

Oxfordshire

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Geophysical Survey in Dorchester-on-Thames, Oxfordshire, 2008.

Introduction

The Discovering Dorchester-on-Thames Project is an archaeological research project involving the local Dorchester community, Oxford Archaeology and the University of Oxford (Booth *et al.* 2012). The project's third excavation, undertaken at Deacon's Field to the north of Dorchester, investigated a Neolithic cursus and a Bronze Age ring ditch (Hey 2012; 2013). The excavation took place as a result of a geophysical survey performed in 2008 by MSc students in Applied Landscape Archaeology from Oxford University's Department for Continuing Education. This report provides a summary of the geophysical survey.

The Geophysical Survey

The cursus at Dorchester-on-Thames was first reported by Crawford (1927, 471, Plates I and II) as parallel cropmarks visible on aerial photographs taken by the RAF and which extended over half a mile. These parallel ditches were also visible in aerial photographs taken by Major Allen (Allen 1938, 169-170, Plate XVI) who noted "Their extension to the north-west is covered by a grass field and as grass does not readily produce crop-marks no signs of them can be seen in that direction." (Allen 1938, 170). This grass field is Deacon's Field. The full extent of the cursus is mapped by Benson and Miles (1974, 67, Map 36) apart from its north-western terminus in or beyond Deacon's Field. The cropmarks of two parallel ditches are shown in Deacon's Field in English Heritage's Thames Valley Mapping Programme of the 1990s but it is unclear if this is based on aerial photographic evidence or as an extrapolation of the visible cropmarks to the south-east.

At some time after the 1930s the grass field was divided into two, with the smaller, western part used by Thames Water as a sewage treatment plant which has subsequently been demolished. The larger, eastern part of the original Deacon's Field is used on Sundays as a site for a car boot sale and is maintained as grass and was available for survey in 2008. This eastern area was selected by Gill Hey as the most likely site to contain a surviving segment of the Dorchester cursus, much of which has been destroyed by gravel extraction and the construction of the Dorchester bypass.

Figure 1 is a map of the modern Deacon's Field and road alignment at the Berinsfield Roundabout. A 120 metre baseline was laid out parallel to the fence separating the former water treatment plant from the car boot sale field and seven 30 metre grids were surveyed with a Bartington Instrument's GRAD601 gradiometer. Two positive magnetic linear anomalies were detected and interpreted as ditches. The northern of these two ditches was believed to be the northern cursus ditch and the other was interpreted as a feature within the cursus. The southern cursus ditch was not detected. Traces of ridge and furrow running from the south-west to the north-east are also present. Additionally, a small ring ditch was visible, apparently centred on the northern cursus ditch. As it lay across the boundary of two survey grids, a new grid was laid out with the ring ditch at its centre and resurveyed, as shown in figure 2.

The cursus appears to continue westwards into the area previously occupied by the Thames Water treatment plant. As cropmarks have not been observed in the arable field further west, it appears likely that the north-western terminus of the cursus lies under the demolished treatment plant.

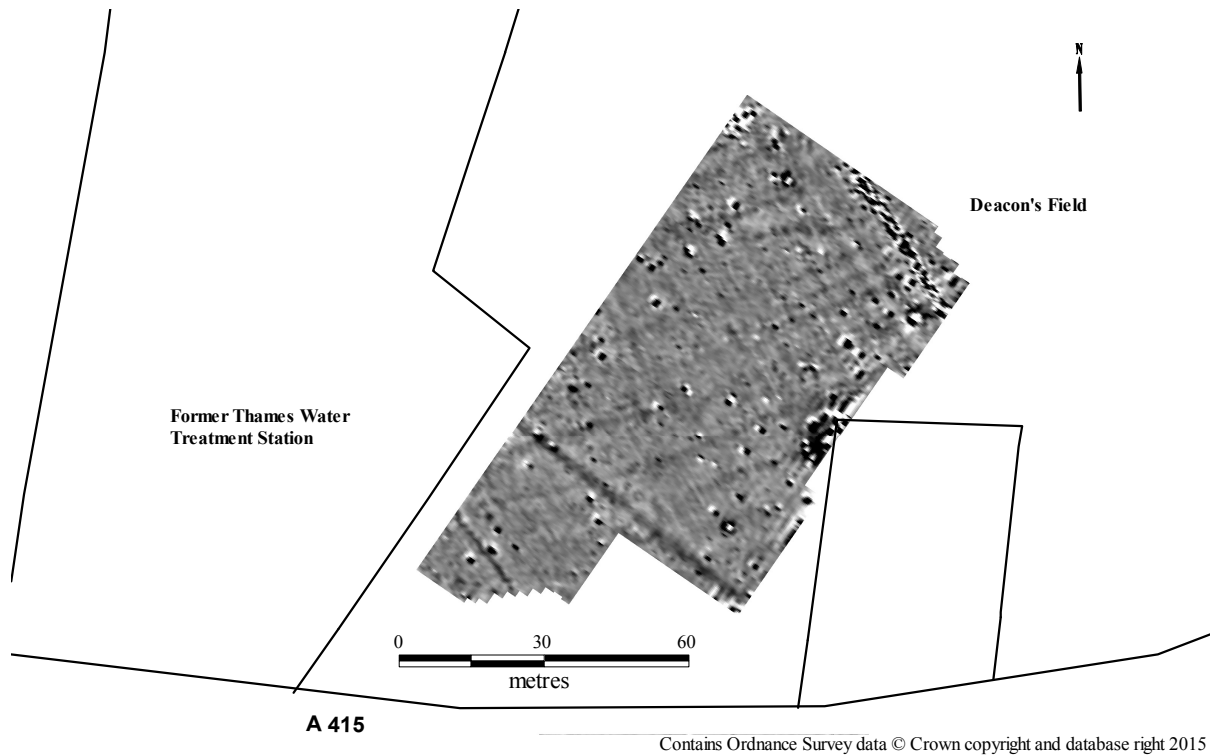


Figure 1 – The Cursus Ditch in Deacon's Field (June 2008)

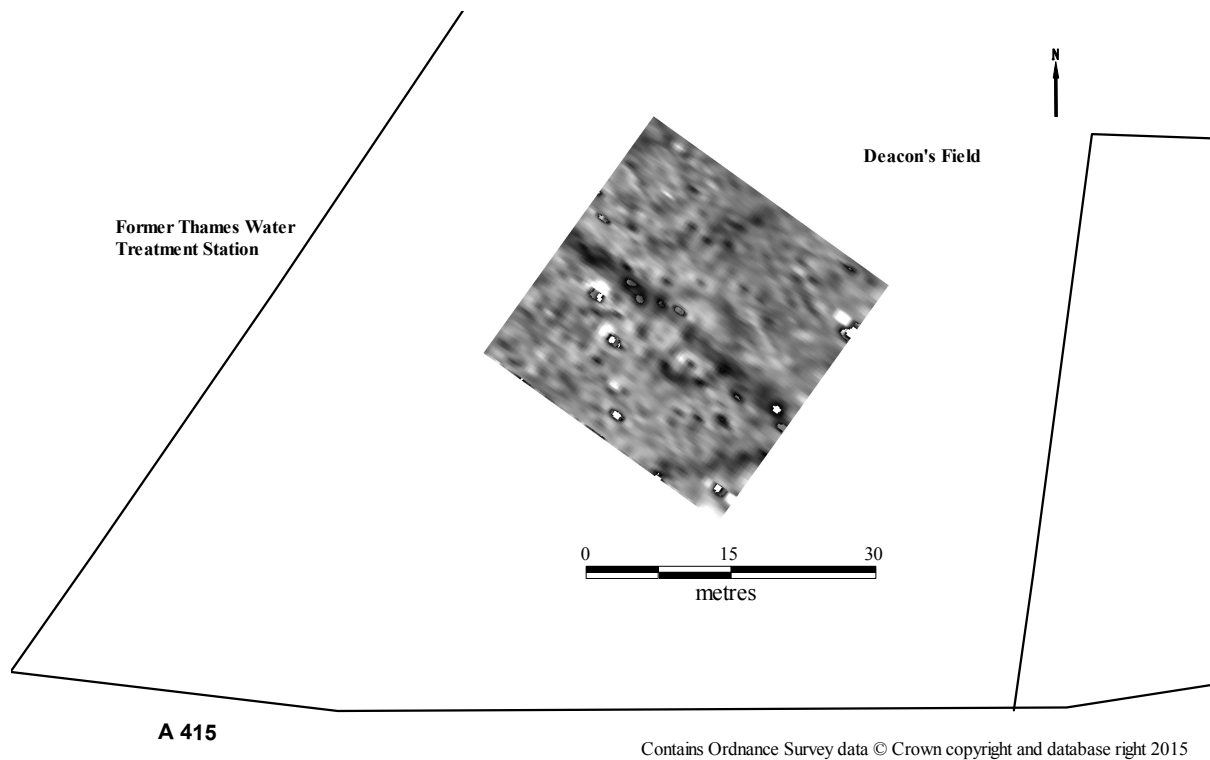


Figure 2 – The Ring Ditch on the Cursus (June 2008)

Discussion

Neither aerial photographs nor geophysical survey can provide direct dating of the features detected. Instead, such features are most usually dated by analogy with similar features whose date is known. Ultimately, firm dating evidence needs to be supplied by excavation.

The cursus ditch was excavated in 2010, 2011 and 2012 (*Booth et al.* 2012, 5-9). Despite a lack of dating evidence, its similarity in form to a feature excavated further south in advance of gravel extraction confirms it as the northern cursus ditch (Hey 2012, 52). The excavation in 2012 located a short section of the southern ditch, 45 metres from the northern ditch (Hey 2013, 61) and outside the area investigated by the geophysical survey. The ditch visible in figure 1 to the south of the cursus ditch was felt to be later, probably Roman (Hey 2013, 61).

Excavation also demonstrated the ring ditch post-dated the cursus ditch and was of two phases. Initially built in segments with an entrance to the north-west it was later modified into a continuous circuit. Hey (2012, 52) suggests this was to enable a mound to be built over a grave located in the middle of the ring ditch which contained a crouched burial and an early Beaker pot.

Conclusions

The Upper Thames Valley contains a range of important and extensive Neolithic monument complexes. Adjacent to the river Thames between Abingdon and Wallingford are three cursus monuments: Benson, Dorchester-on-Thames (*Atkinson et al.* 1951, *Whittle et al.* 1992) and Drayton (*Barclay et al.* 2003). Most cursuses, including Dorchester-on-Thames, are accompanied by other Neolithic and Bronze Age funerary monuments such as long barrows, enclosures, henges and round barrows.

Much of the Dorchester-on-Thames cursus and its associated monuments were destroyed by gravel extraction in the 1940s and the construction of a bypass in the 1980s. The geophysical survey at Deacon's Field has revealed a surviving element of the cursus and a ring ditch. Additionally, by providing accurate location information the survey enabled a targeted and important research and training excavation to take place.

Hey has suggested that the north-western terminus of the cursus lies under the adjacent demolished Thames Water treatment plant. As the western boundary of the treatment plant is marked by a small stream flowing towards the nearby river Thames, this would fit a pattern of cursus terminals lying near to a river or stream (*Barclay et al.* 2003, 29).

Survey Technique

The surveys were undertaken using a Bartington Instrument's GRAD601 gradiometer with a single magnetometer tube and set to a scale of 100nT with a sensitivity of 0.1nT. Grids were laid out in 30 metre squares and were walked in a clockwise "zigzag" pattern. Traverses were one metre apart with readings taken four times a metre. The results have been processed by ArcheoSurveyor and are displayed in figures 1 and 2 as a block shaded image using a grey-scale. The location of the grids was subsequently recorded with a Leica survey grade GPS.

Acknowledgements

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The Ordnance Survey data used in the figures is the freely available OS Open Map - Local.

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