

Walking over Magoulas: Mapping Neolithic Tell Settlements in Thessaly (Greece) Using Integrated Archaeo-geophysical Techniques.

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‘Magoula’ is the local term given to manmade mounds on the fertile Thessalian plain, Central Greece, which are generally associated with Neolithic settlements. These mounds or tell sites are originated by long-term and sometime multi-phase accumulation of debris produced by human occupation. Thessaly is well known for the concentration of these prehistoric sites and contains some remarkable examples. In spite of the great deal of archaeological research focused on these sites since the beginning of the 20th century, there is still a gap in the understanding of the factors behind the establishment, distribution and development of these early farmer communities. Even if there has been recently a GIS – satellite remote sensing approach dealing with the landscape distribution of these settlements, much less is known regarding the local extent of them.

This paper shows how the implementation of non-destructive and ground based geophysical techniques can provide key information related to the structural layout of tell sites. Emphasis is given to methodological aspects, the advantages and limitations of the different techniques and survey-related problems. In so doing, we present the preliminary results of the ongoing project IGEAN (Innovative Geophysical Approaches for the Study of Early Agricultural Villages of Neolithic Thessaly, implemented under the "ARISTEIA" Action of the "OPERATIONAL PROGRAMME EDUCATION AND LIFELONG LEARNING" and is co-funded by the European Social Fund (ESF) and National Resources), which is focused on the investigation of several tell sites in eastern Thessaly in order to reconstruct the major habitation patterns of the Neolithic farming groups in the area using geophysical surveys techniques. The methods include the extensive and high resolution geophysical surveys to map and characterise in detail the extent of the sites and reveal other buried features of interest. Multi-technique geophysical instrumentation able to survey extensive areas are being used and comprise of a multi-sensor magnetometer system, electromagnetic induction instruments, multi-channel and single channel GPR systems as well as soil analyses.

The new evidence provided so far by this non-invasive approach is uncovering a previously unknown layout of prehistoric occupation which may shed light on archaeological questions related to the origin and long-lasting character of these Neolithic settlements in Thessaly.