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Meninx – geophysical prospection of a Roman town in Jerba, Tunisia

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Meninx, located in the southern part of the island of Jerba, was an important Roman harbour and one of the largest production sites of purple dye in antiquity. Existing since Punic times, the city experienced its cultural and economic heyday in the 2nd and 3rd centuries AD. The site extends ca. 1.7 km along the coast and ca. 200 to 600 m inland. However, it is still unclear how far it extends under water.

Since the 19th century, sporadic excavations near the supposed forum and outside the city were undertaken. From 1996 to 2006 Meninx was included in the research project "An Island through Time: Jerba Studies", during which comparatively small areas in the centre of the site were excavated (Drine *et al.* 2009). These excavations were accompanied by limited magnetometer measurements in the centre around the basilica and the *macellum*.

In the framework of the new project "The urban structure of the ancient town of Meninx" by the Ludwig-Maximilians University (LMU) Munich, a large-scale magnetometer prospection was conducted in 2015. The results provided the first coherent picture of the extensive core area of the ancient city that extends along the coast. For measurement we applied the Scintrex SM4G-Special Caesium magnetometer in a handheld duo-sensor configuration with a sensitivity of ±10 pT, and a sampling rate of 25 x 50 cm, interpolated to 25 x 25 cm. The configuration allowed us to cover almost the entire surface regardless of the extremely uneven topography, ruins, piles of rubble and sand as well as bushes and little trees which cover the area.

Results

Contrary to earlier assumptions based on some of the excavation results, the magnetogram shows no orthogonal street system in the old city centre of Meninx. While the streets themselves are not always clearly visible, the alignment of the buildings shows their layout throughout the city. Also, the position of the forum is not as clear as earlier research suggested.

Although the partly excavated basilica is covered with pieces of highly magnetic rocks, it was possi-

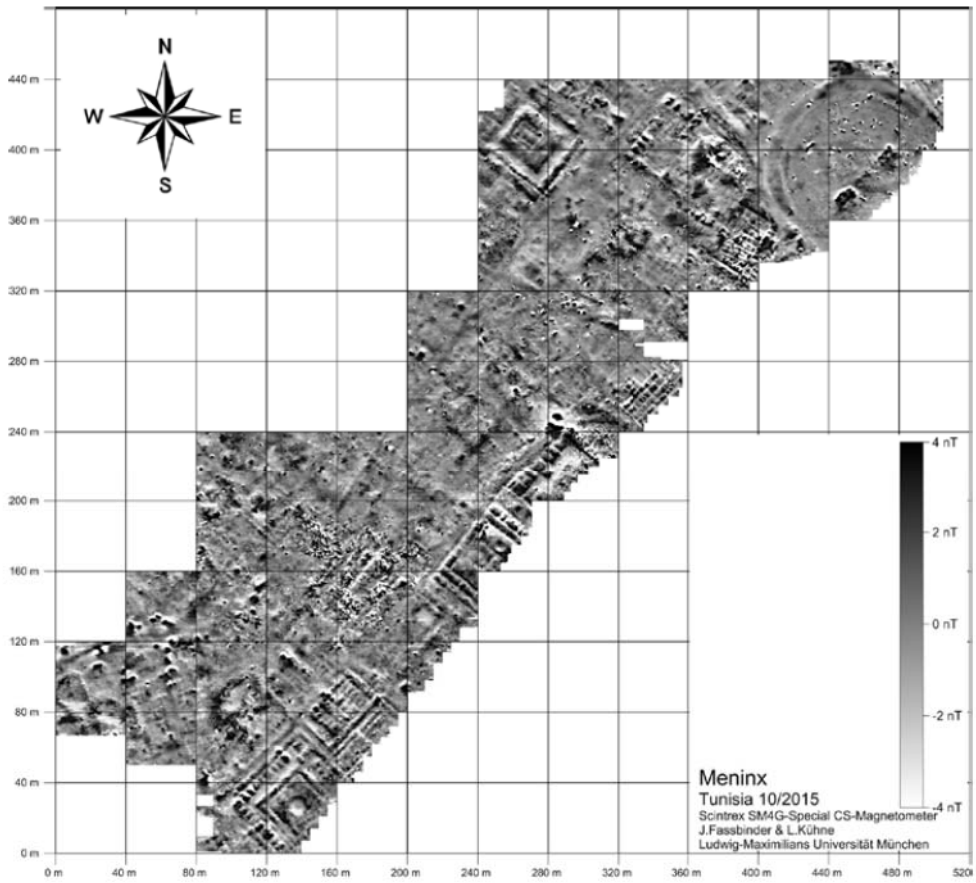

Figure 1: Magnetic map of the survey area. Smartmag SM4G-Special caesium-magnetometer, sensitivity ±10 pT, duo-sensor configuration, sampling rate 25 x 50 cm, interpolated to 25 x 25 cm.

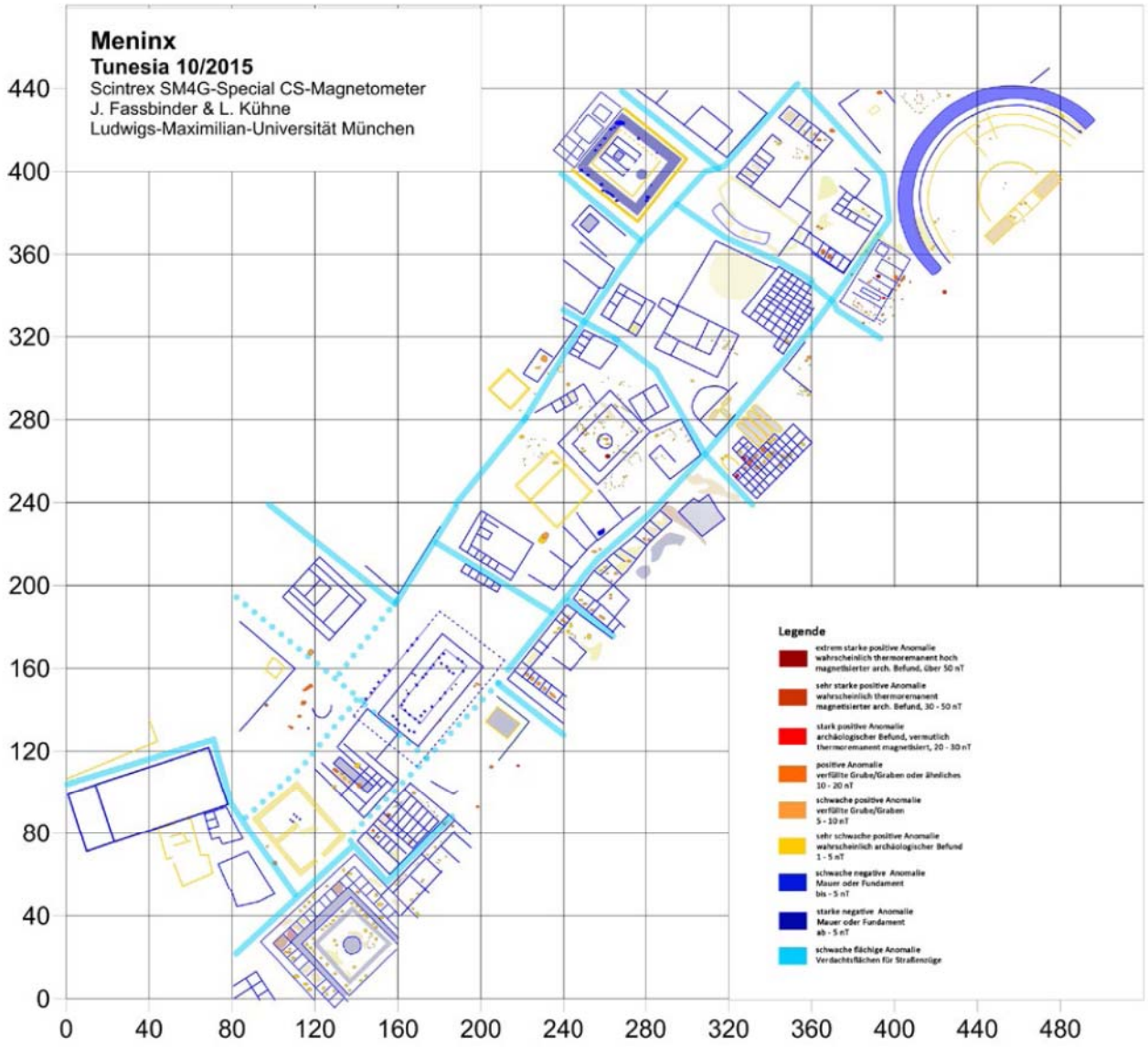

Figure 2: Classification and interpretation of the magnetogram based on magnetic value.

ble to connect linear anomalies with column bases. Some columns are still visible above ground while others are not. For interpretation of data it was important to note that the columns and some of the representative buildings were made of marble and thus feature "negative" magnetic susceptibility. As a result, some large column fragments lying on the surface in the westernmost part of the site with a diameter of 80 cm and a length of up to 5 m long clearly show as a strong dipole anomaly as if they were pieces of iron.

The theatre is still visible on the surface through its huge debris and sand layers. In the magnetogram the substructures made of marble and other stones are clearly visible. Even parts of the stage are preserved, probably partly made of burned bricks. An enclosed area marked by piles behind the *cavea* seems to belong to the theatre setting. Connected to the theatre on its south-eastern side are several storehouses, joined by several cisterns a little further away, of which four were previously excavated.

The building south-east of the basilica seems to feature *tabernae* along the street, while the magnetic values from ±5 - ±20 nT seem to indicate organic material in the context of these rooms. Similar *tabernae* surround the *macellum* in the south. Some of them even have values up to ±50 nT, indicating either floor heating or cooking in these rooms. North-east of the *macellum* is another storehouse.

In a south-eastern direction our survey was limited by the coastline. If the city centre continued towards the south-west and if a former harbour was located there, its location will require an extended sonar survey.

Thanks to the interpretation based on the magnetic value, certain details of the site plan can be depicted very clearly, such as the different ranges of mag-

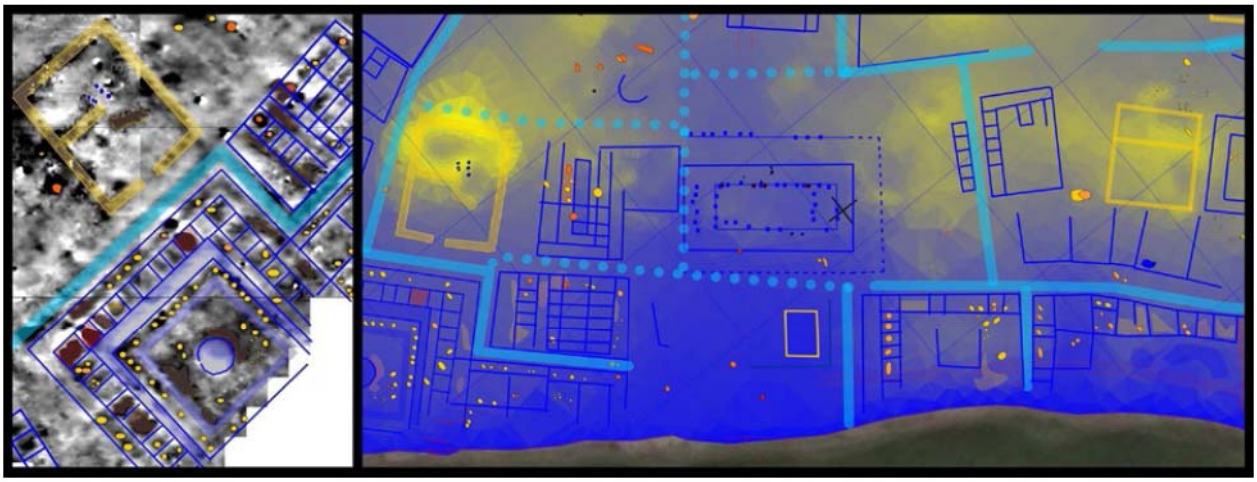

Figure 3: Details of the interpretation: *macellum* with high magnetic values in some *tabernae* (left); area of the basilica with two buildings showing as positive magnetic values (right).

netization of the shops in the *macellum* mentioned above, which indicate different uses of the rooms. At first glance, positive values of two buildings in the city centre seemed to indicate an earlier construction phase with burned bricks or rocks with higher magnetic susceptibility than those of limestone. But the elevation map revealed that the higher values in the magnetogram are caused by the surrounding material. The thick debris layers contain a lot of diamagnetic shell waste material from the purple dye production during late antiquity. Thus, these buildings are covered by less magnetic material than the stone buildings themselves.

Bibliography

Drine, A., Fentress, E. and Holod R. (2009) *An Island through Time: Jerba Studies 1. The Punic and Roman Periods* (JRA Suppl. 71). Portsmouth: Journal of Roman Archaeology.