2723

Ancient Monuments Laboratory
Report 40/98

WESSEX BOWL BARROWS PROJECT. REPORT ON GEOPHYSICAL SURVEY, APRIL 1998

E Bray

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Summary

The aim of the Wessex Bowl Barrow Project, funded by English Heritage, is to investigate the state of preservation of plough-damaged Bronze Age barrows to inform future policy for their conservation. As a preliminary step, routine geophysical survey was undertaken over a sample of 9 sites in order to provide evidence of the survival and location of archaeological features. Only one barrow-like feature was successfully located, at Site 5. Other anomalies of interest included one generated by a square-shaped feature at Site 1, and a large amorphous anomaly at Site 10. Neither are likely to be barrows. Various other minor features of possible archaeological origin were found at several of the sites. The lack of positive geophysical identification of barrows is unlikely to be due to geological conditions: either they have been totally eliminated from the landscape by cultivation or the original locational information was in error.

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WESSEX BOWL BARROW PROJECT.

Report on Geophysical Survey, 1998.

INTRODUCTION

Geophysical surveys were carried out as part of the Wessex Bowl Barrow Project, a major aim of which is to determine the archaeological value of bowl barrows which, although scheduled as Ancient Monuments, have been flattened by cultivation. Geophysical data were collected over several barrow sites, located according to the available literature and scheduling maps.

The aims of the surveys were:

1) to locate more precisely on the ground the position of the barrows
2) to locate any associated archaeological features.

In this way, it was hoped that the barrows could be characterised as much as possible before any excavation.

Bowl barrows are a type of round barrow or cairn usually characterised by a roughly hemispherical mound, sometimes surrounded by a close-set complete or segmented ring-ditch. Many were constructed during the late Neolithic and early Bronze Age periods, and have frequently been found reused for later burials. Diameters can vary greatly between 3m and 65m; the larger examples can be as high as 6m. Comprehensive description and categorisation of bowl barrows can be found in such publications as Ashbee (1960) and Grinsell (1953).

All of the sites chosen for examination are on Cretaceous Upper or Middle chalk, with a possibility of clay-with-flints in the area of Site 10. Remains of barrows on chalk in the Wessex area have been found to respond well to geophysical survey (eg. Cole 1997; David and Payne 1997), so it was expected that (if the barrows were present within the areas surveyed) their ditches and/or other associated archaeological features would be detectable.

METHOD

Survey grids were positioned and set out at each site by the CAS. Magnetometry was chosen as the chief method of survey, as it is both time-efficient and has a reputation for good results over similar sites, as mentioned above. A Geoscan FM36 fluxgate gradiometer was used to collect magnetic data at intervals of 0.25m along survey lines separated by 1m. Where the grid orientation allowed, the traverses were made in a N-S direction, as any enhancement to the magnetic field caused by a buried feature is shown at its strongest in this direction (Scollar 1990). The data was 'despiked' using a local median filter to replace spurious values caused by responses to ferrous objects.

As the presence of a pipeline at East Ilsley Down (Sites 11 and 12) seriously disrupted the local magnetic field, a Geoscan RM15 resistivity meter was used to collect electrical data here. Readings were taken at 1m intervals along traverses separated by 1m.

RESULTS

Site 1 - NE of Mere Down Farm: Survey centred on NGR ST 383585 135377
(Figure 1, greyscale display parameters +/- 4nT)

Site 1 (SAM AM520) is a bowl barrow shown by excavation in 1812 to be of Bronze Age date, and levelled by cultivation since 1955[1]. Estimated dimensions in 1955 were a diameter of ~15m, and height 0.3-0.6m. A grid was positioned over a shallow depression surrounded by a ring of flint debris, assumed to represent the remains of the barrow.

Magnetometer survey has detected an anomaly with a square shape of side 10m, with a linear extension 5m long on the north-western side. Average anomaly strength is 2.5nT and a region of lower readings can be seen just off-centre. Four responses which may be representative of pits can also just be seen in the data as very weak anomalies around the main feature.

The square shape of the main anomaly is not as expected, and no evidence of a surrounding ditch is apparent. As plotted on the OS map, the barrow lies just to the north of the survey area: it is therefore possible that the anomaly identified (which coincides with a visible depression) is an unrelated feature. If not a barrow[2], other interpretations might include a dew pond (these have been identified mostly on chalk upland areas: Wood 1979)[3], some sort of former excavation, or perhaps the foundation of a structure such as a windmill.

Site 2 - The Park,W of Court Hill Plantation: Survey centred on NGR ST 382729 136746
(Figure 2, greyscale display parameters +/- 3nT)

The undated bowl barrow AM441 was estimated in 1954 to have a diameter of 14m and a height of 0.6m. No excavation of the site is recorded, and no visible features signify its position on the ground.

A linear anomaly of average width 1.8m and strength of 1.25nT has been detected by the

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[1]Historical and statistical information given for the sites in this report has been obtained from SMR and scheduling notes.

[2] Less possibly, the anomaly may represent a square barrow. However, these are known in Yorkshire and Humberside (Stead 1961) Midlands river valleys, and South Essex (MCD 1989) but are not recorded in Wessex. Square barrows characteristically comprise a central round barrow, surrounded by a square ditch. A proton magnetometer survey carried out over one known at Arras, East Riding, in 1959 (Stead 1961) successfully delineated three sides of the bounding ditch (Stead 1961; Aitken 1961). However, a fluxgate gradiometer survey over a presumed square barrow on Hutton Buscel Moor, N. Yorkshire (WYAS 1995) yielded results that showed a central area of slightly positive readings surrounded by higher readings over the main body of the earthwork. Negative readings surrounding this were taken to be indicative of the ditch. The anomaly found here at Site 1 is similar to that found at Hutton Buscel Moor, but without such an obvious surrounding ditch.

[3] But magnetic survey over a known dewpond at Maiden Castle (Sharple 1991) provides a differing pattern of anomalies to those seen at Mere Down Farm.

magnetometer over the 60m x 60m grid set out by the CAS surveyors. The detection of this anomaly indicates that any barrow present within the survey grid should have been detected; it is therefore possible that the grid is displaced from the position of the barrow and it is noted that the OS mark a tumulus some 35m to the SE.

Site 5 - Littlecombe Down: Survey centred on NGR ST 389819 139541
(Figure 3, greyscale display parameters +/- 5nT)

This undated bowl barrow (AM174B), although levelled by cultivation before 1996, is still visible in the soil as a mark of 12m diameter (including the ditch width). The diameter of the barrow was recorded in 1955 as 9m, with a height 0.9m.

This feature has a good response to magnetometer survey, and reveals an interrupted circular ditch of diameter 10m surrounding an anomaly oriented NW-SE and 4m long just SW of centre. Anomaly strength over the ditch is approximately 3nT, and 6nT over the central feature. Three pit-like anomalies of maximum strength 5nT have been detected beyond the barrow, and other possible pit responses are also indicated, seemingly in a circular arrangement.

Site 8 - Smeathes Ridge, S Burderop Down: Survey centred on NGR SU 416288 175704
(Figure 4, greyscale display parameters +/- 3nT)

This is an undated bowl barrow (AM194) recorded in 1955 as having had a diameter of 12m and a height of 1m, but which has now been levelled. Although it has been excavated (Passmore nd) no record of a surrounding ditch exists.

Magnetometer survey does not show the presence of a barrow ditch; the Ridgeway path can be seen running E-W along the left-hand side of the plot; singular anomalies along and beside this path are probably due to lost pieces of horse tack. Two strong anomalies were located in the southern half of the area, caused by buried ferrous objects. Six small anomalies have been tentatively labelled as being of archaeological origin. Since the relatively slight disturbance of the ground caused by the pathway has been detected in the data, it seems unlikely that features related to a barrow will have been missed: perhaps the grid was incorrectly positioned.

Site 9 - Coombe Down, 690m SE of Smeathes Plantation: Survey centred on
NGR SU 418230 174470 (Figure 5, greyscale display parameters +/- 3nT)

AM618, an undated bowl barrow, has not been excavated, but had a diameter and height of 15m and 1m respectively recorded in 1955; since then it has been levelled by cultivation. A shallow depression in the ground is suspected to represent the barrow remains, although another possible site was seen nearby.

The magnetometer survey over this area revealed two main anomalies, both within 5m of the fence. The largest has a strength of over 60nT and a rough diameter of 11m, and is probably due to a large buried ferrous metal object (or objects). The second anomaly (in the bottom left-hand corner of the plot) is much more likely to be of archaeological origin (although not obviously a barrow), with a strength of 3nT and diameter of 6-7m. No ditches were located. There are, in addition, a few minor anomalies here and there which may be of archaeological

origin but these are difficult to discriminate from widespread magnetic noise and may not be significant.

Site 10 - S of Liddington Castle: Survey centred on NGR SU 421445 178138
(Figure 6, greyscale display parameters +/- 3nT)

A Bronze Age bowl barrow (AM599) is recorded in this area (some 1800m SSW of Liddington Castle) by two excavations (no dates), and was 0.6m high with diameter 20m and ditch 0.3m deep in 1955. Flattened by cultivation before 1996, no remains of the barrow are visible on the ground today.

A large amorphous positive magnetic anomaly (1.25 nT) was detected in the centre of the area surveyed, with several small anomalies of similar strength scattered around it, particularly to the west. The large anomaly does not have any obvious characteristics expected of a barrow, and may be explained as a response to disturbance created by the known excavations here, or to earlier diggings, perhaps even chalk or flint mining; a barrow and quarrying activity are both indicated by Hirst *et al* (1996) some 1600-1700m SSW of Liddington Castle. Excavation of similar anomalies at Houghton Down, Hampshire, revealed areas of quarrying dating from the Late Iron age to the Early Roman period (Cunliffe 1994). Alternatively, it may be due to local subsoil variation, perhaps linked with a localised deposit of clay-with-flints.

Sites 11 and 12 - East Ilsley Down: Survey centred on NGR SU 450696 180938
(Figure 7, greyscale display parameters 22.5 - 37.5 Ohms)

Sites 11 and 12 are both recorded under SMR No. AM111, and both reported to be about 20m wide and 0.3-0.6m high, with ditches still visible in 1968. Neither have been excavated, but a ditch was found nearby during the laying of a pipeline, yielding a Bronze Age spear head.

Owing to massive magnetic disturbance caused by the recently-lain pipeline, the area was surveyed using a resistivity meter. The position of the pipeline is clearly visible as a line of high resistance (about 4 Ohms higher than the average reading) at a slight angle to the plough direction (shown by the striations in the plot). No barrow features are obvious. It can be seen that the grid was positioned directly over the recorded location of the tumuli on the OS map.

Site 13 - Hodcott Down: Survey centred on NGR SU 448925 183647
(Figure 8, greyscale display parameters +/- 3nT)

This undated bowl barrow (AM82) was 20m wide and 0.3m high in 1956, with no record of excavation or associated ditches. No obvious sign of the barrow is visible on the ground.

No barrow-shaped anomalies are apparent in the magnetic data collected over this area. Several pit-type anomalies of 2.5-3nT were located, mostly clustered in the eastern part of the area. As at Sites 2 and 8 (Figures 2 and 4), the location of weak anomalies suggests that the presence of a barrow would also be detected if it were within the surveyed area; the OS map suggests the location may be further south. Three narrow linear features of average strength less than 2nT can be seen in the SW corner of the plot; it is not certain whether these are along the plough line or not.

CONCLUSIONS

The aims of this geophysical survey were to locate and delimit any remaining features associated with scheduled bowl barrows that have been degraded in recent years by cultivation.

Magnetometer survey successfully located the presence of archaeological features at Sites 1 (Figure 1) and 5 (Figure 3). Site 5 has a well defined interrupted circular ditch surrounding a central feature. The square feature located at Site 1 is probably not a barrow. At both sites there are anomalies suggestive of pits nearby.

A feature was located at Site 10 (Figure 6), and if not of archaeological origin, it is likely that local variations in shallow geology and topsoil are responsible.

Barrows were not located with the magnetometer at sites 2, 8, 9 and 13 (Figures 2, 4, 5, and 8), but plots of the data from each of these locations suggest that the instruments would have successfully measured a response from the remains of any barrow ditches had these been present.

The resistivity data gathered over Sites 11 and 12 (Figure 7) show only the local variation in resistive properties of the topsoil and the position of a buried pipeline; no anomalies clearly indicative of the presence of archaeological activity are apparent.

From these results, it can be concluded that (with the exception of Site 5, and perhaps Sites 1 and 10), no remains of barrows are present within the areas surveyed. In these latter cases, it is possible either that scheduling has been mistakenly applied to the wrong location (as for example has been shown at Avebury (Hamilton 1998)), or that the survey grids were misplaced.

Surveyed by:	E. Bray N. Linford	Dates of Survey:	30/3 - 1/4/98
Reported by:	E. Bray	Date of Report:	22/7/98

REFERENCES

Aitken, M.J., 1961. The Proton Magnetometer Survey at Arras, *Antiquities Journal*, **XLI** pp58-59.

Ashbee, P., 1960. *The Bronze Age Round Barrow in Britain,* Phoenix House Ltd., London.

Cole, M., 1997. Geophysical surveys of Three Pond Barrows in the Lake Down Barrow Group, near Wilsford, Wiltshire, *Archaeological Prospection,* **4**, pp113-121.

Cunliffe, B., 1994. *The Danebury Environs Project 6: Houghton Down Excavation 1994, Interim Report.* Danebury Trust, Institute of Archaeology, Oxford (unpublished).

David, A. and Payne, A., 1997. Geophysical Surveys within the Stonehenge Landscape: A Review of Past Endeavour and Future Potential, *Proceedings of the British Academy*, **92**, pp73-113.

Grinsell, L.V., 1953. *The Ancient burial Mounds of England*, Methuen & Co., London.

Hamilton, M.A. and Dennis, I., 1998. *A Geophysical Exploration for Avebury G29a.* Cardiff Studies in Archaeology, Special Report No. 10.

Hirst, S., Rahtz, P., 1996. Liddington Castle and the Battle of Badon: Excavations and Research 1976, *Archaeological Journal* **153**, pp1-59.

Monuments Class Description - Square Barrows, Oct 1989, Monuments Protection Programme.

Scollar, I., Tabbagh, A., Hesse, A., Herzog, I., 1990. *Archaeological Prospecting and Remote Sensing*, Cambridge University Press, Cambridge.

Sharples, N.M., 1991. *Maiden Castle - Excavations and Field Survey 1985-6*, HBMCE Archaeological Report No19, English Heritage, London.

Stead, I.M., 1961. A Distinctive Form of La Tène Barrow in Eastern Yorkshire and on the Continent, *Antiquities Journal*, **XLI** pp44-57.

Webb, A., 1995. *Earthwork and Tumuli, Hutton Buscel Moor, N. Yorks*, Geophysical Survey Report, West Yorkshire Archaeology Service.

Wood, E. S., 1979. *Collins Field Guide to Archaeology in Britain,* Collins, London.

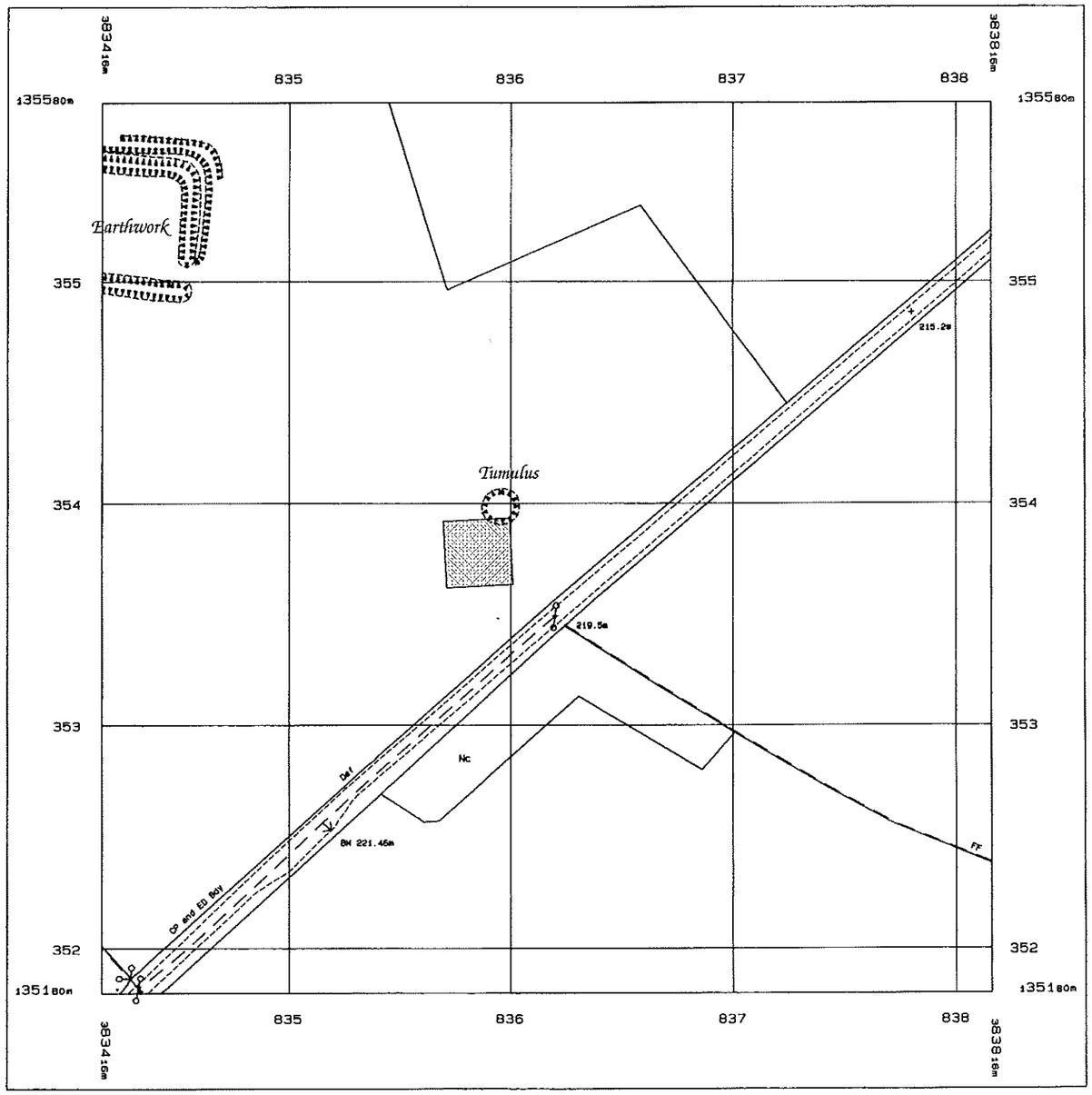
List of Figures

All figures consist of:

a) Location of survey grid
b) Greyscale plot of despiked data
c) Trace plot of despiked data
d) Interpretation diagram

Figure 1: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 1 - NE of Mere Down Farm

a) Location of survey grid



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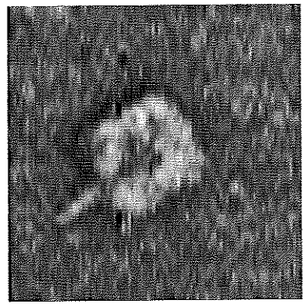
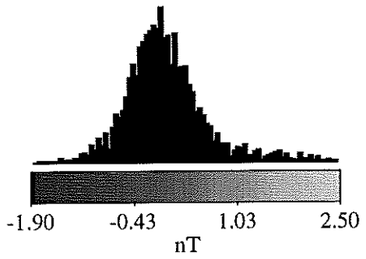
N

b) Greyscale plot of despiked magnetometer data





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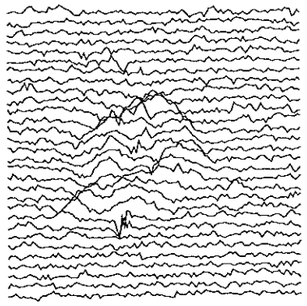
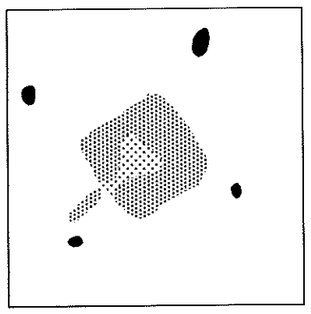


12.5nT

N

0 30m

d) Interpretation diagram



Possible pits

Main anomaly, average strength +2.5nT

Area of lower readings within main anomaly

Apparent extension of feature

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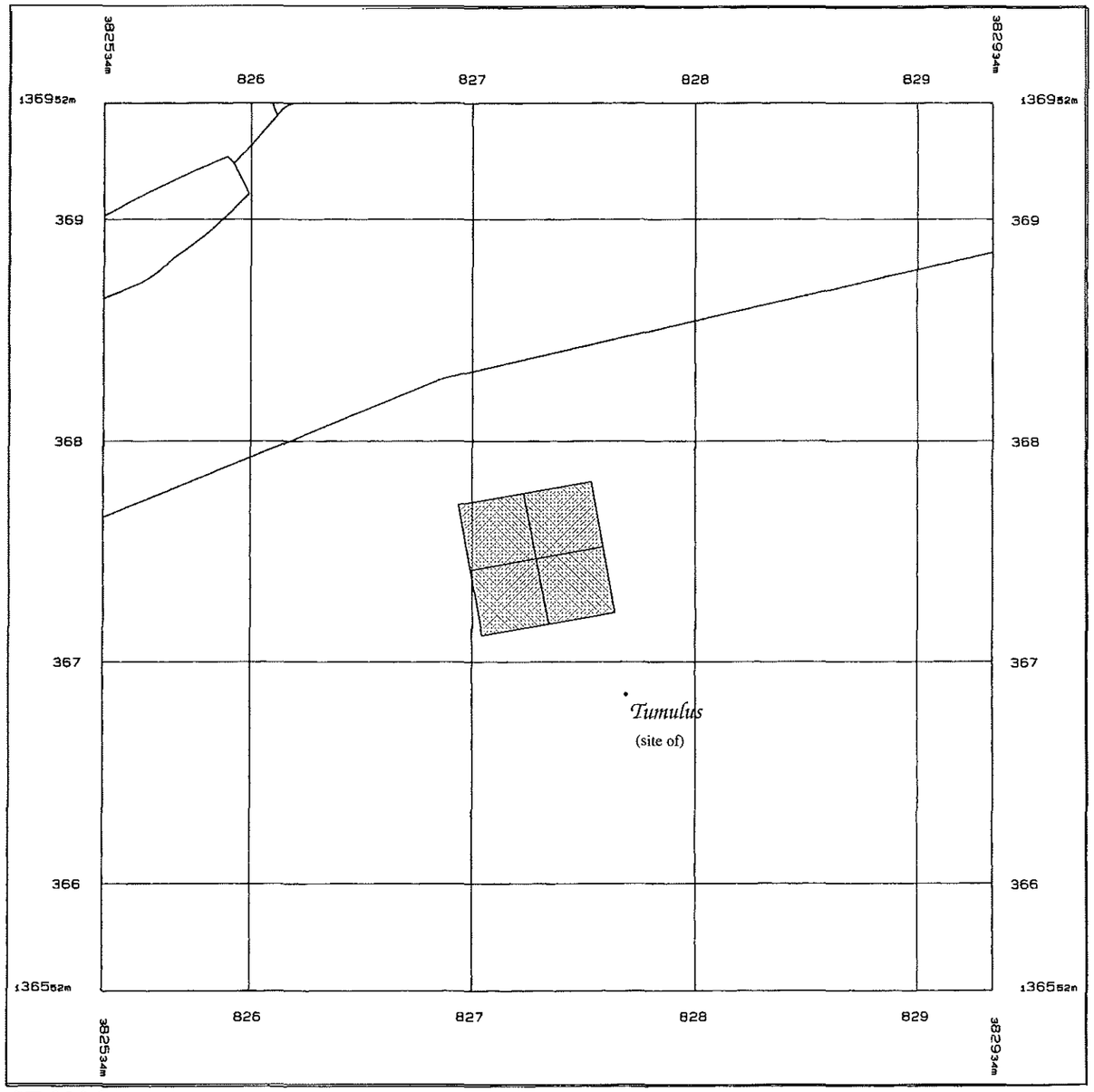
Figure 2: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 2 - The Park, W of Court Hill Plantation

a) Location of Survey Grid



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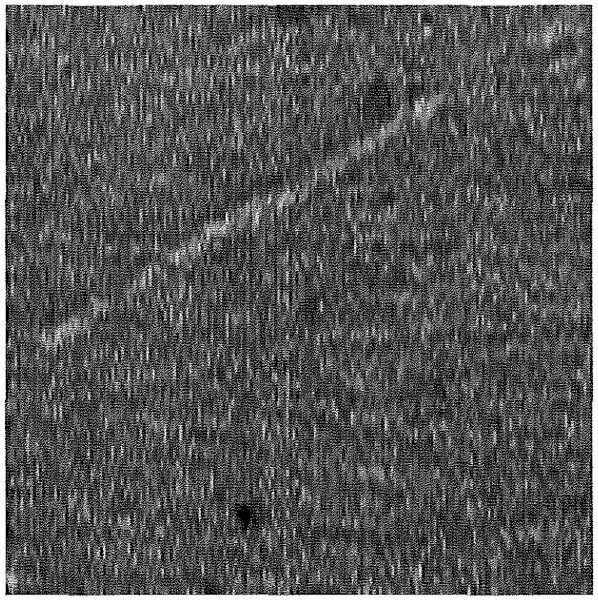
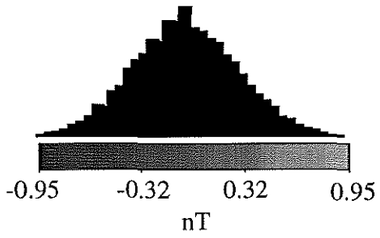
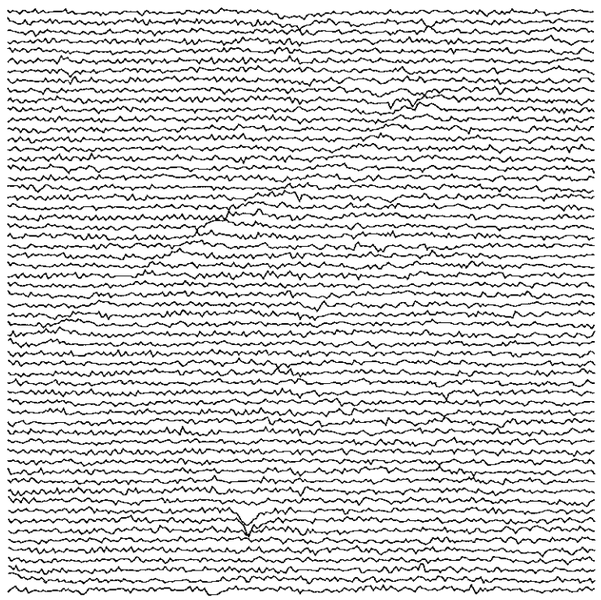


b) Greyscale plot of despiked magnetometer data





c) Trace plot of despiked magnetometer data

12.5nT

N

0 30m

d) Interpretation diagram

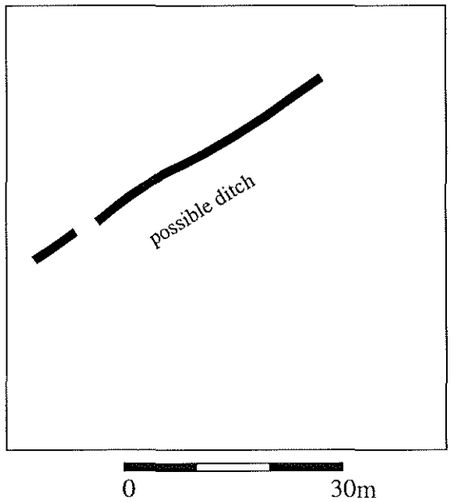


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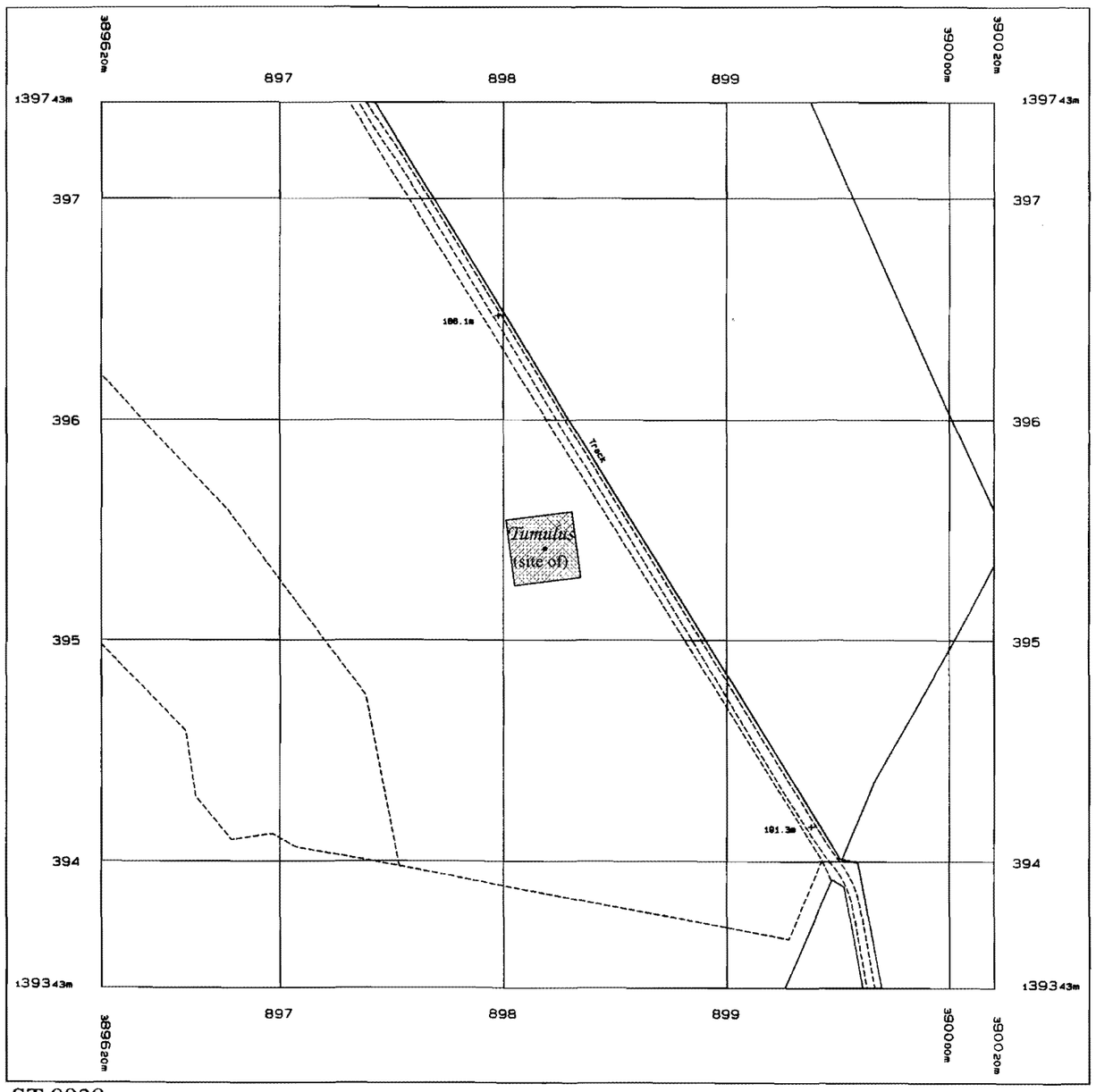
Figure 3: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 5 - Littlecombe Down

a) Location of Survey Grid



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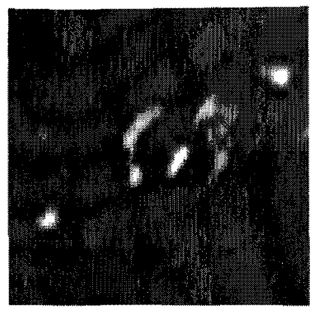

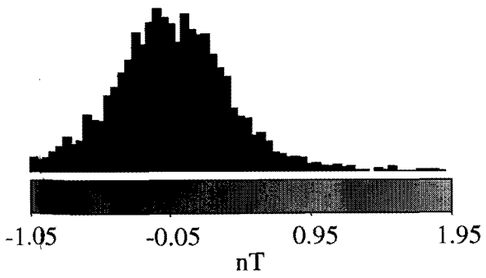

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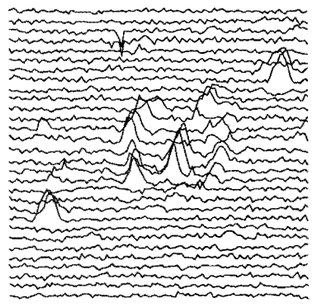

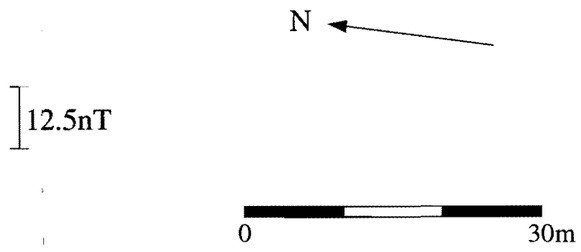

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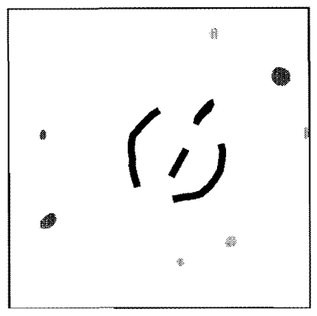

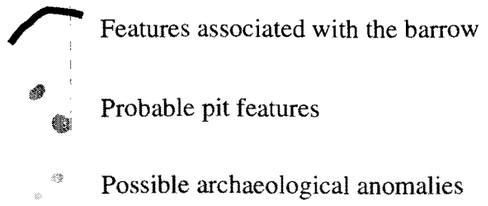

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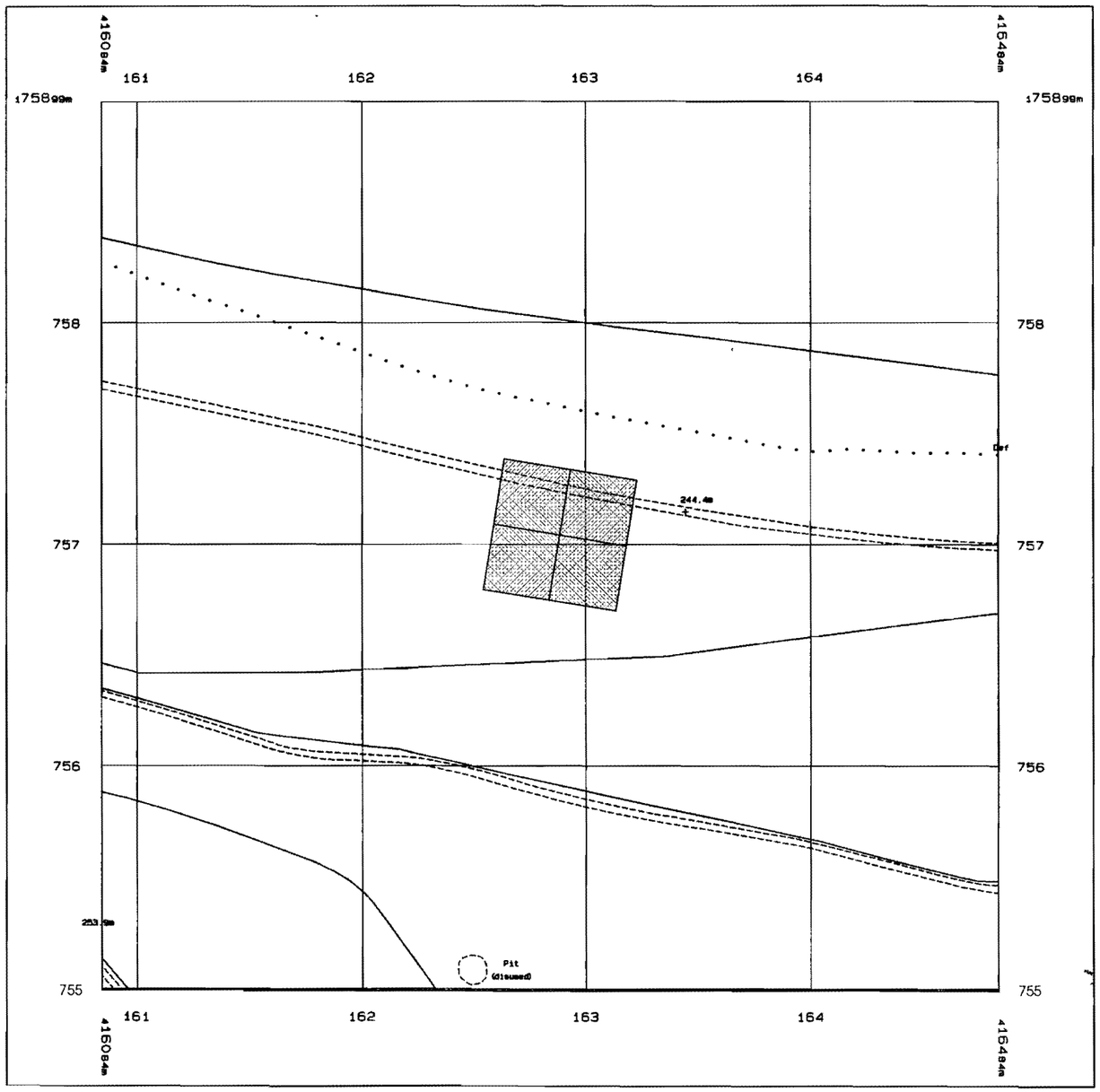
Figure 4: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 8 - Smeathes Ridge

a) Location of Survey Grid



SU 1675

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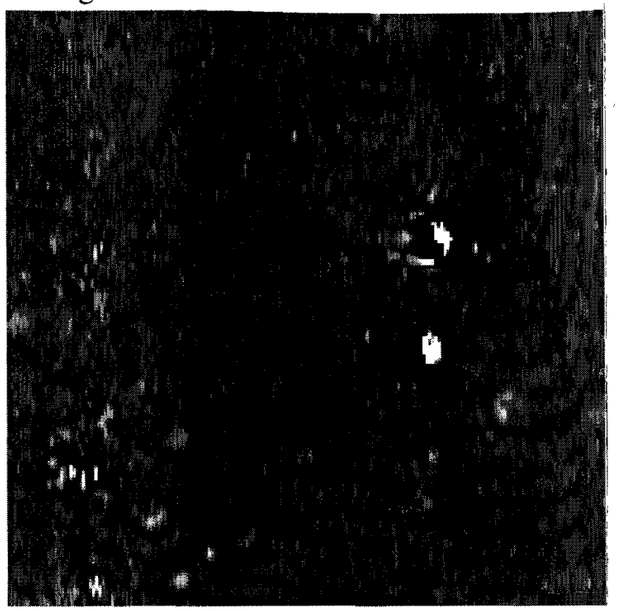
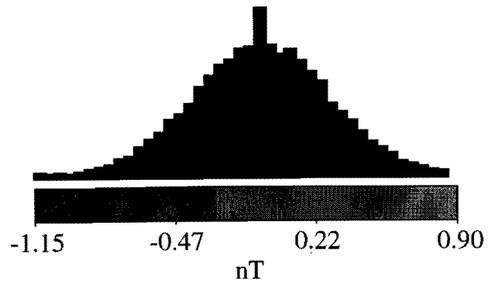
b) Greyscale plot of despiked magnetometer data





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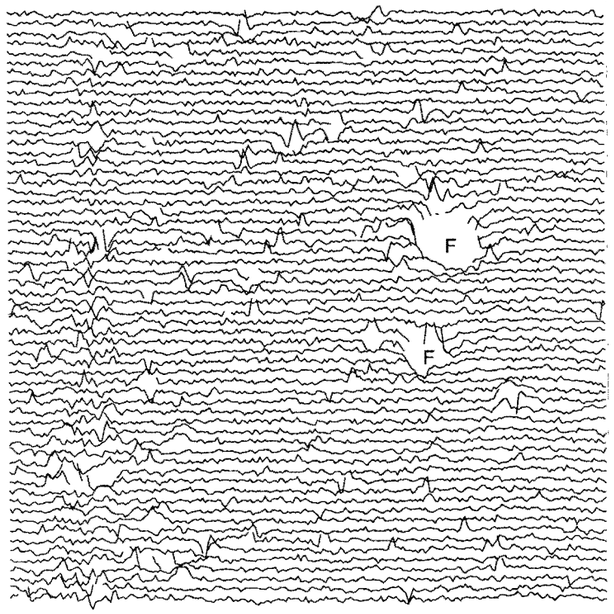
c) Trace plot of despiked magnetometer data

12.5nT



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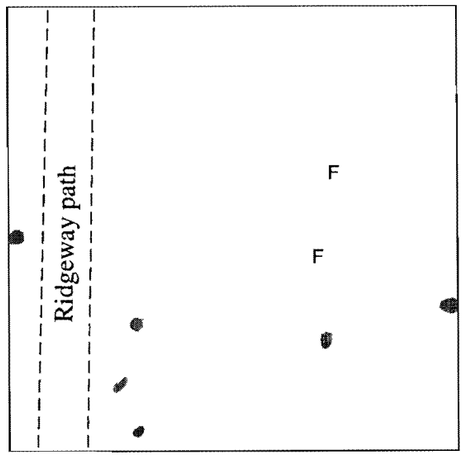

0 30m

Tentative archaeological anomalies

F Anomaly due to buried ferrous material

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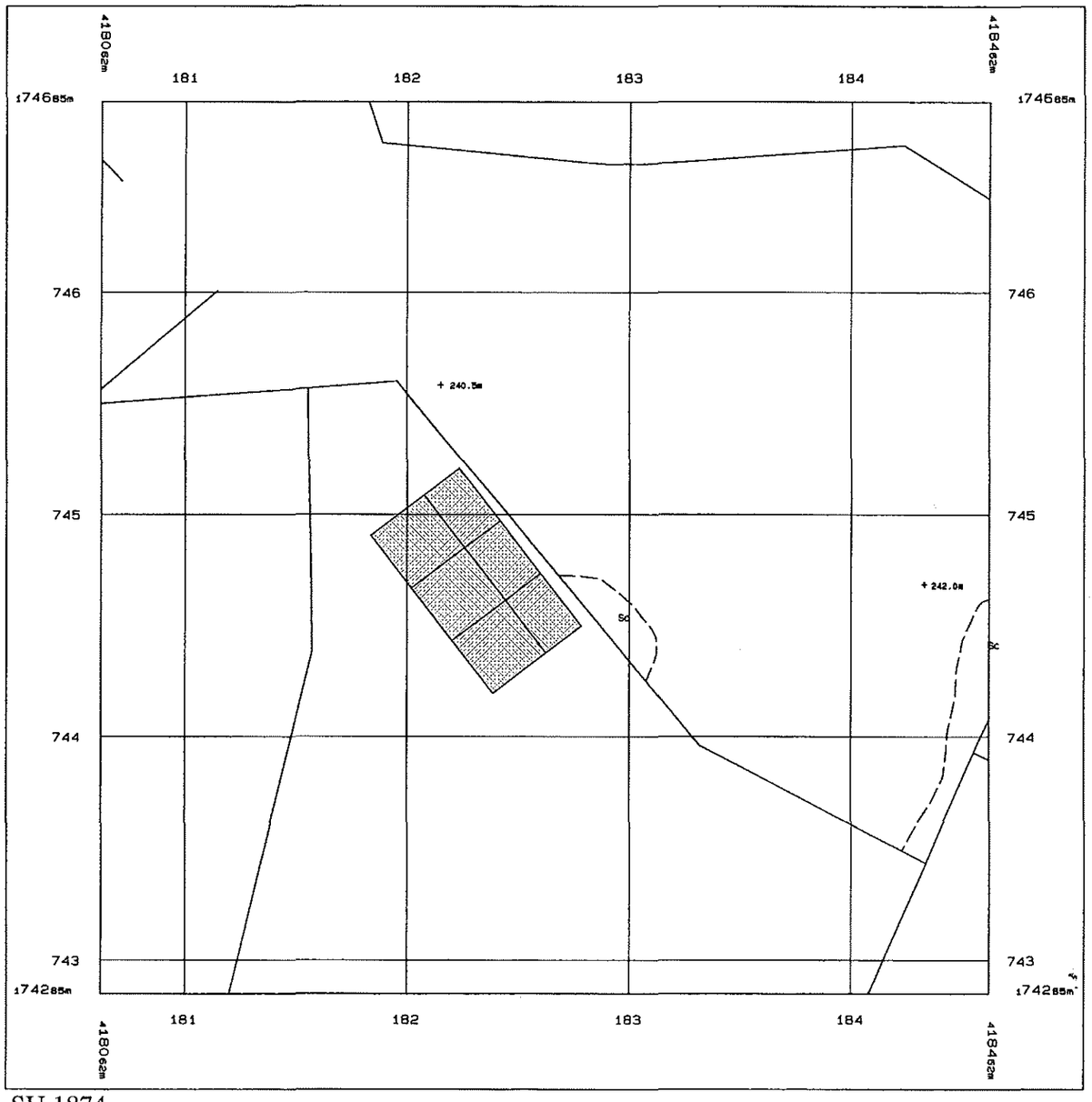
Figure 5: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 9 - Coombe Down

a) Location of Survey Grid



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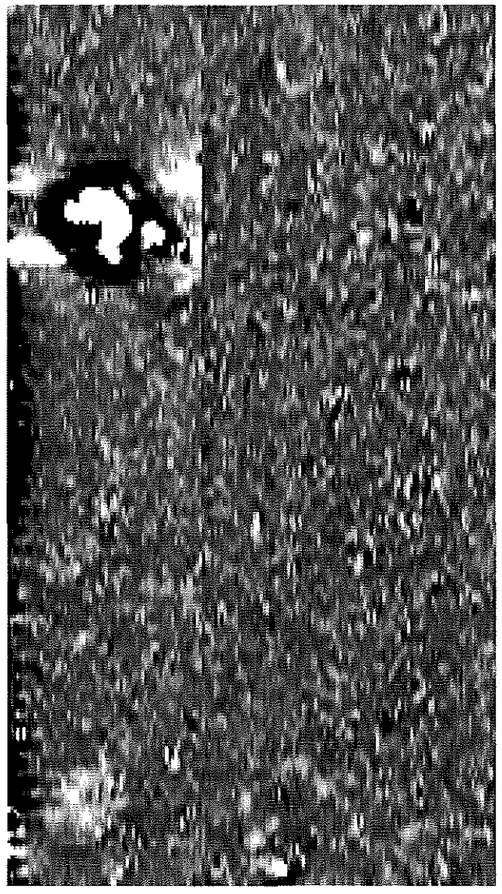
b) Greyscale plot of despiked magnetometer data



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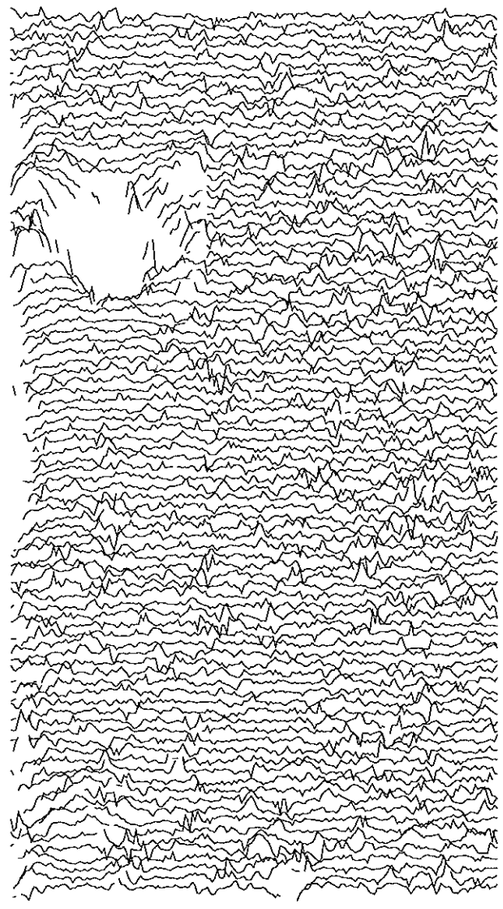
-3.75 -1.80 0.15 2.10
nT

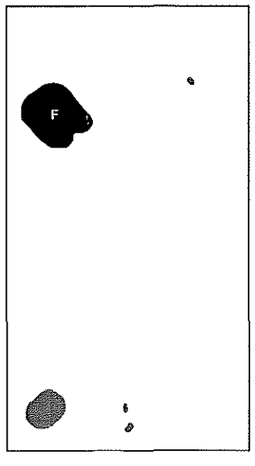
N

c) Trace plot of despiked magnetometer data



12.5nT

d) Interpretation diagram



F Anomaly due to buried ferrous object

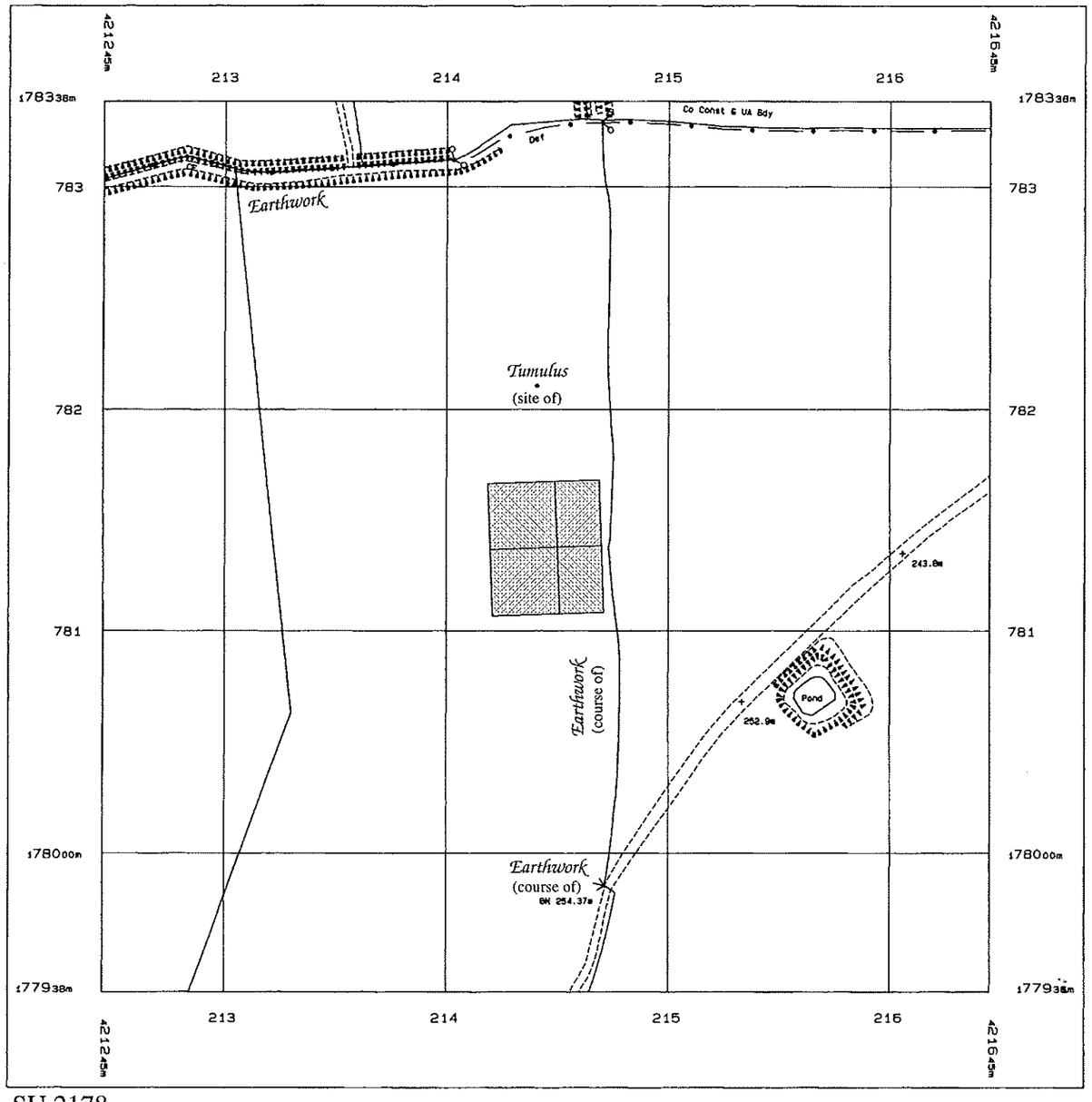
Tentative archaeological anomalies

0 30m

AMLab 1998

Figure 6: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 10 - S of Liddington Castle

a) Location of Survey Grid

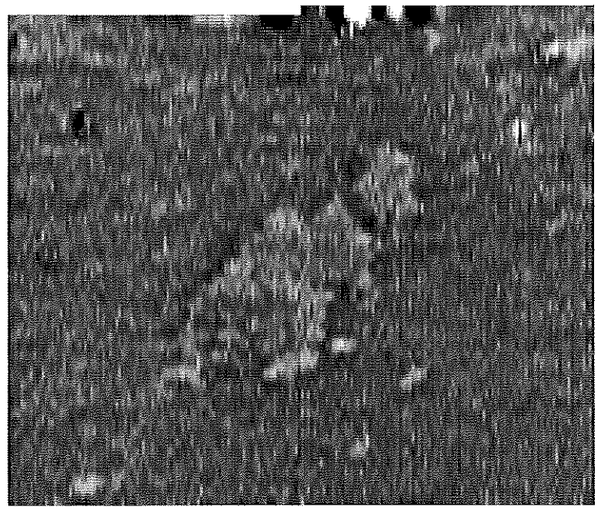


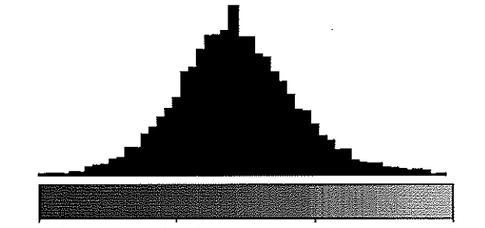
SU 2178

0 1:2500 90m

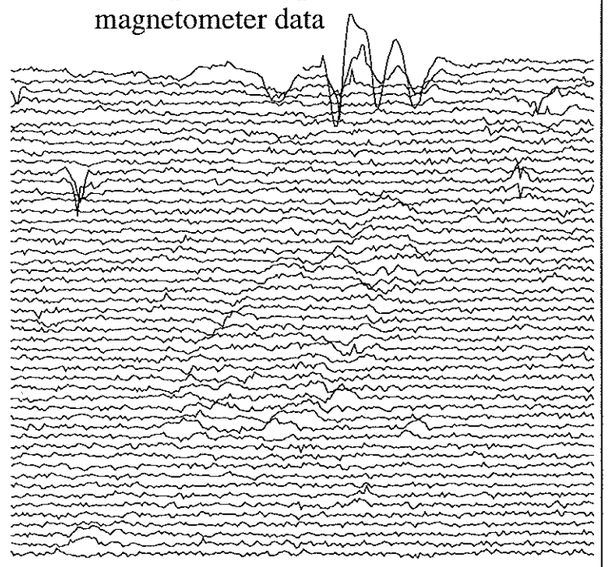
N

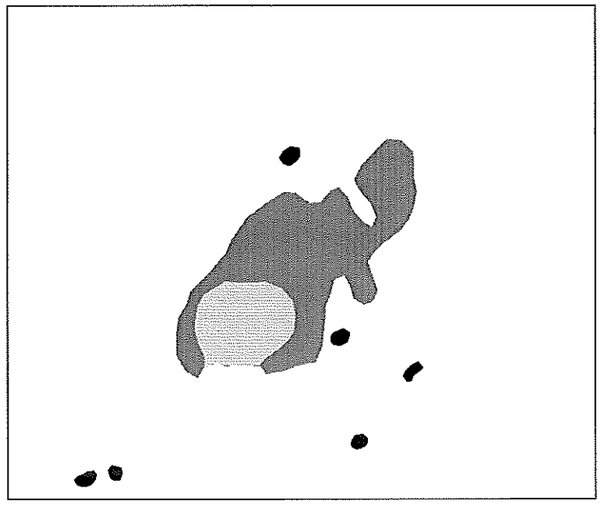
b) Greyscale plot of despiked magnetometer data





c) Trace plot of despiked magnetometer data





d) Interpretation diagram

Area of positive magnetic response

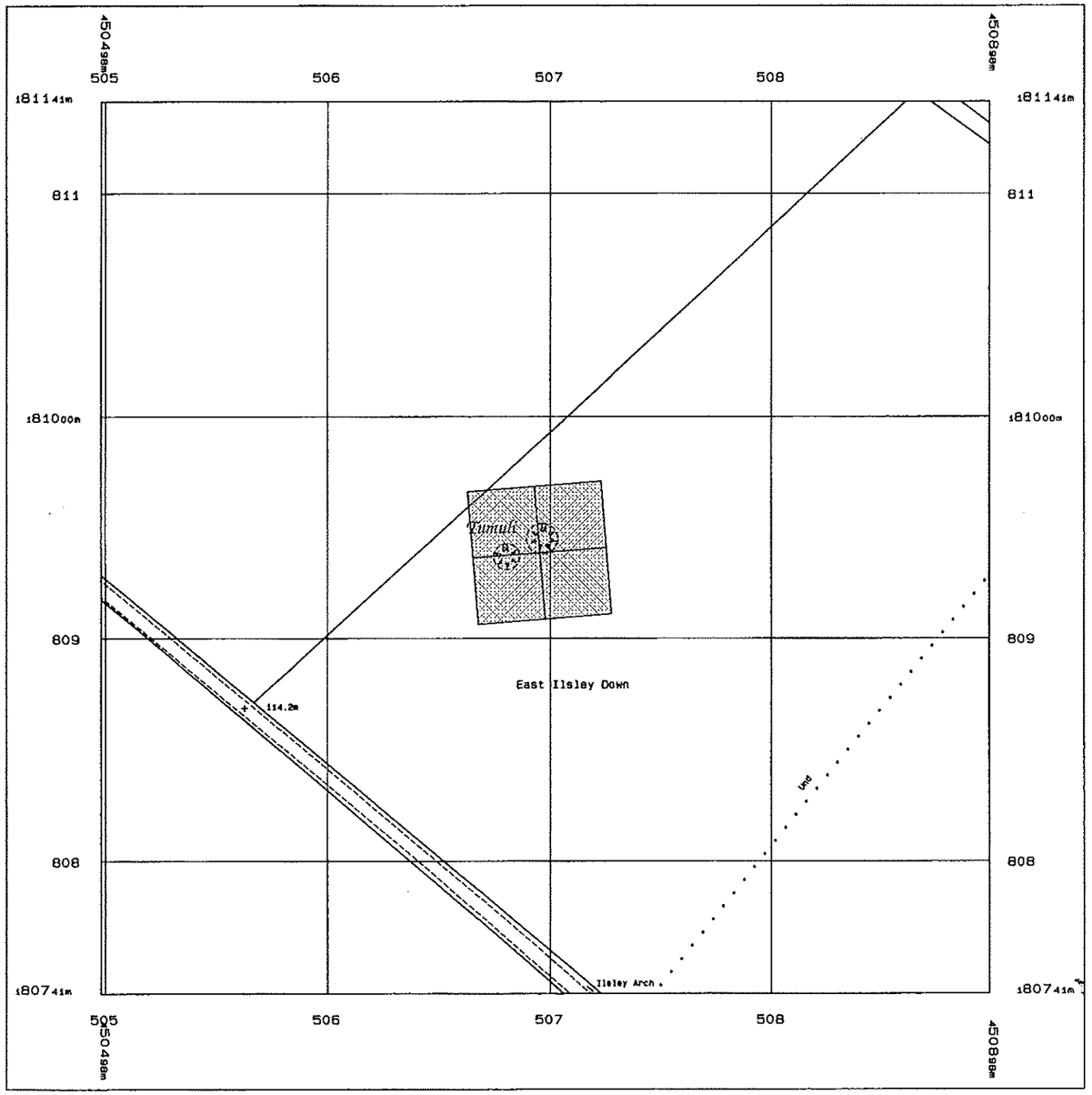
Area of weaker magnetic response

Anomalies possibly of archaeological origin

AMLab 1998

Figure 7: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Sites 11 & 12 - East Ilsley Down

a) Location of Survey Grid

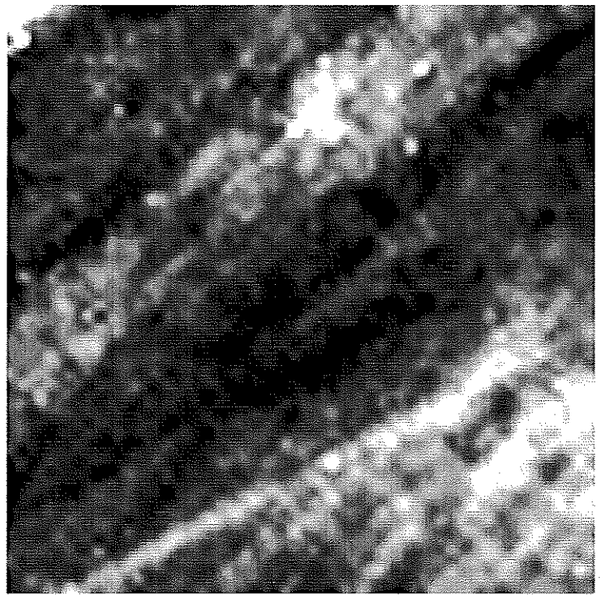


SU 5080

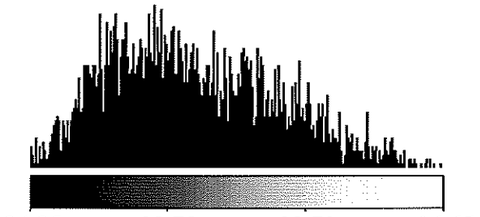
0 1:2500 90m

N

b) Greyscale plot of resistivity data



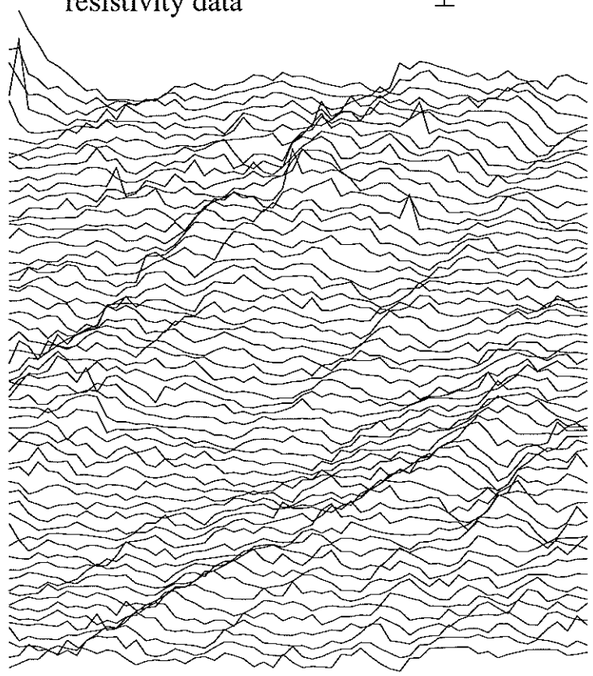
0 30m



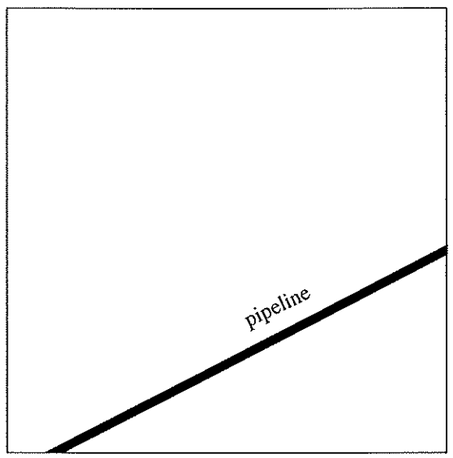
N

c) Trace plot of resistivity data

12.5 Ohms



d) Interpretation diagram

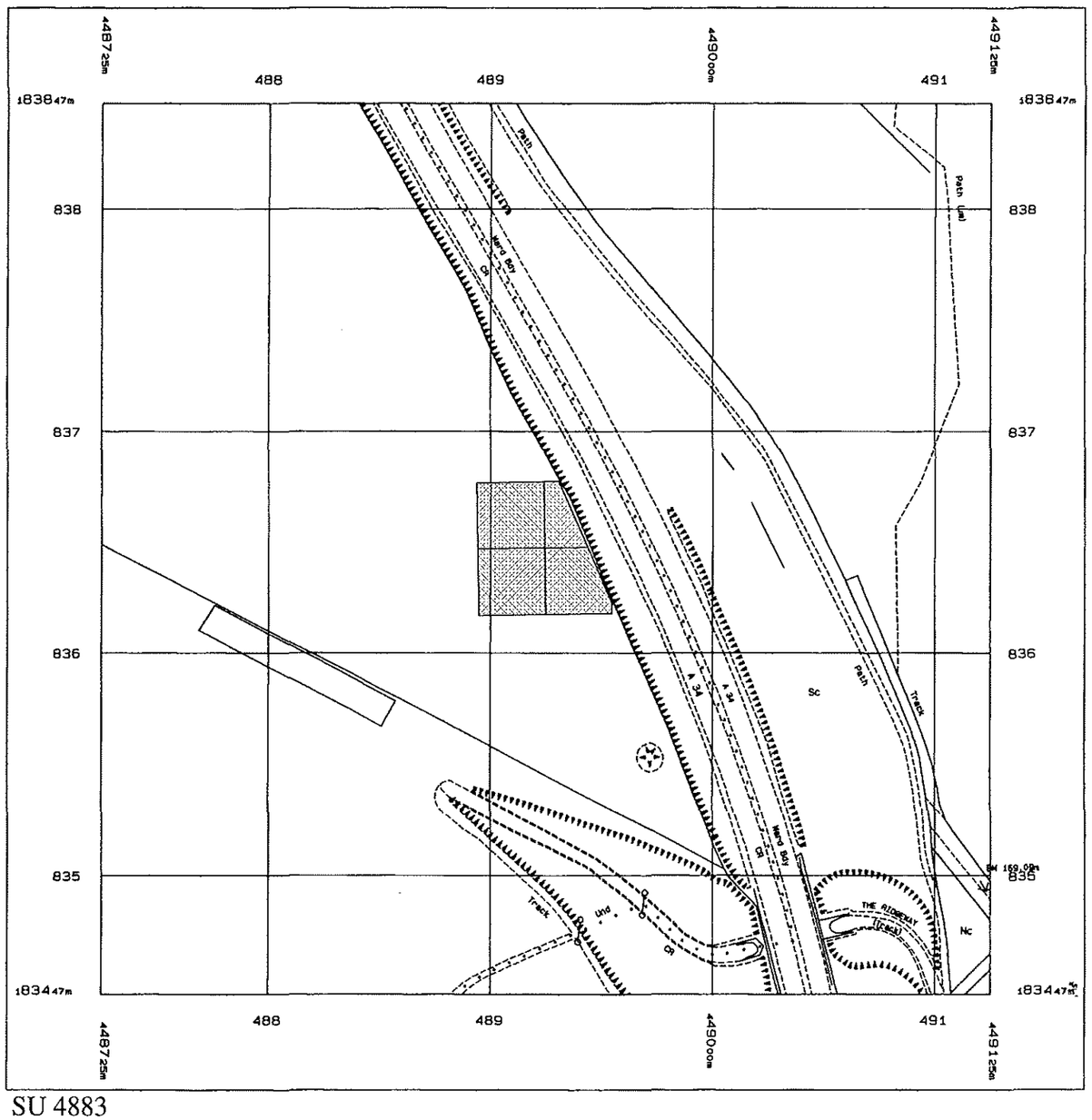


0 30m

AMLab 1998

Figure 8: WESSEX BOWL BARROWS PROJECT Geophysical Survey, April 1998. Site 13 - Hodcott Down

a) Location of Survey Grid

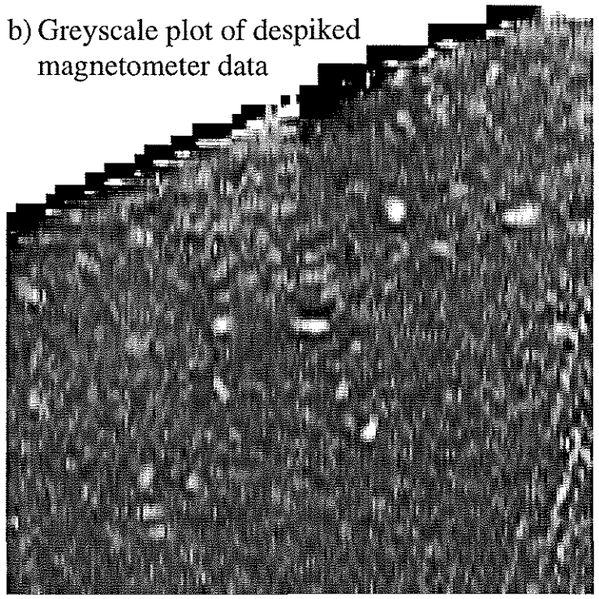


SU 4883

0 1:2500 90m

N

b) Greyscale plot of despiked magnetometer data



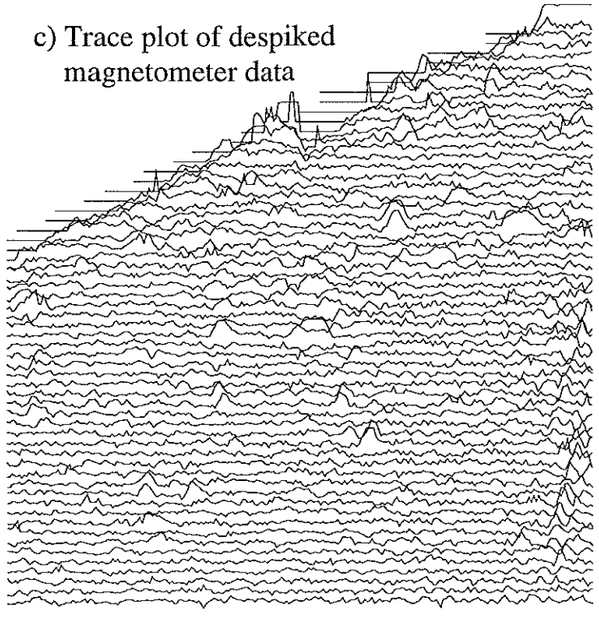
-1.55 -0.67 0.22 1.10

nT

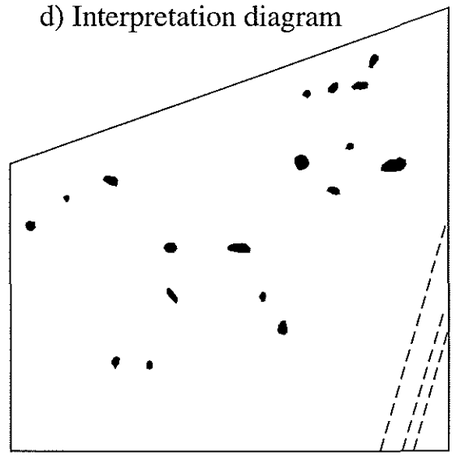
0 30m

12.5nT

c) Trace plot of despiked magnetometer data



d) Interpretation diagram



0 30m

Possible archaeological pits

? cultivation lines

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