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South Carolina Geophysical Initiative Launched

By Jonathan Leader

The Office of the State Archaeologist is launching a statewide archaeological geophysical initiative. The intent of the initiative is to systematically map archaeological and historical sites using multiple geophysical techniques following a standardized protocol of best practice and disseminating the results to landowners, land stewards, agencies, and researchers. The field research will be coordinated with other state agencies, university, nonprofit, and for profit groups engaged in geophysical investigations willing and able to implement multiple techniques and prepared to provide data in an open and transparent format.

Geophysical sciences study the earth using quantitative physical methods. The most common techniques focus on seismic reflection and refraction, gravity, magnetic, electrical, electromagnetic, and radioactivity methods. Within

archaeology this usually translates to the use of soil resistivity meters, magnetometers and gradiometers of various kinds, satellite or photographic imaging and ground penetrating radar (GPR). Each of these methods has strengths and weaknesses. By using multiple techniques the weaknesses of one are mitigated by the strengths of the others.

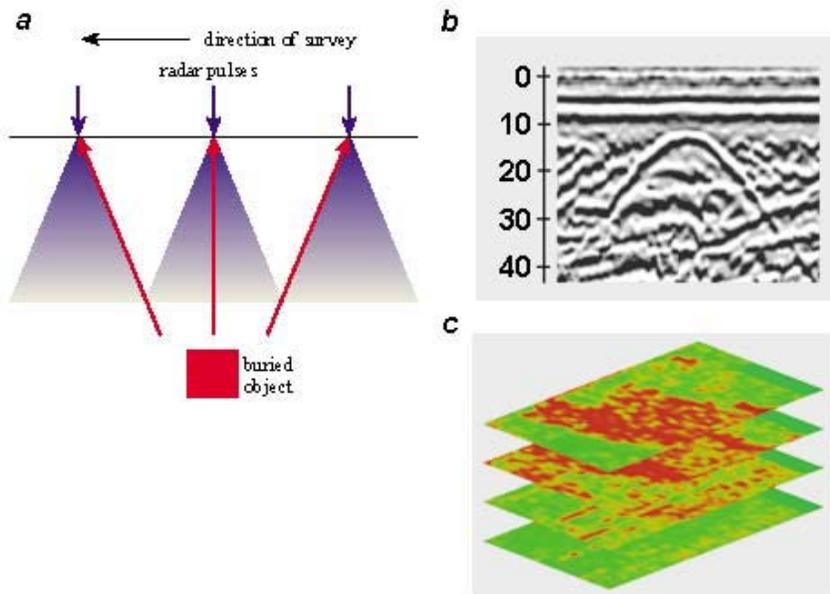
The Office of the State Archaeologist has been using several of these techniques to answer applied



Fort Motte site map with GPR lanes. (SCIAA drawing)

questions for almost a decade. With few exceptions, this work has been driven by fairly narrow questions resulting from immediate public needs. The results have almost always answered the questions at hand but have not provided that additional level of information useful for academic research. This is a problem common to all applied research. In our instance by incorporating the public outreach component into a larger research oriented program targeting prioritized sites throughout the state, the resulting data will have much greater impact and utility.

Individuals and groups interested in taking part in the initiative are encouraged to contact the State Archaeologist for more information.



GPR works by projecting radio waves across a subsurface feature and collecting the reflected wave (a). The resulting image produced by the wave's return is filtered to highlight the feature (b). Multiple scans of a large area containing many features are collated by software and can be examined by "time slice," which highlight the site patterns. In this case, a building floor plan (c). (Diagram courtesy of Physics World, May 2000)