

**ABINGDON ARCHAEOLOGICAL GEOPHYSICS**  
**4 Sutton Close, Abingdon, Oxon OX14 1ER**  
**tel. 01235 529720 archgeophys@hotmail.co.uk**

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Short Report form no. 2022-02



Name of site: **Site at Round Hill, Swalcliffe, Oxfordshire**

County: Oxfordshire District: Cherwell Parish: Swalcliffe  
National Grid reference. SP385394 Nearest postcode OX15 6PG (access OX15 6ET)  
Client; North Oxon Archaeology Group

Start date: 09 Feb 2022      End date: 21 March 2022      Report date: 31 March 2022

This is in our short report format so others can use the information. Details of geophysics techniques can be found elsewhere such as in our book "Archaeology- In the Service of Property Development?" available on our website ([archgeophys.weebly.com](http://archgeophys.weebly.com)).

### **Survey Details**

Geology at site; Whitby Mudstone Formation - Mudstone. Sedimentary Bedrock formed approximately 174 to 183 million years ago in the Jurassic Period.

At the top of Round hill the geology is Northampton Sand Formation - Sandstone, Limestone And Ironstone. Sedimentary Bedrock formed approximately 170 to 174 million years ago in the Jurassic Period.

Soilscape viewer; Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

Topography; On lower, south eastern, slope of Round hill.

Land use at the time of survey; Cropped clover.

### **Known archaeological sites / monuments covered by the survey**

The clients' fieldwalking found a scatter of Roman pottery and has been noted in South Midlands Archaeology, principally vols. 28, 1998 p67; 30, 2000 p57, where fieldwalking and metal detecting located Roman roof tile, pottery ranging from Samian ware to Oxford red ware and white mortaria. Coins ranged from a Dubonnic coin to late coins of Constantine and included 20 early Roman sestertii. It is understood that they have also excavated in the area. Oxfordshire HER no 16348.

### **Archaeological sites / monument types detected by the survey**

Ditches forming rectangular, circular and sub-circular enclosures. Probable pits. Ridge and furrow and other field systems. Geophysics along cannot give a reliable date to these features.

**Surveyor** Abingdon Archaeological Geophysics, Roger Ainslie, Sally Ainslie

**Purpose of survey:** To ascertain if magnetometry was likely to reveal any archaeological remains in the area. A small area of resistivity was also carried out.

**Location of:** a) Primary archive, i.e. raw data, electronic archive etc; Abingdon Archaeological Geophysics. Also with client. b) Full report: ditto

### **Technical Details**

Type of survey

A Magnetometer

Area surveyed; 3.1ha Traverse separation, if regular: 1metre Reading / sample interval: 8 per metre

Type, make and model of instrumentation: Bartington Grad 601/2

B Earth Resistance

Area surveyed; 0.18ha Traverse separation; 0.5 metres Reading / sample interval: 2 per metre

Type, make and model of instrumentation; TR Systems/CIA resistance meter Mk 2. Twin probe array, 0.5 metre mobile probe separation. Remote probe initial separation 0.5m. NW corner reading first grid 23.45 ohms.

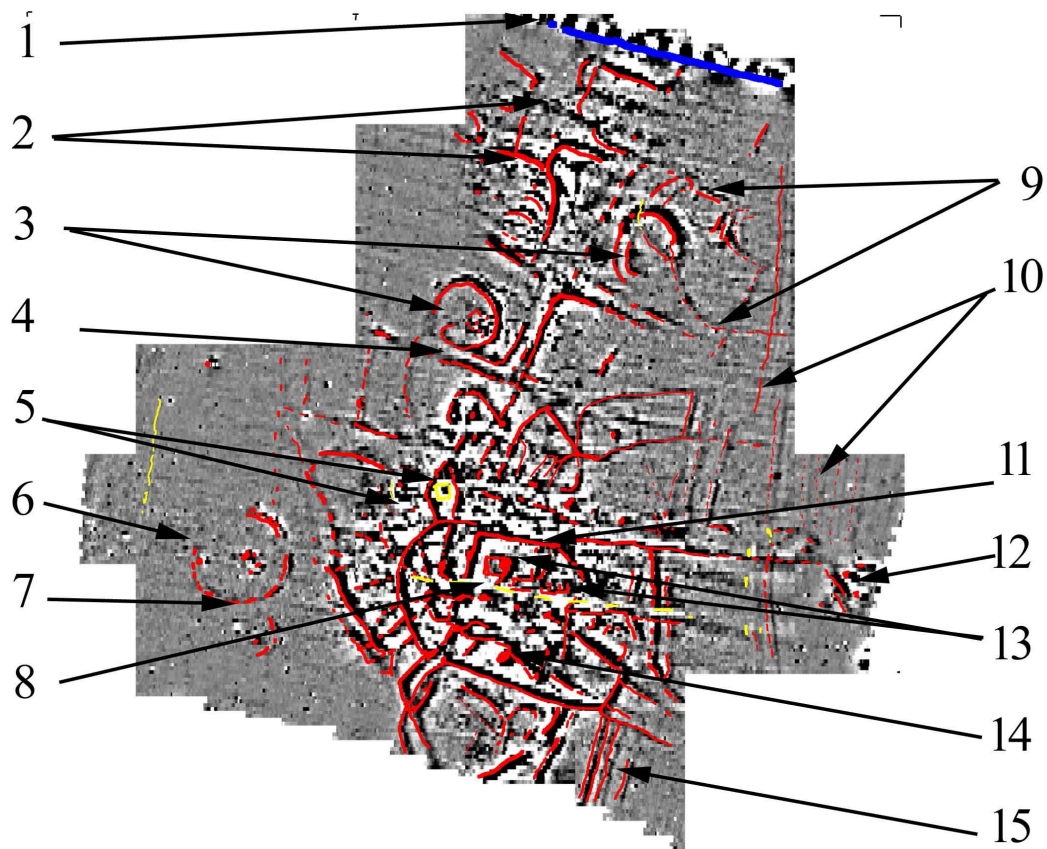
Processing

TerraSurveyor was used. The principal processes for magnetometry were de-stripe, destagger at 90cms, clipping. For earth resistance clipping was used as the logger enabled defective readings to be identified and re-done as work progressed.

Additional remarks

30 metre grids. First line start NW corner going east zig zag. Grids set out using a Trimble Pro XR differential GPS, probably accurate to approx 30cms. Grids aligned on National Grid.

## Results (refer to plans below)



### Magnetometry

1 Line of very high and low readings.

Probably a modern steel water pipe.

2 Parallel broad high anomalies.

Traces of presumed medieval ridge and furrow field system. They cross almost all the survey area and affect the detection, and probably preservation, of features.

3 Sub-circular ditched enclosures.

These are probably too large to be buildings at 28m diameter and thus more likely to be enclosures which may have contained buildings. There is the possibility that they could have had 10 metre round houses with a broad area between the building and the ditch. The possible pits and internal divisions would support the former.

4 Parallel pairs of ditches turning 90 degrees.

At 4 metres between ditches the possibility of them being ditches on either side of a hedge could be considered. At Fengate, nr Peterborough, this arrangement was attributed to the Bronze Age (Colin Burgess, *The Age of Stonehenge* 1980 p250) At Appleford it has been given a Roman date. (Henig and Booth *Roman Oxfordshire* 2000 p 100)

5 Low magnetic response small circular anomalies.

Possibly daub from buildings. We found similar at Shotteswell recently.

6 Area of waterlogged ground recently poached by horses.

This may be related to the removal of the hedge (8) which can be seen on old air photos and maps. If the hedge contained a ditch, its removal will have impeded drainage. This can cause reducing conditions in the soil which affect the magnetic particles which would otherwise be detected using a magnetometer.

7 Circular ditched enclosure.

The western part may be less visible magnetically due to waterlogging. The gap in the north east

side may be where a ditch along a former hedge line cut it.

8 Line of low magnetic response.

This may be the former hedge line.

9 Rectangular enclosure and other curved ditches.

These are less visible than other anomalies further up the slope. Discussed in conclusions below.

10 North-south slight linear anomalies.

These are probably related to agricultural operations or field drainage and appear to be later than the ridge and furrow. They also appear not to be cut by any ditch which may have run along the hedge (8 above), so may date from after its removal.

11 L-shaped ditch with strong magnetic strength.

This could be an enclosure around less detectable buildings, such as at Barton Court in Abingdon. It also shows in the earth resistance results.

12 Patch of high anomalies.

This could be all that remains of the building shown on the old map.

13 Three small rectangular high magnetic features.

These are problematical, although in the most promising area for any Roman building. At 5 metres long they are a bit small for most buildings. The sides of two of them align with the direction in which the magnetometer was being carried, which can be influenced by the height of the sensor above the ground. The responses are also influenced by the ridge and furrow and hedge line anomalies.

14 Small area of high anomalies

This is probably a pit and also shows in the earth resistance results.

15 Several small ditch-like anomalies parallel to each other.

This is probably agricultural or field drainage. It is not on the same alignment as 10 above and therefore probably a different phase of activity.

## **General Observations**

We only saw 4 pottery shards on the surface whilst surveying, 1 Roman Samian ware, 1 Roman greyware, 1 post medieval slipware and a Midland purple looking shard. This contrasts with the clients fieldwalking results. It will be interesting to see what the pottery density per cubic metre is of the clients' small excavation so this can be related to densities observed in their gridded fieldwalking.

## **Conclusions**

Magnetometry worked well on this site, to the extent that minor features were detected and made the results more complex than usual. Earth resistance didn't work well. There was a small range in readings, with most being within 21 to 26 ohms, possibly caused by the iron in the soil and it being damp. This meant that the undulations caused by cultivation a year earlier dominated the results.

The magnetic anomalies detected can be analysed to see which ones abut others, so forming a possible sequence. It should be remembered that we are looking at magnetic halos and that a strong anomaly can swamp a slighter one which is above it.

The main magnetometry question is why we located a band of anomalies where we did. There is a high area of readings in the area of grids 2 and 3, which can be explained by the features there indicating a settlement there which will have had the burning to generate magnetic anomalies. The problem is in the band of high anomalies running northwards in grids 5 and 12. The features are not a track running on that alignment, which would usually have occupation along it and people throwing ash from cooking fires into the roadside ditches, enhancing magnetic detection. Here we have features which are not aligned on that axis but are more detectable over it. The 4 most likely possibilities to me are;-

- 1 This band is on a slight slope and people may have preferred to live on a slight slope so the rainwater could drain away.
- 2 The remains have been buried by colluvium more deeply where the gradient is least and are less detectable in those areas.
- 3 There is a band of more iron rich subsoil here, which has assisted magnetic detection.
- 4 There has been earlier occupation, (the features of which we have not detected), and burning in this area which has enhanced the magnetic properties of the soil.

The dense magnetometry results appear largely to coincide with the areas of Roman pottery found during the clients' fieldwalking. The exception to this is the southern part of the field where in grid 4 there was little magnetically detectable but the pottery scatter was quite dense in that area. There are also anomalies, (3 and 6), which appear to resemble prehistoric remains. If we had not been surveying to verify the fieldwalking, we would not have located these.

### **REMINDER**

Many features cannot be located by using magnetometry or resistivity. Features including flint scatters and burials may well exist which are not detectable by these survey methods. The failure to locate remains does not mean that they are not there.

### **Acknowledgements**

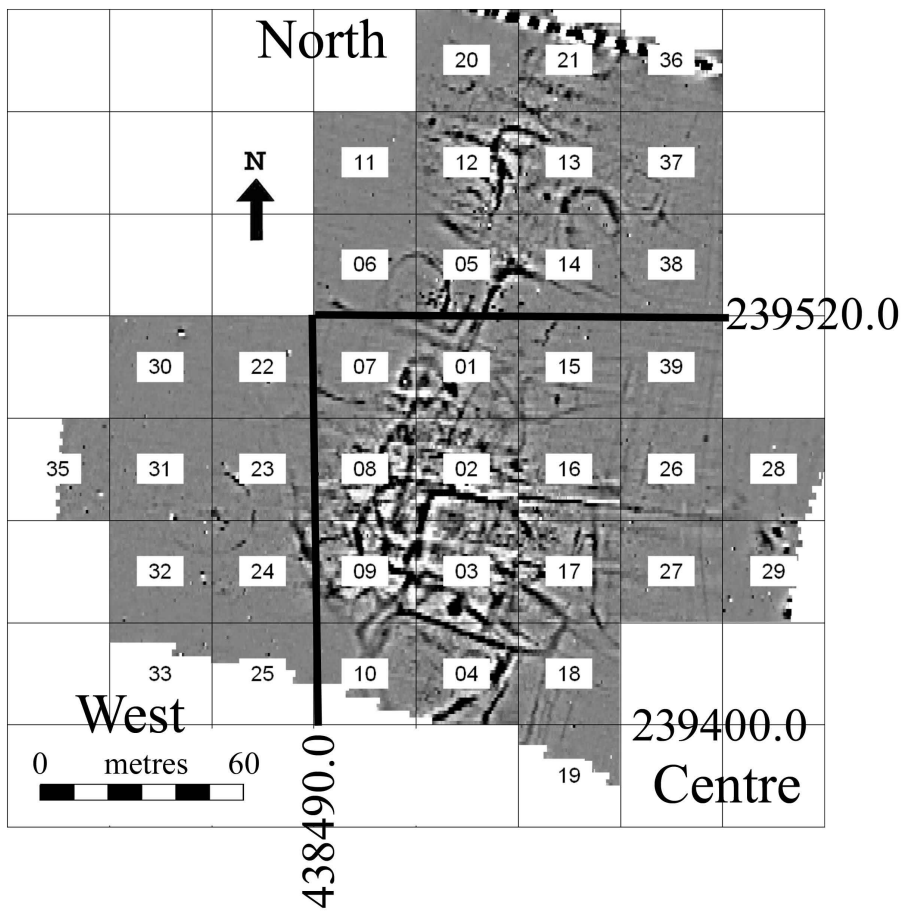
We would like to thank the clients for asking us to do the survey and for providing information concerning earlier work there and air photos which assisted the interpretation. We would also like to thank the landowner for permitting access and for transporting us and our equipment to the site.



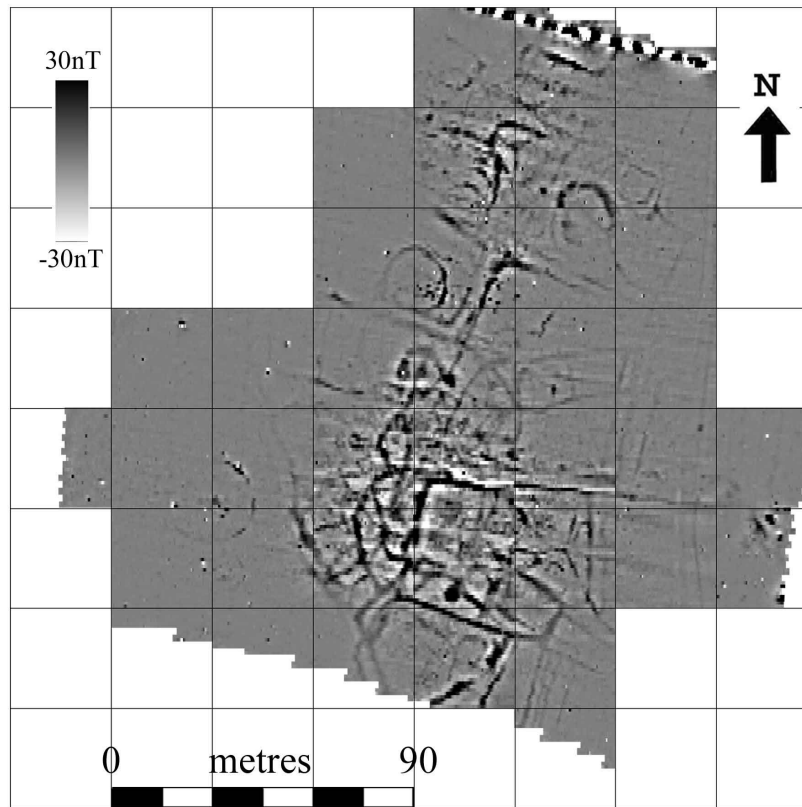
LOCATION on OS map.



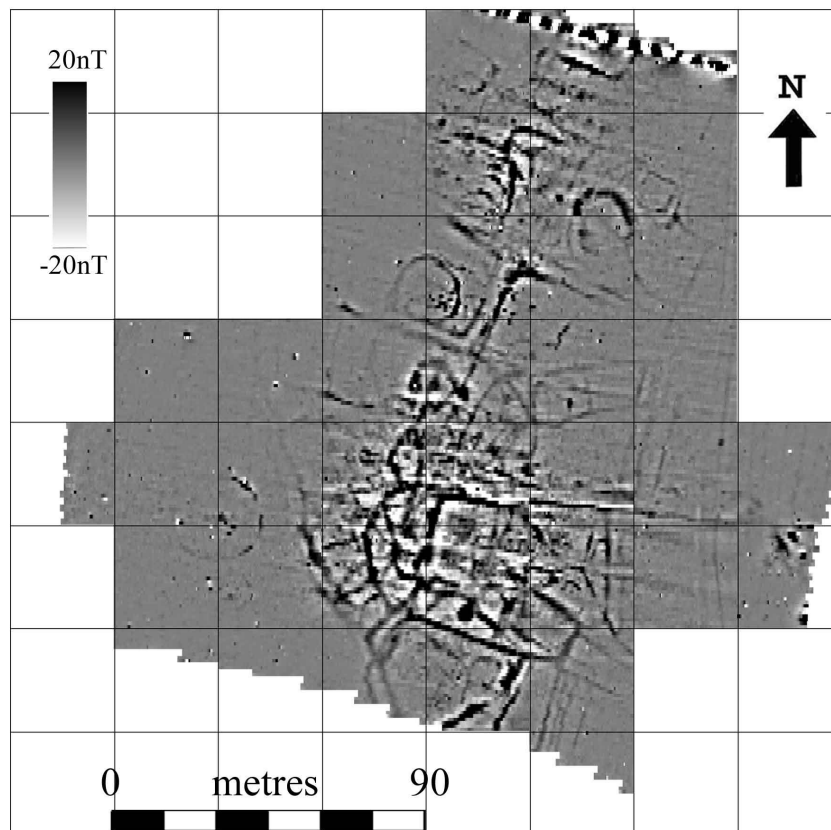
LOCATION on Google Earth base.



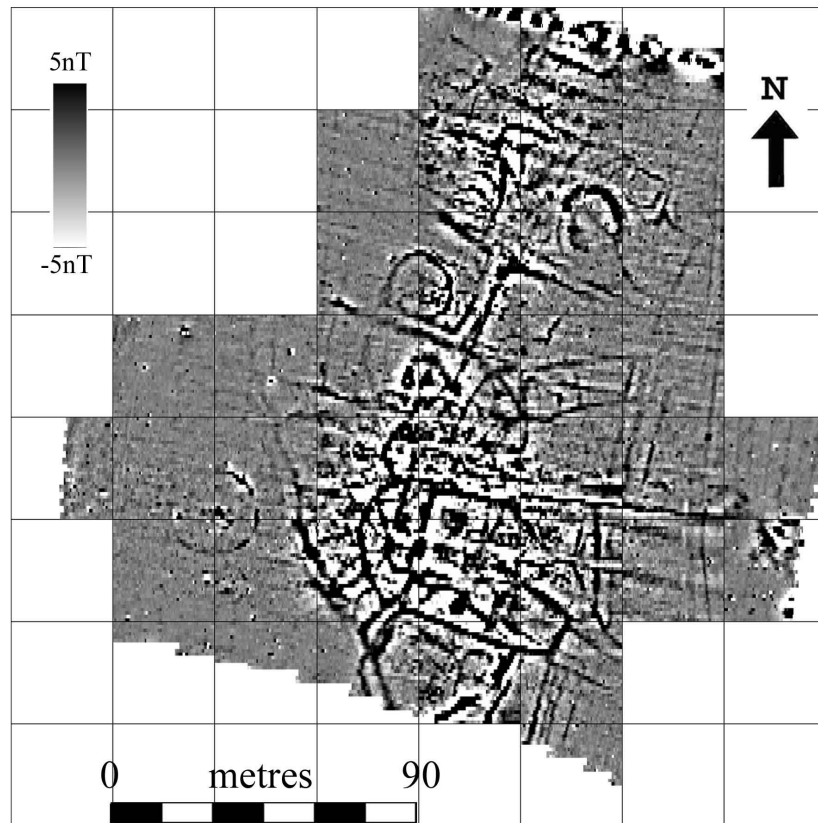
LOCATION grid order and co-ordinates



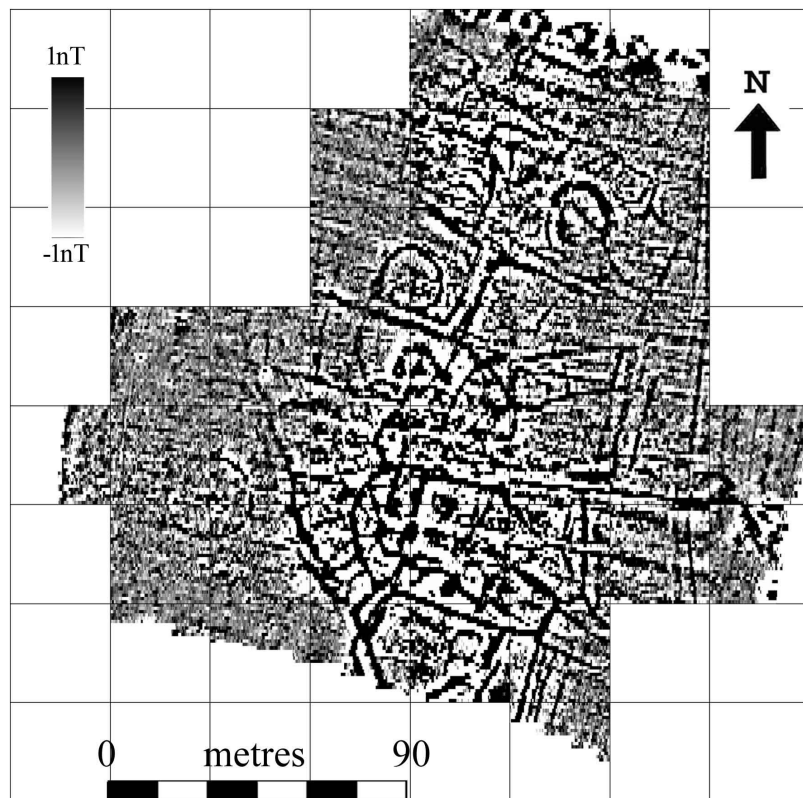
All magnetometry Greyscale with grid and scales clipped to 30nT



All magnetometry Greyscale with grid and scales clipped to 20nT

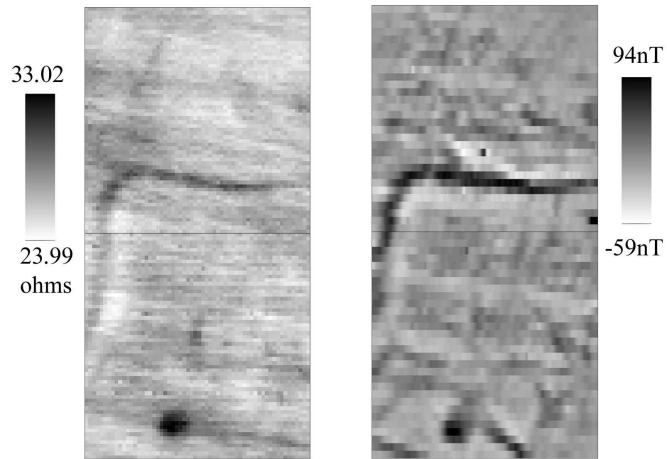


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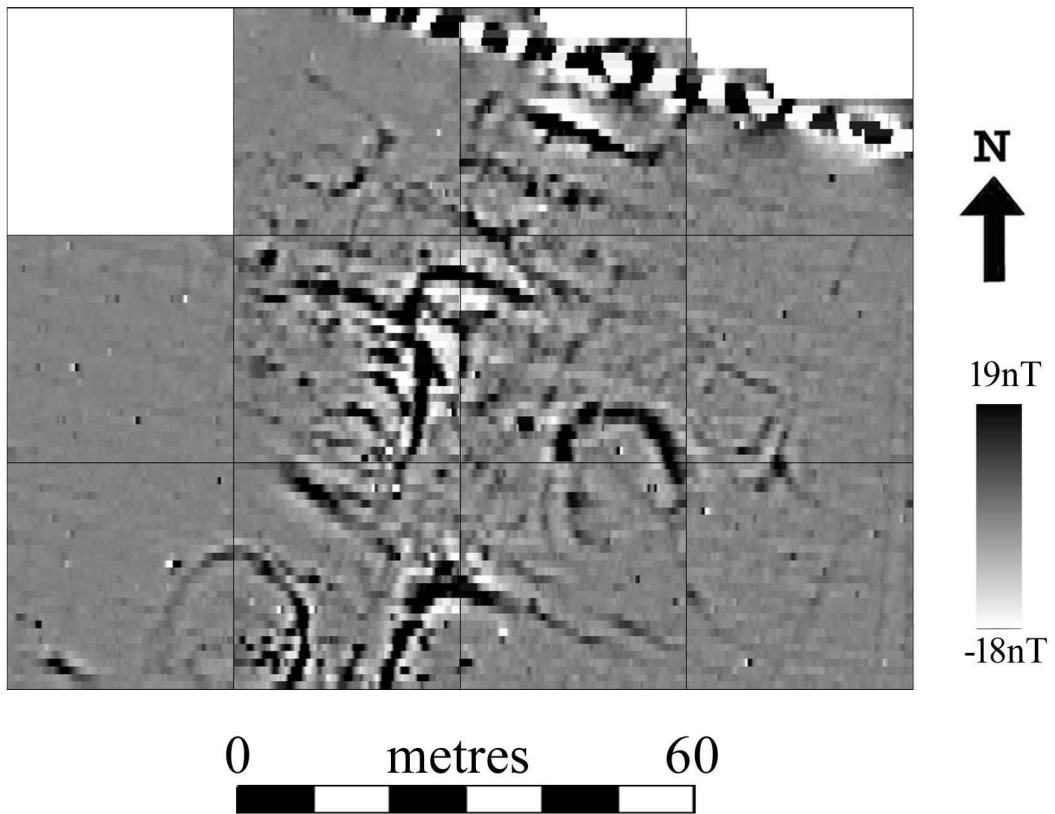


All magnetometry Greyscale with grid and scales clipped to 1nT



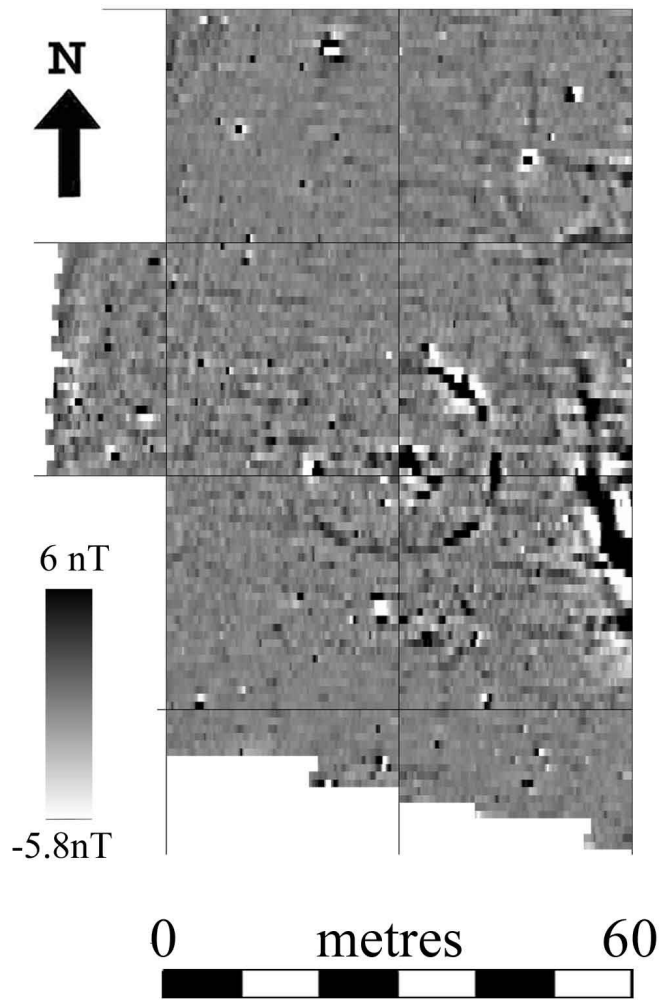


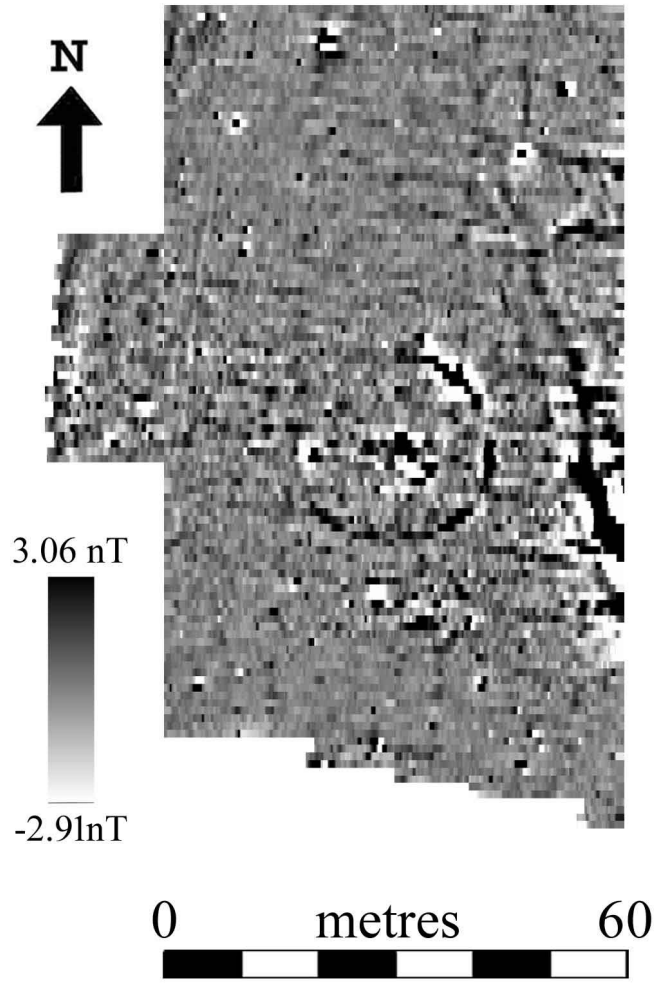
Earth resistance and magnetometry of grids 2 and 3



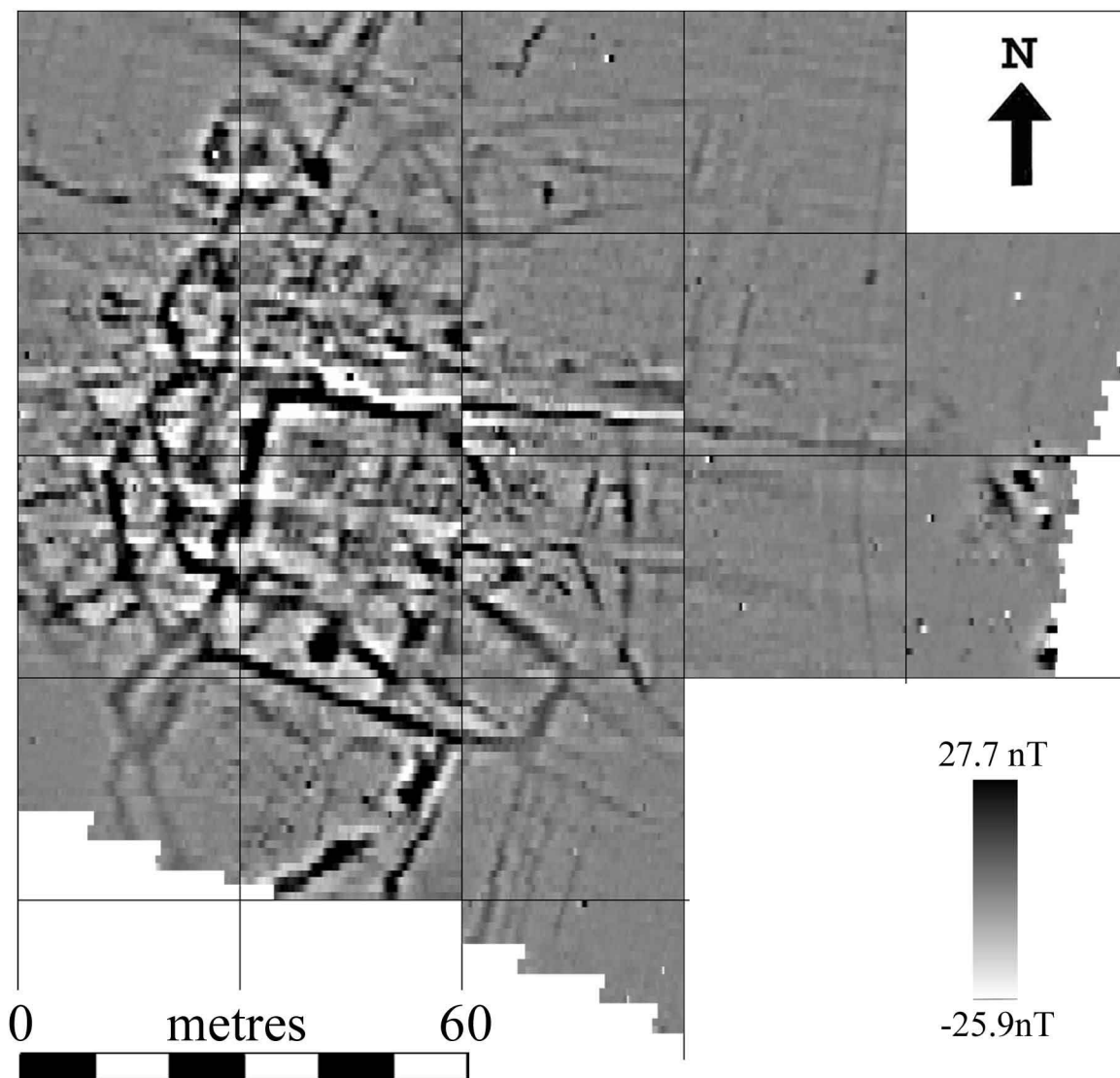


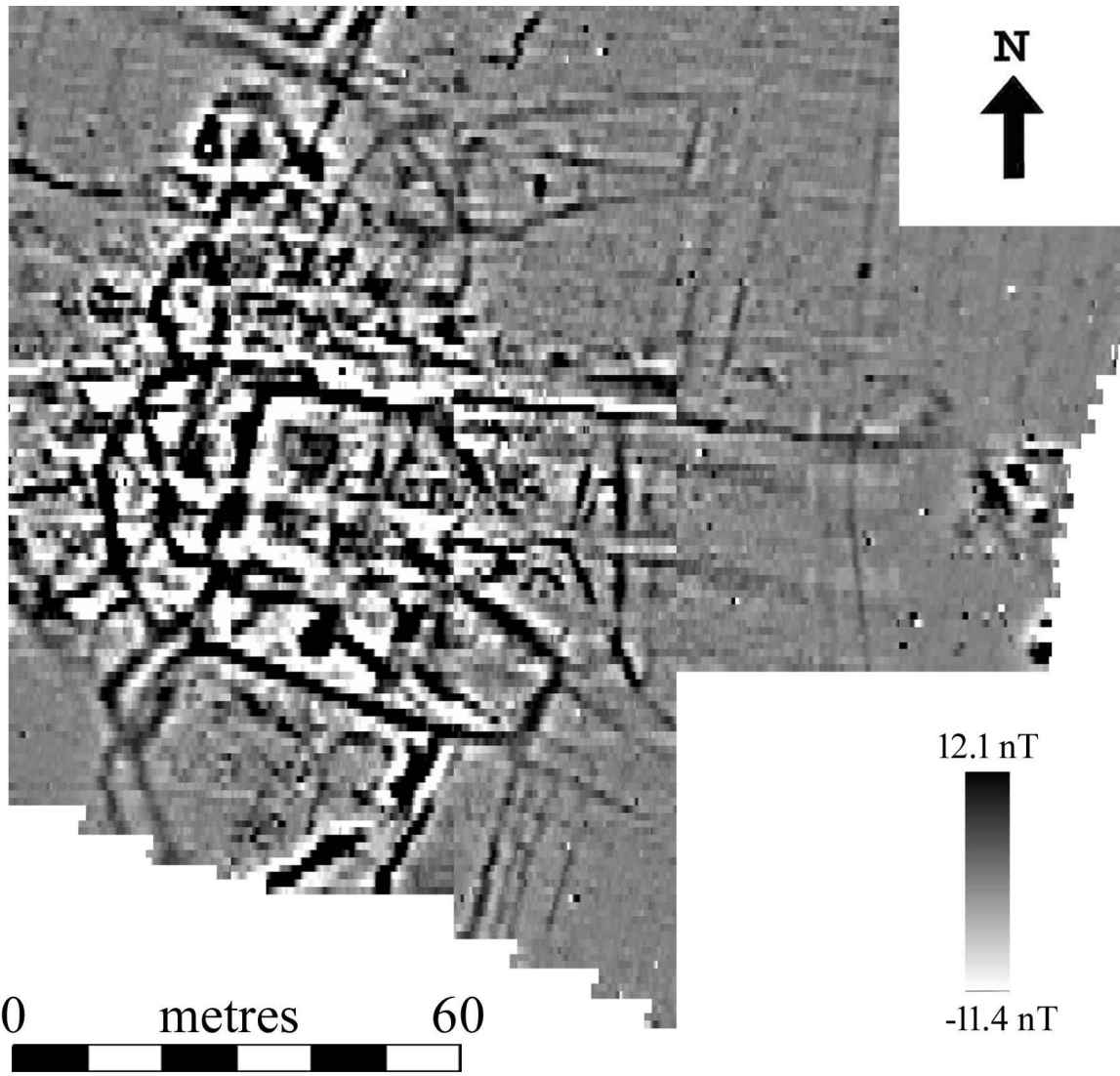
Northern area Clipped to 6 and 19nT

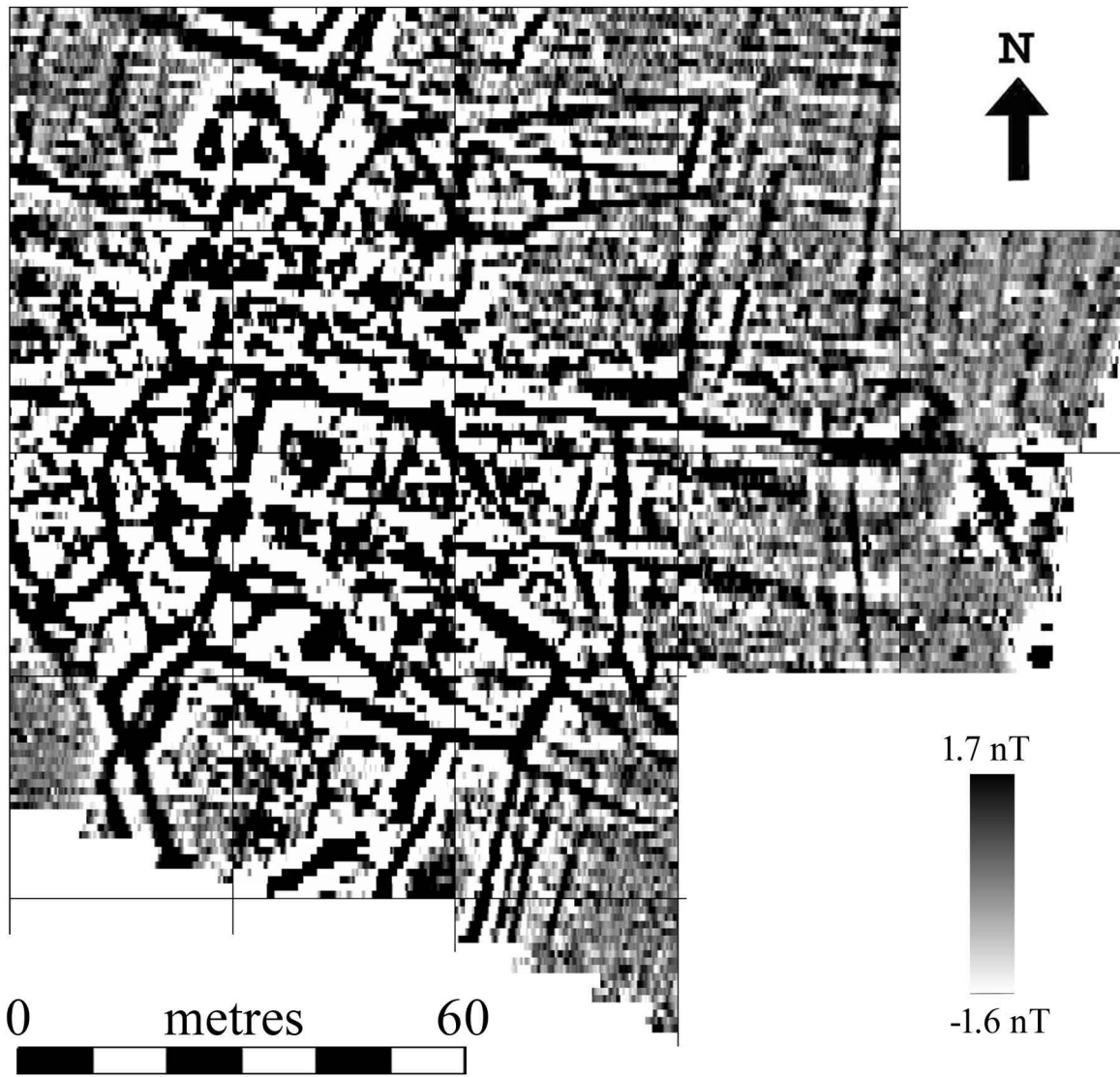




Western Area clipped to 3 and 6nT







Central area clipped to 27, 12 and 1.7nT