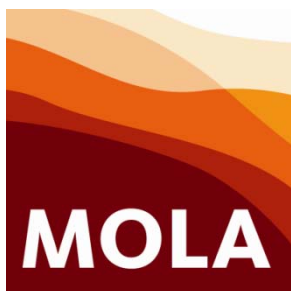


**Archaeological geophysical survey of land at
Wall Tree Farm, Farthinghoe
Northamptonshire
April 2014**

Report No. 14/94

Authors: Chris Chinnock

Illustrator: John Walford



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OASIS REPORT

PROJECT DETAILS		Oasis No. molanort1-178467
Project name	Archaeological geophysical survey of land at Wall Tree Farm, Farthinghoe, Northamptonshire	
Short description	MOLA was commissioned to carry out a detailed magnetometer survey on land at Wall Tree Farm, Farthinghoe Northamptonshire. The survey detected a series of undated archaeological features focused in the southernmost field as well as remnant medieval ridge and furrow cultivation which predates the current arrangement of field boundaries.	
Project type	Geophysical survey	
Site status	None	
Previous work	DbA CgMs Consulting (Butler and Smith 2014)	
Current Land use	Arable	
Future work	Unknown	
Monument type/ period	Medieval ridge and furrow	
Significant finds	Undated ditches, medieval ridge and furrow	
PROJECT LOCATION		
County	Northamptonshire	
Site address	Land to the east of Cockley Road, Farthinghoe, Northamptonshire	
Study area	c 21.6 ha	
OS Easting & Northing	SP 5444 3983	
Height OD	c 145-150m AOD	
PROJECT CREATORS		
Organisation	MOLA	
Project brief originator	CgMs Consulting	
Project design originator	MOLA	
Director/Supervisor	Chris Chinnock	
Project Manager	Adam Yates	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	22nd April 2014	
End date	25th April 2014	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey of land at Wall Tree Farm, Farthinghoe Northamptonshire April 2014	
Serial title & volume	MOLA Northampton Reports 14/94	
Author(s)	Chris Chinnock	
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Contents

1	INTRODUCTION	1
2	BACKGROUND	1
	2.1 Location and geology	1
	2.2 Historical and archaeological background	2
3	METHODOLOGY	2
4	SURVEY RESULTS	2
	4.1 Field 1	3
	4.2 Field 2	4
	4.3 Field 3	4
5	CONCLUSION	3
6	BIBLIOGRAPHY	3

Figures

Cover	Magnetometer survey results Field 1	
Fig 1	Site location	1:10,000
Fig 2	Magnetometer survey results - west	1:2000
Fig 3	Magnetometer survey results - east	1:2000
Fig 4	Magnetometer survey interpretation - west	1:2000
Fig 5	Magnetometer survey interpretation - east	1:2000
Fig 6	Unprocessed magnetometer data	1:2000

Archaeological geophysical survey of land at Wall tree Farm, Farthinghoe Northamptonshire April 2014

ABSTRACT

MOLA was commissioned to carry out a detailed magnetometer survey on land at Wall Tree Farm, Farthinghoe Northamptonshire. The survey detected a series of undated archaeological features focussed in the southernmost field as well as remnant medieval ridge and furrow cultivation which predates the current arrangement of field boundaries.

1 INTRODUCTION

MOLA was commissioned by CgMs Consulting to conduct a geophysical survey on land at Wall Tree Farm, Farthinghoe, Northamptonshire (NGR SP 5444 3983; Fig 1). A detailed magnetometer survey was undertaken on 22nd to 25th April 2014, and covered a total area of approximately 21.6ha.

2 BACKGROUND

2.1 Location and geology

The survey area comprised three arable fields, covering a total of 21.6ha located to the east of Farthinghoe. It is bounded to the west by Cockley Road and on all other sides by arable farmland (Fig 1).

The topography of the site is undulating. Field 1 undulates from approximately 150m Above Ordnance Datum (AOD) at the north-east corner, down to c 145m AOD in the south, rising again to c 149 AOD on the western edge. Field 2 also undulates with the highest ground in the centre of the field at c 153m AOD. This drops slightly to the east to approximately 152m AOD, and more substantially to the west, with the lowest point in the south-west part at approximately 149m AOD. Field 3 has the most varied topography. It undulates with three broad ridges from south to north, and slopes down from west to east. The highest point is at the south-west corner at approximately 151m AOD, with the north-west corner at c 148m AOD. The lowest point is at c 137m AOD midway along the eastern edge.

The British Geological Survey (BGS website) shows the underlying solid geology of Field 3 and most of Field 2 to be Whitby Mudstone. The north east part of Field 2 has solid geology of Northampton Sand Formation (Sandstone, Limestone & Ironstone). Field 1 has a banded solid geology with Whitby Mudstone in the north and centre, surrounded by Northampton Sand Formation. This is followed by Horsehay Sand Formation (Sandstone) which runs around the perimeter of the field from the northwest to south-east. In the extreme south-west and south-east there may be small areas of Taynton Limestone Formation (Ooidal Limestone).

2.2 Historical and archaeological background

A full, detailed account of the recorded archaeological evidence within a 1km buffer around the site can be found in the Desk Based Assessment prepared by CgMs Consulting (Butler and Smith 2014). The archaeological record shows limited activity in the area surrounding the site throughout all periods. There has been little intrusive archaeological work in the area and much of the Historic Environment Record (HER) is based on the Royal Commission on Historical Monuments report (RCHME 1982) comprising mostly aerial photographs and crop marks.

An undated sub-square enclosure lies immediately to the south-east of the site (HER 228/0/1). Further activity has been recorded immediately to the north of the site (HER 1439/0/1).

Field walking by the Royal Commission found limited evidence for prehistoric activity, chiefly indicated by scattered Neolithic and Bronze Age flint find spots. Possible Neolithic or Bronze Age activity is recorded to the north of the site (HER 339/1). The spread of low density prehistoric finds is more indicative of a general background noise rather than focused prehistoric settlement or activity.

The evidence for Roman period activity suggests that the study site lay in an area remote from known areas of settlement activity, but with some level of activity in the vicinity. The low density of finds recovered in the development area could represent the manuring of fields with domestic waste. Any activity in the vicinity is likely to have been agricultural in nature. However, recent ongoing and as yet unpublished work at Steane Park approximately 1km to the south-east of the site has revealed a large, dense area of settlement with a number of high status finds (pers comm. J Walford). In the 1970's a bronze bust, believed to be that of Marcus Aurelius was discovered in the plough soil on the site and has since been recorded in the Portable Antiquities Scheme (PAS: BERK-E24C84).

Approximately 1km to the south-east of the site is the deserted medieval village of Steane. Several areas of ridge and furrow are recorded in the HER around Farthinghoe and it is very likely that the study site comprised of field systems throughout the medieval periods. A low potential is therefore considered at the site for any sort of concentrated activity for the period, but evidence of land division and drainage could conceivably be present.

Cartographic evidence dating to 1812 shows that the layout of the fields has changed little between the early 19th century and the present time.

3 METHODOLOGY

The magnetometer survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

An independent network of 30m grid squares was established within each of the fields to be surveyed. These grids were set out with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by means of a Leica Viva RTK GPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically

triggered every 0.25m along the traverses, giving a total of 3600 measurements per square. All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011) and the methodology established in the Written Scheme of Investigation (Chinnock 2014).

The survey data were largely processed using Geoplot 3.00v software. Striping was removed using the 'Zero Mean Traverse' function and de-staggering of the data was performed where necessary. The processed data is presented in this report in the form of greyscale plots at a range of +4nT (black) to -4nT (white). These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2 and 3) and are shown with an interpretative overlay in Figures 4 and 5. Separate greyscale plots of the unprocessed data are presented in Figure 6.

4 SURVEY RESULTS

4.1 Field 1

The clarity of the results in this field has been significantly affected by the variable underlying geology. Particularly strong anomalies are associated with a spur of the ferruginous Northampton Sand Formation which spreads from the eastern edge of the field to the centre, underlying roughly a quarter of the field. A large swathe of blurred and mixed data spreading from the southern tip of the field to the north-west corner correlates with mapped geological data as well as seasonal cropmarks and can be described as possible colluvial deposits.

Several short but strong positive linear anomalies have been detected across the area of the Northampton Sand outcrop (Fig 4). The majority of these form a rectilinear arrangement, on a distinct alignment from those anomalies related to ridge and furrow (see below). They probably represent fragments of a system of enclosure and boundary ditches, perhaps of Iron Age or Roman date. Other positive anomalies have been detected which perhaps represent pits; however, these cannot be distinguished with much confidence from similar anomalies of geological origin.

At least four different areas of weakly positive linear anomalies are indicative of remnant ridge and furrow cultivation (Fig 4). A roughly north-south aligned area to the north of the field possibly represents the southern limit of the ridge and furrow present in Field 2. In the south-western corner of the field there is a north-north-east to south-south-west aligned area of remnant ridge and furrow. A third small area aligned north-east to south-west can be seen in the most southern part of the field. The fourth and largest area is aligned north-east to south-west and is visible in the eastern half of the field.

A strong positive linear anomaly in the south-west corner of the field is aligned approximately north-east to south-west. The anomaly is c 50m long and correlates well with an irregularly shaped field boundary immediately to the west (Fig 4).

In the north-west corner of the field a negative linear anomaly is aligned roughly east to west. Another similar anomaly can be seen in the south-west corner, also aligned east to west. A further two negative linear anomalies are present in the south-east corner of the site (Fig 4). The specific cause of these anomalies is not known, but similar anomalies sometimes represent service trenches containing cables or plastic water pipes.

A large dipolar anomaly in the southern half of the field relates to a stone lined access point for a large grubbed-out field drain observed during the survey (Fig 4).

4.1 Field 2

The majority of this field is mapped as Whitby Mudstone Formation (www.bgs.ac.uk). However, a slight variation in the geology can be seen at the eastern end of the field, possibly defined by a more iron rich deposit such as the Northampton Sand Formation seen in Field 1. Further variation can be seen in the western half of the field possibly relating to groundwater flow (Fig 4).

At the eastern end of the field there are two small positive linear anomalies, which could represent possible ditches. Linear anomalies, aligned approximately north to south, relate to remnant ridge and furrow cultivation and are present throughout most of the field. Further ridge and furrow on a slightly different alignment can be seen at the western end of the field. Furthermore, anomalies aligned east to west at the western end of the field, represent the edge of another area of ridge and furrow cultivation.

Several dipolar anomalies indicate modern debris and/or ferrous objects present throughout the ploughsoil (Fig 4).

4.3 Field 3

This field is also mapped as Whitby Mudstone Formation, but show the same variation in the south-western corner as seen at the eastern end of Field 2.

An irregular band of diffuse weakly positive anomalies bisects the field, aligned approximately north-east to south-west (Fig 5). This coincides with a dry stream bed which marks the lowest point in the undulating topography in the field.

In the south-west corner of the field two broadly parallel positive linear anomalies are aligned north-west to south-east. These possible ditches may relate to the features identified at the eastern end of Field 2. Another weakly positive linear is present in the north-western part of the field; this may be a ditch or old boundary line (Fig 5).

Four distinct areas of ridge and furrow cultivation can be seen in this field as indicated by a series of positive parallel linear anomalies. The area to the south-west is most likely the same as the ridge and furrow visible in Field 2. The area in the south-east corner shows variation in the direction of some of the furrows, this may indicate a joint between two furlongs or an extension of a pre-existing furlong.

A curvilinear anomaly in the north-east corner of the survey area cuts the main area of ridge and furrow cultivation. The limitations of the survey area and field boundary preclude any meaningful interpretation of this feature.

Several dipolar anomalies indicate modern debris and/or ferrous objects present throughout the plough soil. Two of these anomalies relate to telegraph poles in the northern half of the field (Fig 5).

5 CONCLUSION

The survey results indicate that Field 1 has a number of features which have archaeological potential. The identified features are mostly restricted to the area of more ferruginous material which may suggest that activity was limited to this location or that the other geological formations are less responsive to survey. The visible features may indicate a rectilinear arrangement of ditches and enclosures. Further scattered linear anomalies present in all three fields may represent other ditches though no discernible form or function can be given. This would accord well with the sporadic prehistoric and Roman activity in the surrounding area, recorded in the Historic Environment Record.

Evidence for ridge and furrow cultivation can be seen throughout all three fields. Several opposing directions of ridge and furrow are evident, though it has been noted that in comparison with the eastern parts of Northamptonshire 'the high undulating ground in the west of the county can have very complex patterns of small furlongs, with lands lying in many directions' (Hall 1993).

Dating the ridge and furrow cultivation is difficult as it was in use throughout the medieval period and into the post-medieval era. However, the arrangements visible in the survey area do not have the characteristic straight, narrow 'lands' seen in the 19th century. The fields, in their current form, are recorded on the 1841 Farthinghoe tithe map and are broadly similar to those on the 1812 Ordnance Survey drawing. The ridge and furrow also seems to pre-date the track-way which runs between fields 1 and 2, this track-way is shown on a 1779 map of Northamptonshire linking Farthinghoe with Halse to the east. It is clear in each field that the current boundaries do not reflect the layout of the open field system. The fields around Farthinghoe were enclosed by the 1720's and it is likely that the layout of the ridge and furrow significantly predates this (RCHME 1982).

The geophysical results correlate well with David Hall's survey of the landscape of the historic county of Northamptonshire (Partida, Hall and Foard 2013). This survey was a combination of field survey and analysis of historical records and aerial photography. The result was a comprehensive map of the layout and orientation of the open field system prior to the parliamentary enclosure act.

BIBLIOGRAPHY

Butler, C and Smith, M, 2014 *Archaeological Desk Based Assessment: Land at Wall Tree Farm, Farthinghoe Northamptonshire*, CgMs Consulting, **CB/MS/16471a**

Bartington, G, and Chapman, C, 2003 *A high-stability fluxgate magnetic gradiometer for shallow geophysical survey applications*, *Archaeological Prospection*, **11**, 19-34

Chinnock, C 2014 *Written Scheme of Investigation for geophysical survey of land at Wall Tree Farm, Farthinghoe Northamptonshire*, MOLA Northampton

EH 2008 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

Hall, D 1993 *The Open Fields of Northamptonshire: The Case for the Preservation of Ridge and Furrow*, Northampton, Northamptonshire County Council

IfA 2011 *The Use of Geophysical Techniques in Archaeological Evaluations*, (2nd Edition), Institute for Archaeologists Technical Paper

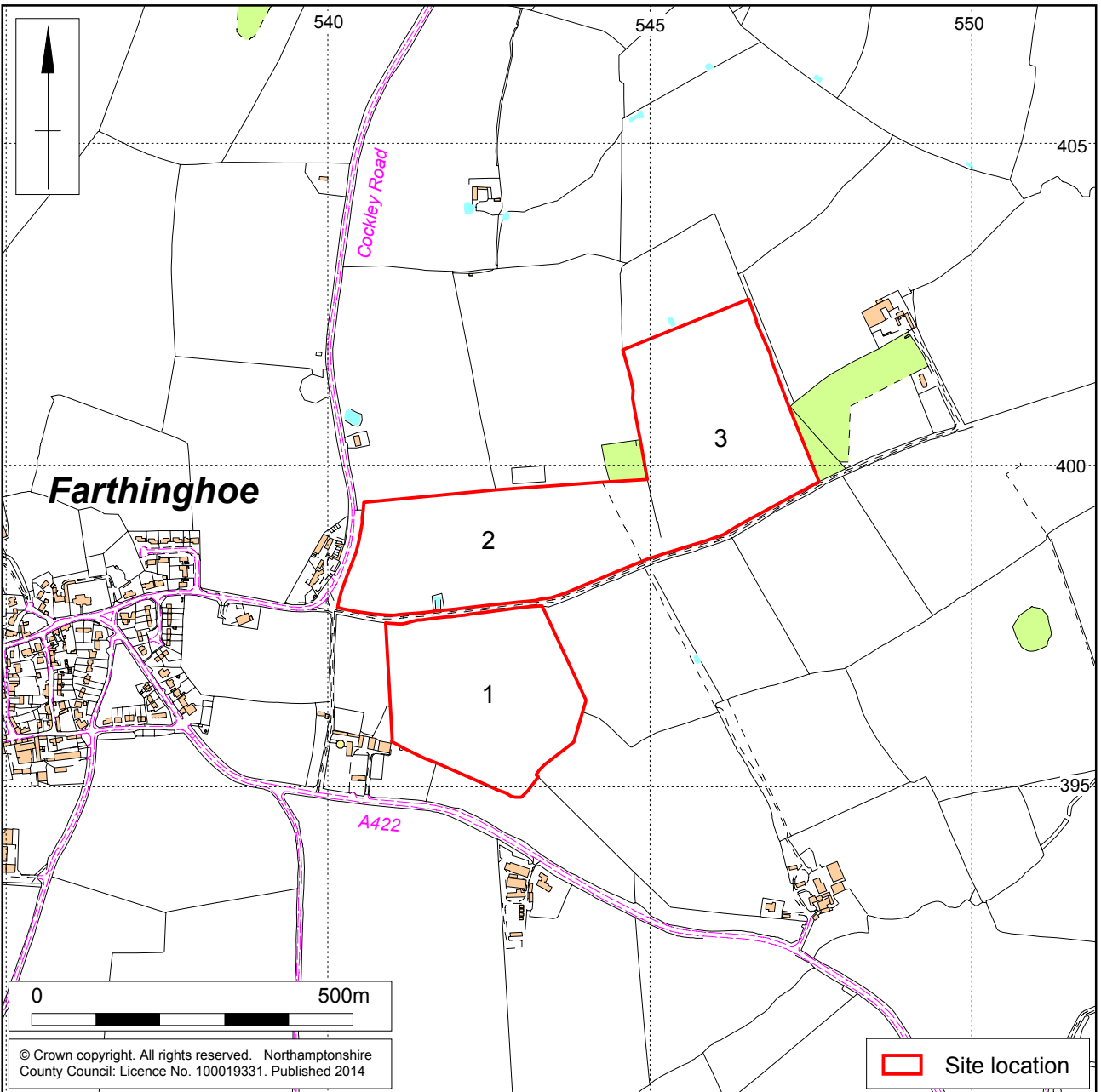
Partida, T, Hall, D and Foard, G 2013 *An Atlas of Northamptonshire: The Medieval and Early-Modern Landscape*, Oxford: Oxbow Books

Royal Commission on Historical Monuments England (RCHME), 1982 *An Inventory of Archaeological Sites in South-West Northamptonshire*, London: HMSO

Websites

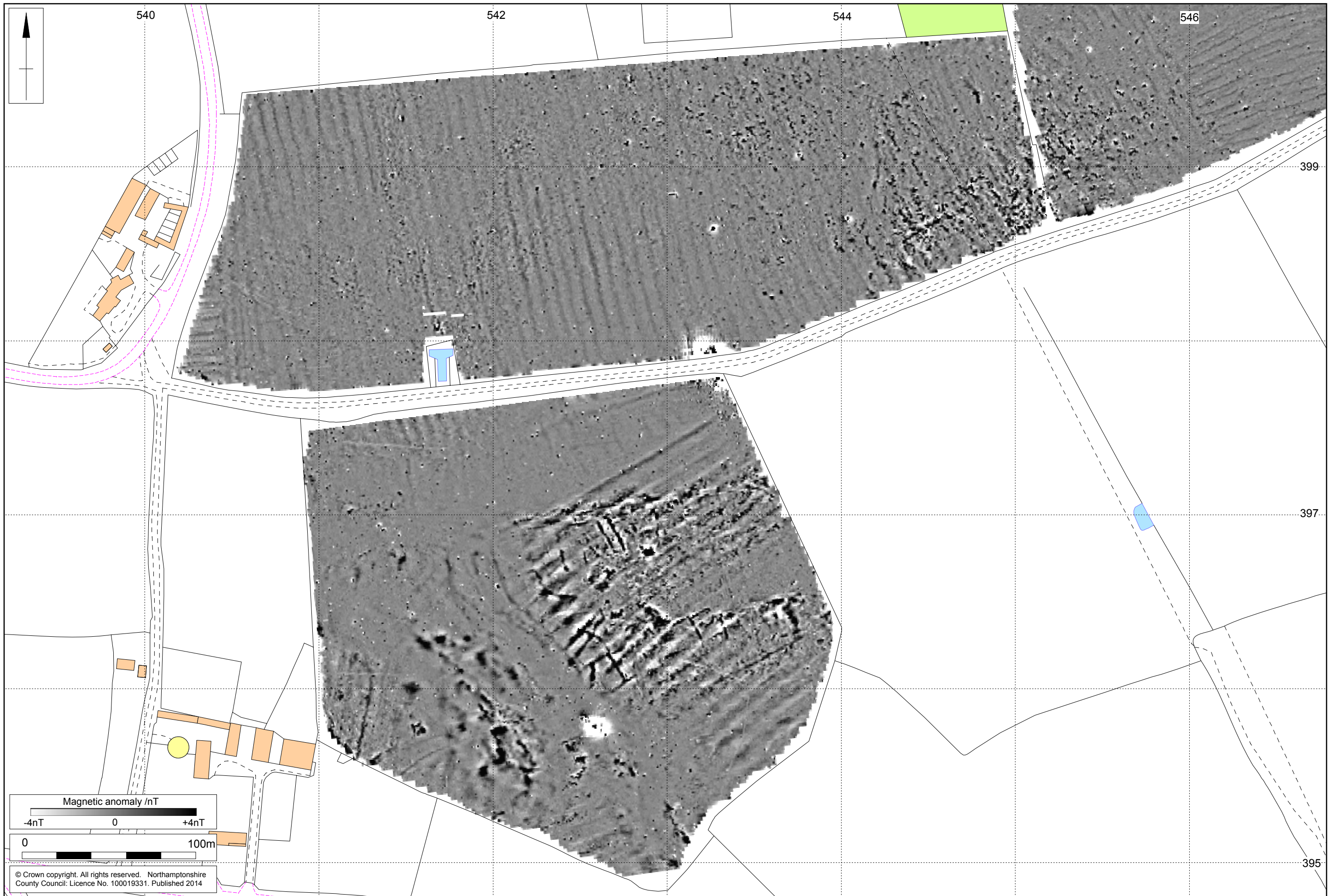
BGS 2014 *Geoindex* www.bgs.ac.uk/geoindex.htm, British Geological Survey, accessed April 2014

MOLA
1 May 2014



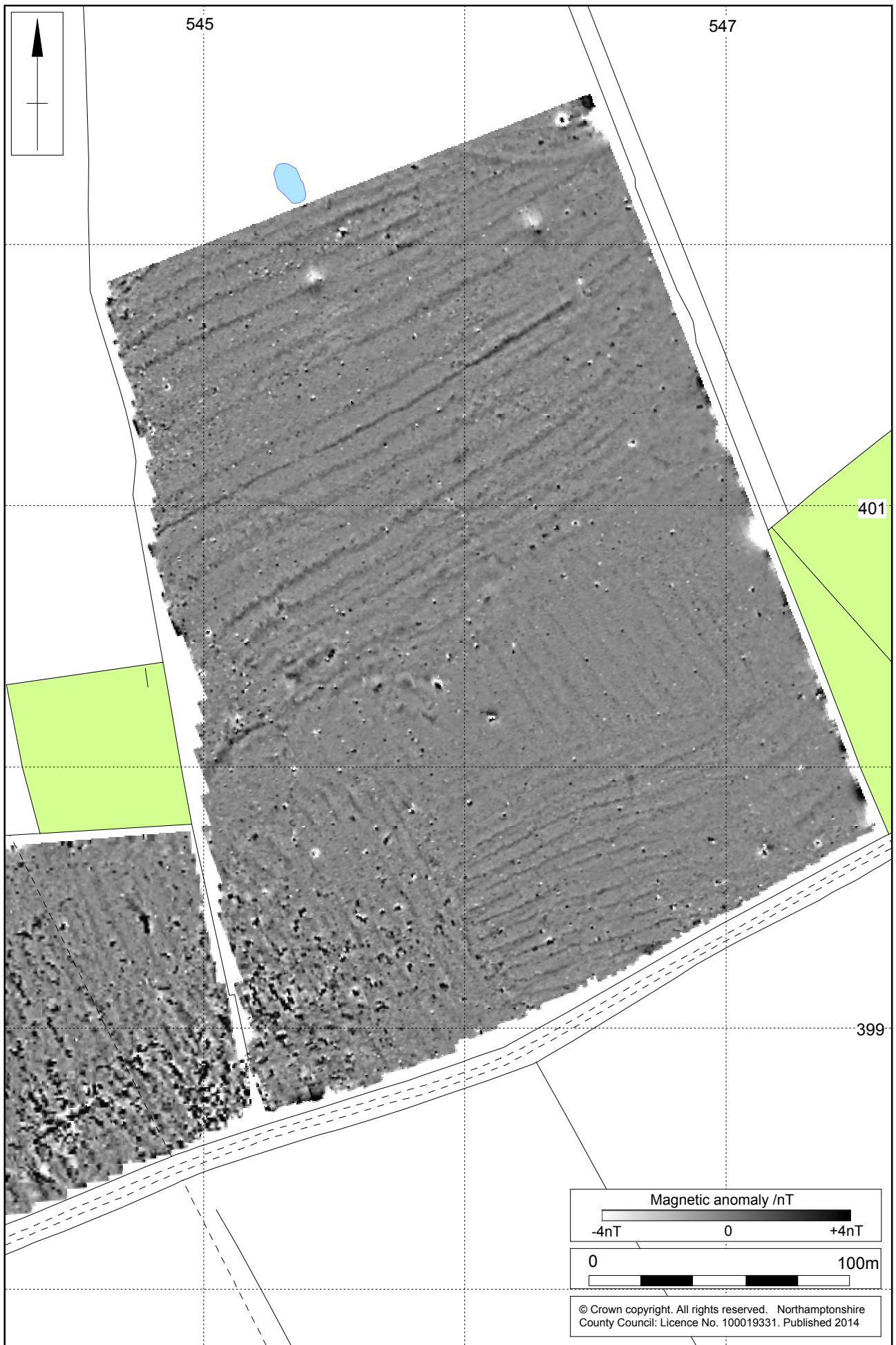
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Site location Fig 1



Scale 1:2000

Magnetometer survey results - west Fig 2



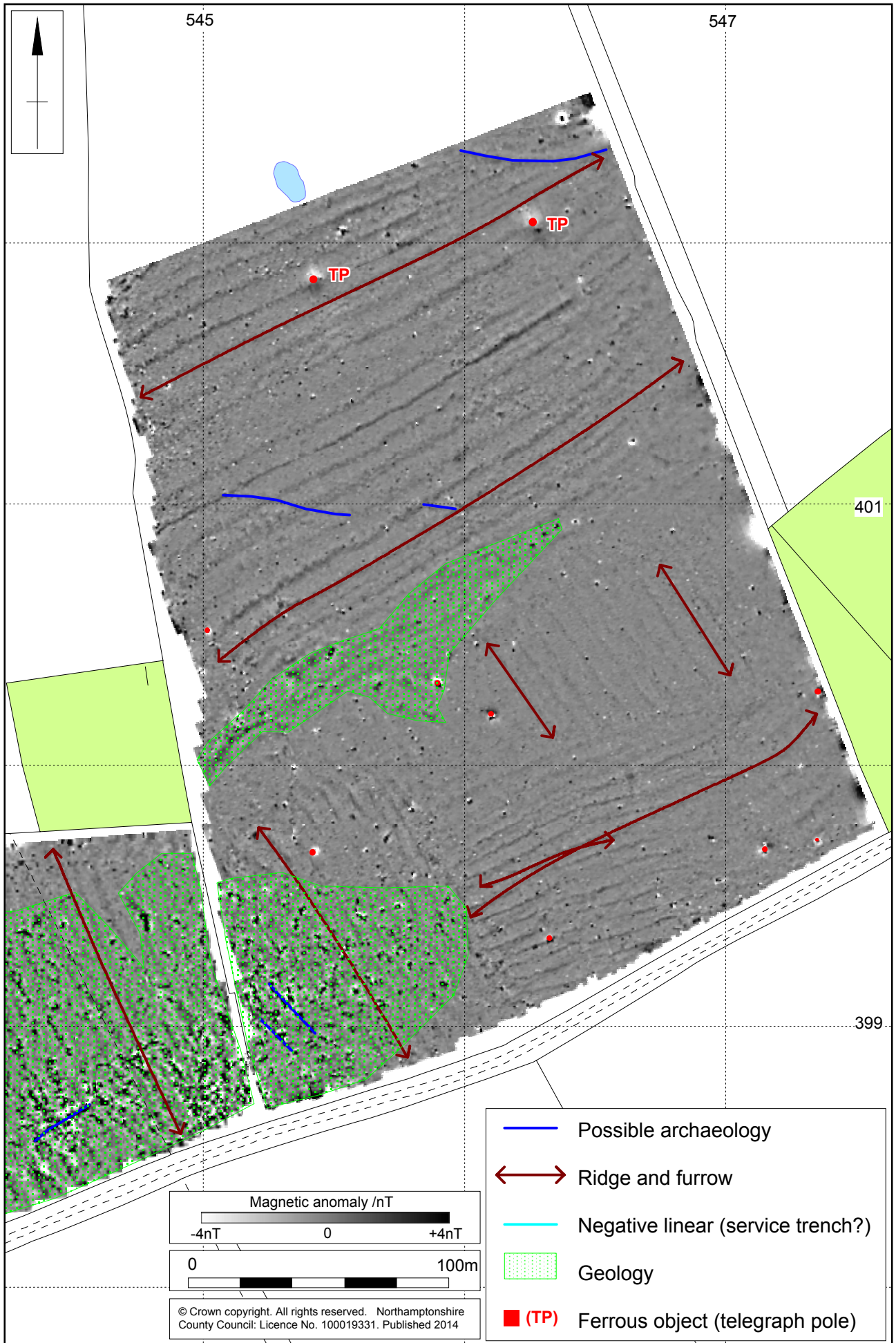
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Magnetometer survey results - east Fig 3



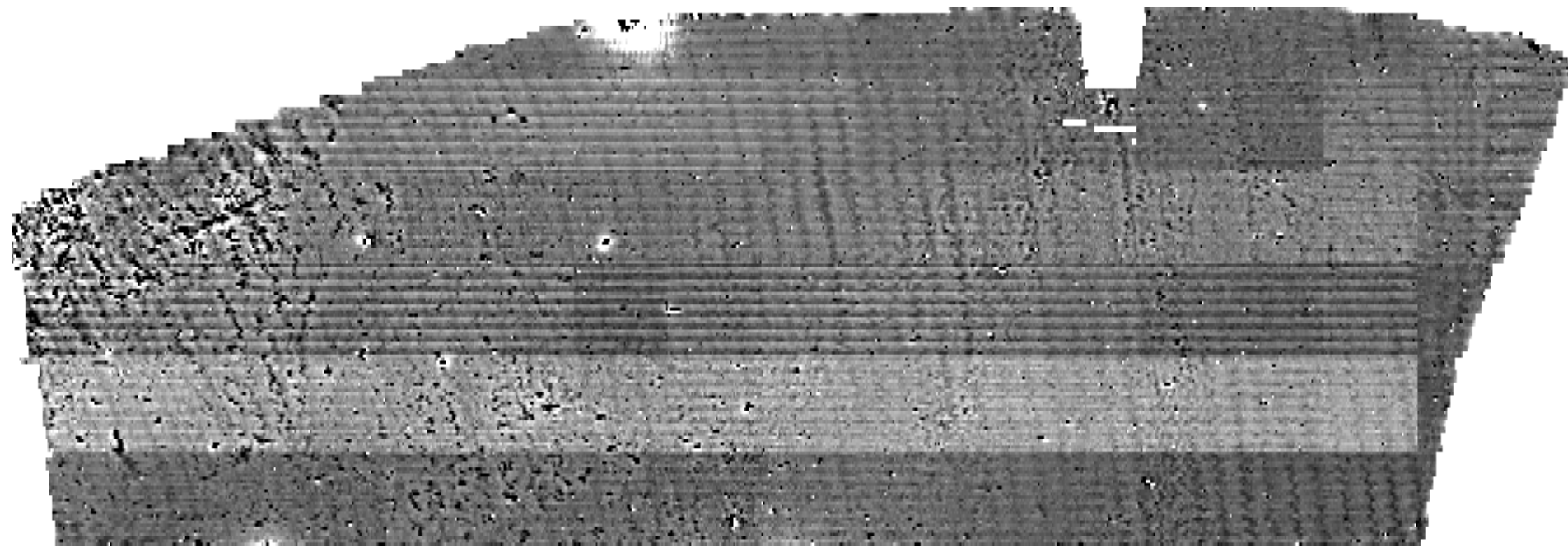
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Magnetometer survey interpretation Fig 4

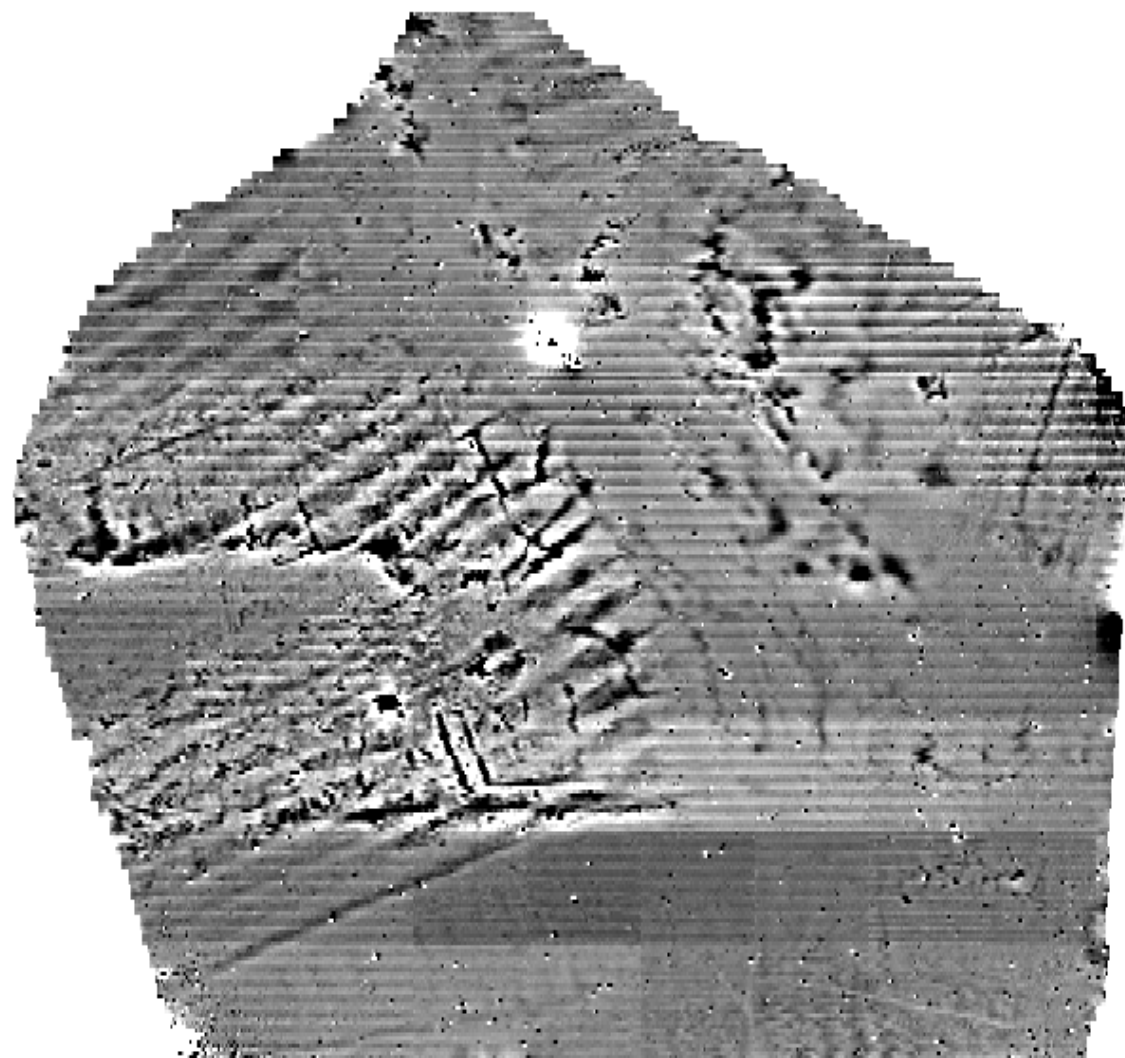


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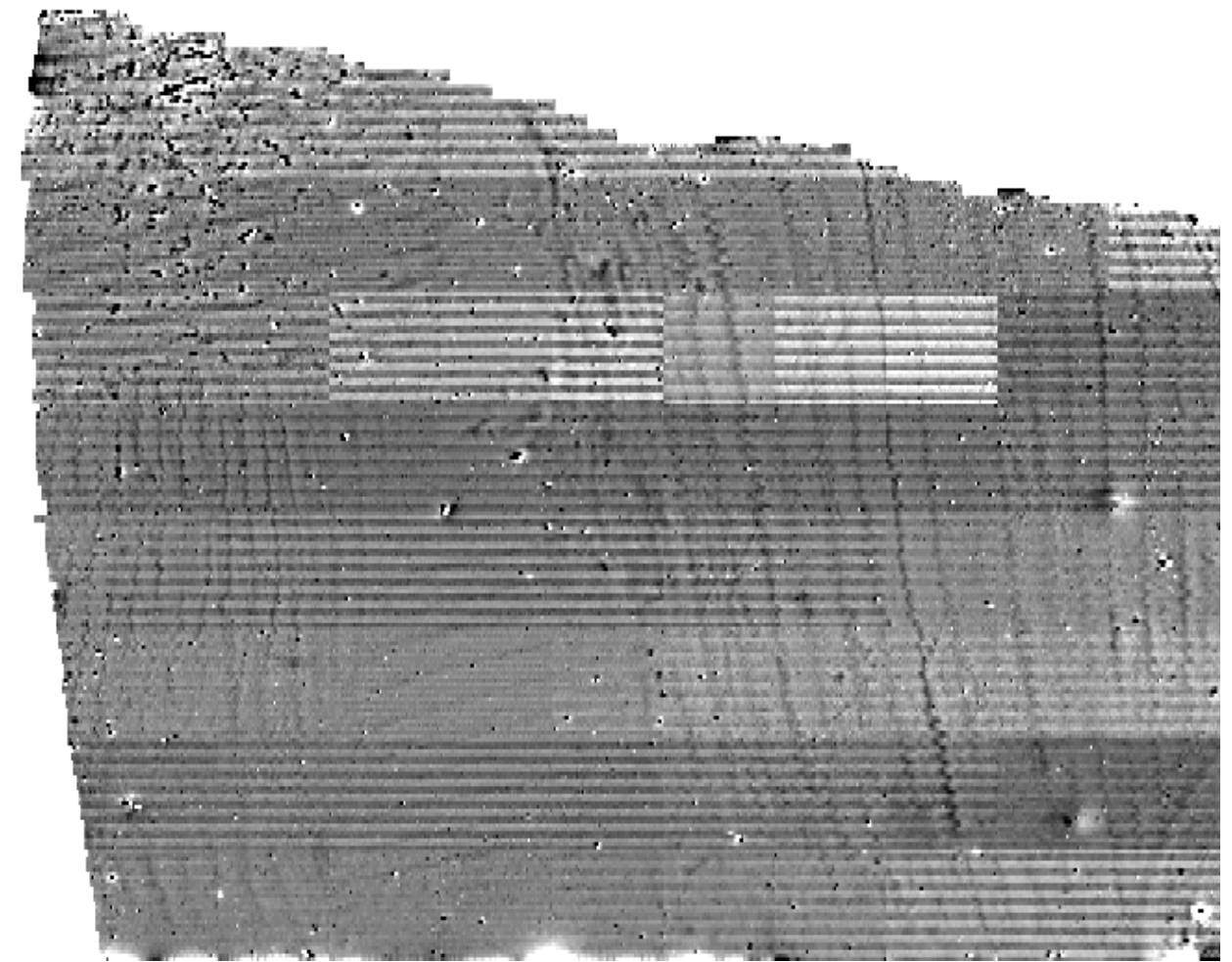
Magnetometer survey interpretation Fig 5



Field 2



Field 1



Field 3

