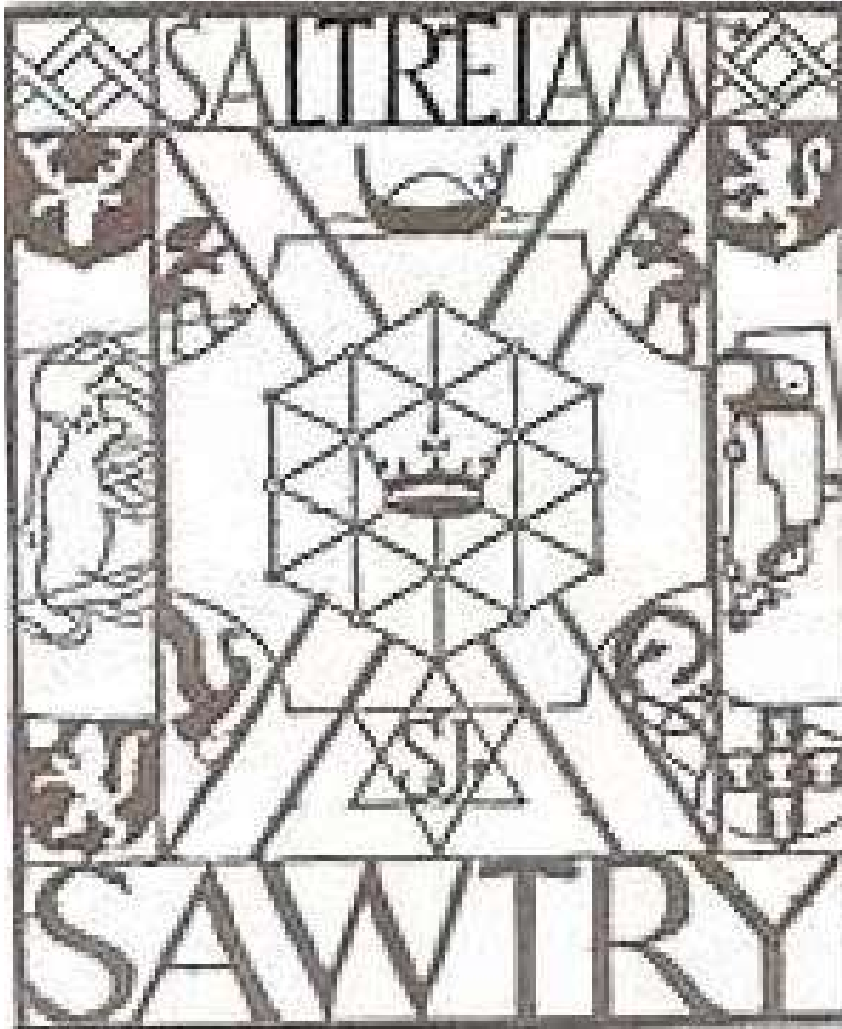


SAWTRY HISTORY SOCIETY



**ARCHAEOLOGICAL GEOPHYSICAL SURVEY INTERIM REPORT
SHS17-1_IR-4**

**GEOPHYSICAL EARTH RESISTANCE SURVEY (7 - 8
MAY 17) - HILL TOP, ALCONBURY WESTON**

30 July 2021

by

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& Phil Hill BA(Hons)***

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OASIS REPORT FORM

PROJECT DETAILS		OASIS No:	
Project name	Geophysical earth resistance survey of Hill Top field in Alconbury Weston		
Short description	An earth resistance survey was undertaken in the central area of the site where the coins and metal artefacts finds plot suggest a concentration of activity spanning several centuries. This survey encompassed the area of a recent magnetometry survey, in an endeavour to identify further evidence of structures and settlement activity.		
Project type	Geophysical survey		
Site status	N/A		
Previous work	1. Desk-top research into previous archaeological investigations undertaken by local and commercial archaeologists prior to 2009. 2. Desk-top analysis of the results of metal detecting undertaken by the Landowners Historical Research Group (LHRG) from 2009 to 2018. 3. Geophysical magnetometry survey, 24 Feb 17.		
Current land use	Arable farming		
Future work	Geophysical survey, fieldwalking survey and excavation		
Monument type/ period	Iron-Age/Romano-British, <i>circa</i> 100 BC to AD 410		
Significant finds	N/A		
PROJECT LOCATION			
County	Cambridgeshire		
Site address	Hill Top, Alconbury Weston		
Study area	12,000m ² (1.2ha)		
OS grid reference	TL18374 77628		
Height OD	48m		
PROJECT CREATORS			
Organisation	Sawtry History Society		
Project brief originator	Sawtry History Society		
Project design originator	N/A		
Director/Supervisor	Phil Hill		
Project Manager	Kevin Redgate		
Sponsor or funding body	Sawtry History Society		
PROJECT DATE			
Start date	7 May 17		
End date	8 May 17		
ARCHIVES	Location	Content	
Physical			
Paper			
Digital	SHS Archaeological Digital Archive	SHS Archaeological Digital Records and Media	
BIBLIOGRAPHY			
Title	Geophysical Earth Resistance Survey (7 - 8 May 17) - Hill Top, Alconbury Weston		
Serial title & volume	N/A		
Author(s)	Kevin Redgate & Phil Hill		
Page numbers	009, plus 3 Annexes and 1 Enclosure		
Date	30 July 2021		

1. Introduction.

1.1. Hill Top has provided tantalizing evidence of a potentially significant Romano-British settlement through the antiquarian investigations of Dr J R Garrood MD in the 1932, and the developer led commercial archaeological evaluations of the both the Archaeology Section of Cambridgeshire County Council (CCCAFU) and Birmingham University Field Archaeology Unit (BUFAU) 1990s. This evidence has been significantly reinforced, not just by the quantity of coins and metal artefacts detected during the period 2009 to 2018, but by the presence of numerous artefacts of high status and significance within the metal finds assemblage.

1.2. This survey follows on from the recent magnetometry survey in an endeavour to identify further evidence of structures and settlement activity.

2. Site Details.

2.1. Event Number.

2.2. **Location.** The site consists of Hill Top field and Long Nines field to the south-east. It is located west of the A1 and east of Vinegar Hill in the centre of Alconbury Weston Civil Parish (Figure 2.1), and centrally in the northern half of National Grid Reference (NGR) square TL1877 (Figures 2.2 and 2.3).



Figure 2.1: Site relative to Alconbury Weston (Google Earth, 2016)



Figure 2.2: Site relative to Alconbury Weston (Ordnance Survey, 2006)

2.3. **Site Benchmark (SBM).** This has been set on the edge of the tree line adjacent to the south corner of the residential gardens at NGR TL 18374 77628, as shown by the red dot (Figure 2.3).

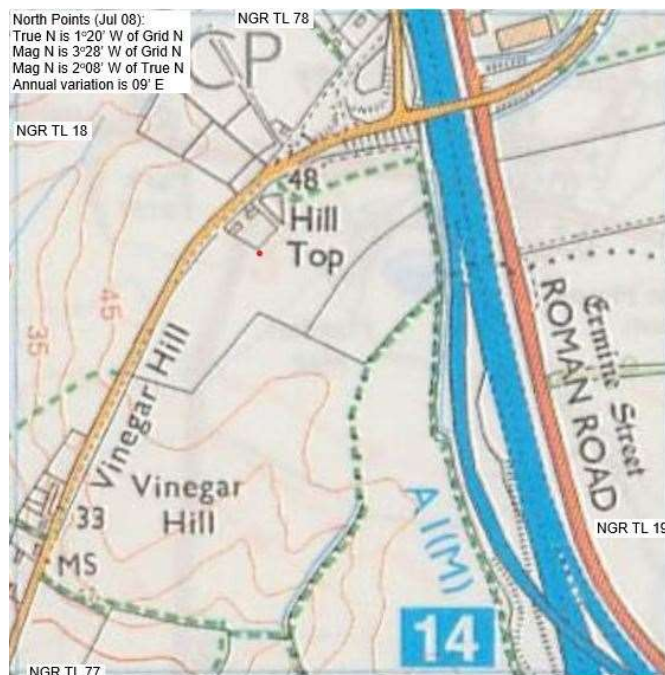


Figure 2.3: Hill Top site with SBM in red (Ordnance Survey, 2006)

2.4. **Site Grid.** The site grid can be found at Annex A.

2.5. **Geology.** The site sits on the west edge of a plateau on the 45m contour that overlooks the broad Alconbury Brook valley. The bedrock is Oxford Clay Formation-Mudstone with Oadby Member-Diamicton superficial deposits, above which is an unknown depth of plough-soil (Figure 2.4).



Figure 2.4: Site geology (British Geological Survey, 2017)

2.6. **Protection.** The site is not protected or within a conservation area.

2.7. **Land Use.** The two fields that comprise the site were used for arable farming and, as such, subjected to modern farming methods including ploughing and harrowing for crops, and deeper mole ploughing for drainage. From early 2018, Hill Top was held as grassland for hay and silage.

2.8. **Utilities.** An active branch of the ex-government fuel oil pipeline (now under private ownership) runs through the west end of the site, whilst a medium pressure gas pipeline runs through the site on a north/south alignment west of the Hill Top cottages. There is also a short low voltage (230V/480V) supply line serving the new barn in the berm enclosure and a low voltage supply line to the north of Hill Top Cottages that serves a sewage kiosk; suggesting that there is an underground sewage tank at the northeast of Hill Top Cottages (see Figure 2.5).

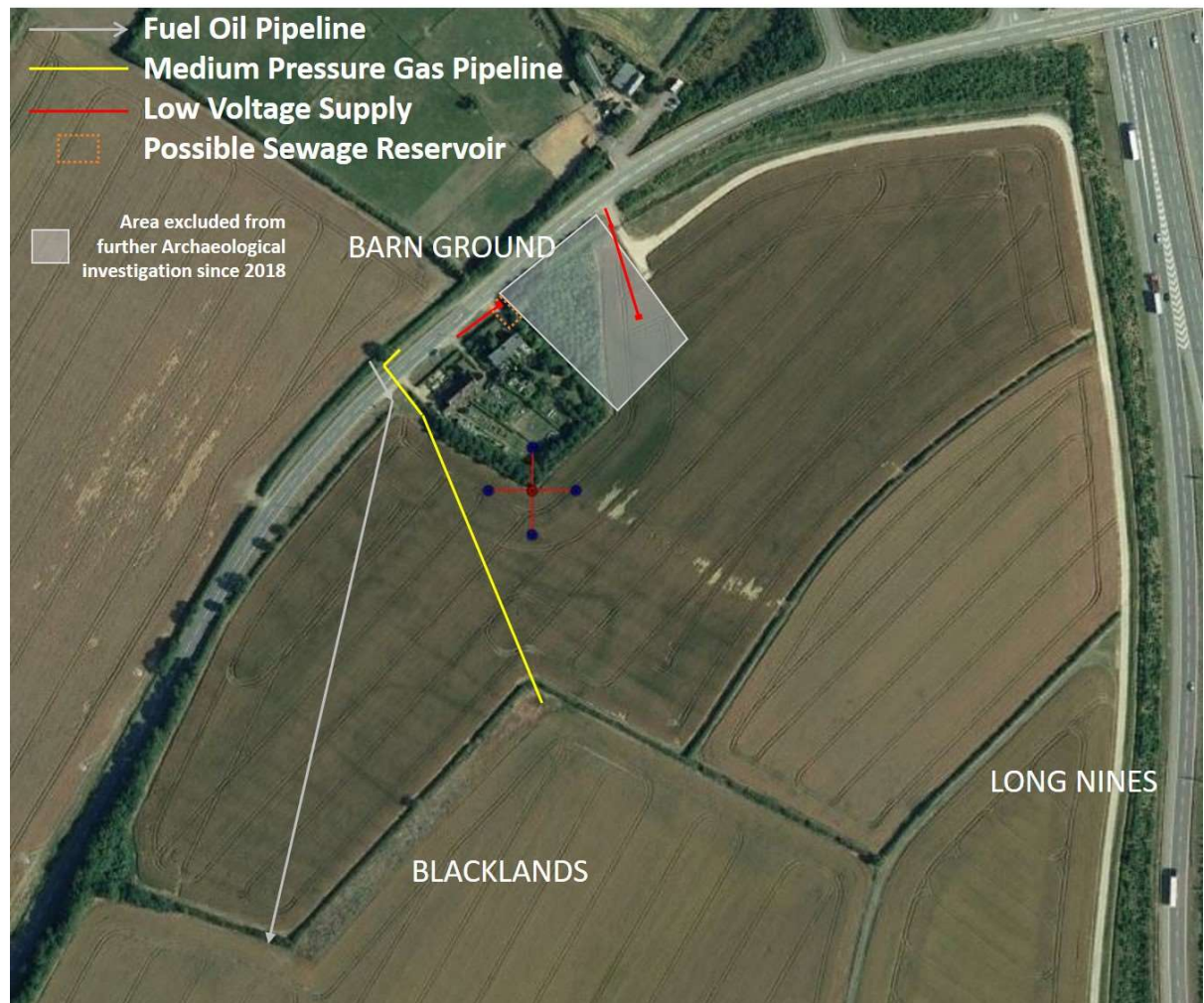


Figure 2.5: Utilities (Google Earth, 2016)

2.9. **Historical Background.** In 1932 Dr J R Garood MD, a local antiquarian of the Cambridgeshire & Huntingdonshire Archaeological Society (CHAS), began investigating the fields of Blacklands and Barn Ground (the previous field names of the field now known as Hill Top) as part of a wider investigation of Iron Age and Roman-British settlement sites on Alconbury Hill. Further archaeological investigations were undertaken by the Archaeology Field Unit of Cambridgeshire County Council (CCCAFU) in 1991, 1992 and 1995 in advance of A1 widening. Archaeological investigations were also carried out by Birmingham University Field Archaeology Unit (BUFAU) in 1996 also in advance of A1 widening. Since 2009 the two fields of the site have undergone methodical metal detecting which has produced a considerable volume of Roman artefacts ranging from coins to high status jewellery spanning four centuries of Roman occupation. Incidental to the metal finds was a wealth of ceramic artefacts including pot sherds, CBM and tesserae. Sawtry Archaeology,

under the auspice of Sawtry History Society, has undertaken periodic, and ongoing, archaeological investigations since 2017.

3. Methods.

3.1. **Survey Area.** The survey area consisting of thirty 20m x 20m squares was established from the site grid as shown at Figure 3.1.

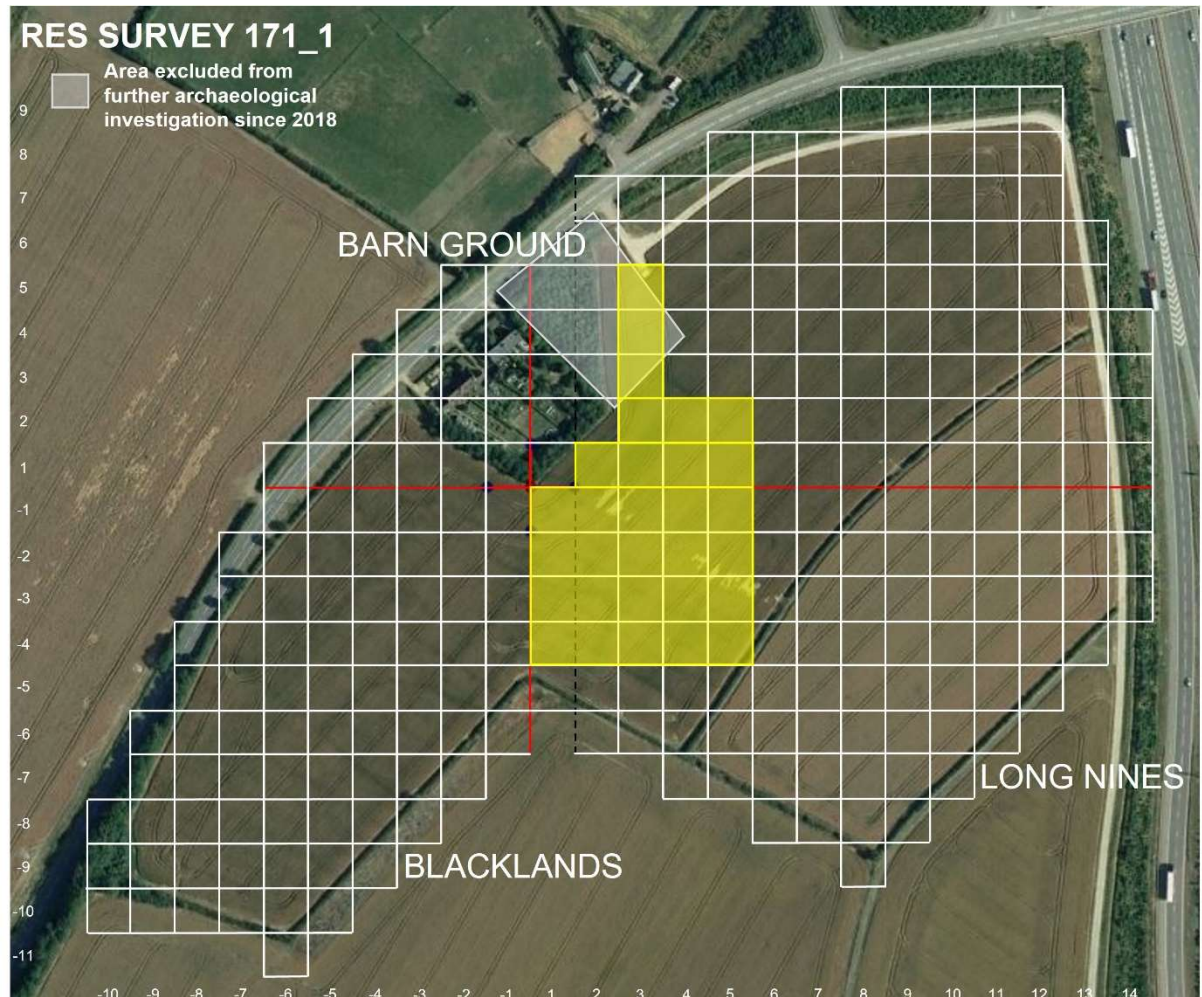


Figure 3.1: Site grid with survey area highlighted (Google Earth, 2016)

3.2 **Earth Resistance Survey.** The survey was carried out using the Geoscan Research RM85 Resistance Meter System and PA20 Probe Array assembly. Each survey square consisted of twenty traverse lines with readings being taken at one metre intervals along each traverse. The survey started in the southwest square of the survey area, traverses in each survey square started in the SW corner and followed a north-south zig-zag pattern to end in the SE corner. The Survey Record Sheet is at Annex B.

4. **Results.** Survey data was imported into Snuffler (version 1.21) as a single data set. The data plots presented in Figures 4.1 to 4.5 are presented in the default linear display option and greyscale display type; other display options and types are provided at Annex C:

- black = low resistance; pits, ditches, clay dumps
- white = high magnetic response; iron, steel, brick, burned soil, kilns, hearths, ditches, pits
- white = high resistance; walls, rubble, paving areas
- white = low magnetic response; stone features
- red = areas not surveyed
- linear = display colour blocks are assigned to equal ranges of values
- non-linear = display colour blocks are assigned to equal numbers of readings

relief plot = displays results as a 3D image
 - high resistance readings are high points
 - low resistance readings are low points

4.1. Raw Data Plots. Raw data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation (Figure 4.1).

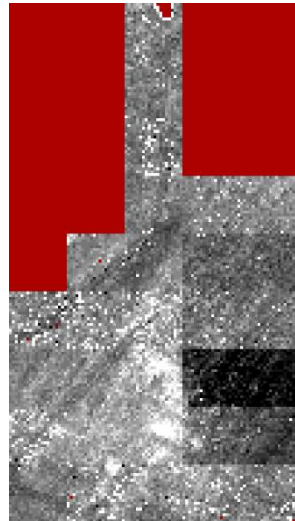


Figure 4.1a: Raw data

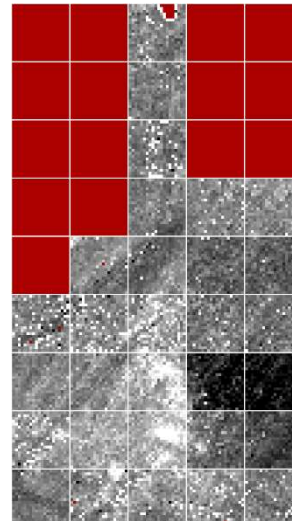


Figure 4.1b: Raw data

4.2. Corrected Data Plots. Corrected data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation. Correction to the raw data was applied in two stages, firstly through the application of clip, de-spike and edge correction (Figure 4.2) and secondly through the further application of sharpen (Figure 4.3).

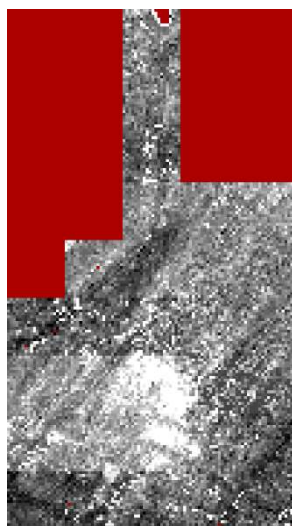


Figure 4.2a: Corrected data #1

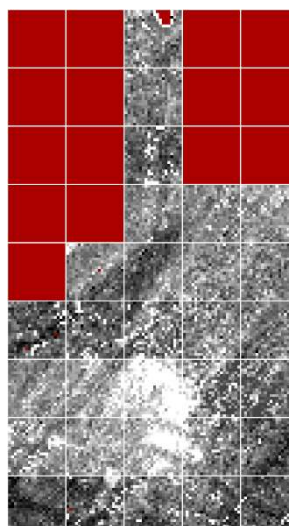


Figure 4.2b: Corrected data #1

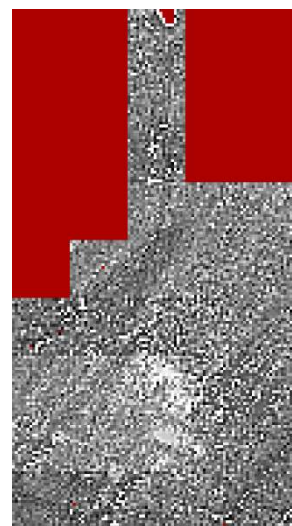


Figure 4.3a: Corrected data #2

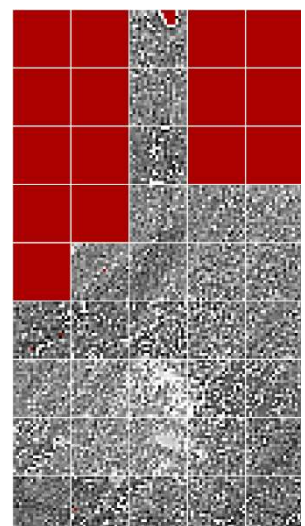


Figure 4.3b: Corrected data #2

4.3. Filtered Data Plots. Filtered data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation. The corrected earth resistance data plots in Figure 4.2 have been filtered by the application of interpolate (x2) (Figure 4.4), whilst the corrected earth resistance data plots in Figure 4.3 have been filtered by the application of remove geology and interpolate (x2) (Figure 4.5).

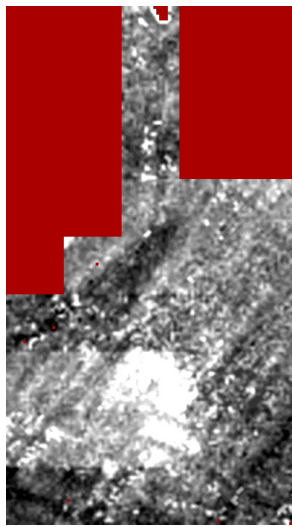


Figure 4.4a: Filtered data #1

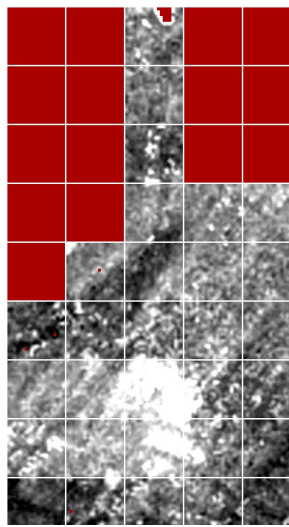


Figure 4.4b: Filtered data #1

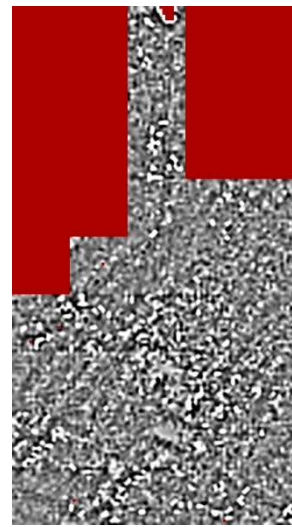


Figure 4.5a: Filtered data #2

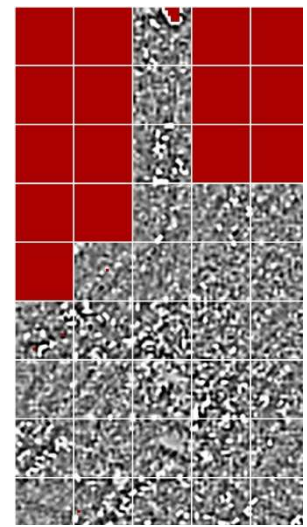


Figure 4.5b: Filtered data #2

5. **Analysis.** The filtered results in Figures 4.4 and 4.5 show a number of distinct anomalies that are discussed below. Survey squares are numerically referenced from left to right and bottom to top.

5.1. The first anomaly of significance is the large (white) mass of high resistance predominantly in the squares 3,2 and 3,3. This is interpreted as compacted building rubble or (with a little optimism) an intact floor.

5.2. The next anomaly of significance is the (dark) spread of low resistance in squares 2,5, 3,5 and 3,6. This coincides with the magnetic anomaly identified in square #5 of magnetometry survey 171-1 (Redgate & Hill, 2021:5).

5.3. The weaker low resistance linear anomalies running northeast-southwest predominantly in squares 4,3 and 5,3 align with modern ploughing and are probably evidence of deeper ploughing activity, such as mole-ploughing. This analysis is supported by their coincidence with similar magnetic anomalies in square #3 of magnetometry survey 171-1 that were assessed as such (Redgate & Hill, 2021:5).

5.4. There is a weaker low resistance linear anomaly running northeast-southwest in squares 1,2 and 2,3 that, whilst aligned with the modern plough marks, has a slightly different nature that is indicative of a robbed-out wall foundation. This analysis is supported by its coincidence with a similar magnetic anomaly in squares #1 and #2 of magnetometry survey 171-1 that is assessed as such (Redgate & Hill, 2021:5).

5.5. Similarly, the weaker low resistance linear anomalies running northwest-southeast align with medieval ridge-and-furrow visible in the utilities Google Earth imagery (Figure 2.5).

5.6. There are two other stronger low resistance linear anomalies that, whilst aligned with plough marks, have a slightly different nature to them which could suggest they are archaeological; a northeast-southwest linear in square 5,2 and a northwest-southeast linear in square 1,1.

6. **Summary.** The survey was, generally, successful in achieving its aim. Although the results do not contain any clear indication of buildings or other structures, they do contain responses that are highly suggestive of being archaeological; some of which appear to be anomalies revealed in magnetometry survey 171-1 and, therefore, strengthen the evidence of (undated) settlement activity on Hill Top.

ANNEXES

- A. Site Grid.
- B. Sawtry History Society Geophysical Survey Record Sheet.
- C. Additional Data Plot Display Options and Composite Plots.

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