Issue 29: November 2011

ISAP NEWS

The newsletter of the International Society for Archaeological Prospection

Contents

Editor's Note

Robert Fry R.J.Fry@student.bradford.ac.uk

Welcome to the 29th issue of ISAP News! A huge thank you to all who have found the time to contribute to the newsletter, I hope you will find it an enjoyable read.

I would also like to thank Mahmut Drahor and Meriç Berge and their team for a fantastic conference held in Izmir in September. The hospitality was tremendous and it was a really insightful and enjoyable event.

The last few months have for a lot of us been filled with fieldwork projects, and I hope you might find time to update the community on any aspects of this by contributing to the next newsletter! All entries are welcome.

*Please send any contributions or queries for the next newsletter (ISAP News 30) to the address above by the **31st January 2012**. All entries are gratefully received; I will always try to respond to emails in the same day if possible.*

Important Notices

Archaeological Prospection Journal

Take advantage of the great deal offered to ISAP members by Wiley-Blackwell for this journal http://www.bradford.ac.uk/archsci/archprospection/menu.php?2

ISAP Conference, Izmir September 2011

Chris Gaffney
University of Bradford
ISAP Chairman
C.Gaffney@bradford.ac.uk

Photo Courtesy of Mahmut Drahor

Dear Colleagues,

I thought that I would share a few thoughts with you regarding the ISAP conference that was held in Izmir. Essentially I would like to thank Prof. Mahmut Drahor and his team for the excellent programme and the superb facilities and entertainment that they provided. The papers were of a high standard and the posters were organised in such a way that each one was 'presented' to the audience. I think that the poster sessions were probably the best I have been to and I would hope that future conferences would follow this example.

The only regret that I have is that the conference was not as well attended as I expected. I understand the very great financial stress that many of us (and our organisations) are currently under and I appreciate the lengths that some people went to so that they could participate in Izmir.

The conference fee was set at €300 (€100 for students) and I felt that was very good value. For this money the organisers were able to provide an 'icebreaker' cocktail evening, four days of conference presentations (including refreshments during the day and three course lunches!), an evening trip to Izmir Agora (followed by dinner and music) and a visit to Smyrna en route to the conference dinner. For those who were able to stay another day we were treated to a sightseeing tour to Ephesus which naturally ended with a wonderful dinner in a traditional restaurant…including music and dancing for the a few brave souls (photographs need not be published!).

In addition the delegates were able to listen to presentations by six students who had been financially supported by ISAP to attend the conference. In my opinion that was money well spent.

I hope that I will see you at the next ISAP conference.

Dr Chris Gaffney
ISAP Chairman

Magnetic Survey of the Iowaville Site in South-eastern Iowa, USA

Steven L. De Vore
National Park Service, Midwest Archaeological Center steve_de_vore@nps.gov
Cynthia L. Peterson, Anton Till
University of Iowa, Office of the State Archaeologist cindy-peterson@uiowa.edu

The Iowaville Site (known as 13VB124) represents an Ioway (Báxoje) village site on the Des Moines River in south-eastern Iowa (Fig. 1). Known to archaeologists and collectors for its remarkable surface and metal detector finds including glass beads, silver ornaments, a large faunal assemblage, and nested copper alloy kettles containing fur and uncharred seeds, the site represents a major village of the Ioway prior to their removal in the 1820s and 1830s to Indian lands further west. Dating from 1765 to 1824, the village site housed up to 800 people.

Figure 1. General View of Site 13VB124

The fieldwork goal was to assess the site condition, in order to understand what, if anything remained preserved below ground in the cultivated farm field. The magnetic and resistance results, coupled with archaeological testing, revealed astonishing news about the level of site preservation. The National Park Service's Midwest Archaeological Center staff conducted the geophysical investigations of Iowaville Site as part of technical assistance to the University of Iowa Office of the State Archaeologist staff during the Fall of 2010.

The archaeological search for the historic Ioway village site on the Des Moines River first occurred in the spring of 1924 by Charles R. Keyes, State Archaeologist of Iowa. Keyes conducted a search of the historic town site area of Iowaville hoping to find traces of the historic Ioway village site from the late 1700 to the early 1800s (Straffin 1972:44-45). Although Keyes indicated that there were numerous accounts of local residents finding historic trade artifacts, he did not find any traces of the historic Ioway village mentioned in Fulton (1882:117). In 1938 Keyes returned to the Iowaville vicinity with Waldo Wedel of the U.S. National Museum and Mildred M. Mott (Straffin 1972:45). They were unable to locate any evidence suggesting the location of the Ioway village or any other Native American occupation. In the fall of 1970, Anton Till (1976) located the village site during his investigations of the Black Hawk Historic Archaeological District (Till 1976). Till indicated that the site was located on the featureless floodplain of the Des Moines River. The site had materials dating from the present to the early 19th century. He also indicated that artifact concentrations suggested discrete structures. In 1971, Dean Straffin (1972:45) recorded the site as 13VB124 on the Iowa Site Record form.

Pedestrian and metal detector investigations by avocationalists at the site have yielded English and French trade items and other artifacts, which dated the site to the late eighteenth and early nineteenth centuries (Gourley 1990, Ingalls 1991, Office of the State Archaeologist 2007, Straffin 1972, Till 1976).

The magnetic survey was conducted at Site 13VB124 with a Bartington Grad 601-2 dual fluxgate gradiometer (Fig. 2). The magnetic survey was part of the National Historic Landmark evaluation of the archaeological resources of the Iowaville Site. The geophysical survey area was divided into 20m by 20m grid units (Fig. 3), which was oriented nine degrees west of magnetic north.

Figure 2: Magnetic survey with a Bartington Grad 601-2

The resulting geophysical project area measured 360 meters east-west by 260 meters north-south. The geophysical project area investigated at the site consisted of a total of 78,400 m^2 or 19.37 acres. The magnetic data were collected at eight samples per meter along one-meter traverses across the grid units in a bi-directional collection mode. Archaeo-Surveyor processing software was used to process the magnetic data. Steps included the creation of a composite file from the individual grid files, the correction of heading

errors, interpolation of the data from the original 8 x 1 data matrix to a 4 x 4 data matrix, and the use of a low pass filter to remove any high frequency, small scale spatial detail for the improvement of visibility of larger, weak archaeological features (Fig. 4 overleaf).

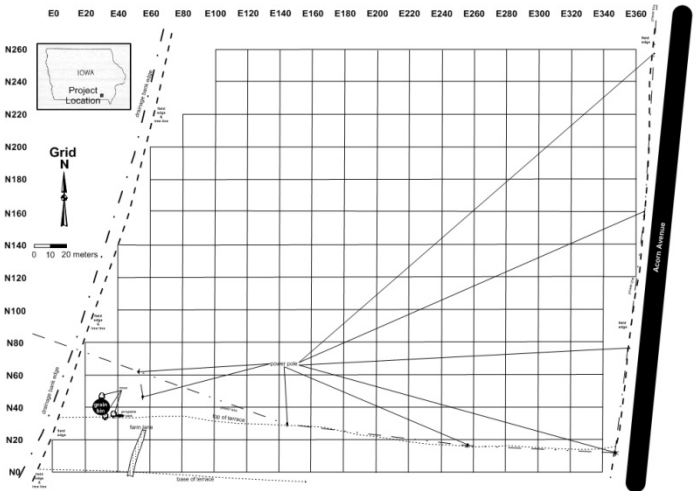

Figure 3. Sketch map of the magnetic project area

Analysis of the magnetic data from the Iowaville site (Fig. 5 overleaf) reveals numerous surface and subsurface magnetic anomalies associated with the farmstead and with the historic Ioway village site. The historic farmstead is identified by two dense clusters of magnetic anomalies in the southern and western parts of the geophysical grid. The larger cluster contains the extant grain bin and propane tank along with strong magnetic anomalies that appeared to be associated with the barn, house, and other outbuildings. A smaller cluster of strong magnetic anomalies is located near the south central portion of the grid. This area is potentially identified as the location of a ca. 1840s cabin on the property.

The historic Ioway village site extends across the higher part of the terrace and probably extends into the neighbouring fields to the east and west of the geophysical project area. Numerous magnetic anomalies are located across the terrace associated with the historic village site. Of particular note is the 90 meter diameter circle along with two smaller circular or rectangular anomalies to the west and southwest of the larger circular anomaly. Ground truthing excavations near the top of the large circle indicate the presence of a shallow basin feature that appears to represent a ditch enclosure. Several smaller clusters of oval to circular anomalies appear to represent lodge floors and associated storage or refuse pits. Other magnetic anomalies represent ferrous objects buried in the soil.

The results of the magnetic survey indicate that the site contains intact subsurface features associated with the historic Ioway occupation of the late 1700s and early 1800s. The site contains a high degree of integrity of the buried archaeological deposit associated with the historic Ioway village below the plough zone. The impact to the site from the artifact collectors including the use of metal detectors is also largely confined to the plough zone. The site represents an important village site to the Ioway tribe prior to their removal from the state in the 1830s and is potentially eligible for listing as a National Historic Landmark.

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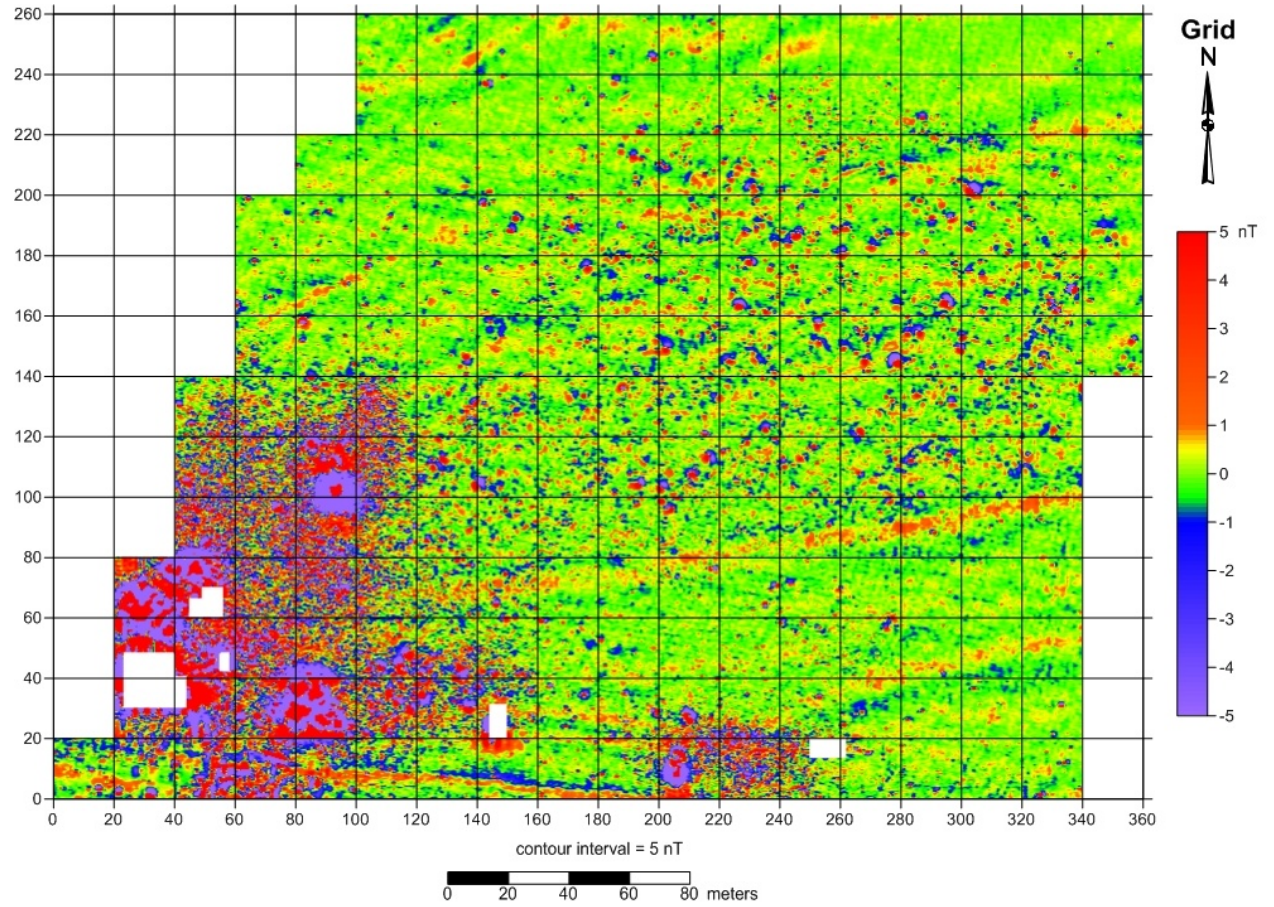

Figure 4. Magnetic survey data collected at the site

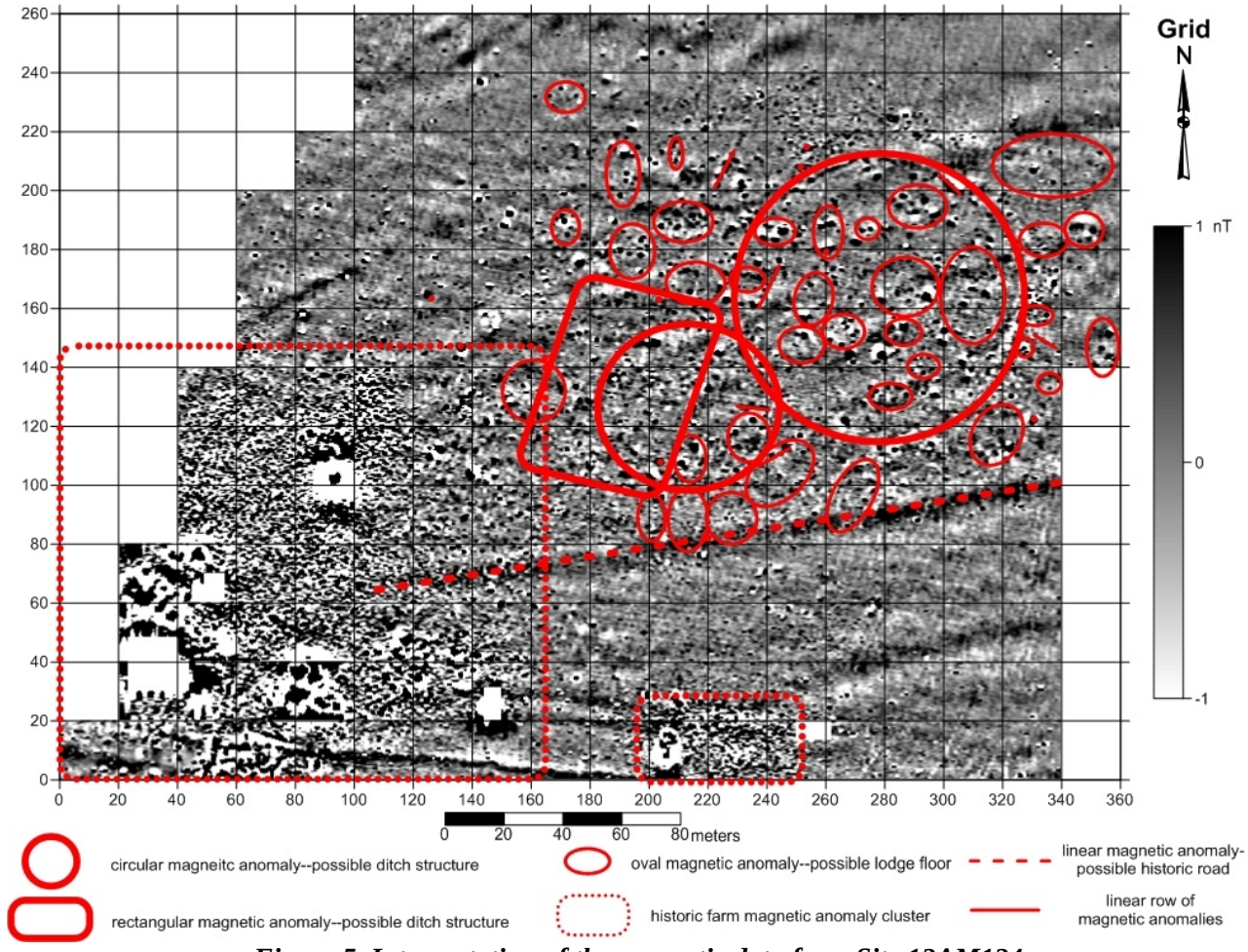

Figure 5. Interpretation of the magnetic data from Site 13AM124

Stanton Drew after English Heritage

John Oswin
Bath and Camerton Archaeological Society (bacas) JohnOswin@aol.com

The English Heritage geophysical survey at Stanton Drew in 1997 (David *et al*. 2004) was one of the most spectacular results of the time. It was also the first time in a century that this major stone circle complex had received any significant attention.

Their survey of Stone Close, the field containing two circles (including the second-largest after Avebury Outer Circle) and their avenues, was conducted with a Geoscan FM36 at normal data density (4 readings per metre, lines a metre apart) and an area within the main circle was also subject to a high density scan (8 readings per metre, lines 0.5 m apart) with a Scintrex SM4 Caesium vapour magnetometer. The FM36 survey showed that there were nine concentric circles of posts inside the stone ring and that there had been a henge bank and ditch around the outside, with a large gap to the north-east. The Scintrex scan showed the inner rings in much finer detail.

In 2009, bacas had the opportunity to do some survey work in conjunction with Bath and North-East Somerset (BANES) council, and this continued into 2010. The 2010 report has recently been issued on both parties' websites. As there would have been data compatibility problems, bacas decided to survey the whole of Stone Close again, this time using a Bartington 601-2 twin fluxgate device at the same high data density used for the Scintrex scan.

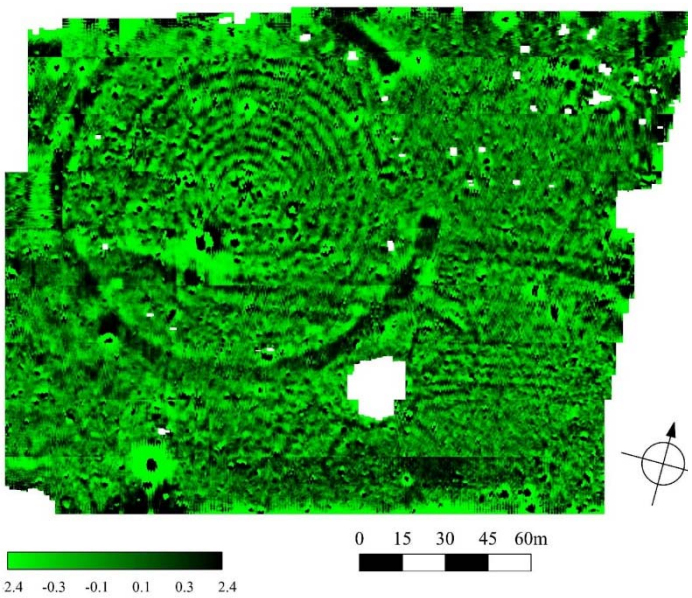

Figure 1. Survey of Stone Close with a Bartington 601-2 Fluxgate Gradiometer

The result is shown in Figure 1. The plot has been coloured green so that stones stand out as blanks, although those stones now flush with the ground were included in the survey. The results were as good as the earlier Caesium output and the larger high definition area showed up a number of extra features:-

- There appears to be a portal on the outer timber ring, pointing down the avenue, just north of east.
- There is a second entrance through the ditch, to the south-west, directly opposite the north-east circle.
- The ditch has also been broached further north, apparently by a later track, and the southern area of the circle has been damaged by later occupation.
- This probably includes the small post circle visible at the very south of the main circle. The track exits through the bank in the south-east.
- There are also strong signs of activity, probably later, just outside the circle to the south-east. The large blank area was caused by the presence of an iron fence of generous proportions surrounding a sapling.
- There appear to be post holes in the main avenue and also near the north-east circle.
- There is a lot of activity, undefined, in the far south-east of Stone Close. These appear to be large post holes.

A large area has been subject to twin-probe resistance, but the field has not yet been completed. This is saying a lot about the geology, and also suggests an area with buried stones just south of the north-east circle.

Resistivity profiling using the TR/CIA kit has proved very useful. This included a north-south profile and an east-west profile across the whole field. The profiles are shown in position superimposed on the magnetometry in Figure 2. The east-west profile shows a section through the ditch and through a number of the post holes of the timber rings. The north-south profile also shows how the post hole rings have been damaged in the south part of the circle.

Survey of the south southwest circle also confirmed English Heritage's intriguing results, with rings of concentric post holes, and contour survey also indicated that this circle had been set up on a deliberately levelled platform.

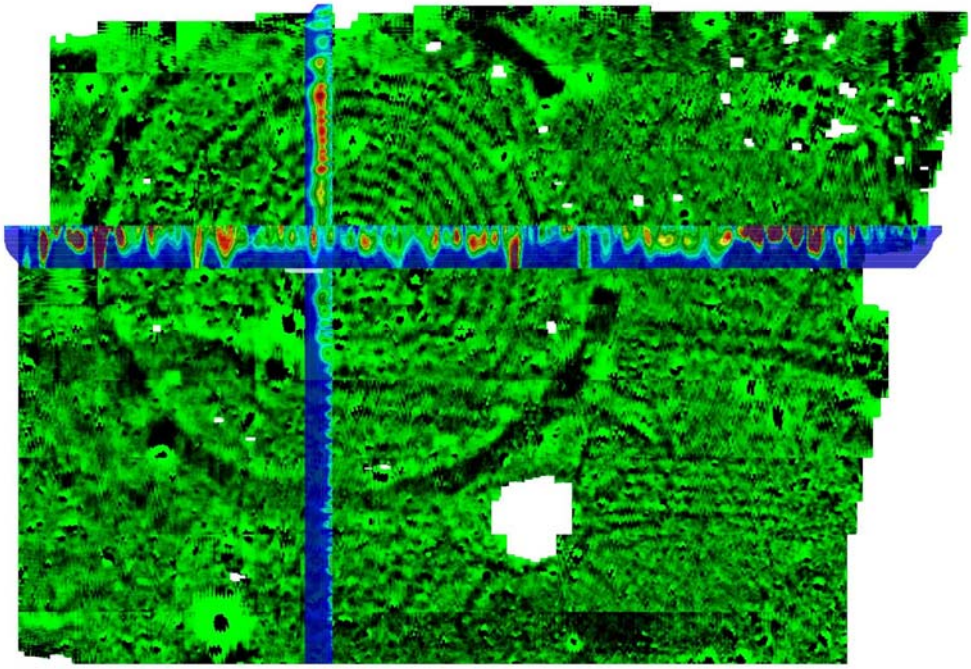

Figure 2. Resistivity profiling superimposed onto the magnetic dataset

Our other major finding was that the Cove, three large stones in the garden of the Druids Arms Inn, on the other side of the village, had probably been part of a chambered tomb, thus dating it several hundred years older than the stone circles. The resistance survey (plotted in colour in XL to give higher definition and mounted on Google Earth) is given in Figure 3. Profiling also supported the likelihood of there being a buried stone chamber.

There has been no surveying in 2011, but it is hoped to do more work in 2012, particularly on setting the stone circle complex in its landscape.

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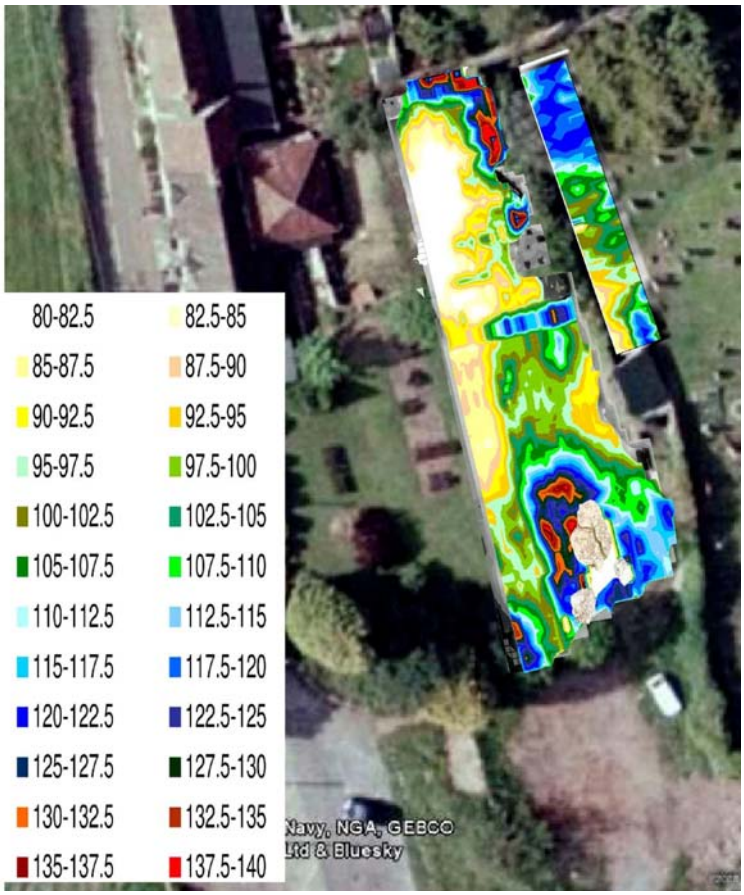


Figure 3. Resistance survey of the garden at the Druid's Arms Inn (data presented in Ohms)

Kite aerial thermography

John Wells. Rosie Wells, Cade Wells and Jim Knowles
West Lothian Archaeology john@WestLothianArchaeology.org.uk

West Lothian Archaeology is a non-commercial community group, which specialises in non-invasive techniques for studying and identifying archaeological sites, predominantly in West Lothian, but also elsewhere in the British Isles. We have a special interest in kite aerial photography, in the visible and near infra-red parts of the spectrum, which has served us well in our investigations (www.WestLothianArchaeology.org.uk). All group members are interested in kite aerial photography.

More recently, we have been impressed by the thermal imaging work of Ulrich Kiesow (www.archaeoflug.de), especially after viewing a thermal video clip of Villa Rustica, Kleinsteinhausen,Germany, which was captured while flying a microlight in 2006. We decided to try thermal imaging using a kite as the platform despite the difficulties in choosing the optimal time/conditions to fly and the problems of obtaining sharp images.

Then we had to decide which camera to use, with cost being an important consideration. We needed a camera that was relatively light and cheap, durable, waterproof, with a reasonable angle of view, and with a resolution that would be useful on archaeological sites when flown below 60 metres. Our choice was the 30Hz, NTSC, 320x240 pixel, 0.36kg, Flir PathfindIR (36x27 degrees field of view), a camera marketed for use on the front of motorised vehicles. The camera has an automatic built-in window heater, which, when activated, has a power consumption of about 5w in total. The camera cost £1,900 including taxes, to which we added a 12v/4800mAh lithium-ion battery, a 12v/60w voltage stabiliser and an MP4 video recorder (PVR with integral screen). Originally, we used a 10 second AVI clip/JPEG, motion-activated video recorder, but this proved to be incompatible.

The camera and stabiliser were enclosed in a plastic sandwich box and, with the recorder and battery; they were mounted on a simple picavet suspension ready for attaching to a kite line. The entire prototype assembly weighs 1.5kg and is illustrated in Fig 1. This weight could be substantially reduced, making the camera suitable for other platforms. The camera was first flown on the 10th September 2011.

Figure 1. The Prototype

Figure 2. Stable Flowform kite

All our flights to date have been with a HQ Flowform 2.0 kite, but a Flowform 4.0 will be used for lighter winds. This is a tough, well-made kite, which is very stable when flown with a fuzzy tail as shown in Fig 2.

The videos produced by the camera are greyscale, with most individual frames unusable as still images. However, there are so many images that acceptable ones can be found as in Fig 3, which is an aerial view of a man with a dog.

Figure 3. Thermal view of a man with a dog

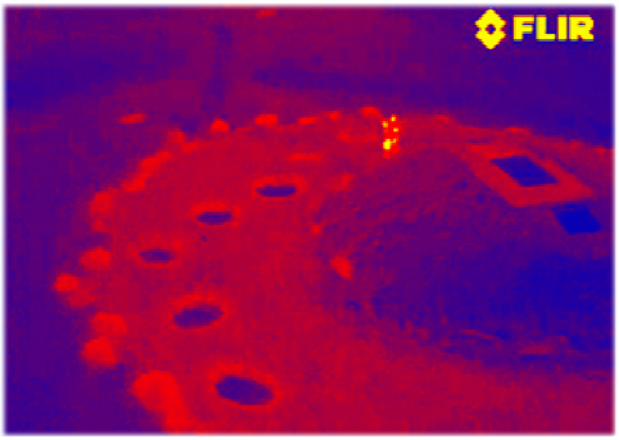


Figure 4. Thermal image of Cairnapple, West Lothian, Scotland

On archaeological sites, a greyscale image is quite acceptable. But, as with temperature-calibrated thermal cameras, it is useful to map a colour gradient onto the image, which can be adjusted to place emphasis on specific features, or to give a pleasing overall image as in Fig 4. This image shows two of our group members on the prehistoric site of Cairnpapple in West Lothian, Scotland.

It is too late in the year to look at crop marks. However, we will take the thermography rig out to archaeological sites to see if any useful thermograms can be obtained outside the growing season.

Kite aerial thermography is another useful tool which our group can employ in combination with other non-invasive methodologies to help in the identification and interpretation of archaeological sites and features.

Geophysical Survey and Excavation at Tidgrove Warren Farm, Hampshire. Some preliminary results from the 2011 season

Kris Strutt K.D.Strutt@soton.ac.uk
Archaeological Prospection Services of Southampton

As part of an ongoing project on the Hampshire Downland in and around the parish of Kingsclere, a survey and excavation was conducted at Tidgrove Warren Farm in September 2011. The season of fieldwork marked the 9th year of work in the area, involving undergraduate students and staff from the Department of Archaeology at the University of Southampton, and volunteers from the Kingsclere Heritage Association. Previous work included geophysical survey and excavation at the supposed Iron Age hillfort and Medieval hunting lodge at Freemantle Park, excavation at Kingsclere in the vicinity of the village centre, and excavation and geophysical survey of Romano-British and medieval sites at Tidgrove Warren Farm.

The 2011 field project focused on characterising the nature of several features associated with the Iron Age and Roman landscape on the Downs. Air photographic evidence indicates an extensive pattern of later prehistoric field systems and settlement across the Hampshire Downs (Fig. 1). This pattern is augmented by the presence of Roman variations to the settlement and organisation of the landscape. In the vicinity of Tidgrove Warren Farm, a system of Iron Age defended sites including Ladle Hill and Beacon Hill, and the presence of a possible hillfort at Cottington's Hill to the north. The Portway Roman Road runs from west to east some 400m to the north of Tidgrove.

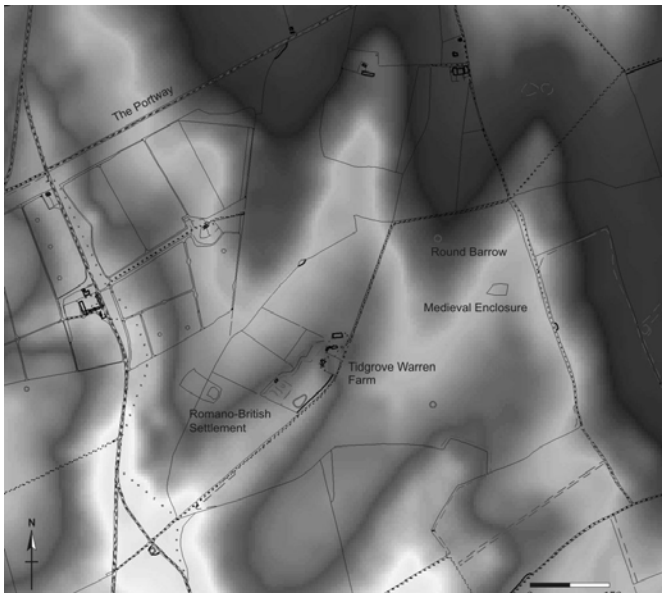


Figure 1. Map showing the topography of Tidgrove Warren Farm and principal sites

To the south of the Portway along a ridge running north-south, the remains of a Romano-British settlement are visible. Excavations at the site in 2004 and 2005 revealed a rural settlement dating from 1st century BC to 4th century AD. The site is located within a system of terraces, and a ditched curvilinear land boundary of unknown date. The geophysical survey and excavation in 2011 aimed to map the extent of parts of the field system and settlement, with excavation to investigate the potential phasing of any features located in the results.

Figure 2. Magnetometer survey being conducted in the field with the Romano-British settlement

Magnetometry was applied at the site as the most expedient way of assessing the presence and nature of archaeological deposits, with work supervised by Rachel Sharland. Two Bartington Instruments Grad 601 fluxgate gradiometers were used, with data collected at 0.25m intervals along 0.5m traverses (Fig. 2). The technique was applied over two areas, the first a large field in the southern part of the farm, and the second a smaller area to the east following part of the line of the boundary ditch, and overlying a rectilinear platform noted in the topography. A small area of resistance survey was also conducted (Fig. 3) to the east to locate possible remains associated with a mill or other settlement, close to the medieval hunting lodge at the site.

Figure 3. Earth Resistance survey to the south of the medieval hunting lodge

Results of the magnetometry indicated the extent of the eastern half of the Iron Age and Romano-British settlement (Fig. 4). In addition with multiple ditches cutting off the end of the ridge and a second boundary ditch running along the contours of the ridge were also located. These results, together with the topographic survey of the field conducted with differential GPS (Fig. 5) indicated two possible phases of field system in the area, in the form of later prehistoric boundary ditches, and a later terrace system extending from north to south along the ridge. Excavation of a small trench over the northernmost of the multiple boundary ditches supported this hypothesis (Fig. 6) with a sherd of early Roman ceramic being found above the natural chalk at the base of the terrace soil, suggesting an early Roman date for the terrace system. A slight recut into the ditch suggests that the ditch is Iron Age, with material upcast to provide revetment for the terrace soil in the early Roman period.

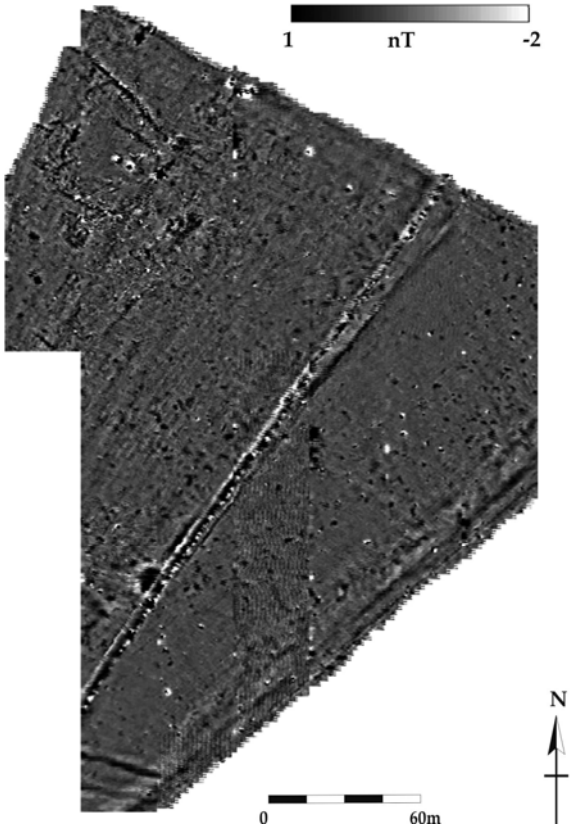


Figure 4. Greyscale plot of the preliminary results from the vicinity of the Romano-British site

Results of the survey to the east indicated the presence of a curvilinear small enclosure feature (Fig. 7) abutting the boundary ditch in the valley. Excavation proved that the ditch is of middle Iron Age date, with later Iron Age and Roman quarrying into the feature.
Results of the survey, together with the use of targeted excavation, are helping to build up a picture of a possible later Iron Age and Roman rural estate in the vicinity of the Portway. The re-alignment and extensive terrace system at the site are of particular interest, in addition to the smaller enclosures of early date on the periphery of the site, and their reuse for quarrying in the later Iron Age. The survey and excavation are due to continue in 2012.

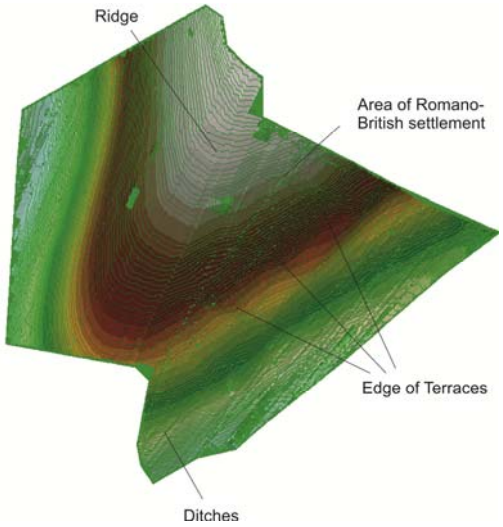


Figure 5. Topographic survey of the ridge with important features highlighted

Figure 6. Excavation in progress on the Iron Age ditch with students and volunteers

Figure 7. The curvilinear ditch enclosure abutting the boundary ditch, all located to the east

The blog for the 2011 season can be found at: www.kdstrutt.wordpress.com

Orthogonal survey directions using the Wenner array in area survey

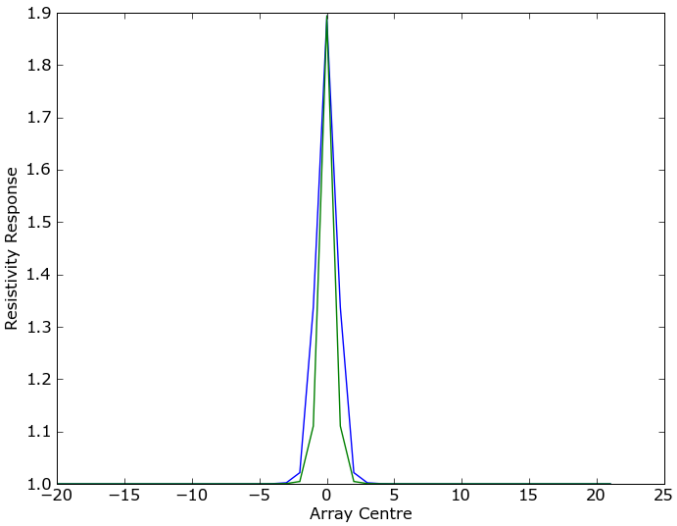
Michael Puntorno mikepuntorno@hotmail.co.uk

In electrical surveys using a Wenner array, a current (***I***) is transmitted through the ground with two electrodes (***A***, ***B***), while the difference of potential (***V***) produced by the circulation of this current is measured with two other electrodes (***M***, ***N***), (Geoscan Research 2005). The apparent resistivity (***rho***) of the ground is defined by the relation **rho = K x V / I**, where ***K*** is a geometrical coefficient which is dependent upon the separations between the ***A, B, M, N*** electrodes.

Azimuthal apparent resistivity measurements are made by rotating an electrode array through 90°, 180° or 360° (Busby 2000: 677 – 678, Conolly and Lake 2006: 18 – 19) and azimuthal inhomogeneity ratio is used to express the orientational variation of current flow into the subsurface (Habberjam and Watkins 1967: 445, Watson and Baker 1999: 740). By using two measurements perpendicular to each other, it is possible to obtain a mean resistance.

By using a modelling programme (Resdata 3), modelled responses are gained regarding the Wenner array. Figure 1 represents a response of the Wenner array to an anomaly in a broadside and transverse manner. When the array passes over the anomaly in a broadside manor there is a slight inward movement towards the array centre, this is seen by the response at 1.03 Ohm-meters, whereas this change in resistivity occurs at 1.11 Ohm-meters when the array is passed over the anomaly in a transverse manor (Aspinall and Crummett 1997: 38 – 39, Lynam 1970: 71 – 101).

Figure 2 represents data collected over the location of the Whetstones stone circle (SO302975) located near the village of Priest Weston; in the parish of Churchstoke (near the famous Mitchell's Fold stone circle). Figure 2 shows a distinct improvement in the data when the broadside and transverse data is combined. The differences between the two data sets may also be seen when the transverse data was removed from the broadside data. The data collected within figure 2 has been left within is raw state so that the changes between broadside and transverse survey directions can be seen.



Response over an insulating sphere with a central depth of 1.00m. The electrode separation was set to 0.5m, the traverse interval set to 1.00m, traverse length at 20.00m and sample interval at 0.50m. broadside = Blue, transverse = green

Figure 1. Modelled responses of the Wenner array when a 90 degree change in survey direction is applied

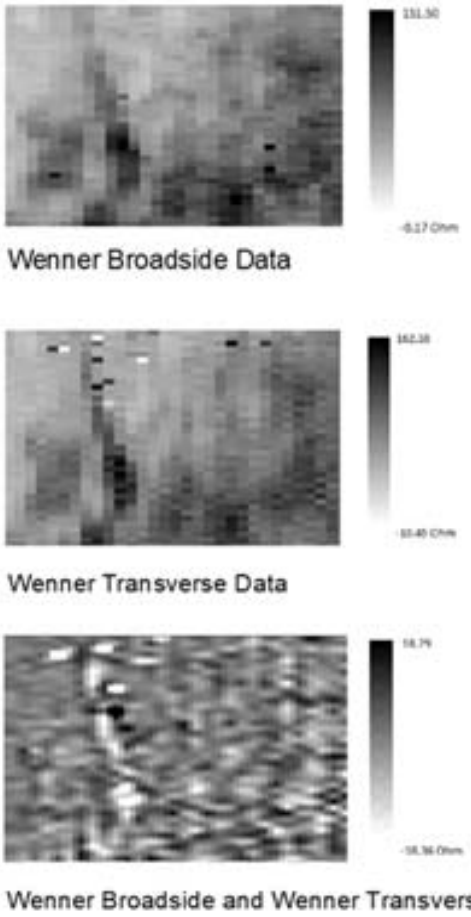


Figure 2. Whetstones stone circle earth resistance data collected in broadside, transverse, and both datasets combined (bottom)

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Call for Papers

The 1st International Conference on Best Practices in World Heritage: Archaeology

Menorca, Balearic Islands, Spain. April 9-13th 2012

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1st INTERNATIONAL CONFERENCE ON BEST PRACTICES IN WORLD HERITAGE: ARCHAELOGY

April 9-13th, 2012 at Menorca, Balearic Islands, (Spain)
http://www.congresopatrimoniomundialmenorca.cime.es/

The Universidad Complutense de Madrid, together with the Consell Insular de Menorca are organizing this international conference to generate a meeting point on Archaeology management and treatment of World Heritage Sites.

The main aim of the Conference is to draw up and publish a "Guide of Best Practices in World Heritage: Archaeology". To this end, sessions about the following topics will be organized:

1) Social action and Archaeology in World Heritage
2) ICT, Archaeology and World Heritage
3) Architecture, World Heritage and Archaeology
4) Land planning, Archaeology and World Heritage
5) Preventive Archaeology and World Heritage
6) Education, diffusion, World Heritage and Archaeology

CALL FOR PAPERS IS NOW OPEN
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Deadline extension: November 10th, 2011

Send as an email attachment in WORD or PDF to:
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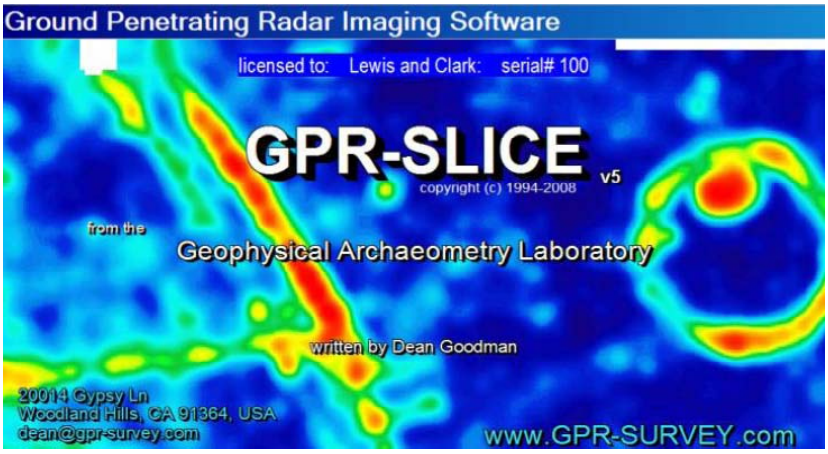


VI Short Workshop on3D GPR Imaging
University of Vigo, Spain
February 13-14, 2012

A new advanced course on GPR-SLICE v7.0 Ground Penetrating Radar Imaging Software is being sponsored by the University of Vigo, Spain. The two day course (13-14 February) is a data processing workshop for those users that are already familiar with the basic operations in GPR-SLICE. The workshop is also opened up to new users of GPR-SLICE. The cost of the course is 300 EUR. There are 10-12 places for advanced users and 3-5 for beginners.

The course will be taught by Dr Alex Novo, official distributor of the software (www.gpr-slice.es) and the GPR-SLICE specialist of the University of Vigo. The course will concentrate on the following topics:

- Signal processing
- Image processing
- Open GL operations
- GPS imaging for all the major manufacturers
- Total station navigation
- 0ns offset radargram editing
- Automatic topographic corrections (regular surveys and GPS)
- Horizon imaging and layer detection (road layer imaging)
- Concrete imaging, XY decoupled gridding
- Vector imaging (tunnel imaging)
- Auto-hyperbola detection and amplitude mapping (bridgedeck imaging)
- BlueBox Batch Processing, one button operation from raw data to processed 3D volumes
- Introduction to GPR via real time simulation software
- Mosaic noise correction
- Some other advanced analyses

A special portion of the workshop will be dedicated to processing data from multi-channel GPR systems. Selected example folders will be used during the processing workshop. The processing of example folders will be distributed at the course or they can be downloaded off the www.GPR-SURVEY.com/practice ftp site: **\Kisatchie\part1 and part2 - Advanced User Project Folders.zip.** The password to unzip these folders "Kisatchie". On this ftp site there is also an **Advanced Users Notebook** which all users should download and print out in advance of coming to the workshop.

All attendees should bring their own notebook computers as well as their own software installation with the latest GPR-SLICE update. Computers with NVIDIA graphic cards is recommended or with graphic cards from ATI that have their latest drivers installed is fine. Notebooks with just integrated graphic chip cards is not recommended. The course is being sponsored by Dr. Henrique Lorenzo from the TF-1 Group, University of Vigo (Spain).

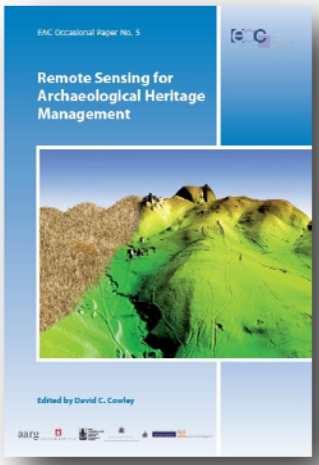
For additional information on the workshop please contact Alex Novo alexnovo@gpr-slice.es

Remote Sensing for Archaeological Heritage Management
Edited by David C Cowley

Remote sensing is one of the main foundations of archaeological data, under pinning knowledge and understanding of the historic environment. The volume, arising from a symposium organised by the Europae Archaeologiae Consilium (EAC) and the Aerial Archaeology Research Group (AARG), provides up to date expert statements on the methodologies, achievements and potential of remote sensing with a particular focus on archaeological heritage management. Well-established approaches and techniques are set alongside new technologies and data-sources, with discussion covering relative merits and applicability, and the need for integrated approaches to understanding and managing the landscape.

Discussions cover aerial photography, both modern and historic, LiDAR, satellite imagery, multi- and hyper-spectral data, sonar and geophysical survey, addressing both terrestrial and maritime contexts. Case studies drawn from the contrasting landscapes of Europe illustrate best practice and innovative projects.

See http://www.univie.ac.at/aarg/php/cms/Occasional-Publications/ for contents list.



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Archaeological Prospection

The final issue of the journal Archaeological Prospection for 2011 (18:4) is currently on its way to the printers. The following articles will be among those published.

Edward Henry - *A Multistage Geophysical Approach to Detecting and Interpreting Archaeological Features at the LeBus Circle, Bourbon County, Kentucky*

Rinita Dalan - *The Measurement and Analysis of Depth in Archaeological Geophysics: Tests at the Biesterfeldt Site U.S.A.*

Geert Verhoeven and **Michel Doneus** - *Balancing on the borderline – A low-cost approach to visualise the Red Edge shift for the benefit of aerial archaeology*

Keith Challis *et al*. - *A Generic Toolkit for the Visualisation of Archaeological Features on Airborne Lidar Elevation Data*

Juerg Leckebusch - *Problems and solutions with GPR data interpretation: de-polarization and data continuity*

Meric Berge and **Mahmut Drahor** - *Electrical resistivity tomography investigations of multi-layered archaeological settlements: Part II- a case from Old Smyrna Höyük, Turkey*

We would like to thank all the authors, referees and Associate Editors for their hard work throughout this successful year. Recently it was announced that journal's Impact Factor had increased to 1.368, which is very satisfactory.

Dr Chris Gaffney & Prof Larry Conyers, Editors of Archaeological Prospection

MSc Archaeological Prospection

MSc. Archaeological Prospection, The University of Bradford, UK.

The course is a highly focused postgraduate degree programme which develops specialist skills in the theory and practice of archaeological prospection, in particular in near-surface geophysics.

It provides students with knowledge and experience of the principal geophysical and geochemical techniques currently available for the detection of buried archaeological features and other near-surface targets. The course provides appropriate background to materials and soil science, together with the relevant mathematical principles.

Other methods of detection such as remote sensing, topographical survey and field-walking are introduced as essential components of an integrated approach to landscape assessment. Sampling procedures and the computer treatment and display of field data from all methods are critically examined with the aid of case studies based on field experience. Skills and knowledge are developed through lectures, seminars, laboratory and fieldwork classes and a substantial individual research dissertation.

Special Features:

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Course Syllabus

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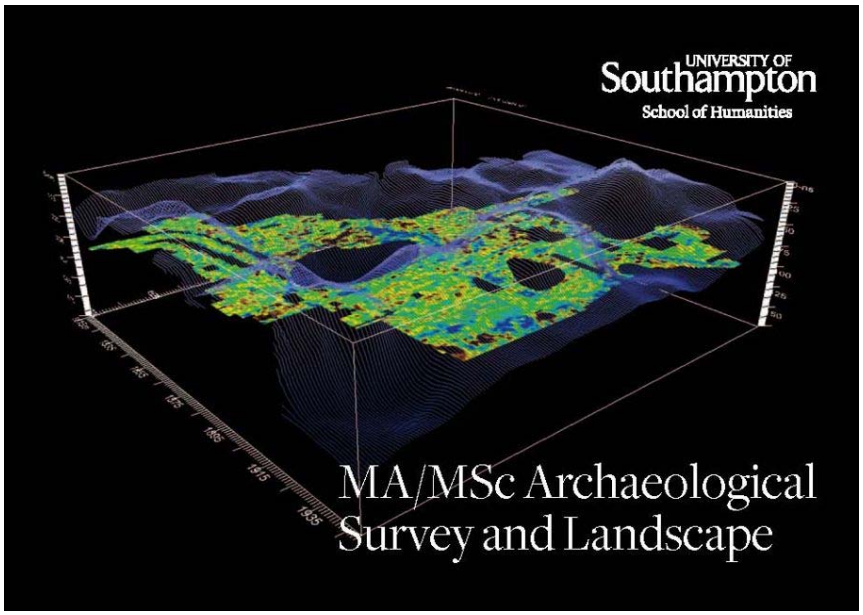
- Magnetic and Electromagnetic Methods of Survey
- Site Evaluation Strategies
- GIS for Practitioners
- The Nature of Matter
- Treatment, Display and Interpretation of Field Data
- Soils and Chemical Prospection
- Dissertation (MSc)

For more information, visit: http://www.bradford.ac.uk/postgraduate/archaeological-prospection-shallow-geophysics/ or contact Dr Chris Gaffney (c.gaffney@bradford.ac.uk).

UNIVERSITY OF BRADFORD
MAKING KNOWLEDGE WORK

MA/MSc. Archaeological Survey and Landscape, The University of Southampton, UK.

The study of archaeological landscapes and the use of survey methods is one of the most fundamental areas of research within the discipline of Archaeology. It includes the development of scientific methods of survey and archaeological practice in the field, and the analysis and interpretation of sites and landscapes.



This is achieved through interdisciplinary skills and the application of theoretical frameworks to understand the past. An emphasis on archaeological survey and fieldwork is a longstanding strength of Archaeology at Southampton and the discipline has made many key contributions to the development of archaeological field techniques in Britain and abroad. The discipline is dedicated to teaching cutting-edge and progressive scientific techniques for the survey and analysis of archaeological sites and landscapes, including geophysical survey and GIS-based skills, backed by first class computing facilities. Our survey projects include research on the landscape of the South Downs, and the survey and excavation at Portus, Rome's ancient port, carried out in collaboration with the British School at Rome. Students on the MA/MSc are fully involved in fieldwork and data processing on these projects. Different scientific methods are taught to a high standard, preparing postgraduates for professional employment in the archaeological sector and allowing students to develop their research abilities. We actively support students with the potential for continuing within a research degree programme.

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Research Skills
Core Computing
Archaeological Evaluation
CAD/GIS for Archaeologists

Typical Optional Modules:
Archaeological Survey and Recording
Archaeological Geophysics
Geoarchaeology
Social and Spatial Landscapes

Find out all the details of the programme and about the funding available on the Archaeology Discipline website: **www.southampton.ac.uk/archaeology** and **www.southampton.ac.uk/humanities**

Or contact Kris Strutt for further information **(K.D.Strutt@soton.ac.uk)**