NEW GLOBAL PERSPECTIVES ON ARCHAEOLOGICAL PROSPECTION

13TH INTERNATIONAL CONFERENCE ON
ARCHAEOLOGICAL PROSPECTION
28 AUGUST - 1 SEPTEMBER 2019
SLIGO - IRELAND

Edited by James Bonsall

Archaeopress Publishing Ltd
Summertown Pavilion
18-24 Middle Way
Summertown
Oxford OX2 7LG

www.archaeopress.com

ISBN 978-1-78969-306-5
ISBN 978-1-78969-307-2 (e-Pdf)

Cover images:

Top Left:	Earth resistance data from a circular ditched monument SL014-209041-, Carrowmore Megalithic Cemetery, Co. Sligo.
Top right:	Electromagnetic induction survey of a fulacht fia, monument SL008-205----, Coney Island, Co. Sligo. Photograph: Ciarán Davis
Bottom left:	Megalithic Passage Tomb, monument SL014-209006-, Carrowmore Megalithic Cemetery, Co. Sligo
Bottom right:	Court Tomb, monument SL015-050----, Deerpark, Co. Sligo

Printed in England by Severn, Gloucester

This book is available direct from Archaeopress or from our website www.archaeopress.com

Contents

The 13th ICAP and the Importance of Archaeological Prospection in Ireland

James Bonsall
Centre for Environmental Research Innovation and Sustainability, Dept. of Environmental Science, Faculty of Science, Institute of Technology Sligo, Ireland

Introduction

The International Conference on Archaeological Prospection came to Ireland for the first time in 2019, when the 13th ICAP took place at the Institute of Technology Sligo (IT Sligo), in the west of Ireland. The conference featured a wide geographical spread of papers and individual presenters, reflecting the varied global approaches to archaeological geophysics and remote sensing in the 21st century. This volume presents 93 papers that were delivered to the conference as either a poster or an oral presentation. Each paper presented here has undergone a detailed peer reviewed by three members of the ICAP Scientific Committee. On behalf of the ICAP 2019 Organising Committee and the Scientific Committee, I would like to thank the authors for their contributions to this volume and to all the delegates at the conference. I would also like to thank all of the members of the Scientific Committee for their diligent work during the peer review process.

Since the first ICAP Conference, which was held at the University of Bradford in 1995, the archaeological prospection community has grown exponentially with new research units and private sector companies emerging all over the world. Economic growth has fuelled construction projects globally, which in turn has emphasised the importance of development-led, rescue and preventive archaeology. Previously the realm of UK commercial archaeology, geophysical and remote sensing data are now gathered widely around the world to mitigate the impact of projects on previously known and unknown archaeological deposits. The conference, and thus the papers in this volume, feature case studies from 33 countries across Africa, Asia, Australasia, Europe and North America, reflecting current and global trends in archaeological prospection. Archaeological prospection techniques are relevant to all archaeologists no matter where they are located and no matter which time period they are studying; this volume includes papers of all time periods, from the Palaeolithic to the 20th century. No less than nine UNESCO World Heritage Sites are featured in research in this volume: two papers on the Monumental Earthworks of Poverty Point, USA; a paper each on the cities of Uruk-Warka and Ur (both parts of The Ahwar of Southern Iraq); two papers on Brú na Bóinne - Archaeological Ensemble of the Bend of the Boyne, Ireland; and papers on Dahshur (part of Memphis and its Necropolis – the Pyramid Fields from Giza to Dahshur), Egypt; Aksum, Ethiopia; Ephesus, Turkey; Prehistoric Pile Dwellings around the Alps; La Grand-Place, Brussels, Belgium; and Cerveteri (part of the Etruscan Necropolises of Cerveteri and Tarquinia), Italy.

Parts One to Five of this volume comprise research and case studies from different continents, illustrating the international reach of the volume and highlighting cultural similarities across certain regions. Research from a variety of ecosystems is presented, travelling far beyond the idealised 'flat pasture fields', with projects focused on deserts, forests, plains, grassland and uplands. Data has been collected from a variety of boats, vessels and specially developed floating sensor platforms in freshwater and marine environments, pushing researchers and their technologies in new and exciting directions. This volume also features research on natural disasters and their impact on archaeological sites, such as the deformation processes of earthquakes or inundation from flooding.

Part Six showcases technical and novel aspects of archaeological prospection, particularly in terms of data processing, convolutional neural networks, automated interpretive workflows and modelling as well as recent improvements in drone technology, remote sensing and visualisation. The science of geophysics and remote sensing is well established, but the means by which we acquire, use and re-use the data is constantly changing and improving with increased computer processing power, cloud-based solutions and cinematic visualisation methods. As we approach the end of the 2010s, we can clearly see the impact that multi-sensor cart and intregrated GPS surveys had on our discipline over the last decade. The advent of automated drone-acquired geophysical data is currently in its infancy, but case studies presented here represent a

technological turning point for the way in which we prospect for archaeology, and suggest that the next decade will see increased technical improvements for automated data acquisition.

Part Seven contains a number of papers that review the legacy of prospection data, the curatorial outcomes of archaeological prospection research, both in terms of interpretation vs. ground observation and the promotion of new and collaborative networks to better understand the soils that we study. Included are papers from practitioners and curators who are developing innovative strategies to 'work smarter', encouraging new ways to assess success, promoting feedback between geophysicists and archaeologists and increasing the capability to harvest large amounts of commercially-acquired data to often short deadlines, via both technology and significant investment in the training of staff.

I believe this volume illuminates the varied ways in which practitioners have developed their methods of data collection and analysis across the globe, which differ from region to region in response to the local cultural needs and knowledge base. These different approaches have led to knowledge-sharing and collaboration on a global scale, as evidenced by the number of researchers and practitioners working in other countries or away from their host institutions. Some papers reflect the work of large and well-funded research units or multi-partner collaborations, whilst others reflect the work of individual researchers or community archaeology groups. Together, these papers illustrate the globalisation of archaeological prospection, demonstrating the familiarity and non-uniqueness of anomalies across the planet.

Archaeological Geophysics in Ireland

Archaeological geophysics on the island of Ireland has a long history, but one interrupted by significant periods of stagnation. Beginning with explorations at the early medieval Ráth na Ríogh on the Hill of Tara, Co. Meath, Professor Séan P. Ó Riordáin in 1952, used an early form of unrecorded electrical resistivity survey (Byrne 1995). Dr (later, Prof.) Martin Aitken carried out the first magnetic prospection surveys in 1959, at the medieval ecclesiastical sites of Downpatrick, Co. Down and Navan, Co. Armagh in Northern Ireland (Aitken 1959, Aitken *et al.* 1958). Aitken described the magnetism of the basalt geology of the Antrim plateau as "too violent to permit archaeological work" (1959: 206), which may have inadvertently discouraged further research in Ireland.

Dr Elizabeth K. Ralph of the University Museum's Applied Science Centre for Archaeology, University of Pennsylvania, carried out a small but successful magnetometer survey in 1968 at the prominent Iron Age royal site of Dún Ailinne, Co. Kildare (Wailes 1970), identifying occupational deposits, subsequently verified by excavation. There was, however, a lack of archaeological scientific research in Ireland during the 1960s and 1970s. Those seeking to improve the outlook in the 1980s were warned that there was no "continuous organised scientific support for strictly archaeological studies" (Mitchell 1978: 3). An absence of funds and little inclination on the part of the National Museum of Ireland and the Office of Public Works also contributed to the absence of archaeological science. The lack of geophysical research was further compounded by the absence of commercial archaeology in Ireland at this time; archaeological geophysics was restricted to a few interested researchers with limited funding and resources.

Ronnie Doggart, a research student at Queens University Belfast (QUB), recognised that Ireland fell 10-15 years behind British and European archaeological prospection research (1983). Doggart established that magnetic prospecting could work in Northern Ireland by exploiting advances in magnetometer and computing technology, focusing on a number of case studies to identify early medieval ringfort enclosure ditches as positive magnetic anomalies on sandstone geology. He also resolved some of the problems encountered by Aitken's (1959) experience of working on basalt geology, and successfully identified a ringfort enclosure ditch as a negative magnetic anomaly, rather than the expected positive magnetic response encountered on a sedimentary bedrock. Doggart also successfully identified Mesolithic and Neolithic occupation sites at Bay Farm and Lough na Trosk in Co. Antrim, and at Mount Sandel, Co. Derry – Ireland's earliest Mesolithic settlement. Importantly, Doggart concluded that researchers should use magnetometers extensively across Ireland to increase knowledge of sites and anomaly types. Through Doggart's work, published in 1983, Irish archaeological geophysicists began to catch up with the work of those European researchers that had been established since the mid-1960s.

A key driver for scientific research in Ireland was the rise of commercial archaeology, which saw an exponential increase in the number of excavations on the island from 1970s and 1980s, leading to the wider use of geophysical surveys. The 1981-1982 Cork-Dublin gas pipeline (Cleary *et al.* 1987) was the largest archaeological project at the time and the first use of geophysics on an infrastructure project. Magnetometer and earth resistance surveys were used at selected areas beyond the pipeline corridor rather than for the prospection of unrecorded sites, such as the identification of an Early Bronze Age ring-ditch at Ballyveelish. Archaeologists were now alerted to the possibility of discovering ancient settlements beyond the limits of conventionally recognised monuments thanks to geophysical survey.

During the late 1980s, Martin Byrne, a postgraduate student at University College Cork (UCC), carried out earth resistance surveys across Co. Cork that located souterrains and lazy-bed activity (Monk 1989: 31). Elsewhere, geophysics continued to be used beyond areas of intrusive investigation such as Cooney's (1990) survey at Ballynee to identify the extent of a known souterrain. Byrne's MA thesis (Byrne 1995) was the first since Doggart's work to examine the state of archaeological geophysics in Ireland and focused on the use of earth resistance. Despite the developments of the 1980s, Irish geophysics was still in its infancy compared to work carried out in the UK.

The Irish prospection experience was fuelled by a combination of heritage-sensitive planning regulations that require scientific assessment of development-threatened archaeological sites and the so-called Celtic Tiger economic boom of the 1990s and early 2000s. Both homegrown Irish companies and those from the UK and Germany carried out a widerange of geophysical assessments across the country across a variety of soils and archaeological sites. By the end of the 2000s, geophysics had been embraced as a useful archaeological tool, helped in no small part by its use on national road schemes which gave the technique a wide exposure to archaeologists working on subsequent phases of investigation. The work of the Discovery Programme and others has also promoted the use of archaeological prospection at high-status Iron Age royal sites such as the Hill of Tara (Newman 1997), Dún Ailinne, (Corcoran 2007, Johnston *et al.* 2009) and Rathcroghan (Barton and Fenwick 2005, Waddell *et al.* 2009).

In the academic sector, Queen's University Belfast (QUB), the National University of Ireland Galway (NUIG) and the National University of Ireland Maynooth (NUIM) also developed archaeological geophysics research during the 2000s. Both QUB and NUIG carried out marine and terrestrial geophysics, and QUB became a research hub for the development of forensic geophysics (Ruffell *et al.* 2009). Research at the Department of Geography in NUIM was driven by the Environmental Geophysical Unit, under the leadership of Dr Paul Gibson, with contributions made to the study and mapping of high-status medieval monuments (Gibson 2007, Gibson and Breen 2005, Gibson and George 2006, O'Rourke and Gibson 2009).

The subsequent financial crisis period was one of reflection and provided the opportunity to study legacy data derived from the geophysical surveys and excavations of the 2000s to quantify the level of success offered by prospection surveys in Ireland (Bonsall *et al.* 2014a, Bonsall & Gaffney 2016). Formal guidance on the use of geophysics derived from that research (Bonsall *et al.* 2014b) has since been implemented by the state body Transport Infrastructure Ireland (the largest procurer of archaeological services in Ireland), and others. In the meantime, private and public sector practitioners, as well as third level institutes of education, embraced the new technological benefits that were developed during the recession, resulting in the use of UAV and multi-sensor platforms as a standard practice for archaeological prospection in Ireland. Today, a vibrant commercial sector is responsible for acquiring large datasets across thousands of hectares per year, with several independent archaeological geophysical companies trading in Ireland, and a number of archaeological consultancies with in-house specialists.

Archaeological Prospection at IT Sligo

IT Sligo has been at the forefront of archaeological prospection in Ireland for the last 16 years. In 2003 it became the first Institute of Technology in the country to offer degrees in archaeology and is still the only third level education body in Ireland where archaeology is taught as a science degree, rather than a humanities degree. The archaeology team at IT Sligo are embedded within the Department of Environmental Science in the Faculty of Science, alongside experts in forensics, geological and environmental science and

nanotechnology. At the core of the Applied Archaeology programme are two dedicated modules on the theory and practice of archaeological geophysics, which has resulted in a strong geophysical education for an entire generation of upcoming archaeologists.

IT Sligo's Department of Environmental Science has built up an impressive suite of archaeological prospection equipment including UAVs, laboratory and field probes for magnetic susceptibility, ground-penetrating radar instruments, metal detectors, magnetometers and earth resistance meters. We are also part of the global earthquake study network thanks to a seismometer acquired in 2013. These instruments have enabled IT Sligo undergraduate students to conduct geophysical surveys of archaeological sites and landscapes and assess materials for conservation in unique ways (Dowd *et al.* forthcoming.). For example, Michael Gleeson manufactured his own iron gall ink and used magnetic susceptibility methods to explore the provenance, conservation and detectability of ancient writing technology. Deirdre Kelly used magnetometry, magnetic susceptibility and earth resistance along with a high-resolution UAV survey to study a prehistoric hengiform enclosure at Carrowmably, Co. Sligo. Sally Siggins and Ciarán Davis each used magnetometry and earth resistance to investigate post-medieval bastioned forts in Sligo Bay, providing a new understanding of the defence of Sligo harbour in the past.

As a result of our prospection knowledge and skillset, we were a key partner in the recovery and conservation of hundreds of conflict-related artefacts from the largest metal detection survey in Ireland, the international Longest Day Research Project, a study of the 1798 Battle of Vinegar Hill. The focus of recent geophysical research at IT Sligo has investigated the impacts of challenging environments on archaeological prospection, such as the use of electromagnetic induction (EMI) over a Late Bronze Age cooking site in the intertidal environment (Bonsall and Dowd 2017); UAV, gradiometry and earth resistance over an early medieval monastic site in a remote (and geologically challenging) upland area (Beglane *et al.* 2018); and the assessment of low- or no-contrast prehistoric and post-medieval middens across dunefields, using EMI, gradiometry, magnetic susceptibility, earth resistance and ground-penetrating radar (Napora *et al.* 2019).

In the summer of 2019, we collected a variety of geophysical, photogrammetry and terrestrial laserscan data in advance of excavations at Alice and Gwendoline Cave, Co. Clare, where a butchered bear patella dating to 10,860-10,736 cal. BC provided the first evidence for a human presence during the Upper Palaeolithic in Ireland (Dowd and Carden 2016). The data analysis is at a preliminary stage, but has demonstrated the benefits of using a magnetic susceptibility point sensor across the cave floor in the search for palaeohearths and the discrimination of undisturbed cave deposits using combined earth resistance, magnetometry and metal detection.

Carrowmore megalithic cemetery, Co. Sligo, has been the focus of geophysical surveys for cohorts of IT Sligo students for many years, and the work has produced a number of discoveries. Among these are features associated with an enigmatic prehistoric monument that was excavated in the summer of 2019 as part of our undergraduate training excavation.

The Importance of an International Conference on Archaeological Prospection for Ireland

Back in 1995, at the 1st ICAP at the University of Bradford, Martin Byrne, the only Irish delegate attending, reiterated a clear and long-term need to develop expertise and training initiatives in Irish universities. Now, 24 years later, Ireland has achieved this and more. Happily, the development of archaeological geophysics at IT Sligo has also propelled Irish research further and Ireland is now the beneficiary of a small but focused geophysical community. I am very pleased to note that the countries most frequently featured in the papers contained in this volume are tied, at eight papers each, to Ireland, the UK and Italy. Irish archaeological prospection has come a long way since 1952 and this gives me hope for those countries or practitioners that are just beginning to explore the use of geophysics and remote sensing techniques, that they will also be making important and impactful research in the coming years. To this end, it is vitally important that the ICAP community continues to meet every two years to discuss the latest trends, challenges, discoveries and methodologies across the world, sharing knowledge and experiences that are relevant to us all, and encouraging the next generation of researchers and practitioners to develop our discipline further.

References

Aitken, M.J. 1959. News and Notes - Magnetic Prospecting: An Interim Assessment. *Antiquity*. 33(131). 205-207.

Aitken, M.J., Webster, G. and Rees, A. 1958. Notes and News - Magnetic Prospecting. *Antiquity*. 32(128). 270-271.

Barton, K. and Fenwick, J. 2005. Geophysical Investigations at the Ancient Royal Site of Rathcroghan, County Roscommon, Ireland. *Archaeological Prospection*. 12. 3-18.

Beglane, F., Bonsall, J., Nugent, L., Moran, J. & Meehan, H. 2018. An oasis in the desert: the early ecclesiastical site of Disert, Co. Donegal. *Journal of Irish Archaeology*. 27. 57-79.

Bonsall, J. & Dowd, M. 2017. Emerging from the waves: a Late Bronze Age intertidal saltwater fulacht fia at Coney Island, Co. Sligo. *Journal of Irish Archaeology*. 24. 79-95.

Bonsall, J. and Gaffney, C. 2016. Change is Good: Adapting Strategies for Archaeological Prospection in a Rapidly Changing Technological World. In F. Boschi (ed.) *Looking to the Future, Caring for the Past: Preventive Archaeology in Theory and Practice*. Bononia University Press. Bologna. 41-58.

Bonsall, J., Gaffney, C. and Armit, I. 2014a. A Decade of Ground Truthing: Reappraising Magnetometer Prospection Surveys on Linear Corridors in light of Excavation evidence 2001-2010. In Kamermans, H., Gojda M. and Posluschny, A.G. (eds.) *A Sense of the Past: Studies in current archaeological applications of remote sensing and non-invasive prospection methods*. BAR International Series 2588. Archaeopress, Oxford. 3-17.

Bonsall, J., Gaffney, C. and Armit, I. 2014b. *Preparing for the future: A reappraisal of archaeo-geophysical surveying on National Road Schemes 2001-2010*. University of Bradford report for the National Roads Authority. 1-151.

Byrne, M. 1995. *An introduction to the methods of Archaeological Prospection and a study of the theory and techniques of Electrical Resistivity*. MA Thesis. Department of Archaeology, University College Cork.

Cleary, R.M., Hurley, M.F. and Twohig E.A. 1987. *Archaeological Excavations on the Cork-Dublin Gas Pipeline (1981-1982)*. Cork Archaeological Studies No. 1. Department of Archaeology, University College Cork.

Cooney, G. 1990. Appendix 3 'Resistivity Survey' In G. Eogan, Ballynee Souterrains, County Meath. *The Journal of the Royal Society of Antiquaries of Ireland*. 120. 41-64

Corcoran, A. 2007. *An archaeological geophysical investigation of the ancient royal site of Dun Ailinne in Kilcullen, Co. Kildare*. MSc Thesis. Department of Geography, National University of Ireland Maynooth.

Doggart, R. 1983. The use of magnetic prospecting equipment in Northern Ireland. In Reeves-Smyth, T. and Hamond, F. (eds) *Landscape Archaeology in Ireland*. BAR Monograph British Series 116. Oxford. 35-46.

Dowd, M. and Carden, R.F. 2016. First evidence of a late Upper Palaeolithic human presence in Ireland. *Quaternary Science Reviews*. 139. 158-6.

Dowd, M., Beglane, F., Bonsall, J., Markley, S., Moore, S. and Read, C. Forthcoming. The past in the present: archaeology at IT Sligo. In Foran, J. (ed.) *IT Sligo 50th Anniversary Commemorative Volume*.

Gibson, P. 2007. Archaeo-magnetic investigation of the former monastic site at Kilskyre, Co. Meath. *Ríocht na Midhe*. 18. 33-38.

Gibson, P. and Breen, R. 2005. The internal structure of the Galtrim motte, County Meath, as revealed by ground-penetrating radar and electrical resistivity geophysical techniques. *Ríocht na Midhe*. 16. 23-28.

Gibson, P.J. and George, D.M. 2006. Geophysical Investigation of the Site of the Former Monastic Settlement, Clonard, County Meath, Ireland. *Archaeological Prospection*. 13. 45-56.

Johnston, S.A., Campana, D. and Crabtree, P. 2009. A Geophysical Survey at Dún Ailinne, County Kildare, Ireland. *Journal of Field Archaeology*. 34. 385-402.

Newman, C. 1997. *Tara: an archaeological survey*. Dublin: Royal Irish Academy for the Discovery Programme.

O'Rourke, T. and Gibson, P.J. 2009. Geophysical Investigation of the Environs of Rattin Castle Tower House, County Westmeath, Ireland. *Archaeological Prospection*. 16. 65-75.

Mitchell, G.F. 1978. Planning for Irish Archaeology in the Eighties (The Royal Irish Academy 1978 Presidential Address). *Irish Archaeological Research Forum*. 5. 1-14.

Monk, M. 1989. Archaeological Prospection Part 1: Geophysical Survey. *Archaeology Ireland*. 3. 30-33.

Napora, K.G., Bonsall, J., Rathbone, S. & Thompson, V.D. 2019. Geoarchaeological Analysis of a Dunefield Shell Midden Site in Carrowdough Townland, County Sligo, Ireland. *The Journal of Island & Coastal Archaeology*. 14(3). 394-410.

Ruffell, A., McCabe, A., Donnelly, C. and Sloan, B. 2009. Location and Assessment of an Historic (150–160 Years Old) Mass Grave Using Geographic and Ground Penetrating Radar Investigation, NW Ireland. *Journal of Forensic Science.* 54(2). 382-394.

Waddell, J., Fenwick, J. and Barton, K. 2009. *Rathcroghan: archaeological and geophysical survey in a ritual landscape*. Dublin. Wordwell.

Wailes, B. 1970. Excavations at Dun Ailinne, Co. Kildare 1968-9 Interim Report. *The Journal of the Royal Society of Antiquaries of Ireland*. 100(1). 79-90.

13th International Conference on Archaeological Prospection: Organisation Committee

- Dr James Bonsall, Department of Environmental Sciences, Faculty of Science, IT Sligo, Ireland
- Dr Kayt Armstrong, Magnitude Surveys Ltd., Bradford, UK
- Dr Immo Trinks, Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology, Vienna, Austria
- Sam Moore, Department of Environmental Sciences, Faculty of Science, IT Sligo, Ireland
- Anthony Corns, The Discovery Programme: Centre for Archaeology and Innovation Ireland, Dublin, Ireland
- Fin Melia, Independent Archaeologist, Sligo, Ireland
- Oli Melia, IT Sligo Science Festival Organiser, Sligo, Ireland
- Greg Carew, Abbey Conference & Events, Dublin, Ireland
- Emma Wood, Abbey Conference & Events, Dublin, Ireland
- Julie Peacock, Abbey Conference & Events, Dublin, Ireland
- Iva Brankovic, Abbey Conference & Events, Dublin, Ireland

13th International Conference on Archaeological Prospection: Scientific Committee

- Jimmy Adcock, Guideline Geo | ABEM | MALÅ, Sweden
- Dr Kayt Armstrong, Magnitude Surveys Ltd., Bradford, UK
- Dr Cathy Batt, School of Archaeological and Forensic Sciences, University of Bradford, UK
- Dr Christophe Benech, Université de Lyon, Archeorient, Lyon, France
- Dr Dan Boddice, University of Birmingham, UK
- Dr James Bonsall, Department of Environmental Sciences, Faculty of Science, IT Sligo, Ireland
- Dr Hannah Brown, UK
- Dr Rebecca J.S. Cannell, Institute for Archaeology, History and Conservation, University of Oslo, Norway
- Erica Carrick Utsi, EMC Radar Consulting, Cambridge, UK
- Anthony Corns, The Discovery Programme: Centre for Archaeology and Innovation Ireland, Dublin, Ireland
- Dr Carmen Cuenca-Garcia, Norwegian University of Science and Technology, Trondheim, Norway
- Susan Curran, School of Archaeology, University College Dublin, Ireland
- Prof. Rinita A. Dalan, Minnesota State University Moorhead, USA
- Dr Philippe De Smedt, Department of Environment, Faculty of Bioscience Engineering, Ghent University, Belgium
- Prof. Eileen G. Ernenwein, East Tennessee State University, USA
- Prof. Dr Jörg W.E. Fassbinder, Geophysics Department of Earth and Environmental Sciences, Ludwig-Maximilians-University, Munich, Germany
- Dr Emily Fioccoprile, University of Bradford, UK
- Dr Simon Fitch, School of Archaeological and Forensic Sciences, University of Bradford, UK
- Dr Robert Fry, The University of Reading, UK
- Dr Christopher Gaffney, School of Archaeological and Forensic Sciences, University of Bradford, UK
- Dr Chrys Harris, Magnitude Surveys Ltd., Bradford, UK
- Dr Paul S. Johnson, Department of Archaeology, The University of Sheffield
- Sam Moore, Department of Environmental Sciences, Faculty of Science, IT Sligo, Ireland
- Finnegan Pope-Carter, Magnitude Surveys Ltd., Bradford, UK
- Dr Apostolos Sarris, Geosat Research Lab., Foundation for Research and Technology, Hellas (F.O.R.T.H.), Greece
- Dr Mary K. Saunders, University of Oxford, UK
- Dr Armin Schmidt, GeodataWIZ, Remagen, Germany
- Dr Petra Schneidhofer, Department for Cultural Heritage Management, Vestfold County Council, Norway
- Dr Arne Anderson Stamnes, Norwegian University of Science and Technology, Trondheim, Norway
- Prof. Alain Tabbagh, Sorbonne-Université, Paris, France
- Dr Immo Trinks, Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology, Vienna, Austria
- Prof. Gregory N. Tsokas, Laboratory of Exploration Geophysics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece
- Dr Geert J. Verhoeven; Ludwig Boltzmann Institute for Archaeological Prospection & Virtual Archaeology; Vienna, Austria
- Dr Andreas Viberg, Guideline Geo | ABEM | MALÅ, Sweden
- Dr Dennis Wilken, Institute of Geosciences, Christian-Albrechts-University Kiel, Germany