

GEOPHYSICS PROJECTS

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The archaeological geophysics surveys conducted by the British School at Rome in collaboration with the Archaeological Prospection Service of Southampton (APSS) have concentrated on sites within Italy this year. In addition to the two surveys reported in more detail below, geophysical survey work has been carried out at Aveia (Abruzzo), Tor Pagnotta (Rome), Interamna Lirenas (Lazio), Falerii Novi (Lazio), Contrada Damale (Calabria) and Peltuinum (Abruzzo).

Ground-penetrating radar (GPR) is a very versatile geophysical technique, and can produce excellent results even in challenging circumstances. We faced such difficult conditions in our surveys of two burial mounds that lie on the Via Appia (between the fifth and sixth miles) and at Alba Fucens in the Abruzzo.

VIA APPIA, ROME

Radboud University Nijmegen's 'Mapping the Via Appia Project' concentrates on the landscape and monuments between the fifth and sixth miles (http://www.fastionline.org/micro_view.php?item_key=fst_cd&fst_cd=AIAC_2872 (last consulted 21.07.2014)). The project is supported and funded by Radboud University Nijmegen, the Netherlands Organisation for Scientific Research and the Royal Netherlands Institute in Rome. It is directed by Dr Stephan Mols and Dr Eric Moormann; and the field directors are Dr Jeremia Pelgrom and Dr Christel Veen.

The BSR/APSS team was invited to survey two burial mounds as part of this project. The twin tumuli are situated opposite the grounds of the Villa of the Quintilii, and often have been associated with the battle between the Horatii and the Curatii, claimed to have taken place at the fifth mile from Rome in the seventh century BC (Livy 1.22–6). This location was the boundary between land held by Rome and that held by Alba Longa, marked by the *Fossae Cluiliae*. The result was a victory for the Horatii, and the two tumuli supposedly mark the burial spots of the two brothers, who died in the battle. Firm archaeological evidence for this conflict does not exist, but the aim of the overall project is to seek some dating evidence for the mounds, to clarify their form, and to complement evidence recovered from recent excavations and help guide future ones.

When faced with the steep slopes of the two burial tumuli, which rise up to just over 5 m in height, the only geophysical survey technique that can attempt to reveal what lies within them is GPR (Fig. 1). The best methodology to use when surveying steep slopes with GPR is debated, but our survey strategy, designed specifically for this project, aimed to collect data at regular intervals, in a manner that compensated for the effects of the slope. Consideration of the topography was paramount, and during the data processing stage the GPR readings had to be adjusted according to the topographic data we collected, so that any archaeological features within the mound would be displayed in their correct position and at an accurate depth.

The geophysics results indicate traces of buried features in each of the tumuli, but no coherent internal chambers could be identified. The combined processes of robbing and erosion doubtless would have changed their form over the centuries, and it is thought that they also may have been 'reconstructed' on occasions: as a consequence, the lack

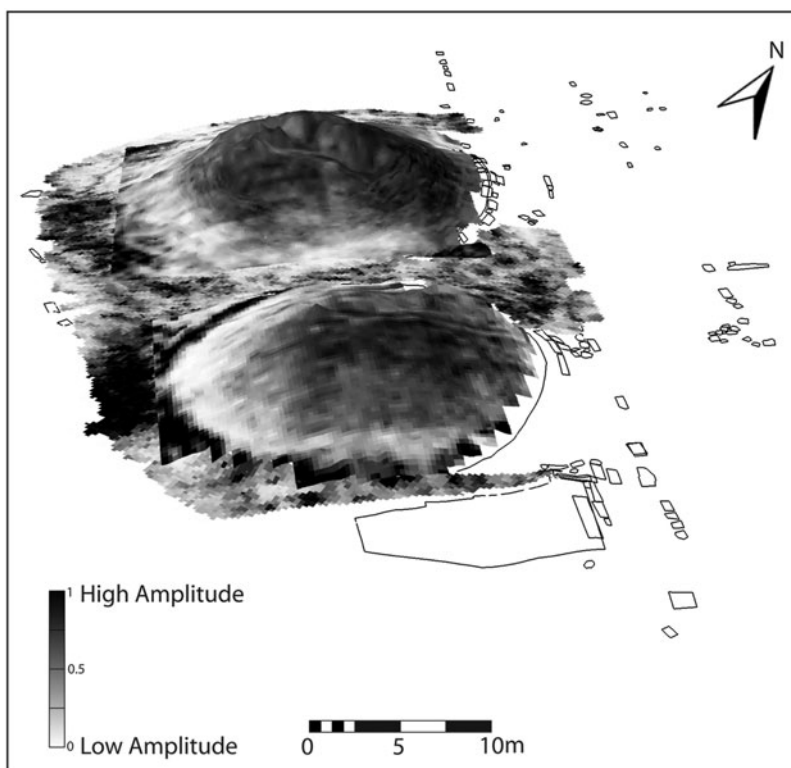


Fig. 1. Via Appia. A digital elevation model incorporating the GPR survey results from the burial tumuli.

of identifiable features in the top level was not surprising. However, at the base of the southernmost burial tumulus there was clear evidence of a revetment wall, identifiable by its high amplitude response in contrast to the low amplitude readings of the earth mound. Evidently, the circular retaining wall survives along the south and southwestern edges of the mound, and there may be some evidence of a break in the line of the wall, suggesting an entrance, at the southwest.

The results from the area at the foot of the northernmost tumulus were particularly clear and significant. Around the western edge of the mound there is a clear circular wall that aligns and joins with the revetment wall reconstructed on the eastern side of the mound. Within the confines of this wall, a series of adjoining recumbent arches could be identified. The plan of this tomb proposed by Luigi Canina in 1853 in fact suggested such a layout, and this same construction technique was found, on a much grander scale, in the Mausoleum of Augustus.

These data, combined with the results of the excavations by the Dutch team, mean that we can postulate that the foundations of the northern tumulus belong to between the first century BC and the first century AD. Certainly, therefore, this chronology does not match the ancient battle and its associated mausolea: however, it does not exclude that the recumbent arches denote an Augustan-period renovation of much older mounds.

ALBA FUCENS, ABRUZZO

The Latin colony of Alba Fucens was founded in 303 BC and it grew into a major urban centre, until the fourth century AD, when, after an earthquake in AD 346, it was probably largely abandoned.

The settlement, nestled on a sheltered plateau, is oriented northwest–southeast, and has an orthogonal street plan but set within the limits of an irregular circuit wall constructed in polygonal masonry. The forum of the town was partially investigated by a Belgian archaeological team led by Joseph Mertens in 1949, with a series of small trenches and a larger open excavation (50 × 10 m) along its entire southwestern extremity. The large trench revealed a portico and a row of pits, perhaps associated with posts for roped barriers to demarcate channels used during the voting process (Mouritsen, 2004; Coarelli, 2005).

Excavations since 2011 in the southeast corner of the forum, directed by Dr Maria Josè Strazzulla with Dr Daniela Liberatore of the University of Foggia, has exposed part of the portico surrounding the forum and a series of narrow shops (http://www.fastionline.org/micro_view.php?fst_cd=AIAC_1952&curcol=sea_cd-AIAC_4216 (last consulted 21.07.2014)). The incline of the natural bank that flanks the forum poses some challenges for excavation, and in order to understand the adjacent building before its

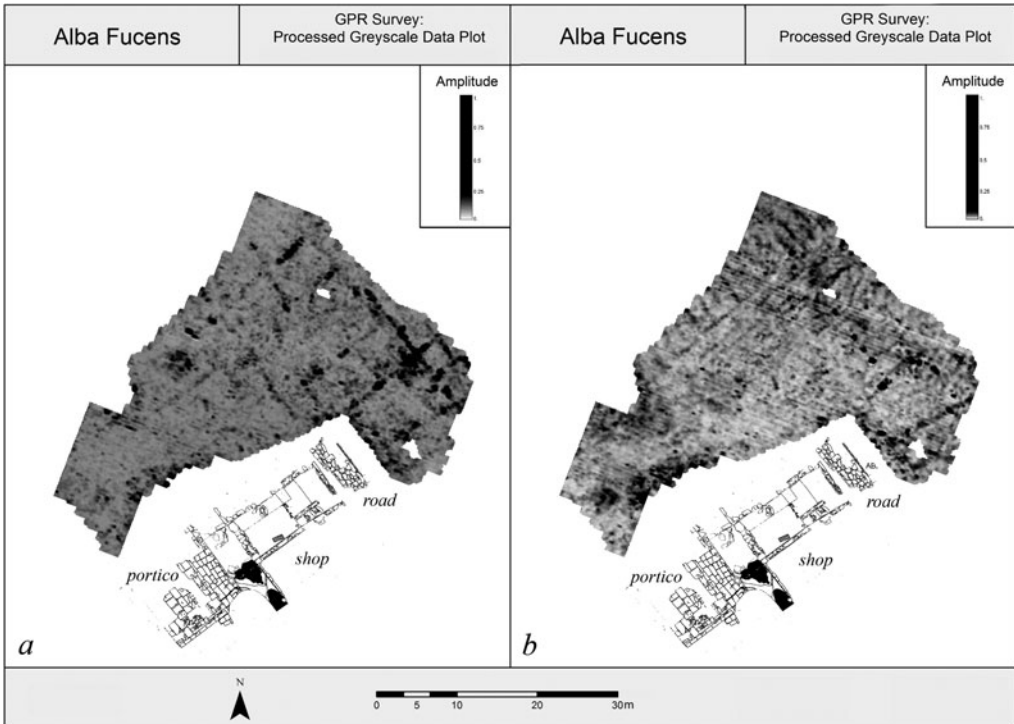


Fig. 2. Alba Fucens. GPR survey results from the area adjacent to the excavated remains. Both images show the same survey area at the same depth but with differing data processes applied: (a) highlights the structures in the southeast of the survey and (b) the ones in the northwest.

excavation the BSR/APSS team was asked to conduct a GPR survey, both to map the archaeology and to establish the depth and condition of the remains.

The results were complex in both content and form. The signal response of the archaeology differed across the survey area, and so the results were processed in two different ways to highlight all the buried structures (Fig. 2). It is clear from Figure 2a that there is a wealth of structures immediately adjacent to the excavated remains. The dark linear responses of the buried walls suggest a dense complex of buildings to the northeast of the excavated road. The survey area adjacent to the excavated shop, opening onto the portico, is characterized by a large structure with few internal divisions: the large scale of this edifice and its location facing onto the forum strongly imply that it is a civic building. In Figure 2b the different data processing applied reveals, along the northern edge of the survey, a series of parallel lines at regular intervals. These closely spaced walls most likely represent an arched construction, perhaps the substructure or podium for a building above. If this is the case, the building is monumental in size, and tentatively might be interpreted as a temple (and we look forward to seeing if such an interpretation is supported by the results of the excavations by the Foggia team).

Further details and a full summary of the work, both past and present, conducted by the BSR and APSS, can be found on the online database of *FastiOnline*, as well as on the archaeology research pages of the BSR website (www.bsr.ac.uk/research/Archaeology).

References

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INTERAMNA LIRENAS AND ITS TERRITORY (COMUNE DI PIGNATARO INTERAMNA, PROVINCIA DI FROSINONE, REGIONE LAZIO)

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This project is exploring the long-term relationship between a Roman town — Interamna Lirenas, founded in 312 BC — and its hinterland. Building on three earlier fieldwork seasons (2010–12) of geophysical survey over the whole urban area (25 ha) and intensive field survey across its surrounding countryside (300 ha) (Bellini *et al.*, 2012; 2013), the 2013 season focused on the theatre (with limited test excavation and further GPR) and extended the exploration of the hinterland (through field survey and landscape-scale magnetometry). Detailed analysis of the finds from both the excavation and the survey has been ongoing.

Previous discussion of the town (Wightman and Hayes, 1994: 35) cited the absence of any archaeological evidence for the presence of buildings such as a theatre as an indication