

CPAT Report No 1123

Potential Pit Circles at Lymore and Coed Mynach, Powys

GEOPHYSICAL SURVEY



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

CPAT Report No 1123

**Potential Pit Circles at Lymore and Coed Mynach,
Powys**

GEOPHYSICAL SURVEY

R Hankinson

December 2011

Report for Cadw

The Clwyd-Powys Archaeological Trust

41 Broad Street, Welshpool, Powys, SY21 7RR

tel (01938) 553670, fax (01938) 552179

© CPAT 2011

cover: Geophysical survey at Lymore. Photo CPAT 3338-0018

CONTENTS

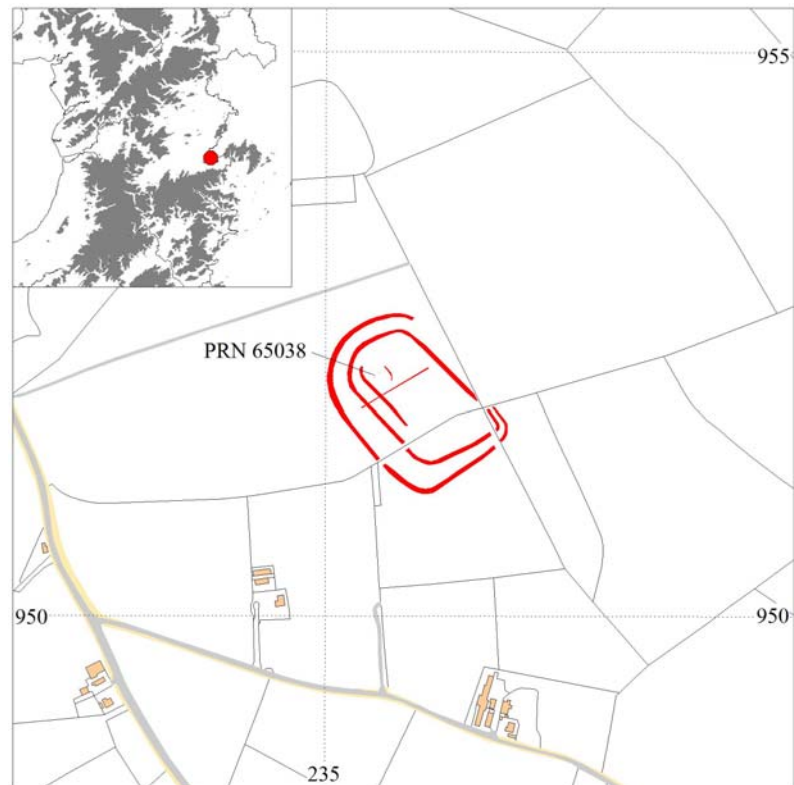
- 1 INTRODUCTION
- 2 LYMORE
- 3 COED MYNACH
- 4 CONCLUSIONS
- 5 ACKNOWLEDGEMENTS
- 6 REFERENCES

1 INTRODUCTION

- 1.1 The following report details a programme of geophysics carried out at two possible pit circles in Powys, as part of the prehistoric funerary and ritual project undertaken on behalf of Cadw. Both were identified as cropmarks from aerial photographs. The Lymore Park circle (PRN 65038, located at SO 23570 95192) is set in rolling terrain within the Vale of Montgomery and is about 1.5km to the south-east of the town, while that at Coed Mynach (PRN 4491, located at SN 95145 66689) lies about 2km south-west of Rhayader, on the valley floor of the Afon Elan.
- 1.2 The geophysical work was carried out using a dual-sensor Bartington Grad 601-2 magnetic gradiometer, which is capable of detecting variations in the earth's magnetic field caused by sub-surface archaeological features. The gradiometer has an on-board data logging device which enables readings to be taken at specific time intervals, and these readings are taken along parallel traverses within a grid of known size, which allows them to be correlated with geographical locations.
- 1.3 Each site was surveyed as a single area, comprising a series of grids each measuring 20m by 20m. Intervals between the traverses in each grid were 0.5m and the speed of each traverse was controlled to ensure that readings were taken every 0.25m, thereby giving a total number of 3,200 readings per 400m² grid. The readings were downloaded and processed using ArcheoSurveyor software, and a greyscale plot produced showing the features revealed. The main functions used in the software were: i) *Despike* to remove the effects of near-surface iron objects, ii) *Destripe* to remove any directional variation between traverses, and iii) *Clip* which removes high and low readings thereby allowing fine detail to be observed in the resulting plot.
- 1.4 Prior to the commencement of work at each site, the survey grids were laid out in a block and this was subsequently located in relation to nearby field boundaries by total station surveying. The survey area was then related to the Ordnance Survey National Grid as a best fit, which enabled the co-ordinates of fixed points on the survey grid to be determined. The greyscale images of the surveys produced in ArcheoSurveyor were registered to the Ordnance Survey grid using these co-ordinates, allowing any features that were visible to be accurately mapped.

2 LYMORE PARK PIT CIRCLE PRN 65038 (SO 2357095192)

- 2.1 A group of six pits apparently grouped around a central one had been identified within a prehistoric enclosure near Lymore Park, Montgomery, from a CUCAP aerial photograph (BUG 092). The photograph suggested that the pits were regularly and widely spaced and this, together with the presence of the central pit, had led to the suggestion that the cropmarks might represent a possible ritual site, rather than a domestic structure (Gibson 2005, 167).
- 2.2 The survey covered eleven 20m square grids, covering an area of 0.44ha and centred on the estimated location of the pit group. The greyscale plot of the results is appended below as Fig. 2 and the interpretation of the results is depicted on Fig. 3.



© Crown Copyright and database right 2011. All rights reserved. Welsh Assembly Government. Licence number 100017916.
© Hawlfraint y Goron â hawl gronfa ddata 2011. Cedwir pob hawl. Llywodraeth Cynulliad Cymru. Rhif trwydded 100017916.

Fig. 1: Location of the Lymore Park Pit Circle

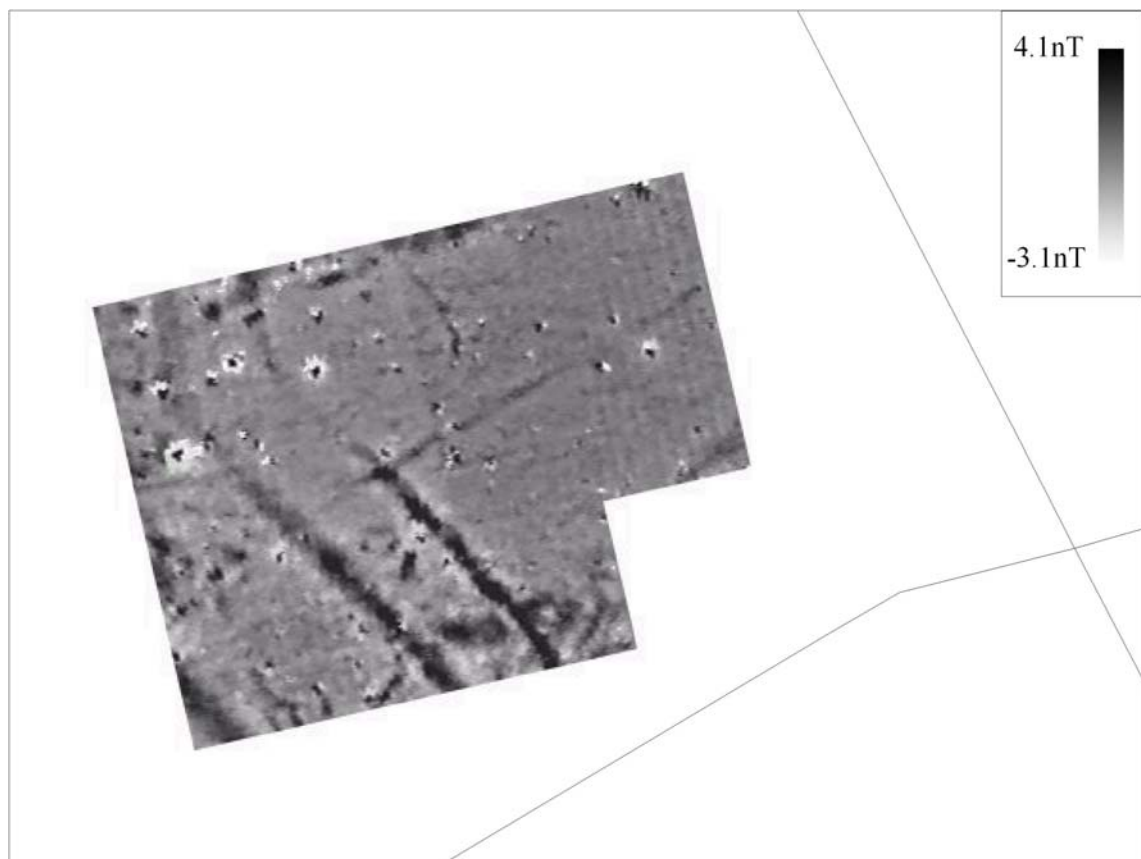


Fig. 2: Greyscale plot of the geophysics results at Lymore Park (Scale 1:1,000)

- 2.3 A number of features were immediately apparent on the plot of the geophysics results, primarily the three ditches (1-3) forming the defensive circuit of the enclosure. The outermost ditch (1) appeared to be the largest, with a width of about 4.5m, while the two inner ditches (2 and 3) were both about 3.0m wide. The outer ditch was also more widely spaced from the central ditch than the inner. All the ditches necessarily extended beyond the boundary of the survey area, but could be matched with features from aerial photographs. A further ditch (4) had a markedly different character, measuring only 1.2m wide and extending for at least 60m on an east-north-east/west-south-west alignment. This ditch evidently belonged to a different phase of activity and may represent a former field boundary of medieval or post-medieval date. A further curved ditch (5), about 20m long and 1.5m wide, could represent an internal division within the western corner of the enclosure.
- 2.4 A number of possible pits or localised anomalies can also be recognised, but for the purposes of this report only those in the immediate area of the postulated pit circle are described below. It is also probably significant that this group appears to fall within the subdivision occupying the western corner of the enclosure, as defined by ditch 5. At least eight features (6-13) can be recognised as discrete anomalies of varying appearance. Anomalies 6, 7, 8, 10 and 12 appear to represent pits about 1m in diameter, perhaps with hints of thermo-remnant magnetism, while anomalies 9 and 13 seem to be pits of similar size whose fill has probably remained unburnt. The remaining anomaly (11) is clearly more magnetic in character and may be a pit associated with more intensive burning; its size cannot be readily determined owing to the wider magnetic effect.

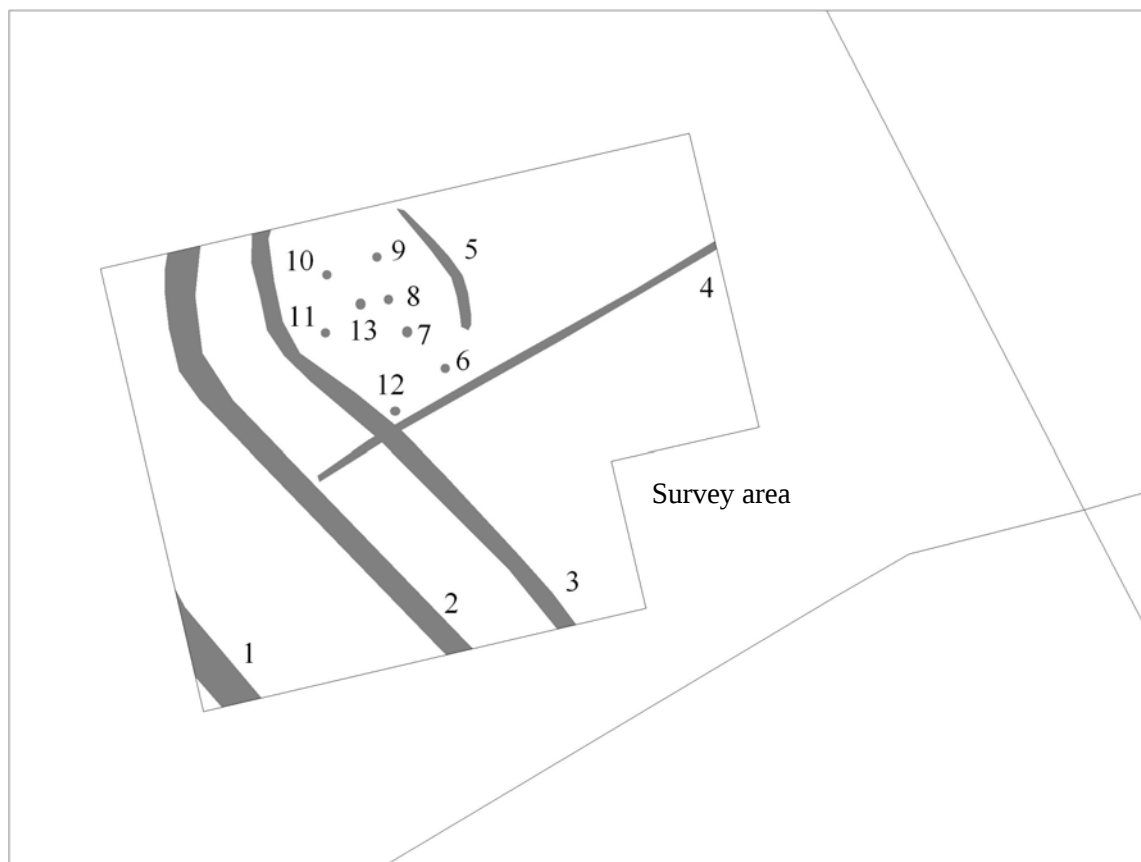


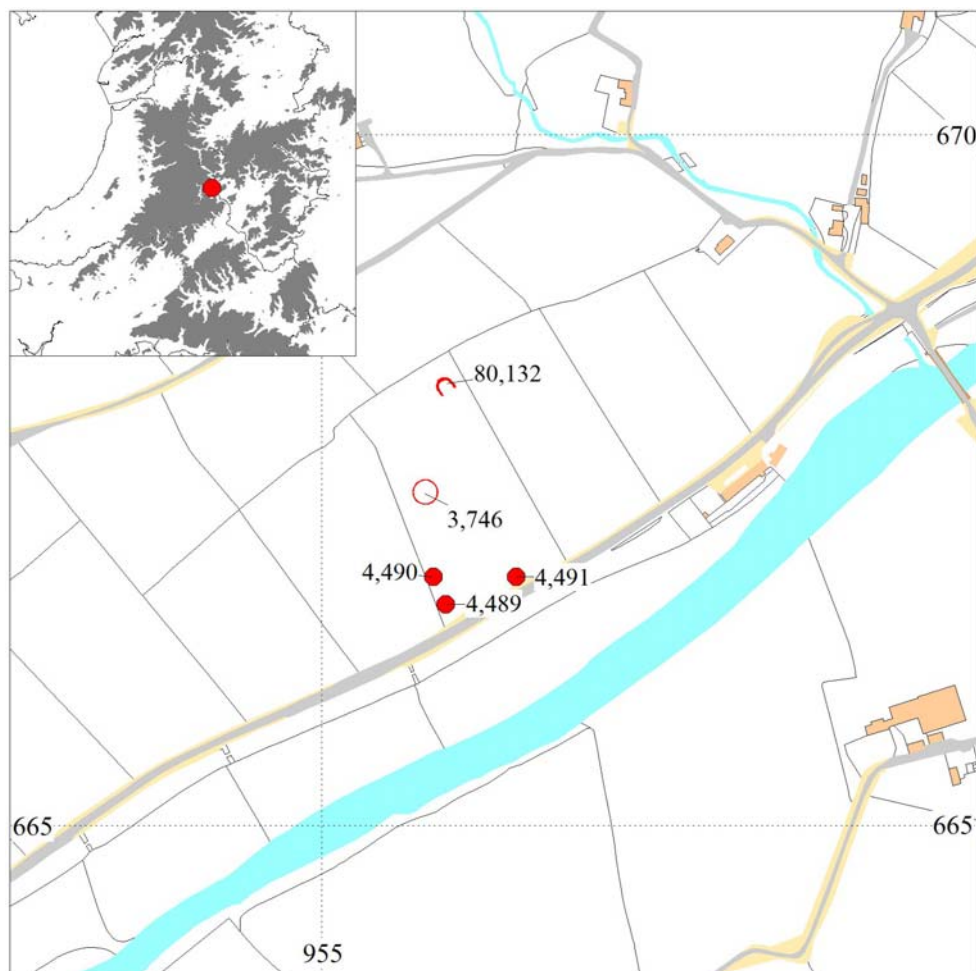
Fig. 3: Interpretation of the geophysics results at Lymore Park (Scale 1:1,000)

- 2.5 A number of the pits described above appear to represent those visible on the aerial photograph, specifically numbers 7, 9, 10, 11 and 13. However, these do not describe the expected circle and

it is perhaps more likely that they relate to some sort of dwelling within the subdivided section of the enclosure defined by ditch 5. In an attempt to resolve the dichotomy between the cropmarks visible on the Cambridge aerial photograph and the geophysics, the photograph was rectified and the cropmarks plotted against the Ordnance Survey mapping. This suggested that the apparently circular arrangement of pits was the result of visual distortion resulting from the oblique angle of the photograph and the fact that the area in question lies on and near the top of a local knoll.

3 COED MYNACH PIT CIRCLE PRN 4491 (SN 95146668)

- 3.1 A possible pit circle is visible as a cropmark on a CUCAP aerial photograph (ASR 6), which shows it to be about 16m in diameter, with at least seven visible irregularly spaced pits. It appears to be associated, at least spatially, with a group of prehistoric funerary and ritual monuments, which have been observed on aerial photographs within the same field.



© Crown Copyright and database right 2011. All rights reserved. Welsh Assembly Government. Licence number 100017916.
© Hawlfraint y Goron â hawl gronfa ddata 2011. Cedwir pob hawl. Llywodraeth Cynulliad Cymru. Rhif trwydded 100017916.

Fig. 4: Location of the Coed Mynach Pit Circle

- 3.2 The survey consisted of four 20m square grids, covering an area of 0.16ha that included the assumed location of the pit circle. The greyscale plot of the results is reproduced on Fig. 5, above, and the interpretation of the results is depicted on Fig. 6.

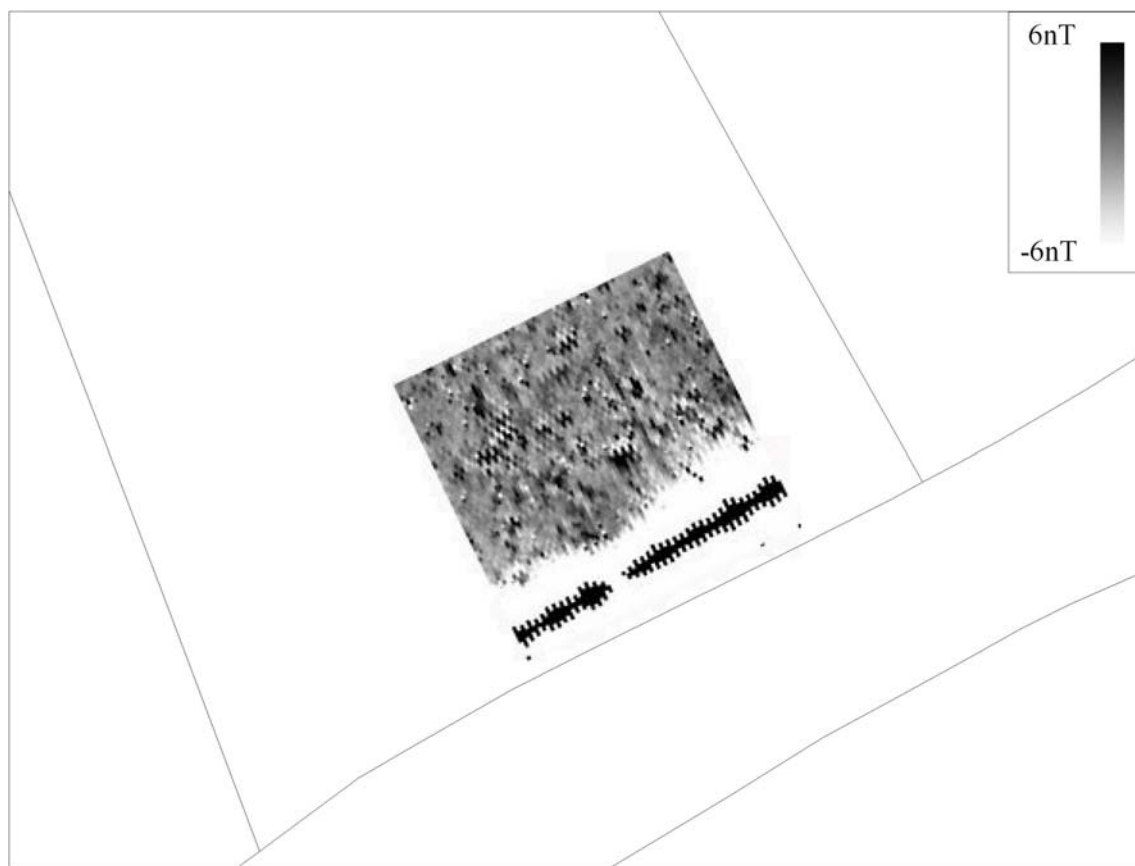


Fig. 5: Greyscale plot of the geophysics results at Coed Mynach (Scale 1:1,000)

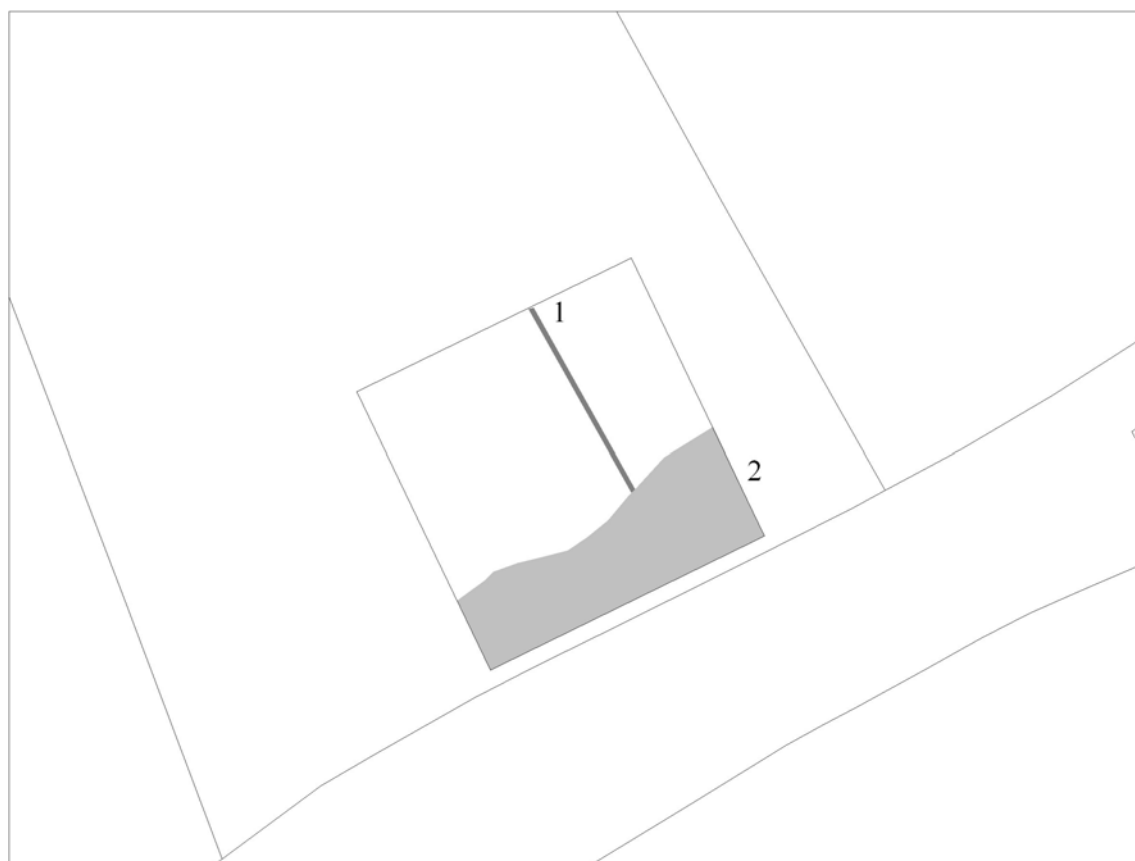


Fig. 6: Interpretation of the geophysics results at Coed Mynach (Scale 1:1,000)

- 3.3 The greyscale plot demonstrates that at least a quarter of the surveyed area was affected by the presence of a large magnetic anomaly (Fig. 6, 2) running along its south-east edge. It appears that a fairly large iron pipe has been installed immediately adjacent to the south-east edge of the field and the magnetic influence of this extends for up to about 15m to the north-west from the corresponding edge of the survey. The only anomaly that seems definitely to represent an artificial sub-surface feature is anomaly 1, which is a ditch about 0.8m wide that runs north-west/south-east for at least 28m. This is probably indicative of a redundant land division, given its identical alignment with the modern field boundaries. No trace of evidence relating to the pit circle was found, but this was no doubt due to the masking effect of anomaly 2; the question of whether the site is an authentic pit circle therefore remains unproven.

4 CONCLUSIONS

- 4.1 The two geophysical surveys have produced rather mixed results. In the case of Coed Mynach, the area in which the potential pit circle is located seems to fall entirely within the magnetic influence of a large iron pipe, and this has effectively masked the potential magnetic response from the pits identified on the aerial photograph. It is not known when the pipeline was installed, but there is no evidence of it on the aerial photograph. Although no further information has been gained by this survey it would no doubt be possible to investigate the nature of the evidence on the aerial photograph by other methods, including excavation.
- 4.2 The survey at Lymore was rather more successful, producing good results for the prehistoric enclosure. The geophysics confirmed that there are three, probably concentric, ditches forming the western defences of the enclosure, although it is currently recorded in the regional HER as bivallate. In this, it appears to confirm the plot of the site by Whimster (1984, 103, No 2) which has three ditches forming the west side of the enclosure, although, in contrast to the Whimster plot, the geophysics clearly shows that the outermost ditch of the three is notably wider and is more widely spaced from its neighbour than the innermost ditch.
- 4.3 With regard to the putative pit circle at Lymore Park, eight possible pits were identified by the geophysical survey, although these did not have the regular appearance which had been suggested by cropmark evidence. While it is possible that some of the pits seen on the photograph were not identified by the survey, this seems unlikely since the response from the linear features was generally good. Following the rectification of the photograph it was evident that perhaps five of the marks corresponded with pits seen in the geophysics results, although these did not describe the expected circle. It seems that the oblique angle of the aerial photograph and the nature of the local topography leads the eye to create a circle where it is unlikely that one exists. It is interesting, however, to note that the pits lie within a subdivided section of the enclosure and some may therefore relate to a contemporary post-built structure.

5 ACKNOWLEDGEMENTS

- 5.1 The writer would like to thank his colleague Ms W Owen for her assistance with the geophysics, and the various landowners and occupiers for their permission to carry out the surveys, specifically, Mr T Till on behalf of Powis Estates, the owners of Lymore Park, and the occupier Mr R Jones of Llwynobin Farm, Montgomery; and Messrs J and W Owen of Aberceithon Farm, the owners of Coed Mynach.

6 REFERENCES

Gibson, A, 2005. *Stonehenge and Timber Circles*, Tempus.

Whimster, R, 1984. *Cambridge University Cropmark Project: Part 1, Welsh Marches and Trent Valley survey areas*, RCHME.

Aerial photographic sources

CUCAP ASR 006, taken in 1967

CUCAP BUG 092, taken in 1975