WARWICK UNIVERSITY,
KIRBY CORNER

Geophysical Survey

Birmingham University Field Archaeology Unit 1990

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Simon Buteux and Alex Jones

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WARWICK UNIVERSITY, KIRBY CORNER: Geophysical Survey

1.0: LOCATION AND TOPOGRAPHY

The site under investigation lies on the outskirts of Coventry, just to the west of the University of Warwick, at the junction of Kirby Corner Road and Gibbet Hill Road (Fig. 1; N.G.R. SP 296 764). The survey was carried out on the site of a former sports ground, and encompassed a playing field and areas of rough ground to the north east and south west. At the time of the survey the pavillion, floodlight towers and other installations associated with the sports ground were in the process of demolition. The sports ground was separated from the area of rough ground to the north west by a substantial bank, which was excluded from the survey. Immediately to the south east of the playing field is the site of an electricity substation.

2.0: ARCHAEOLOGY

To the north west of the survey area, a cropmark has been located by aerial photography, which may be interpreted as part of a ditched enclosure. To the east of the site a quantity of medieval pottery wasters have been uncovered during development, suggesting the near proximity of pottery kilns.

3.0: AIMS OF SURVEY

The site of the former sports ground is scheduled for redevelopment. The geophysical survey was carried out primarily with the aim of locating and defining the possible kiln site, or any features associated with the enclosure.

Fig 1a KIRBY CORNER General Location

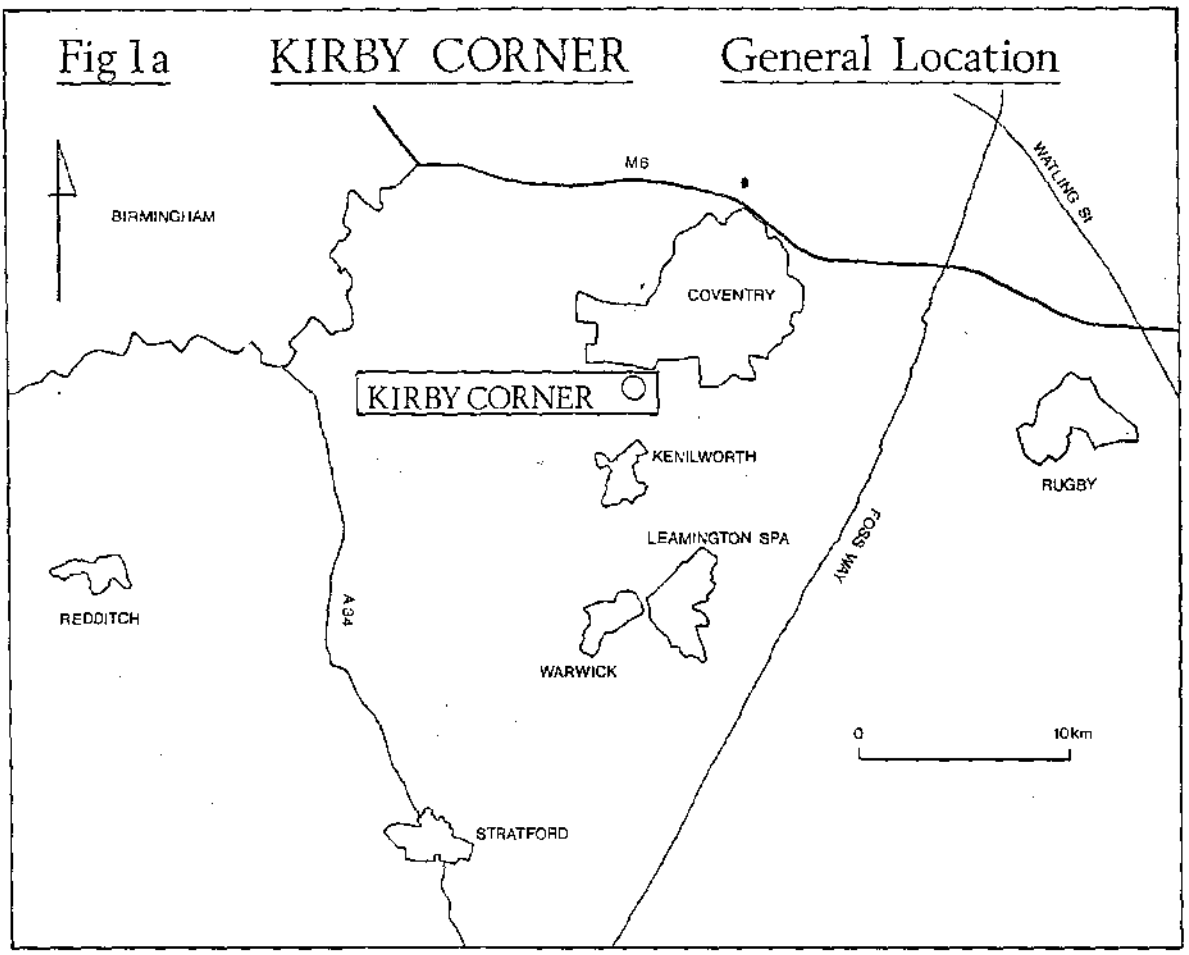
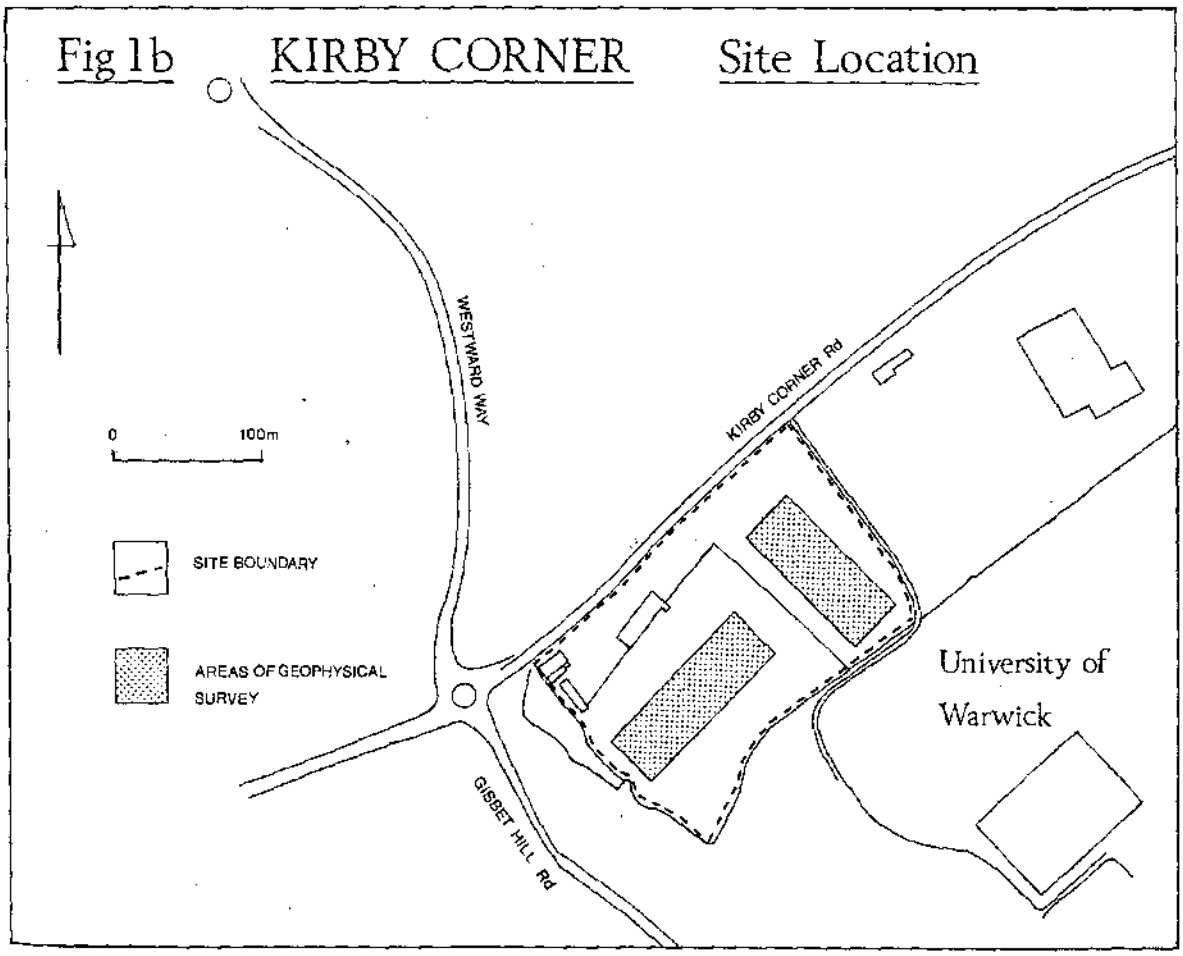


Fig 1b KIRBY CORNER Site Location



4.0: METHOD

4.1: Instrumentation

The survey was carried out using a Geoscan FM18 Fluxgate Gradiometer, with built-in data logger. Readings were recorded at intervals of 1m, along survey lines spaced 1m apart. The instrument was set to a resolution of 1 nT. Recorded data was transferred from the gradiometer and stored to disk on a Toshiba T1000 portable computer for post-survey processing, using the Geoscan Research 'Geoplot' graphics and data-handling program.

Data was plotted in dot-density format on an Epson RX-100 printer.

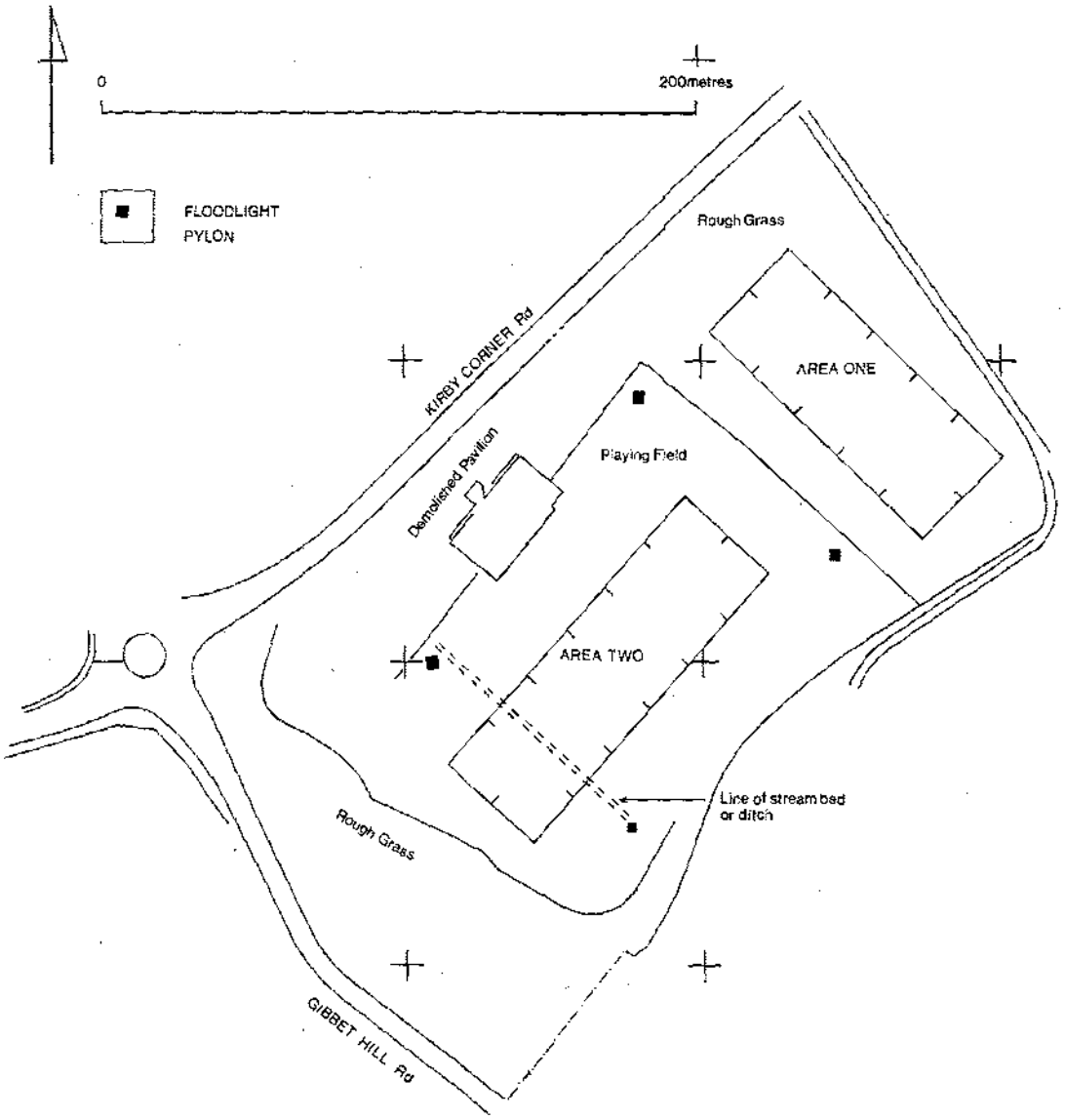
4.2: Survey

The site was surveyed in two separate areas: Area 1 (100m by 40m) was located in the rough ground to the north east of the playing field; Area 2 (120m by 40m) was located down the centre of the playing field, continuing into the rough ground to the south west (Fig. 2). The total area surveyed was 8,800 square metres. Both areas were surveyed in individual squares measuring 20m by 20m. Instrument balance and alignment was checked after the completion of each square, with the instrument being re-zeroed and any zero drift being logged.

The gradiometer used is extremely sensitive to metal objects, or any other objects, structures or deposits which have acquired a magnetic field. For this reason, the survey area was restricted to the central parts of the site, at least 20m distant from structures and objects around the boundary which might have caused interference with the instrument readings. These included metal perimeter fences, and the foundations of the demolished pavillion and floodlight towers. Nevertheless, quantities of scrap metal and other demolition rubble were found in various parts of the site, and may be responsible, along with modern services, for many of the recorded anomalies (see section 6.0, below).

Fig 2 KIRBY CORNER

Location of Survey Areas



A gradiometer can measure subtle changes in the soil's magnetic field intensity, and is particularly suitable for the location of features such as kilns which have acquired thermoremanent magnetism as a result of heating. The instrument may also be employed to locate unfired archaeological features, such as ditches or pits. These may be detected by measuring slighter localised variations in soil magnetic intensity.

5.0: RESULTS

The results are presented in the form of inverse dot-density plots, which highlight the areas of negative anomalies using darker shading; areas of positive anomalies show as un-shaded areas. The data have been processed to eliminate the effects of drift from the individual squares, and extreme high and low readings have been partly truncated to faciliate a uniform density of plot.

5.1: Area 1. (Figure 3)

Four anomalies have been located here; other single-point negative readings which occur throughout the area may be caused by scattered (small) metal objects, and should be disregarded.

The most distinct anomaly is A3, this is of irregular shape, and measures c. 20m by 15m. It is characterised by pockets of high values (120-240 nT), surrounded by negative values (-5 to -17 nT), against background values of the order of -2 to +2 nT. A3 abutts A4, an anomaly of predominantly low values, in the region of -2 to -5 nT, against a background of values in the region of 1-3 nT.

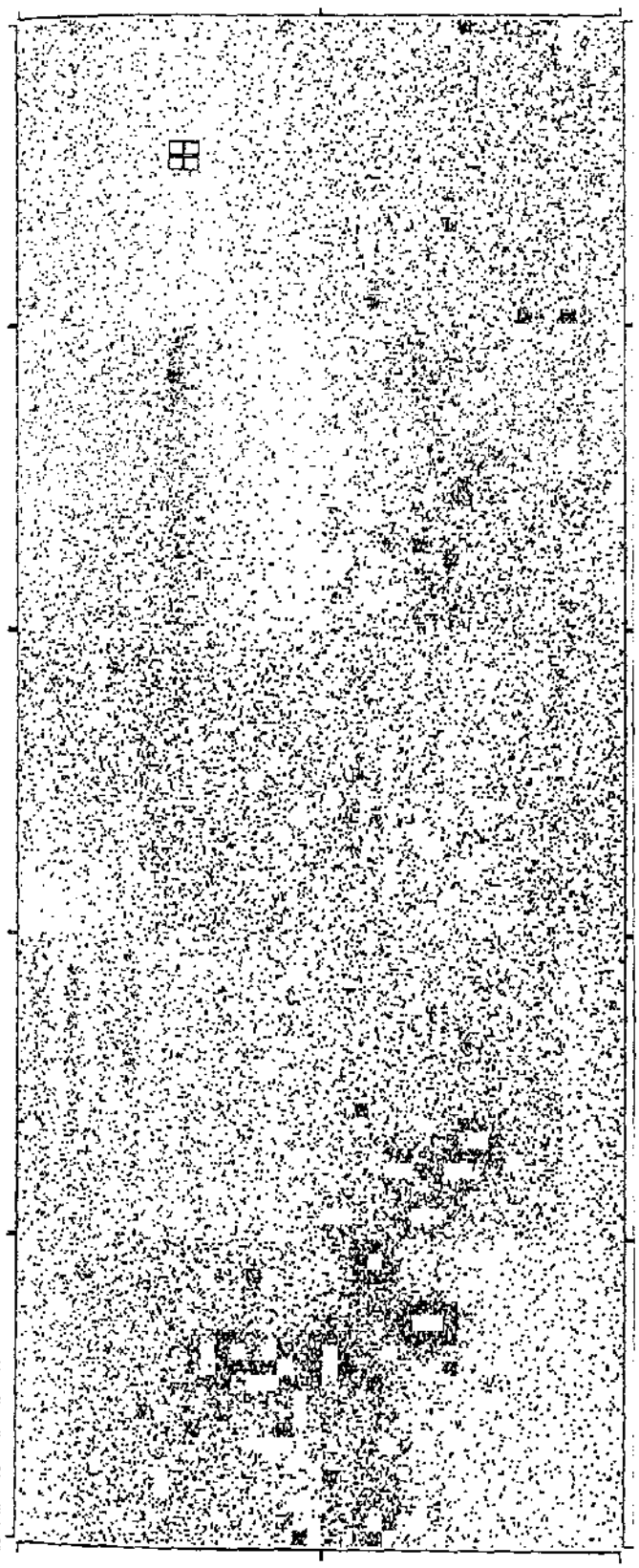
A1 is a linear anomaly, over 20m in length, aligned along the grid axis; it corresponds in part to modern ground disturbances. A2 is an irregular cluster of low readings, in the range of -5 to -18 nT, covering a maximum area of 10m by 5m.

Fig 3 AREA 1

Dot-density Plot (Inverse)

MIN +10nT Pos Light
MAX -10nT Neg Dark
0 20m

INTERPRETATION



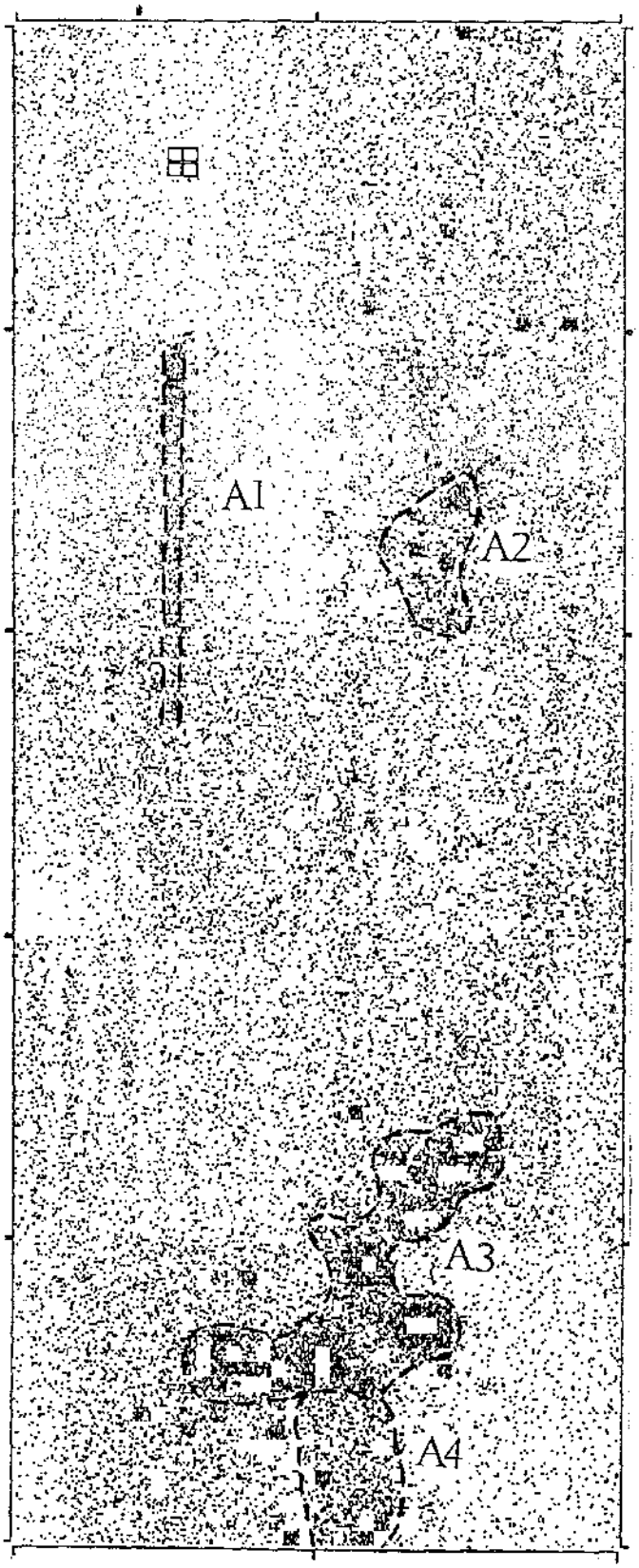
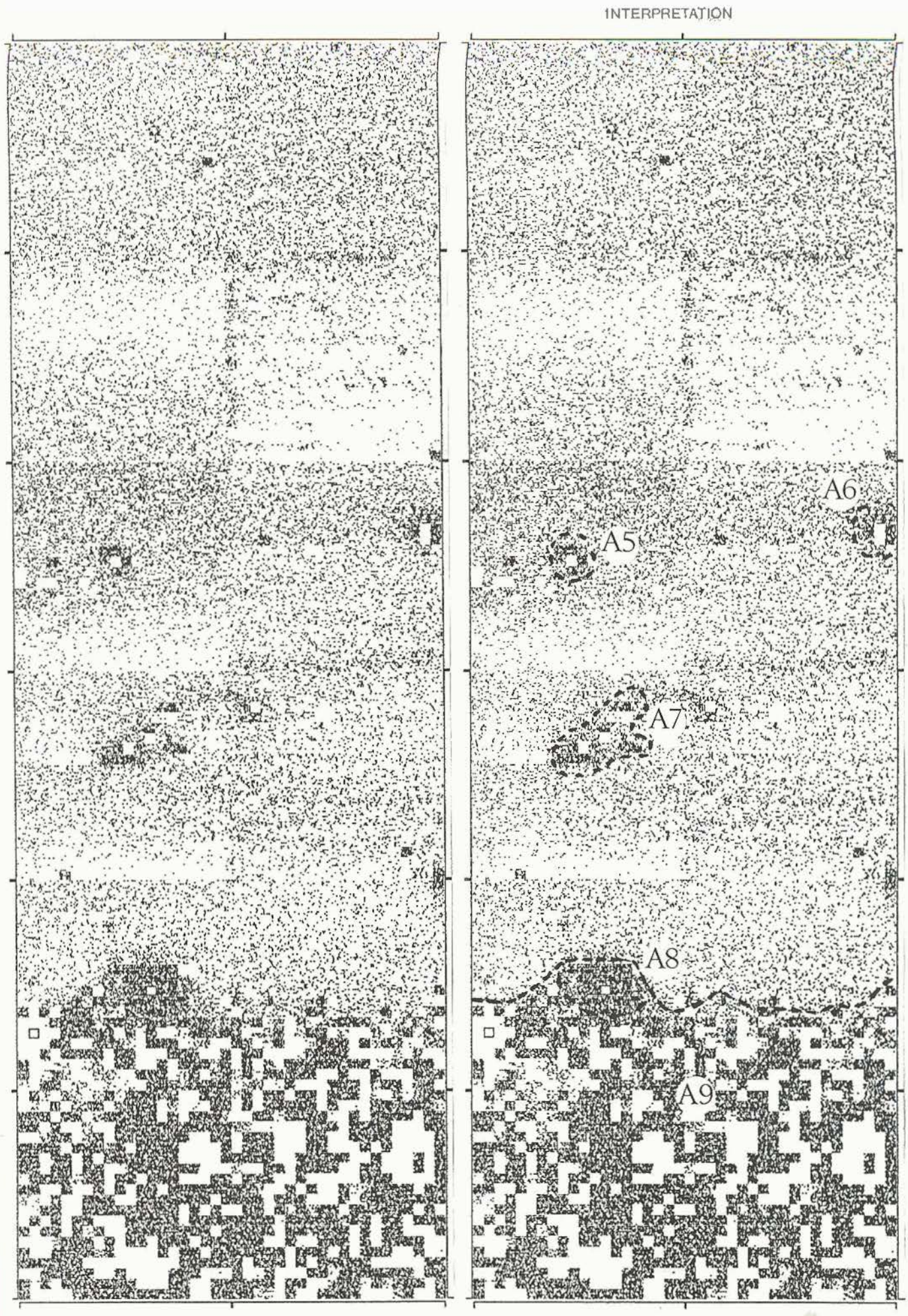


Fig 4 AREA 2

Dot-density Plot (Inverse)

MIN +10nT Pos Light
MAX -10nT Neg Dark

0 20m



5.2: Area 2 (Figure 4)

The most distinct anomaly here, A9, covers an area measuring in excess of 30m in width and 40m in length, which continues beyond the survey area. Its northern boundary corresponds with the junction of the playing field with the rough ground to the south west. A9 contains very large values, in the wide range from -1721 to 1442 nT, but no pattern is discernable within the positive or negative anomalies here. A8, on the north-eastern edge of A9, measuring approximately 5m across, is composed of very low values, down to -1721 nT.

Anomalies A5, A6 and A7, north east of A8, are individual pockets of high values, in the region of +29 to +326 nT, surrounded by low values, in the region of -4 to -52 nT. These individual anomalies are similar in form to the cluster of such anomalies which make up A3 in Area 1.

6.0: DISCUSSION AND INTERPRETATION

None of the anomalies located are definitely of archaeological significance. They are of amorphous or ill-defined shape, and do not correspond to the morphology of archaeological features such as ditches or pits. Most may be attributed to modern disturbances, buried metal or building debris.

The largest and most strongly registered anomaly, A9, situated in rough ground immediately to the south west of the former ditch or stream channel defining the edge of the playing field, may be interpreted as a spread of demolition rubble or other debris, probably containing bricks and/or metalwork. Anomaly A8, although separately defined, may be part of A9.

The linear anomaly A1, partly visible on the surface, probably represents a modern disturbance or trench. The smaller isolated anomalies, A2, A5, A6 and A7, which are apparently randomly distributed, may be caused by small pockets of modern debris, or modern services.

Anomaly A3, which is well defined against the surrounding area, may simply be a larger cluster of similar modern debris. However, the values recorded may be consistent with kiln debris. The adjoining weaker anomaly A4 may be associated with it.

While the nature of the site and its recent use would suggest that most or all of the anomalies recorded may be modern in origin, this does not preclude the possibility that some, in particular A3 and A4, may be of archaeolgical significance. Further investigation of these anomalies by means of sample excavation may be justifiable in advance of redevelopment.

7.0: ACKNOWLEDGEMENTS

The survey was commissioned by Margaret Rylatt of Coventry City Museum on behalf of the Central Electricity Generating Board. The survey was carried out by Wendy Dickinson and John Dalton. The figures were drawn by Ed Newton.