Geophysical Surveying at Bassingbourn Village College.

In 2007 the Archaeology RheeSearch Group carried out magnetometry and resistivity surveys in the grounds of Bassingbourn Village College on 1 July and 29 July 2007.

Members participating: Brian Bridgland, Pat Davies, Liz Livingstone, Bruce Milner, Ian Sanderson, Maureen Storey, Tony Storey.

Site Coordinator: Valory Hurst

Site conditions: School playing field with construction vehicles towards the NE of the survey area.

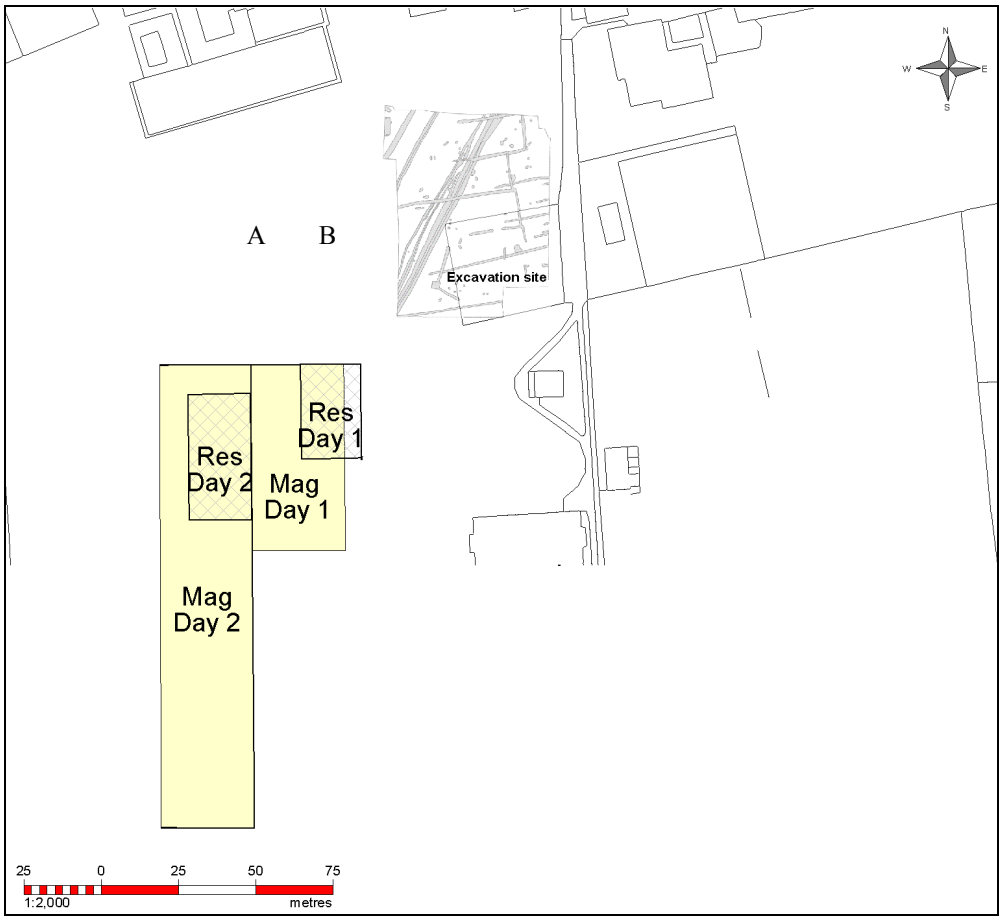
Equipment: Bartington 601 gradiometer; TRCIA 50cm twin probe.

Area covered:

Magnetometry	day 1	two 30 m × 30 m grids
Magnetometry	day 2	five 30 m × 30 m grids
Resistivity	day 1	one 30 m × 20 m grid
Resistivity	day 2	two 20 m × 20 m grids

Location: TL 329 435 South of Bassingbourn Primary School.

Images are orientated with north to the top of the page except where stated otherwise.



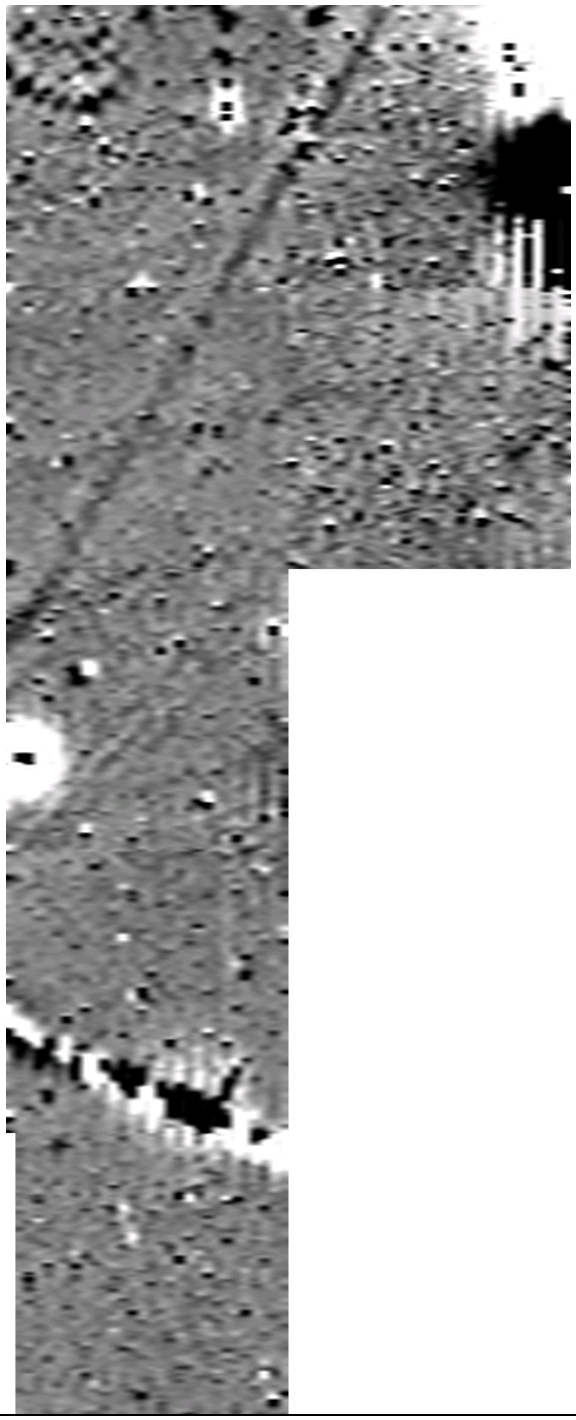
Location plan: South of Bassingbourn Primary School with the survey areas shown.

On the ground location points – *The SW and SE outer limits of the paving around the primary school playground were the primary reference points. These were used to locate two transient points (A & B) which acted as secondary references for day 1 grid locations. Day 2 surveys used and were extended from these points.*

Primary reference locations SE playground to A 59.07 m, B 50.68 m; SW playground to A 56.69 m, B 68.25 m. Magnetometry grid NE corner to A 41.60 m, B 41.60 m; NW corner to A 37.09 m, B 48.58 m. Day 1 resistivity extended 6 m further east than the magnetometry grids

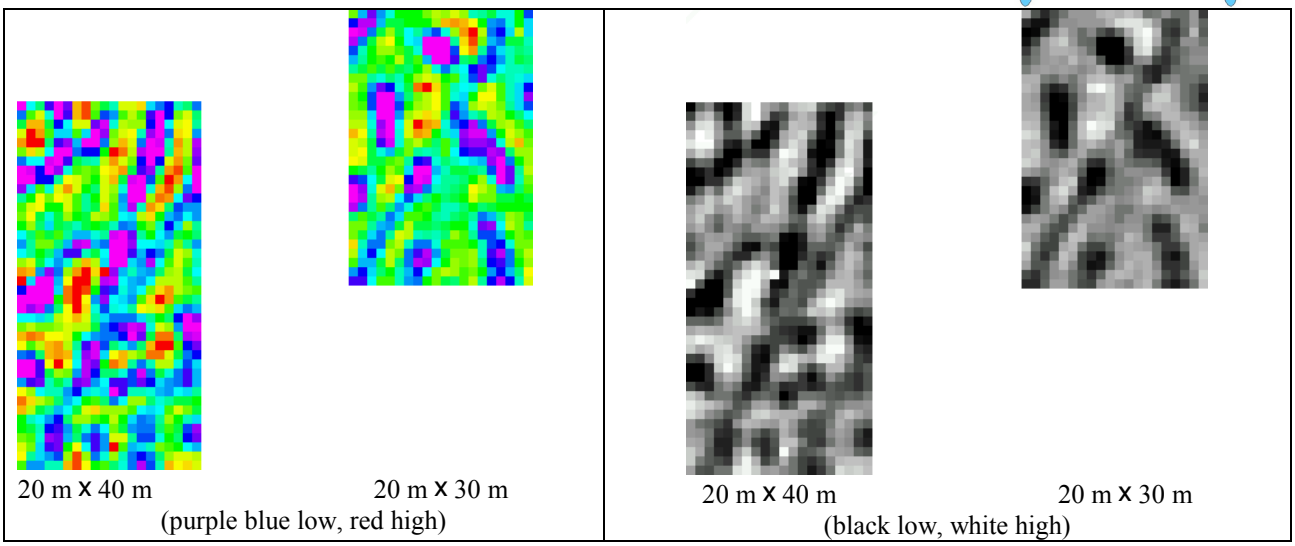
Purpose of survey: To try and locate the continuation of ditches discovered during a nearby excavation, which were thought to be related to the Mile Ditches near Royston. The excavation was carried out by CAMARC in advance of building works on the site. The locations and excavation plan above were provided by Tom Phillips of CAMARC.
An excavation summary was not available at the time of preparation of this report.

Results:



Magnetometry results

Overall dimensions 60 m x 150 m.
(white –8 nT; black +7 nT)



Resistivity results
(shown in their relative positions with overall dimensions 50 m x 56 m)

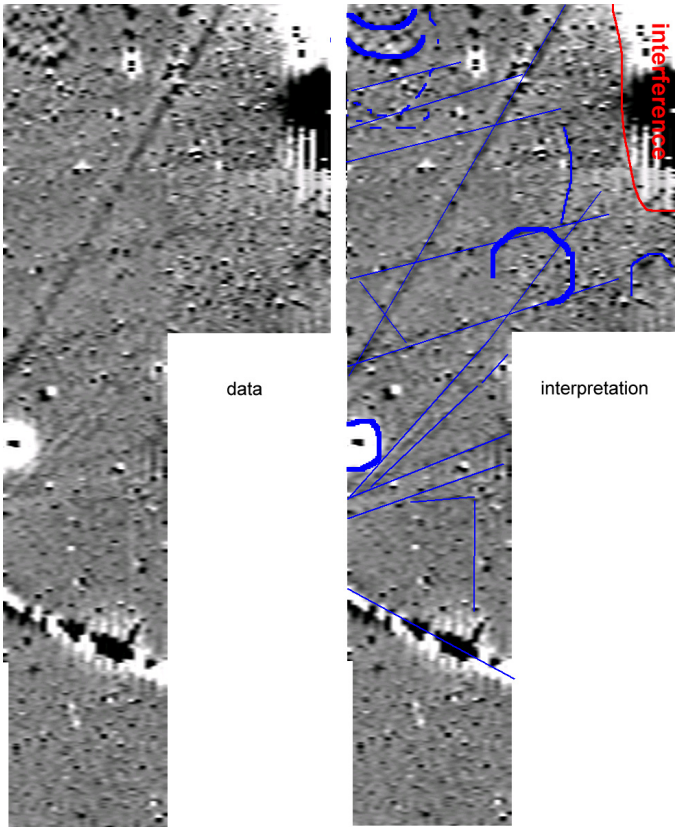
Resistivity

In isolation the eastern resistivity measurements show little coherent pattern. The western resistivity results have a weak low resistance line running NE-SW, which converges with a much stronger low resistance line that lies to the N. There is also the suggestion of a curved low resistance feature to the NW.

Magnetometry

The signals in the NE corner of the magnetometry survey area are obscured by the magnetic influence of construction vehicles and materials positioned some distance to the east.

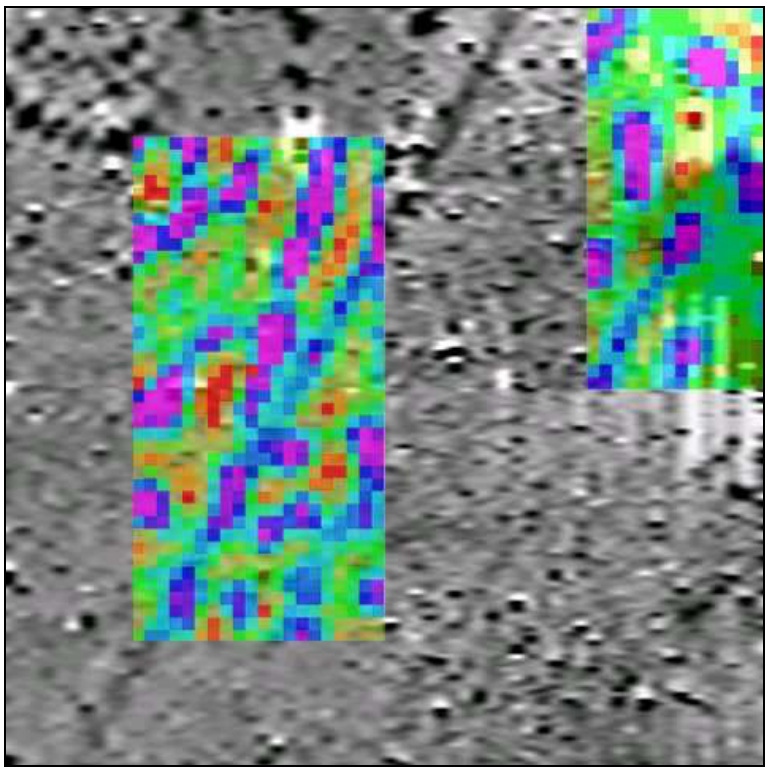
In the remainder of the survey area a strong response was detected running NE-SW with a series of aligned weaker signals which might converge with the strong response line to the SW. A particularly intense line runs NW-SE across the southern part of the survey area. A series of parallel weak signals are apparent running ENE-WSW, the southernmost passing immediately S of the strong singular source on the W edge of the survey area. There are suggestions of further parallel lines to the north. There are indications of a circular feature about 8 m diameter in the SW corner of the day 1 magnetometry area. Two curved features were detected in the NW corner of the day 2 survey area with insufficient coverage to determine a diameter. Two very high signal intensity points were detected, one midway on the western side, the other central to the north.



Correlations

Magnetometry and resistivity detect different aspects of subsurface structures and should not therefore be expected to show the same features. The differences and coincidences in what is detected can sometimes add further information about those structures.

Superimposing the resistivity and magnetometry results shows that there are two almost parallel lines running NE-SW through both sets of data. It also shows that the stronger low resistance line in the western resistivity data, and the low resistance feature NW corner of the same grid, were not reflected in the magnetometry results.



Superimposition of resistivity and magnetometry results

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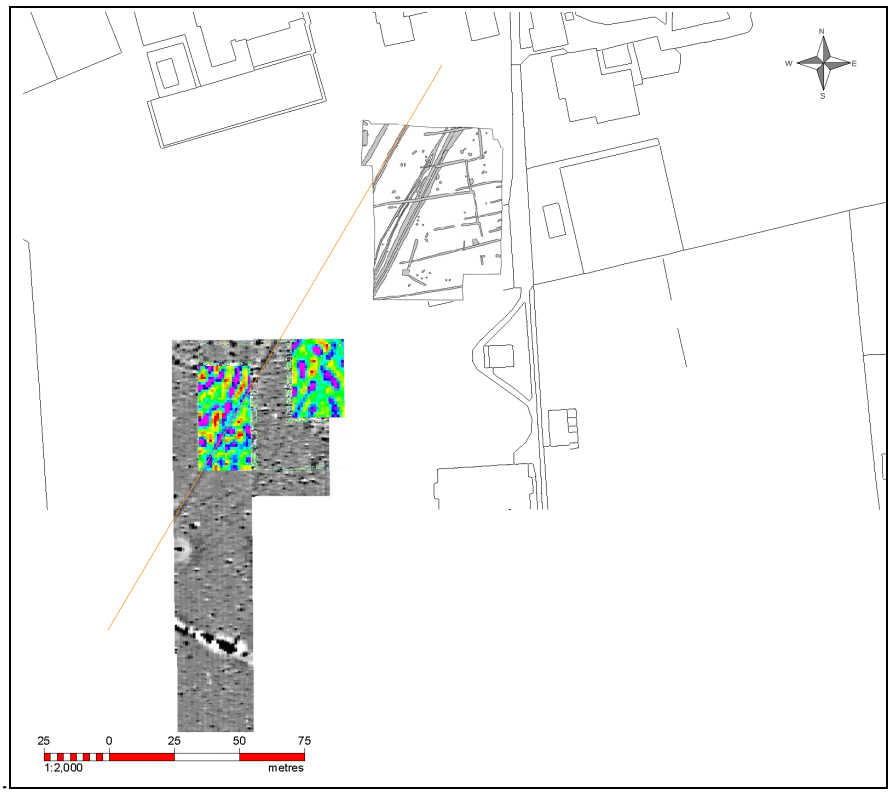
Discussion:
One of the lines detected in both magnetometry and resistivity data aligns almost perfectly with one of the excavated ditches (orange line below). The grouped ditches discovered during excavation are also reflected as continuing into the area of geophysical surveys, although the magnetometry results indicate that they are initially parallel but then bend to the north and may converge just off the western side of the magnetometry survey to the SW of a the strong, isolated magnetic anomaly. This point of convergence would also appear to be very close to the line of the strong magnetic signal running NW-SE in the southern part of the magnetometry survey.

The strength of the NW-SE signal would suggest a strong ferrous component such as a relatively modern iron pipe, this does not preclude it following an older ditch line. The form of the isolated magnetic signals suggests single ferrous sources. The largest source could be up to 4 m by 1 m, though it is difficult to be certain because magnetic signals are affected by both depth and intensity. Given the proximity of the airfield to this site, it would be prudent to exercise particular care if the largest single source feature were to be excavated in the future.



Raw data are available as separate appendices.
Magnetometry readings: 4/m, 1 m separation.
Resistivity readings: 1 m interval, 1 m separation.