Geophysics at Castle Cary

Dimmer Farm

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Abstract

The Bath and Camerton Archaeological Society undertook a Geophysical survey using fluxgate gradiometer and twin-probe resistance in the field immediately south of Dimmer Farm, 2 km south-west of Castle Cary, Somerset in April 2011. The survey covered an area of 0.65 ha. The existing earthworks visible were considered to be part of a deserted mediaeval village first noticed by the then County Archaeologist Mick Aston. Resistance surveying provided only very faint traces of these features, but magnetometry indicated the presence of crofts in the northern part of the surveyed area.

Acknowledgements

Sincere thanks go to Mrs Pamela Nobles and the Targett family for providing permission and access to their land.

Thanks also go to the Bath and Camerton Archaeological Society volunteers, as well as those members of the Castle Cary Museum who took part in the survey over the course of the day.

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Images courtesy of Google Maps and the National Monuments Record.

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1 Introductory

1.1 Location

Dimmer Farm lies approximately 2 km south-west of Castle Cary, Somerset, at grid reference ST625319. Figure 1.1 is a location map for this site. A large field immediately to the south west of the farm contains visible earthworks which can be seen in figure 1.2 and which were identified as a deserted medieval settlement by the then County Archaeologist Mick Aston (Aston 1978).

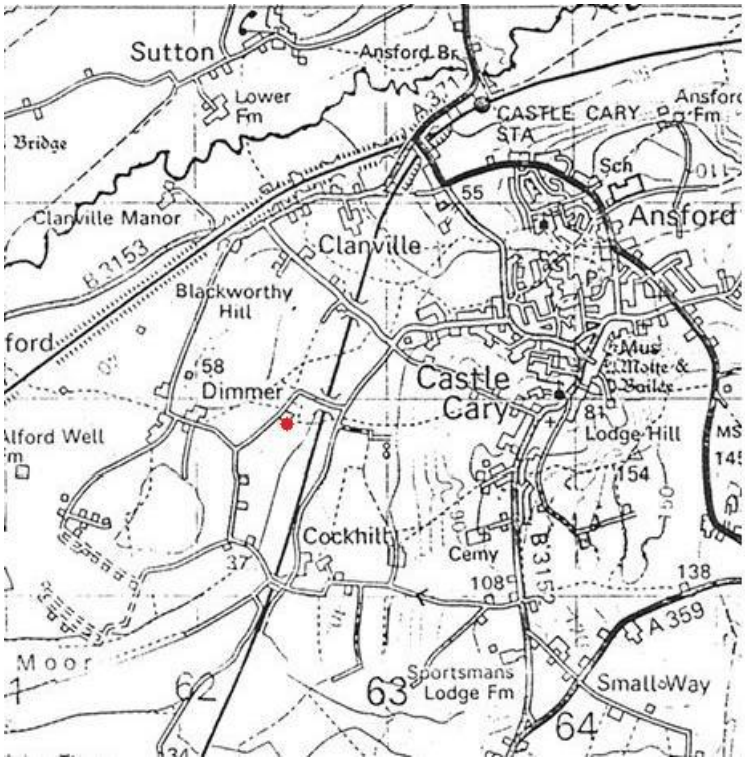


Figure 1.1. showing Dimmer farm

A geophysical survey was undertaken at the southern end of this field in April 2011 to try to verify this, figure 1.3 shows the approximate extent of the geophysical survey.

Topography and Geology

Dimmer is a large area in the west adjoining Alford parish consisting of scattered hamlets and the dispersed farmsteads of Dimmer. The area surveyed consisted of a large open field, with both Back Brook and the River Cary situated near it southern border. The area around Dimmer consists of the gleyed clays of the Fladbury series, which are poorly drained silty soils and derived from the parent beds of the Liassic series (Faxon 1998).

Figure 1.2 Aerial photograph of 1947 showing evidence of visible earthworks

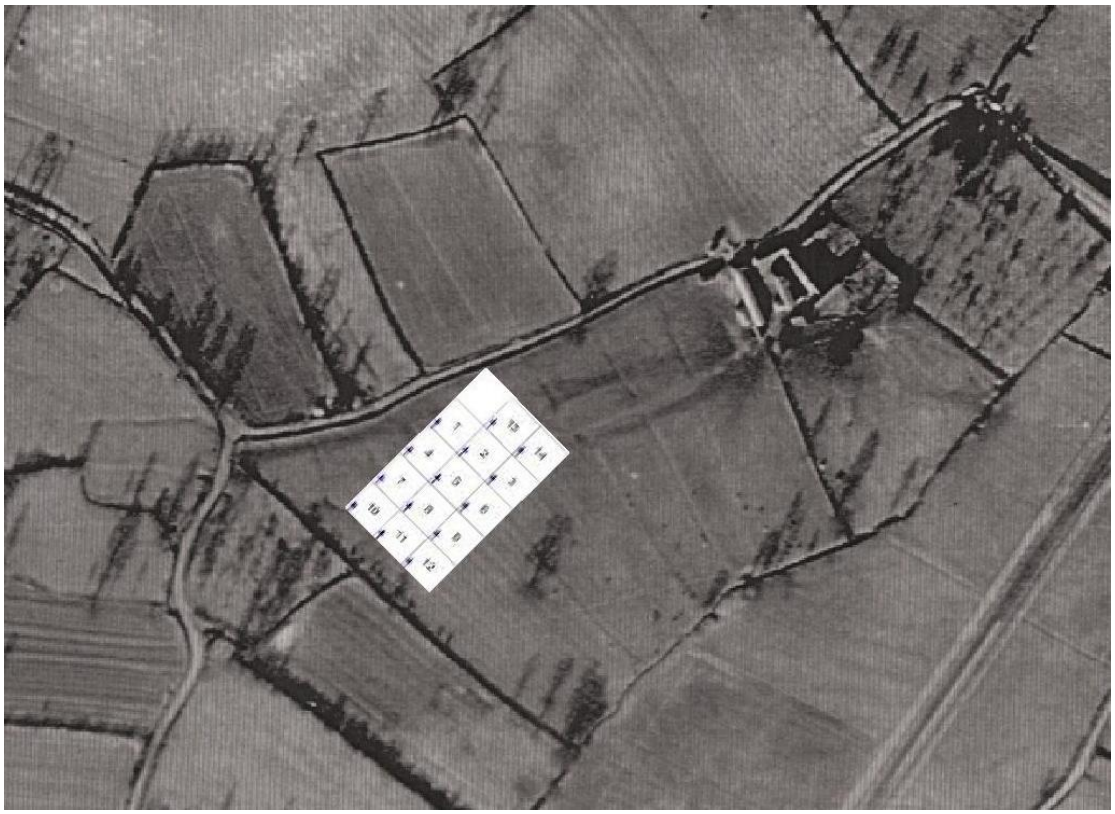


Figure 1.3 showing the extent of survey

1.2 Background

Previous archaeological watching briefs and excavations in Dimmer have recorded evidence of prehistoric occupation dating from the Bronze Age, Iron Age and Romano-British (SMR 11298, 14645, 15589, 19753 and 28467. The OS map records a military base which was constructed south west of Dimmer and consisted of dispersed structures with earth embankments together with circular water tanks, and twenty storage units. Each of these units consisted of four semi-circular iron and concrete huts with steel doors on deep foundations and were enclosed by brick and concrete blast walls, circular water tanks, accommodation, and other buildings (SMR 55402).

In 2002 a geophysics survey was undertaken at Dimmer Landfill site (SMR 16157) in which fourteen anomalies were identified including ditches, pits and a possible ring ditch, with further features extending beyond the survey area. No suggested dates were given to these features however, due to the lack of relationship between the anomalies.

The Victoria County History records that in 1558, a family named Dymer owned land in this area from around 1581. In 1601 the house at Gould's, later Higher Dimmer Farm, was built by John Cary, whose family were major tenants of the manor, but by the 18th century the former manorial lands at Dimmer become freehold including Dimmer farm, and new owners rebuilt the house and a barn.

In 1847 an Independent Minister obtained a licence for worship at his house in Dimmer but held his last service there in 1849. There was also a race course at Dimmer in the early 19th century.

1.3 Dates of Survey

The geophysical survey formed part of a wider project concerned with improving interpretation of historic sites in and around Castle Cary.

The survey was conducted on Tuesday 12th April 2011.

1.4 Personnel

The project was organised by Matthew Charlton of Enthuseit Ltd on behalf of Castle Cary Museum.

The Geophysical survey was undertaken by BACAS volunteers led by John Oswin and Owen Dicker. Assistance was given by members of the Castle Cary Museum including, Anne Brittain and Anne Webster

1.5 Scope of this report

This report concentrates on the survey conducted at Dimmer Farm, Castle Cary on April 12th 2011 by the Bath and Camerton Archaeological Society. It is part 3 of a trilogy of reports on geophysical survey at Castle Cary. There is no other direct relationship between this work and that contained in parts 1 and 2, which were centred on and around the castle site in the town.

2 The Equipment used

2.1 Grids

The areas to be surveyed were divided into 20 m squares. An area 80 m by 60 m was laid out towards the southern end of the field to the south of Dimmer Farm, and this was then sub-divided into 12 squares. A further 2 squares were added at the north-east end of this area, giving a total envelope of 100 m by 60 m. Grid north was 20 ° east of magnetic north.

All 14 grid squares were subject to magnetometer survey, only 4 were surveyed by twin probe resistance. They were numbers 13, 14, 2 and 3 of the magnetometer survey and are at the north-east corner. This is the area shown boxed in red on figure 2.1, which shows the order of survey of the grids by magnetometer.

Two points 40 m apart, shown as A and B on figure 2.1 were measured into trees, which were considered semi-permanent markers, so that the grid could be reconstructed at a later date.
One tree was just on the northern side of the ditch which is the southern bound of the field. This tree had a trunk which was pointed towards the north. The only other tree on this side of the ditch was dead. Measurement was made at ground level. The other tree stood alone in the middle of the field. It had a small indent in its trunk facing west, some 200 mm above ground level. Measurements were to the lower back of this indent. Measurement distances were:-

	To ditch tree	To lone tree
Point A	11.60 m	69.36 m
Point B	53.40 m	47.30 m

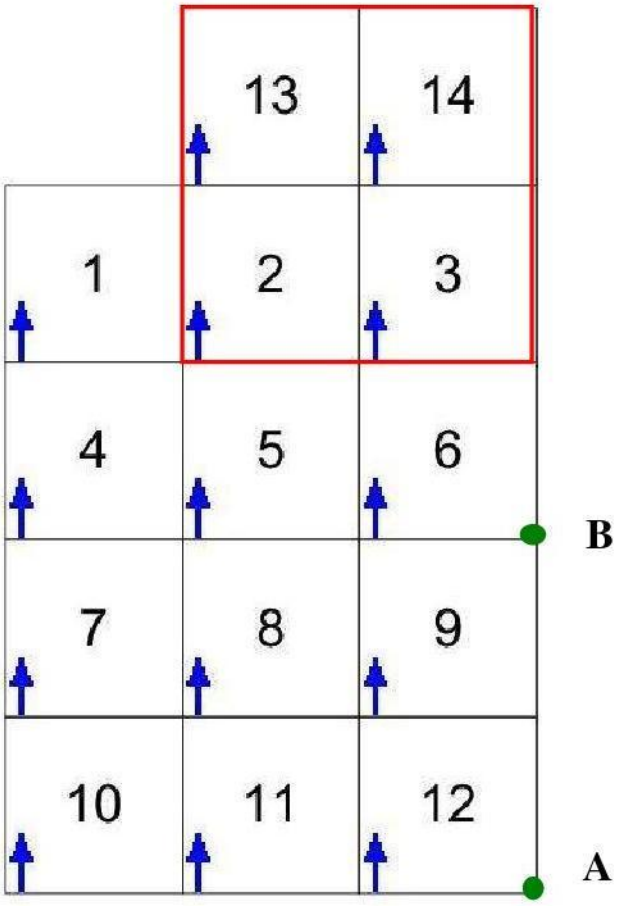


Figure 2.1 Order of grids of magnetometer survey

Given the dry, warm spring of 2011, the grass was already growing well by April, and this caused difficulties in moving tapes through long grass and also made markers very difficult to spot from 20 m away.

2.2 Magnetometry

The magnetometer used was a Bartington 601-2 twin fluxgate gradiometer. This has two separated detectors 1m apart, so allows two traverses to be done at once. It is illustrated in figure 2.2. It was set to take readings at 4 per metre at a pace of 1.0 m/s on lines 1 m apart. Top and bottom baselines had markers (flags and pegs respectively) set as aiming points for the operator. As with other sensitive magnetic detectors, the operator has to be magnetically clean, so the instrument is not suitable for general public use.

2.3 Twin probe resistance

The twin-probe resistance meter used was a TR/CIA device. It twin-probe is shown in figure 2.3. The meter set to take 2 readings per metre along traverses 1 m apart and triggered by making good electrical contact with the ground as it was moved between readings. It was moved along guide ropes with ½ metre marks sown into them, and the guide ropes were moved in turn along baselines with metre markings.

Figure 2.2. .Bartington magnetometer

2.4 Software

Magnetometer and twin-probe resistance data were processed using INSITE. This may be regarded generally as obsolete, but bacas prefers it for its very versatile grid mapping function. Data from the resistance meters were downloaded via bacas proprietary software and imported into INSITE. Data from the Bartington were downloaded by Bartington proprietary software and processed by a bacas proprietary de-stripe software before being imported into INSITE.

Figure 2.3 TR/CIA twin probe resistance meter

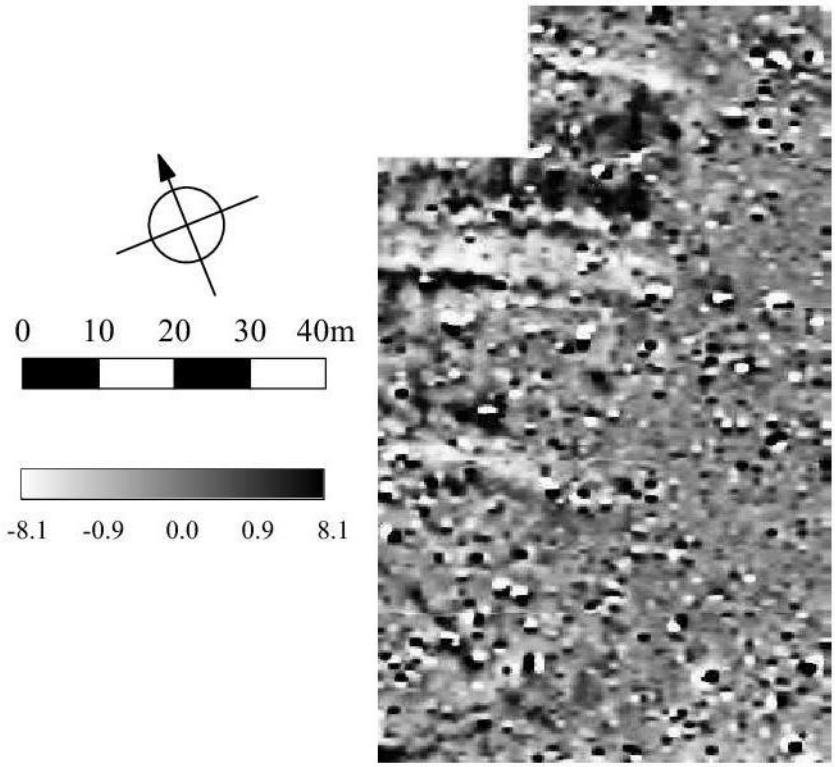
3 Survey results

3.1 Magnetometer

Fourteen grid squares were completed with the magnetometer, operating at normal data density of 4 readings per metre along traverses 1 m apart. The initial block of twelve grids was surveyed starting in the north-west, and the two additional grids to the north-east were added at the end.

The results are shown in figure 3.1. The plot is very noisy. Some of the dots may be pits but many look like metal spikes from buried ironwork. On the western side, there are long curved sections, about 5 m north-south, some 30 m east-west extending west off the plot. There is one at about mid-north, and a group of three at the northern end of the survey. These are taken to be crofts. Of these, the northern two have strong magnetic signals, particularly at their eastern end, which could represent tofts.

There is a faint sign of a curving ditch and large pit in the south-west corner of the survey.

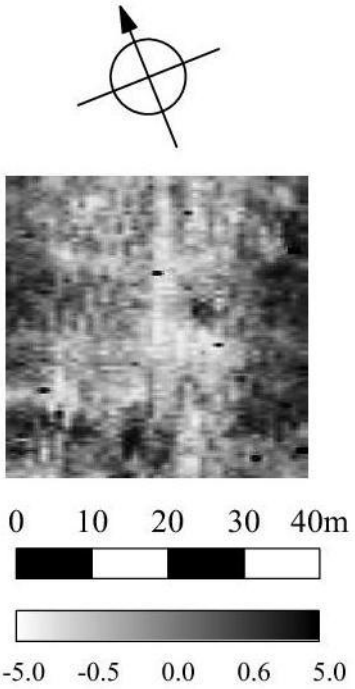


3.1 Magnetometer survey

3.2 Twin-probe resistance

Only the four grid squares at the north-eastern edge of the survey area were completed using twin-probe resistance as this is a much slower method than magnetometery. The results are shown in figure 3.2. All effects were very faint, and the contrast has been magnified to show any variation in resistance.

The dark areas to the west may indicate stonework associated with the tofts, but as there are also higher signals to the east where the magnetometry does not show any features, these may just be natural outcrops of rock. The pale area through the centre and the lines within it are probably signs of modern field drainage.



3.2 Twin-probe resistance survey

4 Discussion

The survey results suggested a large amount of noise in the magnetometer plot, and although some of the individual signals may represent pits or ancient fire sites, many have the look of iron spikes about them, suggesting that there could be a lot of debris in the field. Nonetheless, there were signs of crofts with tofts grouped together at the north end of the survey, which would correspond to a level about half way up the field. These appear to come to a common frontage level, but there are none opposite and no sign of a formal street. This would suggest that Dimmer was a hamlet rather than a village.

Note that the field hedge was curving in at an angle, so although it was some 30 to 40 m west of the survey area at the southern end, it was within 20 m of the survey area at the northern end, and grids further west than those done would not be complete. This would suggest that the crofts did not extend much further west than the survey area edge or that the hedgerow and road have been driven over part of the hamlet site.

These deserted medieval villages of the past often comprised of nucleated farms and cottages, with a field system which was often managed communally, creating an interdependency on farm and land holders, as well as an ecclesiastical independence with its own church. The existence of a hamlets and farmsteads such as Dimmer which lay within the parishes of villages were often not recorded before the 12th and 13th centuries, and even then, the place under discussion would have to be important enough to be mentioned (Aston 1985).

Although the survey only produced evidence of a group of three crofts see figure 4.1 and 4.2 at the northern end of the survey, there could be a number more to the north, as the farm was a full 100 m further north. Note however, that the hedge line continued to extend north-east and would encroach on all grids with 40 m or so. If that were the case, further crofts could only be found if they were offset further to the east.

Figure 4.1

4.2 Future work

It is clear from the aerial photograph of 1947 that there is evidence of features which include the ridge and furrow both north and south of the earthworks, as well possible building platforms and enclosures within the surveyed area. The survey results now confirm the evidence of some of these structures, and therefore it would be beneficial to survey the whole field, or at least that area to the west where a hedge has been removed, in order to gain the knowledge of the full extent of the hamlet.

Fig 4.2 showing the position of the crofts.

Given that the existing grid set-up can be recreated, this would take 2 to 3 days. This makes no allowance for surveying the field on the opposite side of the lane if this is found to encroach on any crofts. This also assumes that only a magnetometer survey is done.

There may also be benefit in doing an earthwork survey of those banks which can be discerned to see how these relate to the magnetometry.

These exercises would be best done when the grass is much shorter than it was in April and when the field is not required for grazing. Unfortunately the timescale of the project restricted any further work on this site, as its primary objective was to undertake a sample survey with the aim of providing a platform for future work.

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