Report of the Project "Wadi Abu Dom Investigation"
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Excavation in El Tuweina

(funded by the the Qatar Sudan Archaeological Project)

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2. Introduction

During the excavation of El Tuweina in 2017 we realized that the visible structures resemble only partly the deeper layers. Several mudbrick walls came to light and even some more stone walls which we could not detect from the surface. Therefore we planned to conduct a geophysical prospection before continuing the excavation. We hoped that the results of the prospection can shed light on the general structure of the building which would enable us to clear the plan with only few sondages in 2018.

3. Geophysical Prospection

The geophysical prospection took place on December 6th and 7th 2017. Member of the team of this short undertaking were Burkart Ullrich from Eastern Atlas company, Dr. Pavel Onderka who kindly accompanied the team because no member of the W.A.D.I.-team had the possibility to be in Sudan at these dates, and Mohammed el Toum as inspector.
According to the experiences we made already 2012 in Umm Ruweim, Quweib, and Umm Khafour, using ground penetrating radar as well as geomagentics, we suggested to use the method of ground penetrating radar, because geomagnetics did not show any detailed survey record within the khor terrace soil of the lower Wadi Abu Dom; since the khor terraces in the middle Wadi Abu Dom at the locality of El Tuweina are geologically very similar, comparable results had to be expected. The company Eastern Atlas, under the direction of Burkart Ullrich, used ground penetrating radar for a prospection of 2,340 m^2 in total. This area covered the courtyard of the structure of El Tuweina as well as the surrounding of the visible buildings. The layers covered the anomalies up to 1.2 m depth, always measuring in 10 cm sections. The interpretations of the measured data were handed over on January 13th, which enabled us to adapt the excavation strategy according to these results (Figure 1). The experts stated already in their interpretative report that it was nearly impossible to visualize mudbrick walls with the given technology. Sondages verified this estimation at least

partly: in some cases of anomalies interpreted as mudbricks we found solitary installations like cooking ovens instead of linear structures (like at trench 3-6); in other cases there were no archaeological records at all (like in parts of trench 1-11). In other parts where the ground penetrating radar did not show significant anomalies we discovered mudbrick or even stone walls (as in trench 1-18 or 1-20). At the other hand, some rectangular or linear structures visible within the radar profiles were proved by the soundings (like at trench 1-10, where a stone wall not known before was revealed by the radar profile, or at trench 1-16, where a rectangular anomaly turned out to be a mud brick installation).

4. Excavations

4.1. Trenches

Altogether, 12 trenches were defined (partly according to the ground penetrating radar prospection) and excavated (Figure 2). Additionally, one trench already excavated in 2017 was re-opened for botanical sampling, and an area in the north of building feature 3 was cleared from sub-recent debris in order to clarify the wall edges; nevertheless, the original stratigraphy in this area was not invasively investigated so far.

4.1.1. Trench 1-10

Since the ground penetrating radar results showed a linear anomaly east of building feature 2, the trench was set out around it. It turned out that the anomaly represented a stone wall of rubble masonry with loam mortar and plaster (Figure 3), which can be interpreted as a northern delimitation of (at least a part of) the compound feature 1. It turned out that the southern outer wall of building feature 2 re-used parts of this wall; nevertheless, the other walls of building 2 are stratigraphically younger than the newly discovered wall, which is of some significance for the general construction history of the building structure of El Tuweina (cf. paragraph 4.2.).

Additional results from this trench were another stone setting rectangularly adjacent to the stone wall and a fixed installation for food preparation. The stone setting, placed at the southern edge of the stone wall, is stratigraphically contemporary to the wall, but since it consists of only one layer of flat stone slabs and is only 1.15 m long, it is most probably not a part of another wall, but simply a stand or support where some goods were placed upon. The cooking installation was found directly within the northern section of the trench. It consists of a large globular jar which was set bottom-up into a small pit; the bottom (now the upper part of the installation) was intentionally broken. The vessel was found filled with large amounts of animal bones and charcoal, since it could be interpreted as a kind of barbecue installation (Figure 4).

4.1.2. Trench 1-11

Since in trench 1-2 already investigated in 2017 mud brick wall structures were observed at the eastern section of that trench which prolonged eastwards into the courtyard of feature 1, a new trench was set out to the east. It turned out that the southern wall of the mud brick structure continued in an eastern direction, while the northern one ended up in a flat construction obviously used as a stand or support for two vessels, closely resembling modern sir stands. Around this construction, several post holes were documented, indicating that this part of the building was once partly made of lightweight vegetable architecture like a rakuba (Figure 5).

4.1.3. Trench 1-12

Results from the ground penetrating radar showed some linear anomalies prolonging the wall already investigated by trench 1-10 to the east towards a wall corner already documented in 2017. In order to clarify this record, trench 1-12 was set out east of trench 1-10. The linear anomaly turned out to represent a stone wall whose construction technology as well as stratigraphy closely resembles the wall already investigated at trench 1-10. The wall shows a bent ground plan which cannot be completely explained so far, but might be connected to a (secondary?) entrance situation at this corner of feature 1 (as already presumed in 2017). But it has to be stated that the architecture in this part of the enclosure is heavily disturbed (most probably by floating surface water) so that a precise architectural plan cannot be reconstructed here. An additional stone feature which showed up in this trench was a secondary stone wall pointing north, whose function cannot be determined so far and has to be subject to future investigations.

Another slight linear anomaly also detected within the 0.4 – 0.5 m radar slice turned out to be a mud brick setting. It was obviously not a part of a wall since it only consists of one single layer of mud bricks. It can probably be connected to another lightweight construction, whose post holes did not preserve here due to the soft and sandy soil within this trench (Figure 6).

4.1.4. Trench 1-13

This trench was set out to clarify the architectural record already documented during the preliminary architectural soundings taken out here in 2013. It turned out that the internal walls in this trench are stratigraphically younger than the outer wall of feature 1. An additional mud brick wall which showed up at the northern section of the trench turned out to be limited to this spot and not prolonging further west into the courtyard. The internal stone walls and the mud brick wall are stratigraphically contemporary to each other. Below the internal stone wall at the southern section of the trench a linear setting of post holes (with remains of the wooden beams still in situ) was documented, stratigraphically connected to the outer wall of feature 1, indicating that the stone and mud brick wall construction was erected at the spot of an earlier building phase carried out in lightweight architecture (Figure 7).

The space between the outer wall of feature 1 and the internal wall constructions was filled with an extraordinary amount of bones and other debris indicating that it was re-used as a rubbish pit. Among the finds in there were also fragments of a figurine of a quadropode, probably a bovine (Figure 8). Since it consisted of unburnt clay, it is possible that it was not intended for long-term use (cf. attached find list, find no. 1000-1-13-29-1).

4.1.5. Trench 1-14

Since at trench 1-11 a mud brick wall was documented prolonging to the south, another trench was set out to clarify this structure. It turned out that it belonged to a rectangular room whose dimensions (by pure coincidence) resembled the trench setting rather closely. The mud brick walls of the room were plastered; the plaster shows at least four different phases, the oldest one of rather elaborated quality and red color (Figure 9). One of the upper layers in this trench consisted of a huge ash accumulation, still containing large remains of wooden beams as well as smaller vegetable fiber (Figure 10). This assemblage of finds indicates that a roof construction made of hasir burnt down, and the roof collapsed; afterwards, the room was obviously not in use any more.

Another interesting feature in this room was an entrance to the west of the room with a rather high

mud brick threshold. At a later phase of usage, this entrance was roughly blocked with stone slabs, which shows some resemblances to secondary door blockings already observed at Umm Ruweim 1.

4.1.6. Trench 1-15

After the discovery of mud brick constructions in the trenches 1-12 and 1-13, another trench was set out between them in order to clarify whether these two mud brick constructions might be connected to each other. It turned out that both structures – the wall from trench 1-13 and the single-layer setting from trench 1-12 – did not prolong so far, and that the area of trench 1-15 was empty of architectural remains. Nevertheless, the trench revealed some ash accumulations and kitchen debris, showing that some parts the open courtyards at El Tuweina were used for different styles of food preparation.

4.1.7. Trench 1-16

Since the results of the ground penetrating radar showed a rectangular anomaly in this area, a trench was set out around it. The anomaly, first interpreted as a basin or rectangular pit, turned out to result from a mud brick construction and two directly adjacent pots most probably used for barbeque (Figure 11) similar to the example already documented in trench 1-10.

Similar to the mud brick setting already documented at trench 1-12, the construction consisted of only one layer of mud brick, and thus cannot be interpreted as the remaining of a wall. Two holes in the construction might indicate that the mud brick layer was used to support lightweight architecture.

Directly adjacent to the mud brick setting, two vessels placed in pits were found, with similar characteristics as the installation already described at trench 1-10: Both vessels were placed upside down into their pits, and the former bottom was cut in order to get a large opening. Inside the smaller eastern pot a great amount of ash and bones were found, in the larger western pot less of it (but still a significant quantity). Interestingly, at least the western vessel was placed into the pit with different layers of ceramic material.

4.1.8. Trench 1-17

This trench was set out in order to clarify the architectural record in this area. Unfortunately, it turned out that the area of the trench was completely disturbed already (most probably due to looting connected with the already documented caterpillar destructions in building 3) and recently refilled with aeolic sand material. For this reason, only measurements to clarify the wall construction were taken.

4.1.9. Trench 1-18

This small trench was set out in order to clarify the southern edge of the mud brick setting already described at trench 1-12. It turned out that the construction ends up in a corner setting immediately south of the southern section of trench 1-12.

4.1.10. Trench 1-19

This trench was set out prolonging trench 1-14 to the south in order to clarify the southern edge of the room structure already documented there, and its connection to the structures in the south-western corner of the courtyard of feature 1. It turned out that the room directly adjacent to the one already documented in trench 1-14 consisted of an internal wall made from mud brick, and three

outer walls made from stone masonry, forming the outer delimitation of this room structure or apartment. The walls were plastered in different phases; in one of the later using phases, the floor was completely covered by strong, but rough plaster, while upon it a layer consisting predominantly of animal dung with a huge amount of animal bones was documented (Figure 12). This might indicate that at least during one of the later using phases of the building complex (maybe after the collapse of the roof of the adjacent room due to a fire) this room was used as a kind of stable for animals.

4.1.11. Trench 1-20

This small trench was set out in order to clarify the northern stone wall appendix to the wall already described at trench 1-12. It turned out that the stone construction formed a corner to the west; other construction details have to be subject to further investigations.

4.1.12. Trench 3-1

The trench in one of the elongated rooms of building feature 3 from 2017 was re-opened in order to acquire further botanical samples at the floor level (cf. paragraph 5).

4.1.13. Trench 3-6

The ground penetrating radar profile showed a linear anomaly directly south of the outer wall of building feature 3; a trench was set out around it. Despite the fact that the trench was excavated until the geological soil, no traces of a wall or a similar linear object were found there. At the other hand, some ash accumulations occurred. One of them correlated with a pit with a re-used vessel very similar to the installations already documented at the trenches 1-10 and 1-16. Here, the vessel was also placed upside down into a small pit, the bottom was intentionally broken, and the interior of the vessel was found filled with a concentrated accumulation of ash, charcoal, and animal bones. Since the vessel was found in a much better general condition than the others, it was recovered en bloc (Figure 13). Additionally, near the eastern section of the trench remains of an installation made from quartzite pebbles, also connected to a lenticular ash accumulation, were found, indicating that also a stone bed based method of barbeque was in use in this courtyard (which was also documented in other parts of the Wadi Abu Dom and named by the German terminus technicus “Steinplatz”).

4.1.14. Trench 3-7

At the northern slope of the debris heap of building feature 3, a surface clearance of looter’s and other sub-recent debris was carried out in order to get a first impression of the architectural ground plan in this part of the building. Only the upper edges of the walls were cleared and no original stratigraphy touched; nevertheless, the surface clearance area was given a trench number in order to label surface finds properly. Four small rooms hitherto unknown were discovered, forming a kind of apartment (Figure 14). Additionally, an (obviously earlier) wall structure was revealed. The function and stratigraphical connection of these wall and room structures have to be subject to further investigations.

4.2. General conclusions from this season’s excavations

It turned out that the stratigraphical sequence documented in the trenches could probably be interconnected at least to two main construction and usage phases (and, most probably, additional

phases of squatter occupation). It turned out that building feature 2 was constructed in a later building phase, but re-using already existing wall structures like the northern limitation of the hosh enclosure of building feature 1. As far as we can estimate from our actual knowledge, the different barbequing installations documented during this campaign seem to be connected to this phase of usage. The internal mud brick and stone masonry installations close to the western limitation of the hosh wall (i.e. the structures documented in the trenches 1-11, 1-14, and 1-19) seem stratigraphically connected to the earlier phase of usage. Nevertheless, it remains unclear whether the internal stone masonry and mud brick installations documented in the east (trench 1-13) are to be connected with the same construction and usage phase as building feature 2, or are to be interpreted just as small-scale reconstructions.
Additionally, the stratigraphical connection between building feature 3 and the other building features is still unclear, despite the fact that trench 1-10 and 3-6 showed some resemblances concerning their stratigraphy which could indicate that at least the southern and central part of building feature 3 might (against the architectural logic of the ground plan) belong to the oldest parts of the building structure of El Tuweina. Nevertheless, the surface clearances at the northern edge of building feature 3 revealed that this building shows different construction and usage phases on its own; it has to be subject to future investigations how they could be connected to the internal stratigraphical sequence of the building features 1 and 2.

The different agglomerations of post hole structures in the trenches 1-11 and 1-13 as well as the remains of wooden building material in the trenches 1-13 and 1-14 show that at least during an early construction and occupation phase lightweight vegetable architecture played a significant role in the layout of the building complex. This combination of walls from different building materials (like stone and mud brick) with these lightweight and most probably partly open constructions resemble modern architecture in the wadi (as for example the nearby istiraha of Fadlallah, the ghafir of the site). An interesting parallel from the archaeological context can be found in the so called Small Enclosure at Musawwarat es Sufra, where similar combinations of these construction techniques were in use.

Interestingly, in this campaign a large amount of food preparation facilities were excavated. The most prominent are the four vessels found upside down with traces of fire and significant amounts of animal bones, which most probably can be interpreted as a kind of barbeque installation. One Steinplatz found near (and stratigraphically connected to) such a barbeque device illustrates that different styles of food preparation were in use during one phase of occupation. These diverse food preparation methods (all of them practiced in an open courtyard, but close to walls or other installations which offer at least some protection from wind), together with the significant amount of cattle bones (cf. paragraph 6.) indicate that food preparation and consumption played an important (and probably prestigious) role for the inhabitants of El Tuweina.

Concerning the general function of the building, an elite context (as already stated in 2017) could be indicated by some decoration elements like painted plaster, by the differentiated styles of food preparation, and by the quality of some of the small finds and ceramics. Still no traces of direct Meroitic administration (like inscribed material or religious installations) were documented, indicating that the building structure was the residence of a local elite rather than an outpost of a representative of the Meroitic central state. Nevertheless, the specific function of the different room

structures or “apartments” is in many cases still unclear, despite the fact that the overall layout generally hints to a residential character of the building rather than to a primarily administrative or economic function (like an outpost, a collecting point for trade goods, or a caravansary).

5. Botanical survey

From January 22nd until February 1st, Prof. Dr. René Cappers (University of Groningen) accompanied the team to take archaeobotanical samples. The samples taken originate from El Tuweina as well as Umm Ruweim, where future excavations are planned. At El Tuweina, two samples of mud brick were investigated concerning their organic temper; the first macroscopic analysis did not show any clearly identifiable remains of cultivated crops, which might be correlated to the idea that also during Meroitic and Post-Meroitic times the general economic structure of the area was mainly based on pastoral concepts. Nevertheless, an in-depth microscopic analysis of the probed material in Groningen shall further clarify this question. Additionally, samples of organic material from the floor level of the large elongated rooms in building structure 3 shall help to clarify the still open question whether these rooms were used for storage or for habitation purposes.

At Umm Ruweim, trench 1 (which was already probed and prepared for quick re-opening in autumn 2017) was botanically investigated and probed. Additionally, mud brick samples from the archaeological structure of Umm Ruweim 3 were taken. We hope that the in-depth microscopic analysis of these samples in Groningen could contribute to our knowledge about the presence of cultivated crops in this part of the Wadi Abu Dom in Antiquity and thus help us planning and preparing large scale excavation activities in the oasis of El-Rum in future.

Additionally to the botanical investigations of material from archaeological contexts, the recent flora of Wadi Abu Dom was comprehensively probed. As already stated for the archaeological record, a clear differentiation between the lower, the middle and the upper Wadi Abu Dom is also present from the botanical point of view, concerning cultivated crops as well as wild plants. An in-depth analysis of the recent flora, especially the trees, might help us in future to compare botanical remains from different archaeological contexts with its recent parallels, an thus contribute to our knowledge of the palaeoclimatology of the Bayuda region (which is still a research desiderate).

6. Archaeozoological study

Last year we transported the animal bones to Muenster to be studied by PD Dr. Valeska Becker. Although she did not finish her investigation yet, she gave a verbal report on the first results. It was very interesting to learn that there were astonishing amounts of cattle bones among the material. Goats and sheep are also common, but cattle as a category of animals which need significant amounts of water and green fodder in walking distance from surface water was a surprise. It could indicate that the role of cattle keeping played some role concerning social prestige, as it is ethnologically documented for some recent ethnic groups in Kordofan and South Sudan.

Until now no bones of a camel could be identified.

We plan to export the animal bones of the campaign of this year again to enlarge the data corpus for the study.

7. Proposal for future activities

Although the excavation of El Tuweina is already in an advanced stage, several questions are not answered yet. These include first of all the overall connection of the different building stages as

well as the function of some rooms. Therefore, we plan a final campaign for 2019. We want to excavate at some specific areas and do a surface clearing for the rest of the building, hoping to document at least most of its architectural ground plan.
But for the general future of the W.A.D.I. project the excavation of Umm Ruweim is planned. An application for funding is under review at the German Research Foundation. If the funding is granted, we hope to be able to start in autumn 2018 with that project.

8. Potential dangers

After the geophysical prospection in December, our ghafir Fadlallah mentioned people with devices for the search for gold near the structure of El Tuweina. He informed Mohammed el Toum who immediately organized a trip to the site. The gold-diggers left already and did no harm, and also some camel herders who built their camp nearby did not affect the ancient structure, thus there were no further destructions at the site. Nevertheless one should be aware of possible dangers, especially because the archaeological site is so close to the asphalt road and easily accessible by heavy machinery.

9. Public relations

From February 16th till February 18th and again on March 5th, the excavation team was accompanied by a film crew from Jäger & Sammler productions, which shot some movie sequences on behalf of the Qatar Sudan Archaeological Project (QSAP). The film crew documented archaeological investigations of the trenches 1-10, 1-11, and 3-6 (Figure 15) as well as the camp life and the interaction of the excavation team with the local inhabitants.
On Sunday, March 5th, a public lecture was organized in the school of Merwa. The Omdar and his son spread the message and more than 100 people – men, women and children – attended the lecture. The lecture was given by Angelika Lohwasser and Tim Karberg, and translated with many additional information by Mohammed el Toum. For this occasion, the film-team of the QSAP-film organization arrived again and documented the lecture. The audience was very interested which resulted in a vivid discussion about specific archaeological installations and finds. The people in Merwa are aware of the records of their past and especially the workers at the excavation started to discuss the function of some features present in the archaeological record with us.

10. Final remarks

We would like to thank Mr. Mohammed el Toum and Mr. Loai Shamsalola very much for all their indispensable help and smooth organization! They have acted as good mediators to the people in the Wadi Abu Dom as well as experts for organization and especially as good friends to us!

Karima, 14.3.2018 Angelika Lohwasser/Tim Karberg

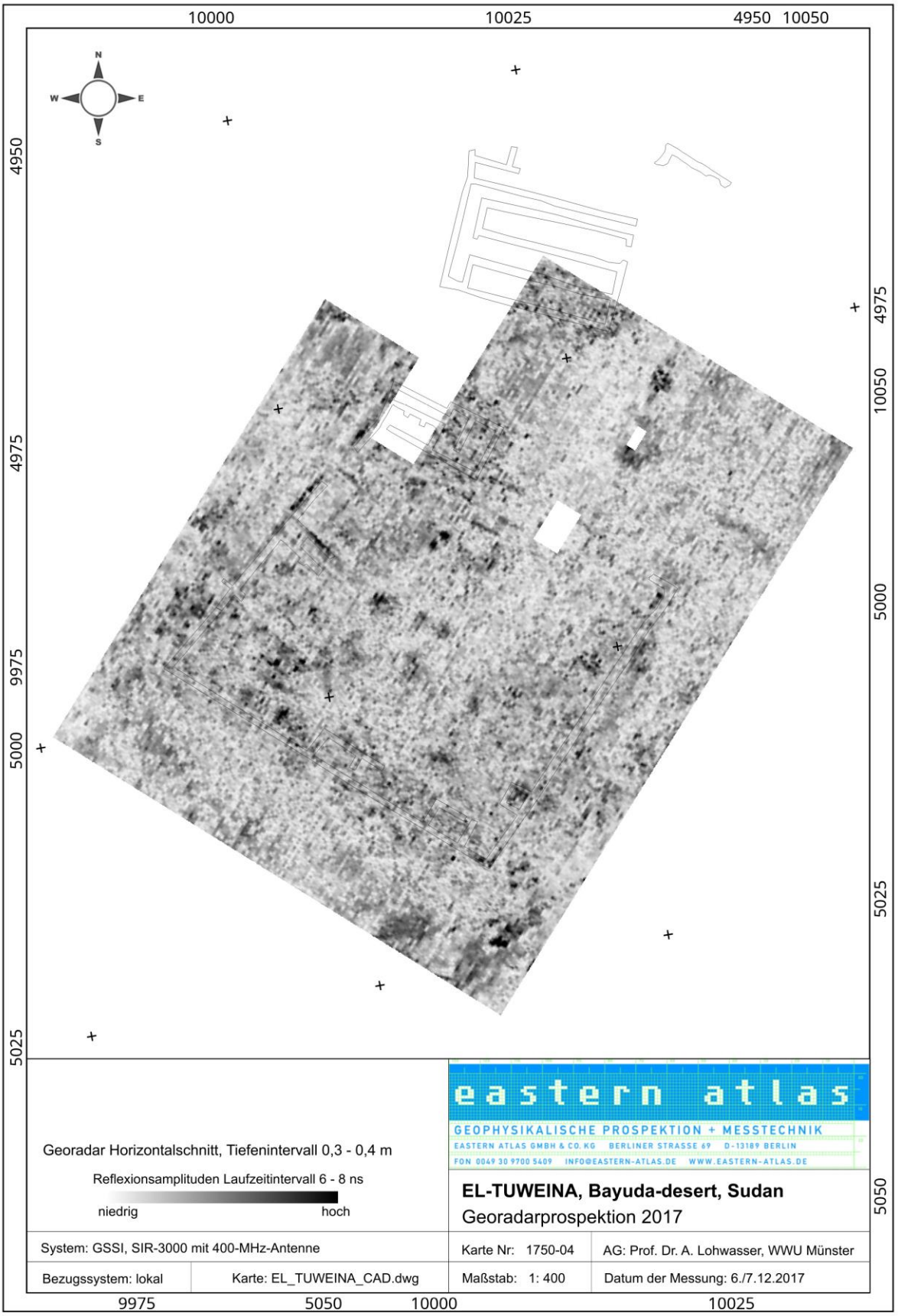

Figure 1: Example for the ground penetrating radar results: radar anomalies between 30 and 40 cm below actual surface

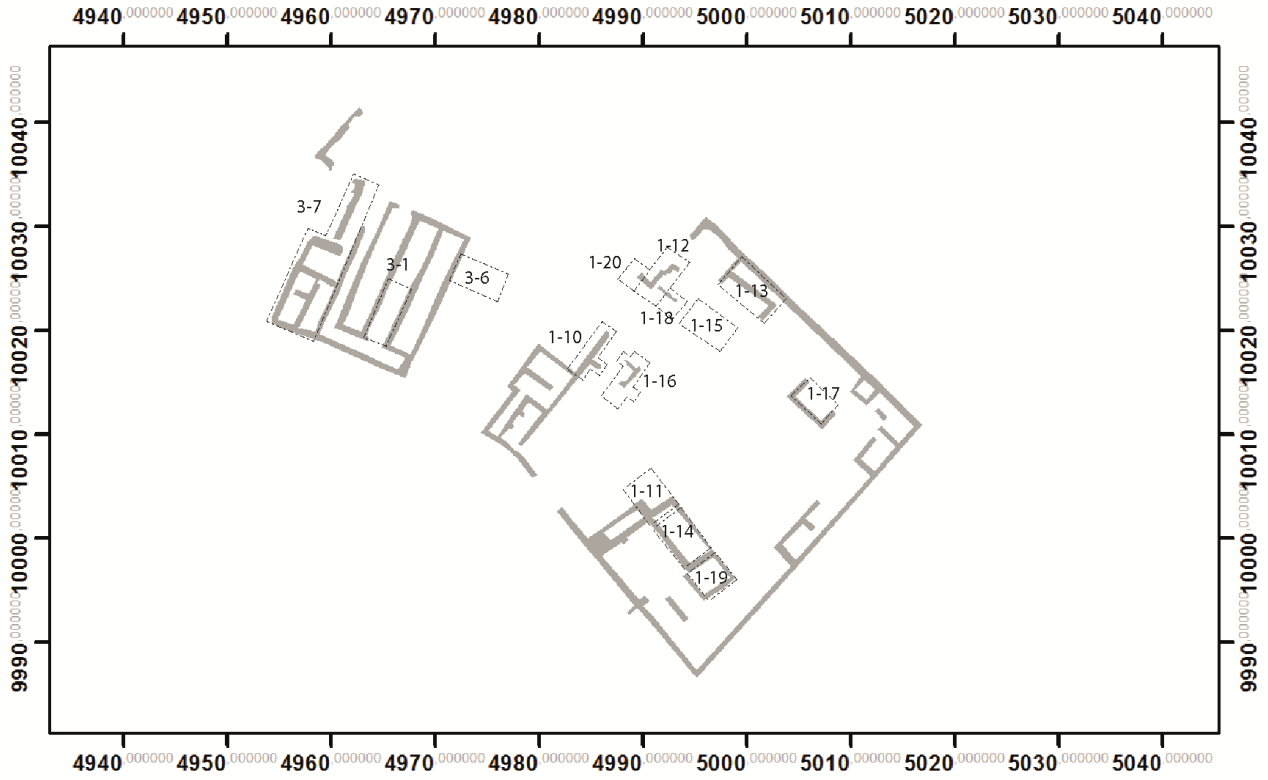

Figure 2: Trenches investigated in the spring campaign 2018

Figure 3: Wall structure at trench 1-10

Figure 4: Barbecue installation at trench 1-10

Figure 5: Probable sir stand and post holes at trench 1-11

Figure 6: Stone and mud brick constructions at trench 1-12

Figure 7: Post hole setting at trench 1-13

Figure 8: Clay figurine of a quadropode

Figure 9: Different plaster phases at trench 1-14

Figure 10: Ash layer at trench 1-14

Figure 11: Mud brick construction and barbeque installations at trench 1-16

Figure 12: Stone and mud brick walls of the room at trench 1-19

Figure 13: Barbeque installation at trench 3-6

Figure 14: Room structures north of building feature 3

Figure 15: Filming of a movie sequence at the excavation