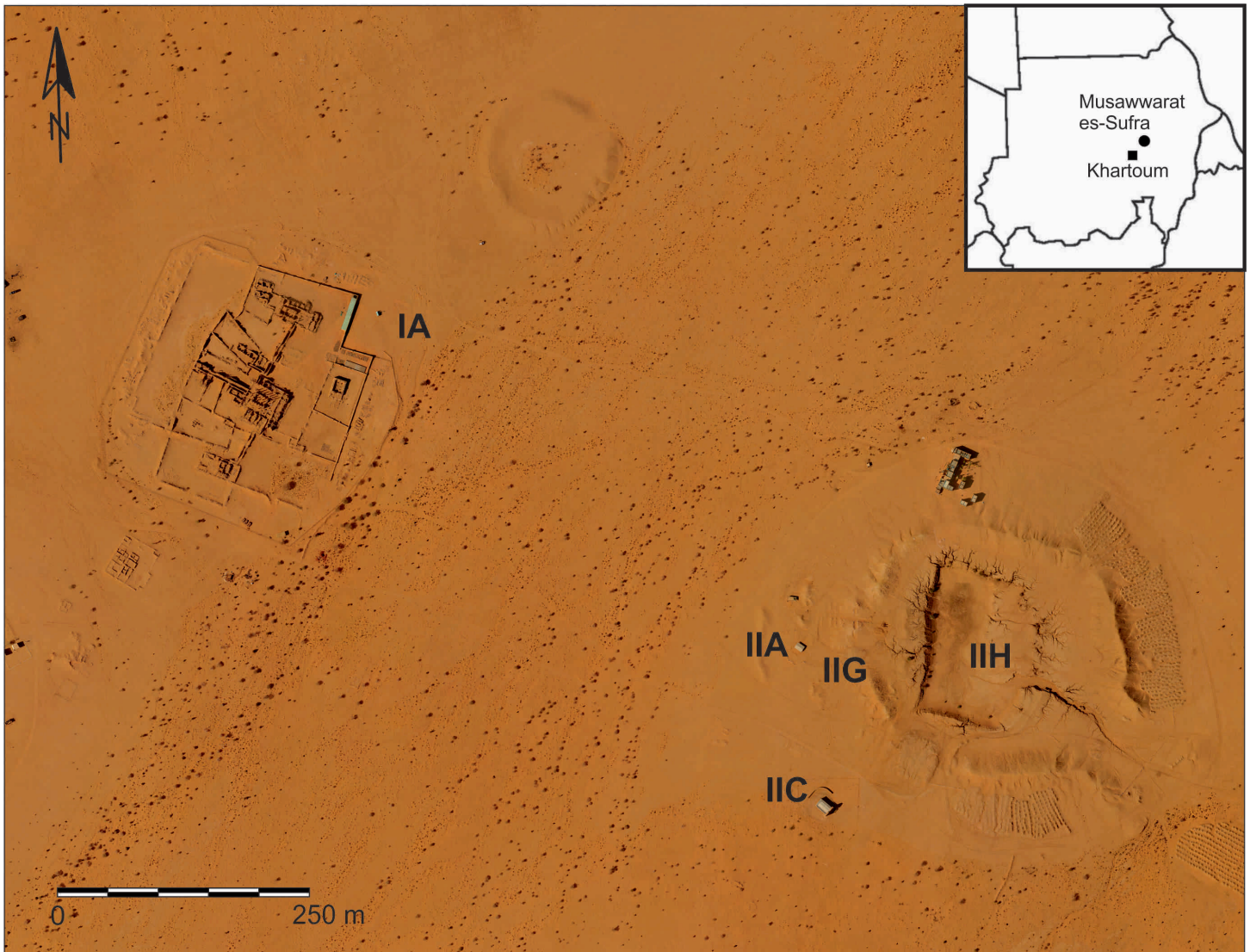


Figure 1: Orthophoto with the main archaeological structures at Musawwarat es-Sufra: The Apedemak Temple (IIC), the Great Enclosure (IA), the Great Hafir (IIIH). Temple IIA and area IIG are also indicated. Graphics: TrigonArt and Jorge de Torres.

archaeological structures in the valley were re-documented and 3D-models as well as orthophotos generated (see Kleinitz forthcoming b). During the previous (i.e. 2017-2018) field season, the valley of Musawwarat had already been re-mapped utilizing a drone-based topographic survey, and previous mapping errors were corrected with the help of the georeferenced 3D-model. Some of Musawwarat’s larger archaeological structures, such as the Great Enclosure and the Great Hafir, had also been re-mapped in detail in 2017-2018 (see Kleinitz forthcoming a).

The excavations of the 2018-2019 field season concentrated on the central area of the site with the temples of the local/regional god Apedemak (IIC) and

(possibly) the local god Sebiumeker (IIA) (Figure 2). This area had been a focus of excavation between 1960 and 1970 under the direction of Fritz Hintze from the Institute of Egyptology at Humboldt-Universität zu Berlin. Monographs were published on the Apedemak Temple (Hintze 1962a, 1971; Hintze *et al.* 1993) and interpretive work was conducted on the organization of space and the functioning of the temple (Wenig 1993; Andrassy 2007). The other structures, such as the ‘Sebiumeker Temple’ (or Temple IIA) or the adjacent ‘workshop area’ (IIG), were mentioned in preliminary and short reports (Hintze 1962b; Wenig 1984b) but never fully published (see Figure 1).



Figure 2: Apedemak Temple in the background with offering area IIC-V in the foreground and IIC-III in between. Photo Pedro Rodriguez Simon.

In order to move beyond this initial work and address questions relating to the archaeology of cult at the site of Musawwarat, archival and object-based work has been undertaken in the Sudan Archaeological Collection & Archive at Humboldt-Universität zu Berlin in addition to re-mapping efforts and excavations. This university collection holds the archive of the Musawwarat Project since its inception in 1960 together with archaeological objects and materials from the site. The latter came to Berlin as a teaching and study collection in the 1960s and 1970s on the basis of a division of finds with the Sudanese Antiquities Service (Kleinitz 2019). These desk-based stud-

ies provided a further foundation for the new research project supplementing the published excavation reports of the 1960s in respect to Temple IIA, area IIG and features relating to the Apedemak Temple (IIC). The (re-)excavations, 3D-documentation and georeferenced mapping reported here permitted the re-evaluation and the supplementation of existing data, with the view of researching the development of the cult topography and of (indigenous) cult practice at Musawwarat.

The area of the Apedemak Temple and its enclosure wall

The Apedemak Temple was first excavated during the 1960 and 1961 field seasons at Musawwarat (Hintze 1962b,

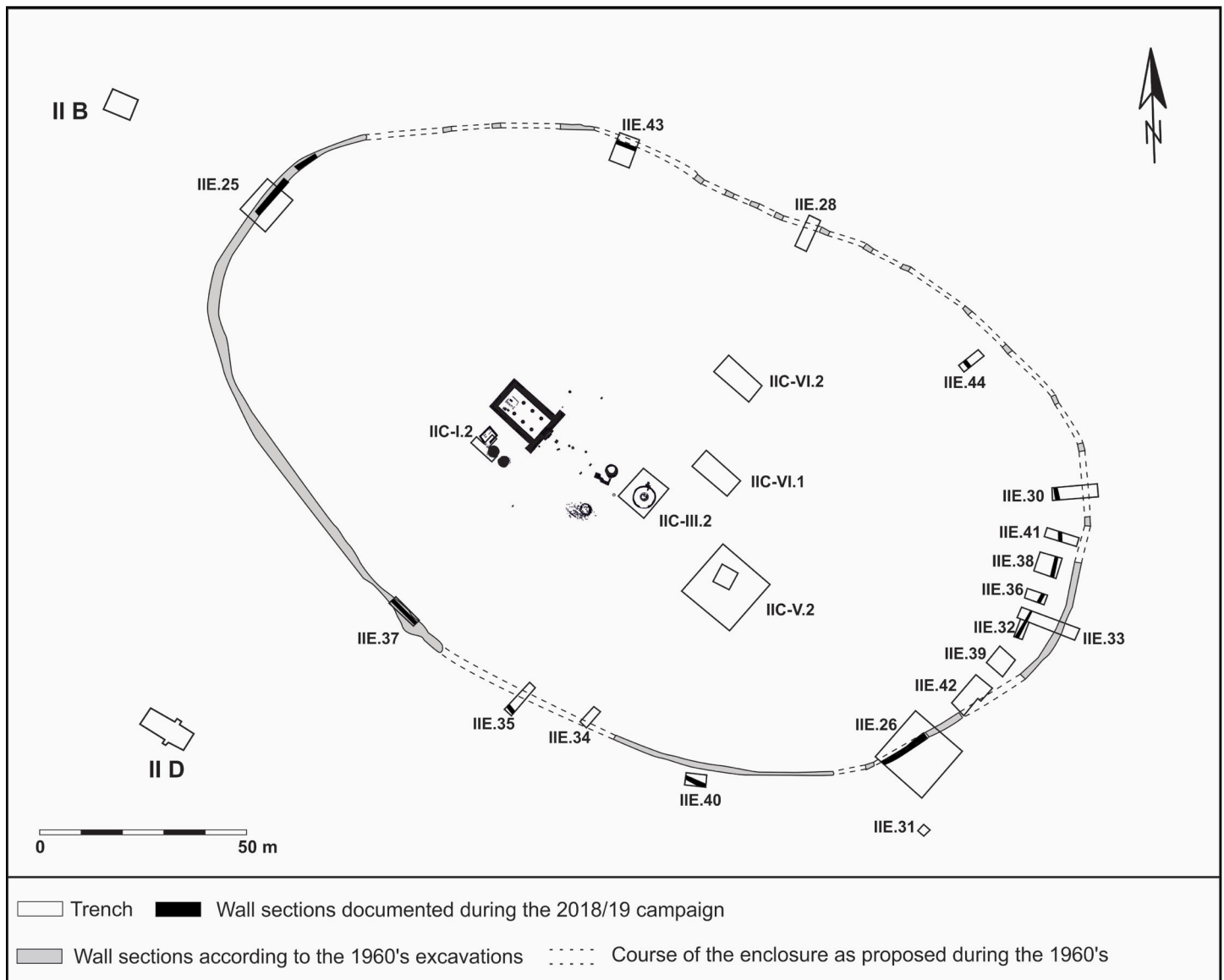


Figure 3: Trenches of the 2018/19 season in the area of the Apedemak Temple with its oval enclosure wall (IIE) mapped according to the 1960s and 2018-2019 excavations. Graphics Jorge de Torres.

1963) with a focus on reconstructing its relief decoration. The temple had collapsed in Antiquity, preserving most of its decorated building blocks buried in the sand. Relief inscriptions and depictions showed that the temple was built in the late third century BCE under King Arnekhamani and that it was dedicated to Apedemak, the local lion-headed god who is presented as being instrumental in royal legitimation and part of the state cult. In preparation for the re-building of the temple in 1969 and 1970, the ruin was dismantled in 1968 and a full excavation of its foundation layers was undertaken providing information on the building process and the use of the temple (Priese 1971, 1993; Andrassy 2003, 2007).

In contrast to temples dedicated to Egyptian gods, the Apedemak Temple comprises only one room, meaning that proceedings for the cult of this local god must have differed significantly from those of the multi-room Egyptian temples (Wenig 1984a; Wolf 2006). Attempts have been made, for example, to understand the placement of wall reliefs in relation to possible complex routes of movement through the temple's room (Wenig 1993). As part of the new research project the spatial organization of cult at Musawwarat will be (re-)investigated from various perspectives and at different levels. In the case of single-room temple

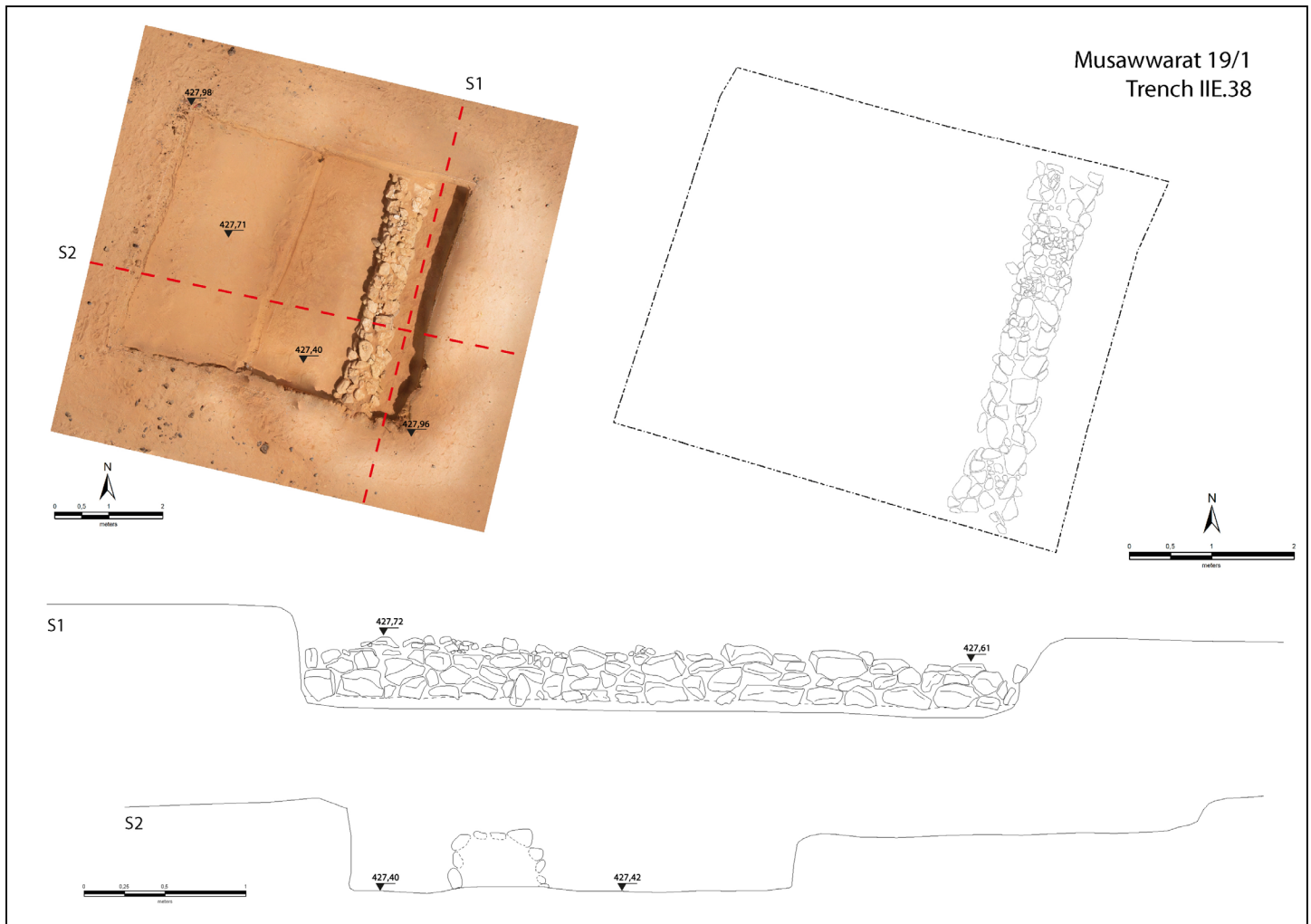


Figure 4: Documentation of the enclosure wall IIE in trench IIE.38. Graphics Pedro Rodriguez Simon.

buildings, such as the Apedemak Temple, it may be worthwhile to think about the relationship of circular and rectangular architecture, and to investigate if such temples could represent a translation of ancient local principles of circular (religious) single-room architecture into rectangular single-room (sandstone) buildings, which followed many, but not all, principles of Kushite temple architecture of the time.

The principle of the circular – or better oval – is represented at the Apedemak Temple in form of its enclosure wall (IIE), illustrating that non-rectangular and rectangular spaces are not exclusive of each other. The roughly oval (or egg-shaped) enclosure wall appears to have demarcated the sacred compound of the temple (Wolf 2006; Andrassy 2007). Hintze (1962b) excavated the enclosure wall by establishing

24 trenches along its 580 m length. He supplied a brief description of the wall and mapped its outline, yet little information was recorded and published. During the 2018-2019 field season a series of 18 trenches was set along the perimeter to clarify its exact course and to document the wall’s structure (Figure 3). While the lowest course of the wall was still visible in its western section and was simply cleared, in the northern, eastern and southeastern parts of the enclosure proper excavations needed to be conducted to locate and study the remains of the wall.

A total of 640 m² were excavated, in some cases reaching 1.8 m of depth. Remains of the enclosure were located in 16 of the 18 trenches, and were generally better preserved to the north and northeast of the temple and heavily eroded in the west, south and southeast. As a road now crosses the remains

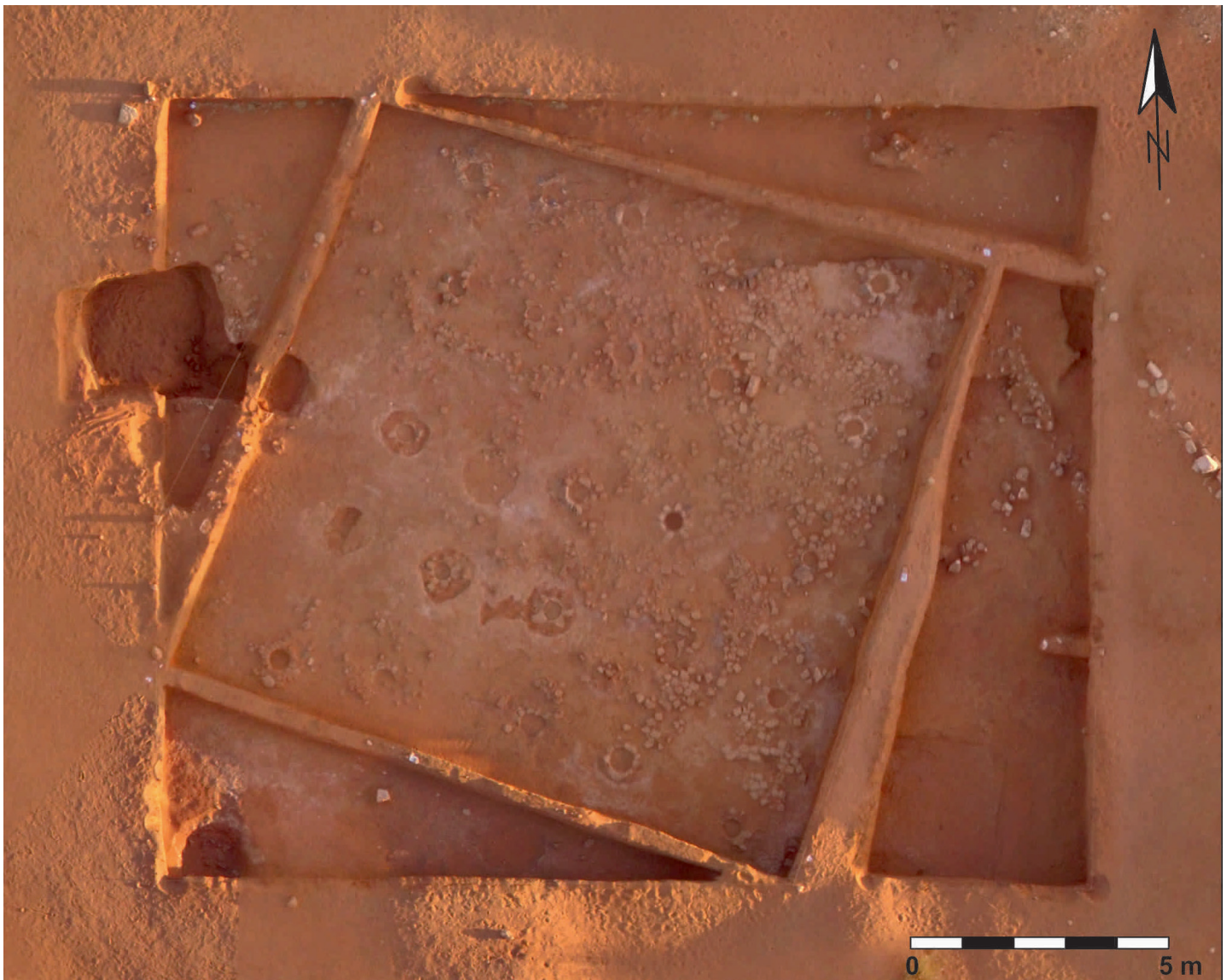


Figure 5: Orthophoto of trench IIG.2 and its extensions during the 2018/19 excavations. Graphics Pedro Rodriguez Simon and Jorge de Torres.

of the enclosure wall, some sections have been severely damaged or even destroyed by cars and heavy vehicles. In the near future a fence is planned to be constructed in order to protect the temple and its enclosure wall, and to illustrate the extent of the sacred space around the temple to its modern visitors.

All remains of the enclosure wall were mapped by drone and documented photogrammetrically. The re-excavation and mapping of IIE during the 2018-2019 season has shown that Hintze's map in its eastern section differed by several meters from the actual course of the enclosure wall. An additional wall

structure, IIM, which was excavated and mapped in this eastern section in 2004 (Wenig 2004; Scheibner 2017: 90ff.), corresponds to the enclosure wall IIE and does not exist as a separate structure (see Figure 3).

The 2018-2019 investigations showed that the enclosure wall may have been built directly on a reddish, highly compacted soil interpreted as the *wadi* bed, with some exceptions in the section built on the slope of the neighbouring Great Hafir. No foundations have been found in any of the trenches. The basic constructive technique consists of a lower course

of mostly unworked sandstone blocks, which are usually a bit wider and larger than the ones above, and which are set in two parallel lines with the space between them infilled with smaller stones. Upon this base, medium sized stones are piled forming rough irregular rows, usually presenting – in well preserved sections – an inverted U-shape which was described as a bee-hive shape by the excavators of the 1960s (Hintze 1962b). No binding materials have been documented during the excavation, although the use of an earth mortar cannot be completely discarded.

The wall presents a remarkable variety of widths, with the most common being 70-80 cm at the base and 50-60 cm in the upper part. However, it is not uncommon to find widths at the base of more than 1 m or less than 60 cm. Although most of the wall sections present a rather poor state of preservation, those sections that are complete show a maximum height of ca. 80 cm, which corresponds to what Hintze (1962b) had documented. All excavated parts of the enclosure wall were recorded photogrammetrically and 3D models were created besides the standard archaeological documentation (Figure 4). Several charcoal samples were retrieved as well as a small number of pottery sherds and animal bones.

Although the general chronology of the wall can be well established, it is still not clear if the wall was built at a single, specific moment or if it was constructed in sections, as well as if there were repairs or reconstructions during the life of the structure. The latter seems likely, judging, firstly, from the apparent differences in the use of materials, constructive techniques, and styles and, secondly, as whole sections of the wall were damaged or even almost completely destroyed by water erosion and may have been in need of regular repair and reconstruction – especially those parts located close to the *wadi*.

Within the oval enclosure wall and in the immediate surroundings of the temple, several structures were excavated in the early 1960s, including what was interpreted as a temple kitchen (IIC-I) as well as several offering places (IIC-II and III) and smaller offering installations (Hintze 1962b). In preparation for the re-building of the temple in the late 1960s, several of these structures that were related to the cult proceedings and the running of the temple were modified, dismantled, or re-located. However,

a further offering place, IIC-V, was more recently identified to the east of the temple (Mucha 2005), showing that additional excavations may still today reveal new material remains related to cult proceedings in the vicinity of the Apedemak Temple. During the re-investigation of IIC-V and its 3D-modelling, an additional sandstone container was identified and excavated, and its fill was preserved (see Figure 2).

These various structures and installations, together with the temple building and its finds, inscriptions, pictorial reliefs, and other architectural decoration, give an impression of the cult topography and proceedings immediately related to the temple of Apedemak. On a larger scale, they reveal some of the general principles of spatial organization – and of cult proceedings – within the site of Musawwarat. GIS-based mapping, for example, has already shown that the Apedemak Temple and its various offering installations are not orientated along the same axis (see Figure 2), but that the latter are arranged along an axis they share with other offering installations from the site of Musawwarat. The spatial and conceptual relationships between the various built structures and offering installations across the valley of Musawwarat are explored within the new research programme and will be presented in a future paper.

Temple IIA and ‘workshop area’ IIG

The Apedemak Temple is not the only single-room temple at Musawwarat with an oval enclosure wall and various offering installations preserved. To its north lies the small Temple IIA that was interpreted by Wenig (1984b) as the temple of Sebiuwerker, who was the local god of Musawwarat according to inscriptions from the Apedemak Temple (Hintze 1962a). Unfortunately, too little is preserved of the reliefs of Temple IIA to fully support this suggestion, but it is clear that a male god was worshipped there (Wenig 1984b). Similar to the Apedemak Temple, Temple IIA was also surrounded by a low oval enclosure wall (Hintze 1962b). While this wall does not appear in any of the published maps of the site and today has all but vanished, it was documented during the extensive excavations of the 1960s.

In Temple IIA an altar was found as well as libation basins and other objects, while a small offering installation was located just in front of the temple. Just a little more than 5 m distance from the



Figure 6: Pit 21 in area IIG after re-excitation. Photo Cornelia Kleinitz.

temple's front, a sandstone structure was located that was initially interpreted as a pyramid tomb. Its excavation yielded no pit or other grave substructure, however (Hintze 1962b). Instead, this structure would have been an open air altar, similar to structures since excavated at other Meroitic sites. Temple IIA was documented photogrammetrically during the 2018-2019 season. All archival material for this temple was gathered and processed, and is now in the process of being published.

Just to the east of Temple IIA and adjacent to the walls of the Great Hafir is area IIG, dated by Hintze (1962b) early in the site's history and interpreted as a workshop for the processing of plaster. Hintze reported 25 pits of various size, which were arranged in five rows of five pits each. The pits contained remnants of plaster and some were lined with fired bricks in the uppermost portions. Additional bricks as well

as the remains of a plastered floor were found in the area between the pits. It has been suggested that these bricks were originally part of an older structure at the site, the location and purpose of which are hitherto unknown. The suggestion of the presence of a brick building is rather interesting, as it could be from the initial occupation of the site. However, apart from mentioning the area in preliminary reports, IIG was not reported on and some of the documentation of its excavation has disappeared.

Area IIG had been left open by Hintze after its large-scale excavation in the 1960s and has recently been subject to damage from heavy transport vehicles. It was thus unclear how much could still be recovered today of the archaeological structures. . A 12 x 12 m trench was opened (and later extended to 15 x 15 m) during the 2018-2019 field season to investigate the state of preservation of area IIG and to determine if

archaeologically relevant information could still be retrieved. Surprisingly, the area was rather well preserved, and its features and finds were re-documented and mapped as far as possible (Figure 5).

Special attention was given to the documentation of the 25 pits, which had been emptied of their content during the initial excavation, and some of which had been partially dismantled. The pits show some variation in size, shape, and constructive techniques, measuring between 30 and 50 cm in diameter at their roughly circular opening and between 15 and 30 cm at their bases (where re-excavated), and between 28 and 42 cm in depth (where re-excavated). They were primarily constructed of ferricrete sandstone slabs in their lower parts and – where enough of the pits' structure was preserved – lined with a setting of fired bricks around their opening (Figure 6). Their interior was lined with a thin layer of fine plaster.

During a minor extension of Hintze's trench to the south of the identified features additional remains were found, indicating that the pit-area was larger than initially noted by Hintze. Our excavations uncovered a potential sixth row of pits (see Figure 5). A 26th pit was partially excavated, and sediment and charcoal samples were taken. Its full excavation is planned for the next field season. Interestingly, the alignment of the pits in IIG appears to correspond to the orientation of the offering installations hitherto mapped at Musawwarat, inviting us to re-evaluate Hintze's interpretation of the area as 'only' a plaster workshop. Currently, the analysis and publication of the newly documented data from IIG is underway, also including the study of the available archival data and of pottery from IIG that was collected during the 1960s.

Outlook

The re-investigation of published and unpublished materials as well as the (re-)excavation and mapping of some of the structures in the central area of the archaeological site of Musawwarat highlighted the potential of re-interpreting previous work and re-thinking some of its conclusions in view of gaining a better understanding of the cult topography, practice(s), and experience(s) at this exceptional Kushite site. Importantly, the GIS-based mapping of the built structures and offering installations highlighted that individual components of the site should

not be studied in isolation. Furthermore, it is now clear that general principles of spatial organization and concepts appear to have been followed across the site. As a result, the investigation of relationships between the various structures will therefore form a central part of the new research project.

Acknowledgments

The new research programme is headed by Cornelia Kleinitz at Humboldt-Universität zu Berlin under the umbrella of the Musawwarat Project, which has been dedicated to the study, preservation, and presentation of the site of Musawwarat es-Sufra since its inception in 1960 under the directorship of Fritz Hintze. Since 2016, Cornelia Kleinitz and Alexandra Verbovsek have been co-directing the Musawwarat Project, with the former also curating the Sudan Archaeological Collection & Archive in Berlin.

The excavations of the 2018-2019 field season were undertaken by the authors, with Zaroog Bakri Mohamed Ahmed acting as inspector for the National Corporation for Antiquities and Museums (NCAM). The director of NCAM, Abdelrahman Ali Mohamed, and the head of NCAM's fieldwork section, Hassan Ahmed, are warmly thanked for their support of the project. Fieldwork was funded by the Qatar-Sudan Archaeological Project (QSAP) and staff at the QSAP offices in Khartoum and Doha, especially Salaheldin Mohamed Ahmed and Thomas Leisten, are thanked for their support.

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