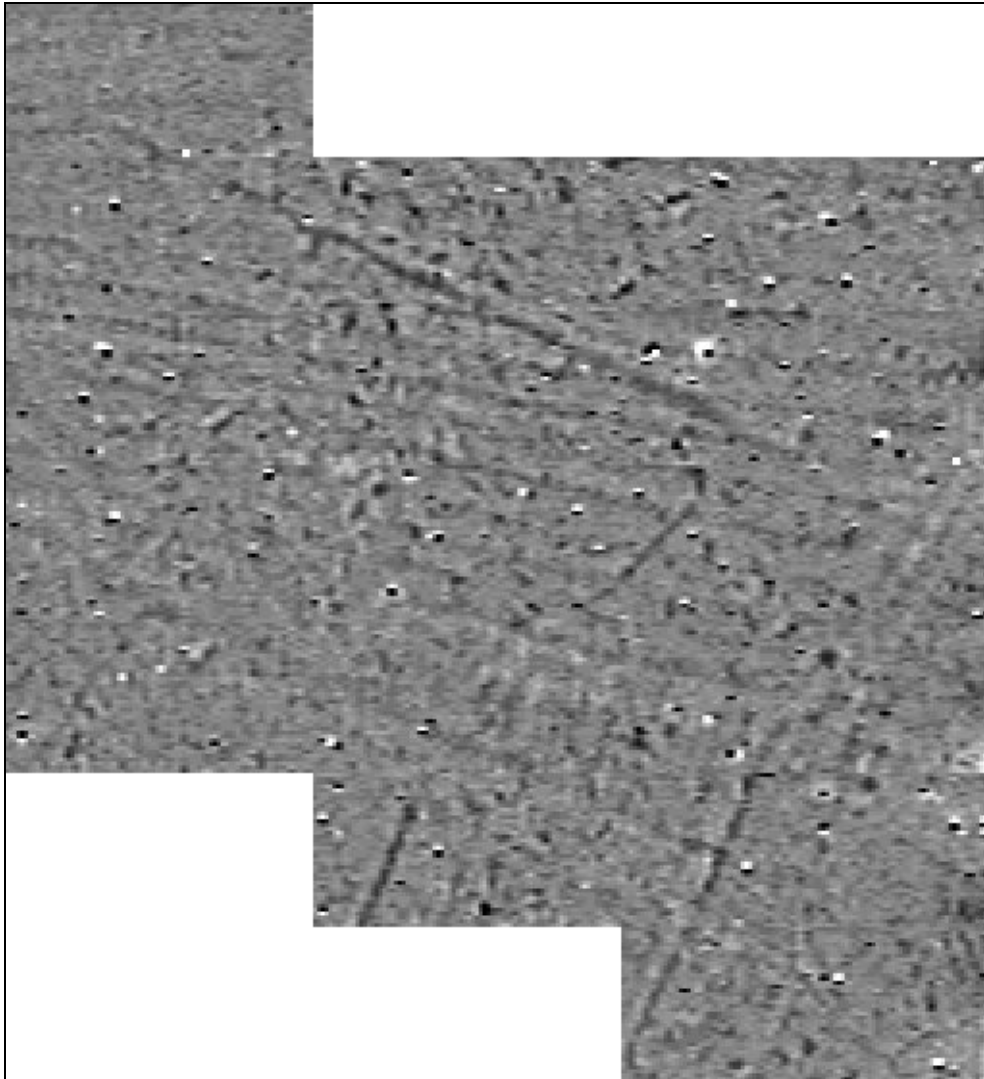


CPAT Report No 1035

Dyffryn Lane Cursus, Berriew

GEOPHYSICAL SURVEY 2009-10



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

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GEOPHYSICAL SURVEY 2009

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Report for Cadw

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1 INTRODUCTION

- 1.1 The complex of prehistoric funerary and ritual monuments at Dyffryn Lane has attracted considerable archaeological interest over many years, and more recent work in particular has helped to shed light on the dating and sequence of some of the major monuments. The complex is currently recognised as extending over an area of at least 1km by 0.7km, and includes the long barrow and Neolithic enclosure at Lower Luggy, a henge and a large, possibly ritual pit at Dyffryn Lane, the Maen Beuno standing stone, and at least fifteen upstanding barrows and cropmark ring ditches (see Fig. 7).
- 1.2 Many of the prehistoric monuments were first recognised as cropmarks from aerial reconnaissance, a process which has gradually increased our knowledge and understanding of the complex as a whole. The most recent discovery came in late June 2009 when an elongated, rectangular enclosure was identified as a positive cropmark in a field of ripening cereal at SJ 19810147.



Plate 1 The Neolithic cursus near Dyffryn Lane. Photo CPAT 09-1-02

- 1.3 The cropmark was first photographed by Toby Driver of RCAHMW on 29 June 2009, and then again by the writer on 2 July. Once the photographs had been rectified and plotted against Ordnance Survey mapping it became clear that they aligned with the cropmarks of two parallel ditches which had been known for some years in the field to the north of Dyffryn Lane, close to the junction with the A483 (Fig. 1). The form of these two sets of cropmarks suggested that the site was likely to be a Neolithic cursus monument, and as such a potentially important addition to the complex at Dyffryn Lane.
- 1.4 Coincidentally, at the same time that the potential cursus was identified a new watermain was being constructed on behalf of Severn Trent Water (STW) which was about to cut through the newly revealed cropmark site. An excavation was undertaken rapidly by CPAT, with funding from STW, which investigated both ditches and produced charcoal from the lower fills of one ditch confirming a Neolithic date.

- 1.5 During 2008-09 CPAT had commenced work on a project to investigate potential cursus monuments in mid and north-east Wales as part of the on-going Cadw-funded work on prehistoric funerary and ritual monuments. This project was extended into 2009-10, at which time it was intended that trial excavations would be conducted on a potential cursus at Gerwyn Fechan, south of Wrexham. By September 2009 it became clear that access to this site would not be available until the following year and a proposal was therefore presented to Cadw to reallocate funding to allow a programme of geophysical survey to be undertaken at Dyffryn Lane in an attempt to identify the south-eastern terminal of the cursus. The proposal was approved and the survey was undertaken in two phases, in October 2009 and January 2010.



Fig. 1 Plan of Dyffryn Lane Cursus and other cropmarks showing the location of excavated sections and geophysical surveys
(A – magnetometry; B – high resolution magnetometry; C – resistivity)

2 EXCAVATION SUMMARY

- 2.1 The excavations, which were undertaken in July 2009, investigated a strip around 3m in width, cutting through the cursus at a slight angle, following the line of the new watermain. Rapid cleaning revealed no evidence for any internal features and attention was therefore focused on the two ditches.



Plate 2 South-east-facing section of Ditch 7. Photo CPAT 2897.024

- 2.2 The north-eastern ditch (7) varied between 2.3m and 2.8m in width, and had an unusual profile with a flat 'shelf' up to 0.6m wide on the north-eastern side, at a depth of around 0.42m below the surface of the natural subsoil (Fig. 2; Plate 2). The south-western side of the ditch was fairly steep-sided, with a narrow base at a depth of about 0.8m. The basal fill (12) consisted of an iron-panned, grey-brown silty clay with frequent stones up to 50mm, while the later fills (8-10) consisted of silty clays with varying quantities of small stones and very occasional charcoal flecking. A layer of stiff yellow brown clay (11), c. 5mm thick, lay directly on top of the shelf on the north-eastern side of the ditch and contained several small fragments of charred hazelnut shell which produced an AMS date calibrated to 3958 to 3779 BC at the 95% confidence level. A layer of stiff yellow-brown clay (11), c. 5mm thick, lay directly on top of the shelf on the north-eastern side of the ditch and contained several small fragments of hazel charcoal which produced a radiocarbon date calibrated to 3658 to 3516 BC and 3398 to 3384 BC at the 95% confidence level.

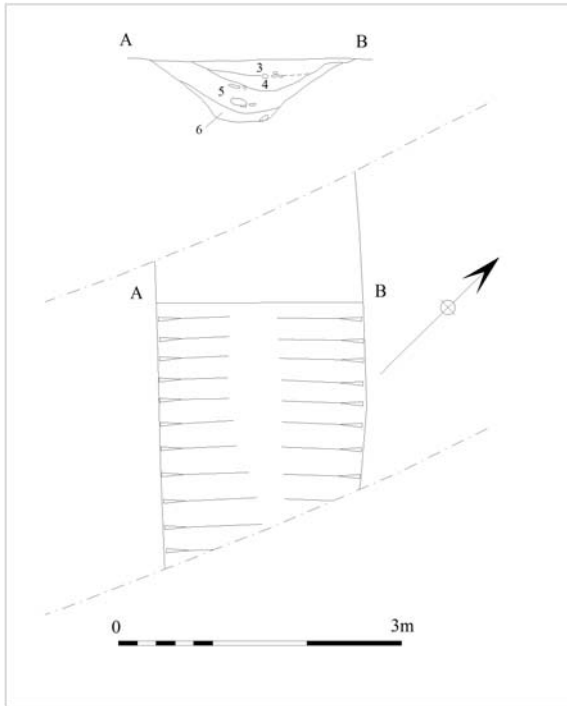


Fig. 2 Plan and section of Ditch 2

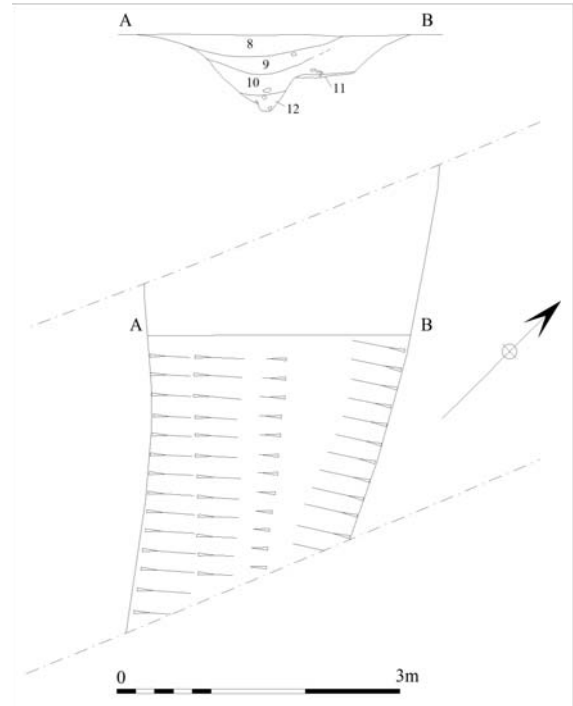


Fig. 3 Plan and section of Ditch 7

2.3 The south-western ditch (2) was around 2.2m wide and up to 0.65m deep with fairly evenly sloping sides and a rounded but uneven base (Fig. 3; Plate 3). The basal fill (6) consisted of a firm silty clay with frequent small stones and was sealed beneath a layer of grey brown silty clay (5) containing variable quantities of stone and tip lines which indicated that the fill had been predominantly derived from the south-west, suggesting an external bank. A small fragment of charred hazelnut shell was recovered from context 5 which produced an AMS date calibrated to 1040 to 1214 AD at the 95% confidence level. The upper fills (3-4) were of silty clay with some small stones and very occasional charcoal flecking.

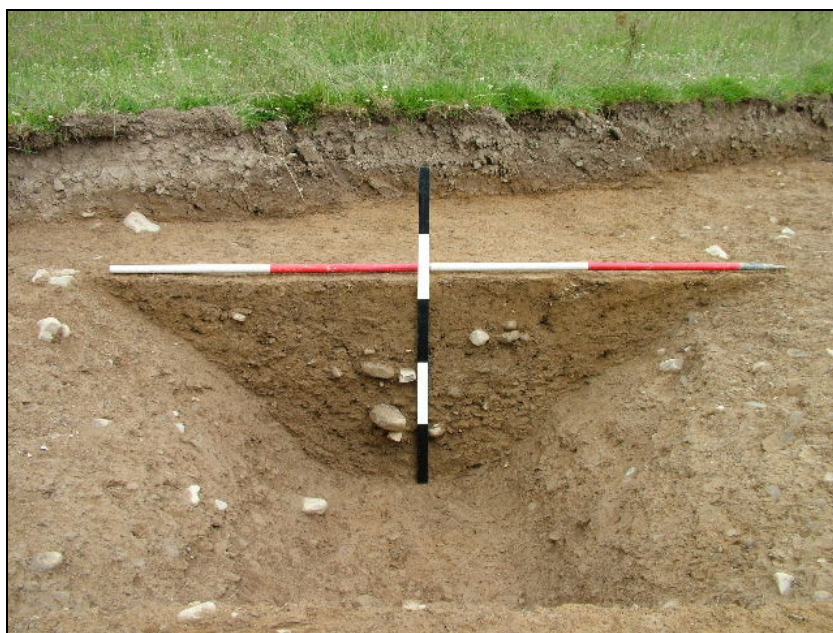


Plate 3 South-east-facing section of Ditch 2. Photo CPAT 2897.011

3 MAGNETOMETER SURVEY

- 3.1 In an attempt to identify the south-eastern terminal a magnetometer survey was undertaken by CPAT in October 2009 within the field which lies in the angle between Dyffryn Lane and the A483. Cropmarks had already defined at least 160m of the cursus to the south-east of the A483, although these did not extend as far as the eastern boundary of the field. The adjacent field to the east has produced excellent cropmark evidence over several seasons, including a timber structure within a post-built palisade, which has been interpreted as either an early medieval hall, or possibly a Neolithic house or mortuary structure. The clarity of cropmarks in this field indicated that the cursus was unlikely to extend this far to the south-east where it would surely have been spotted.
- 3.2 The survey used a Geoscan FM36 fluxgate gradiometer, initially based on grids measuring 20m by 20m, with intervals between the traverses of one metre. The speed of each traverse was controlled such that readings were taken every 0.5m, thereby giving a total number of 800 readings per 400m² grid. The eastern side of the survey was later repeated with grids measuring 10m by 10m, and intervals between the traverses of 0.5m, in an attempt to improve the definition of the results. Readings were then taken every 0.25m, giving a density of readings four times that of the original survey. The results from the more detailed survey were, however, no more informative with regard to the cursus terminal and have not been reproduced here.

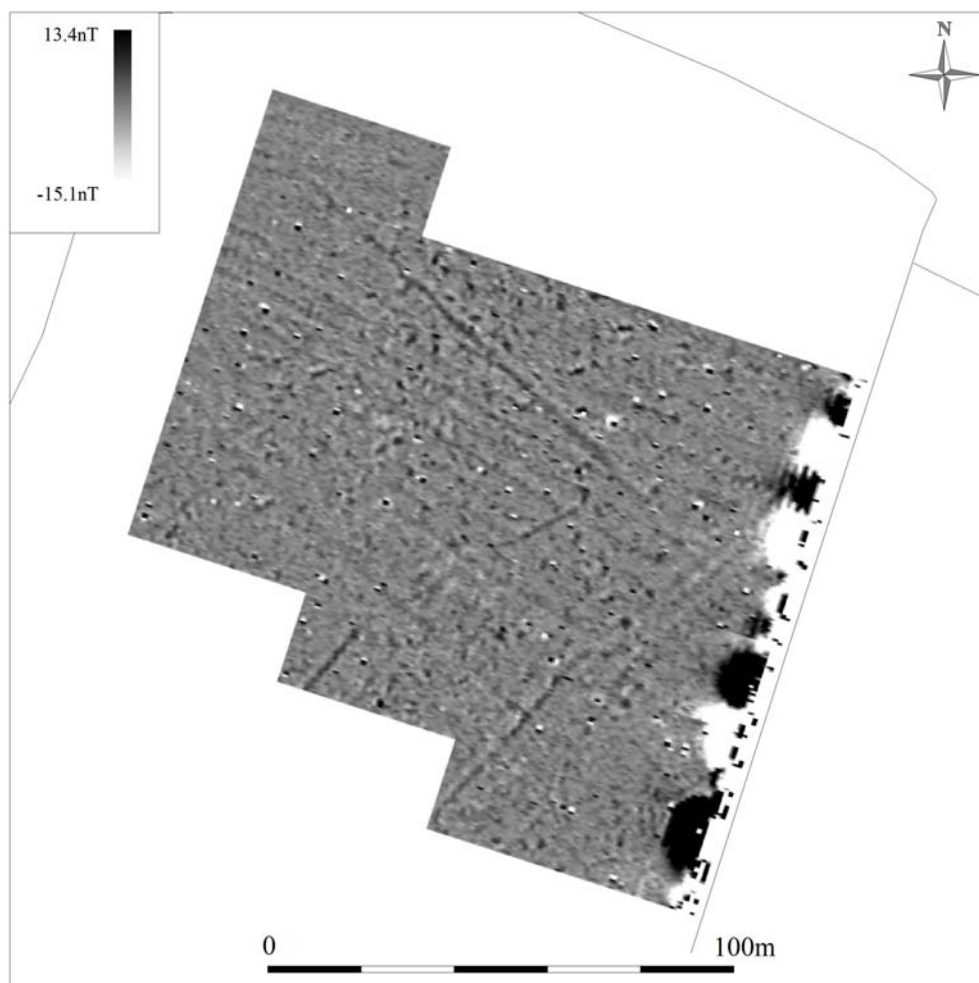


Fig. 4 Processed greyscale plot of the magnetometer survey

- 3.3 The survey successfully identified both ditches of the cursus, lying between 47m and 50m apart and visible within the survey area for around 118m, the south-eastern extent coinciding with a series of ditched features aligned north-east to south-west which are assumed to be part of a former field system (Fig. 4). Unfortunately, significant disturbance from the post and wire fence that edged the field severely limited the effectiveness of the survey along the boundary, although there was the hint of a curving section of ditch which could be the southern corner of the cursus terminal.
- 3.4 Several other linear ditches were identified by the survey, all of which may relate to former field boundaries, as well as evidence for ridge and furrow cultivation aligned west-north-west to east-south-east with the furrows around 5.5m apart.

4 RESISTIVITY SURVEY

- 4.1 An electrical resistance survey was conducted by ArchaeoPhysica in March 2010, on behalf of CPAT, covering the presumed south-eastern end of the cursus in a further attempt to identify a terminal (Fig. 5). The survey produced clear evidence for both cursus ditches, demonstrating that the south-western ditch in particular extended further to the south-east than had been apparent in the magnetic data, beyond the presumed field boundary ditches. There was, however, no conclusive evidence for a terminal, both ditches appearing to come to an abrupt end. The survey also identified further narrow ditches which could be associated with a former field system, as well as a number of small pits (Lewis and Roseveare 2010).

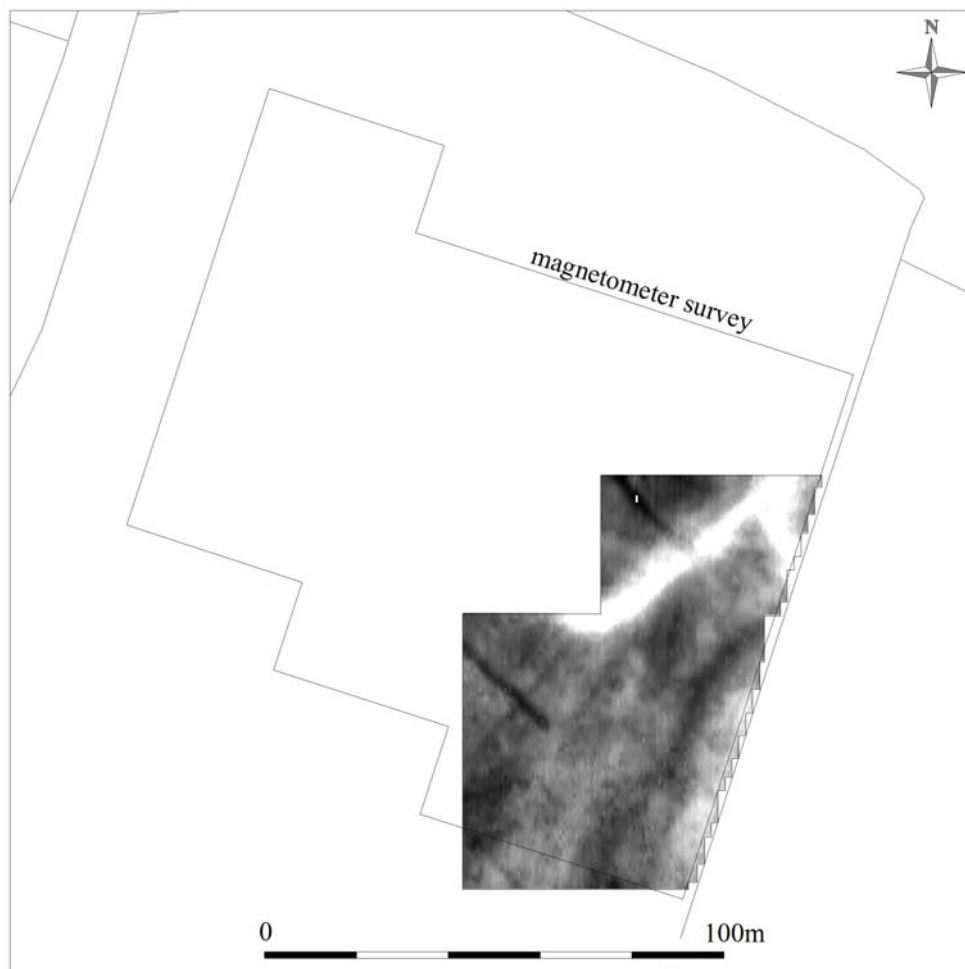


Fig. 5 Greyscale plot of processed resistivity survey results, courtesy of ArchaeoPhysica

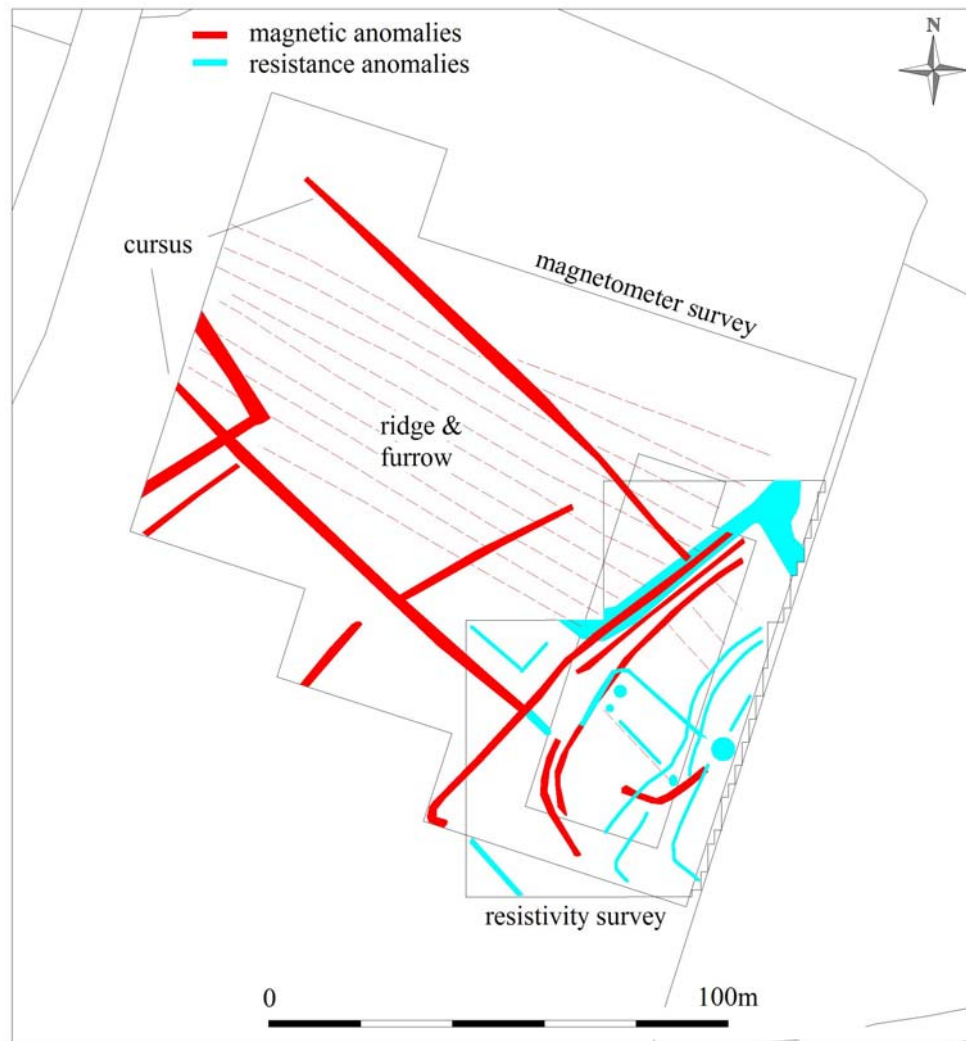
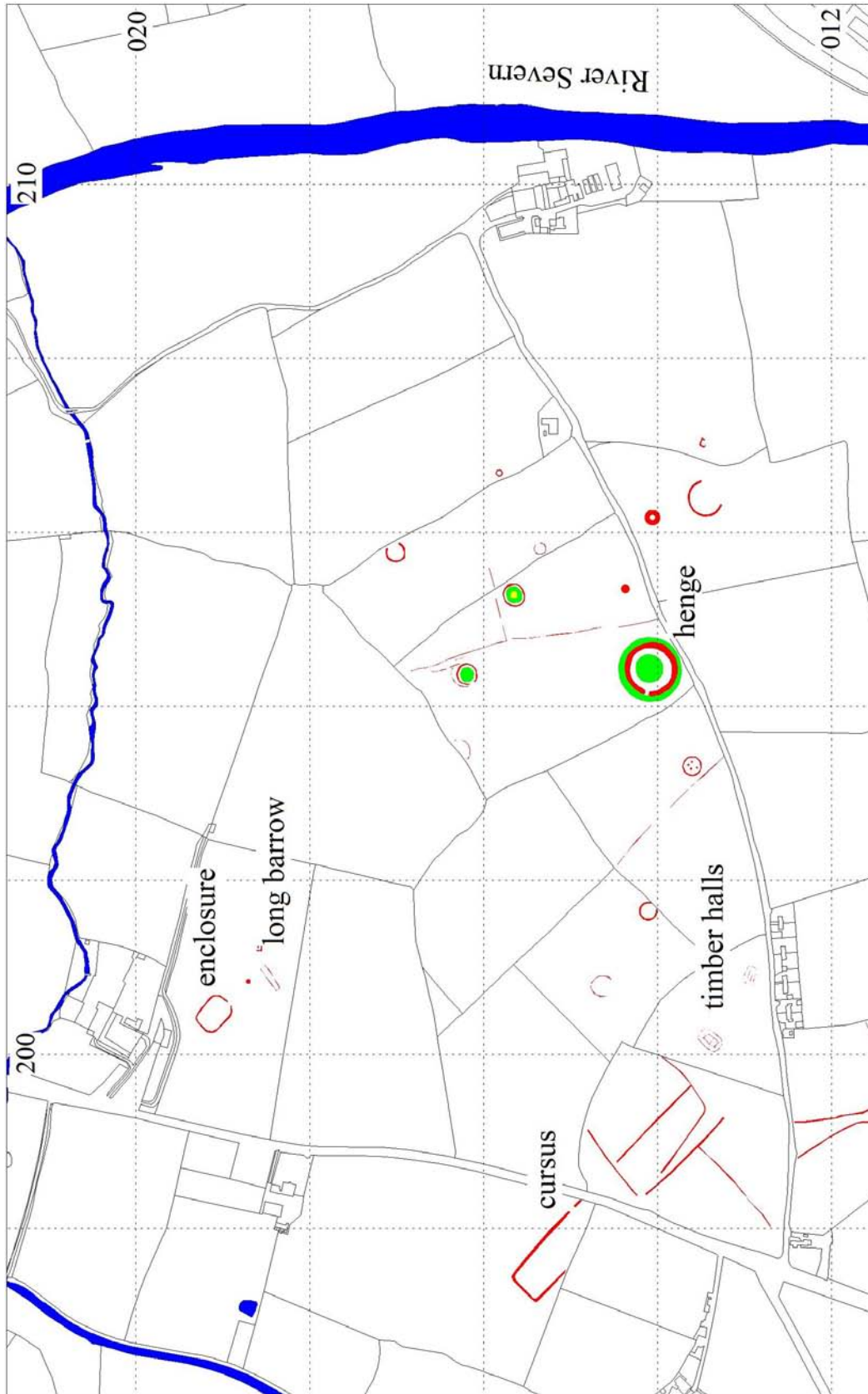


Fig. 6 Interpretation of the combined results from the geophysical surveys

5 DISCUSSION

- 5.1 These geophysical surveys have added further detail to the plan of the newly discovered cursus at Dyffryn Lane. Cropmark evidence from July 2009, together with previous aerial reconnaissance, had already identified the north-western terminal of a cursus around 310m in length. The cropmarks extend over two fields, separated by the A483, although none of the available photography shows any suggestion of a south-eastern terminal. The adjacent field to the east has produced excellent cropmarks in several seasons, including a post-built timber hall which may be early medieval, or possibly Neolithic in date. There is, however, no indication that the cursus extends into this field. The results from the magnetometer survey were limited by the presence of a metal fence forming the boundary between the fields, and although there is a suggestion of a curving ditch which could be part of the terminal, this is far from clear. The resistivity survey, however, produced clear results for the cursus with both ditches appearing to come to an abrupt end and no indication of a terminal. There is clearly a need further to investigate this end of the cursus and a programme of trial excavation would appear to be the best hope of resolving the issue.
- 5.2 The results from the excavations conducted in July 2009, shortly after its discovery, have demonstrated that the north-eastern ditch was 2.3m to 2.8m wide and 0.8m deep, with a profile

- which included a shelf along the north-eastern edge at a depth of 0.42m below the surface of the subsoil. The south-western ditch was more regular, around 2.2m wide and 0.65m deep. No artefactual evidence was discovered, although fragments of charcoal were recovered from the north-eastern ditch which produced radiocarbon dates of 3960-3780 BC and 3660-3520 BC or 3400-3380 BC. However, it should be borne in mind that although the charcoal was recovered from the ditch fill this does not necessarily provide a date for the construction of the monument.
- 5.3 A single date of 1040-1214 cal. AD was forthcoming from the south-western ditch, which appears to be anomalous, although significant worm activity was noted during the excavation and the charcoal could therefore have been intrusive. Remnants of medieval stripfields survived in this area until the second half of the 18th century and are depicted on an estate map of the Berriew area from 1764. Although the map itself is not metrically accurate, it has been possible to rectify it against a modern map base, the results from which demonstrate that the ditches of the presumed cursus follow a different alignment to the medieval field pattern. This is reinforced by the results from the magnetometer survey, which revealed traces of ridge and furrow following the same alignment as the former field system.
- 5.4 The dates from the north-eastern ditch, together with a review of the available aerial photography for the area in question corroborate our belief that the ditches are part of a Neolithic cursus at least 310m in length and between 38m and 53m wide, with a squared terminal at the north-west end. Perhaps significantly, the terminal appears to enclose a prominent elongated rise which may be a natural feature. The south-eastern terminal ditch has yet to be located, although the monument is unlikely to extend much further to the south-east as there is no trace of the ditches extending into the adjacent field which has produced very clear cropmarks in previous years.
- 5.5 Cursus monuments are characterised by roughly parallel banks and ditches, with the more complete examples having terminals at either end, forming elongated enclosures, some with central linear mounds. Excavations in England have dated them to the Neolithic, between 4,000 and 2,500 BC. They take their name from the Latin for 'racecourse', and are so named because early antiquaries believed them to have been used by the Ancient Britons for racing their chariots, a theory which has now been dismissed. Their true purpose, however, remains a mystery, although it is generally believed that they served as routeways for ceremonial processions.
- 5.6 One of the few cursus monuments to have been confirmed in Wales lies 3.9km to the north-north-east, at Sarn-y-bryn-caled to the south of Welshpool, where it forms part of a ritual complex. The cursus is *c.* 380m in length, aligned north-west to south-east, and comprises roughly parallel ditches 8-10m apart. Trial excavations during the early 1990s provided a radiocarbon date of 3891-3889 cal BC or 3796-3662 cal BC for charcoal recovered from the base of one of the ditches (Gibson 1994).
- 5.7 The newly discovered monument provides a significant addition to the nationally important complex of Neolithic and Bronze Age funerary and ritual monuments in the Dyffryn Lane area. This collection of monuments occupies the area on the western side of the River Severn, between its confluence with the Rhiw in the south and the Luggy Brook to the north (see Fig 7). The earliest monuments to have been dated in the group are both at Lower Luggy where radiocarbon dates suggest that the palisade trench surrounding an earthen long barrow and the ditch of an adjacent enclosure were both constructed between 3650 and 3350 cal BC (Gibson 2006). The enclosure also saw later activity with a cremation dated to 3020-2700 cal BC, which is broadly contemporary with a phase of pit deposition involving the burial of Peterborough Ware and burnt material revealed during recent excavations on the site of the multi-phase monument known as Dyffryn Lane Henge (Gibson forthcoming).



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Fig. 7 The Dyffryn Lane complex of prehistoric funerary and ritual monuments

Table 1 Radiocarbon dates from excavations within the Dyffryn Lane complex

Site	Context	Lab No.	C14 Date BP	Cal BC 95%
Lower Luggy Long Barrow	Post in middle of east palisade ditch	BM 2954	4830±45	3780-3750 3710-3510
	Post at end of east palisade ditch	BM 2955	4710±40	3630-3570 3540-3370
Dyffryn Lane Cursus	Secondary fill of north-eastern ditch	SUERC 26897	5060 ± 35	3958-3779
	Secondary fill of north-eastern ditch	Beta 263746	4800 ± 40	3658-3516 and 3398-3384
	Secondary fill of south-western ditch	SUERC 26901	895 ± 30	1040-1110 cal. AD 1116-1214 cal. AD
Lower Luggy Enclosure	Pit within the enclosure	Beta 206284	7060±50	6020-5800
	Fill of enclosure ditch	Beta 206283	4980±40	3940-3870 3910-3650
	Basal fill of enclosure ditch	Beta 177037	4760±50	3650-3490 3460-3370
	Basal fill of enclosure ditch	Beta 206282	4690±40	3630-3580 3460-3370
	Cremated human bone	GrA-29332	4280±45	3020-2860 2810-2750 2730-2700
Dyffryn Lane Henge	Pit	Beta-231247	4480±40	3350-3080 and 3070-3020
	Pit	Beta-231248R	4490±40	3350-3080 and 3070- 3020
	Pit	Beta-236462	4530±40	3370-3090
	Pit	Beta-231250	4330±50	30902880
	Pit	Beta-231250R	4280±40	3020-2860 and 28102760
	Pit	Beta-231251R	4480±40	3350-3080 and 3070-3020
	TAQ stone circle	Beta-223795	4050±50	2860-2800 and 2760-2720 and 2700-2460
	TAQ stone circle	Beta-231837	4020±40	2840-2810 and 2660-2460
	TAQ stone circle disuse	Beta-223794	3840±50	2470-2190 and 2180-2140
	41 upper	Beta-223793	3980±50	2650-2300
	TPQ henge	Beta-223792	4000±50	2840-2810 and 2670-2340
	TPQ henge	Beta-231249	3980±40	2580-2340
	Henge ditch fill	Beta-231836	2500±40	790-490 and 470-410

Table 1: Radiocarbon Dates from Dyffryn Lane complex. Those from Dyffryn Lane Henge which are demarcated 'R' are re-run samples (after Gibson forthcoming)

- 5.8 The most visible monument in the complex is Dyffryn Lane Henge, comprising a Class I henge within which there is a stone circle sealed beneath a turf mound. Excavations in 2006 demonstrated that the stone circle was erected at or after *c.* 2800-2500 cal BC and had been abandoned and deliberately sealed beneath the mound by at least *c.* 2500-2100 cal BC. A small hearth beneath the external bank of the henge was also dated to around 2500 cal BC and these dates have been used to suggest that the stone circle is the earliest phase of the monument, while the construction of the henge ditch represents the latest element in the sequence (Gibson 2007 and forthcoming).
- 5.9 The complex also includes at least nine ring ditches and two upstanding barrows, as well as the standing stone known as Maen Beuno and one, or possibly two timber halls which may be of Neolithic or just possibly early medieval date. The larger and more clearly defined of the two buildings lies in close proximity to the south-eastern extent of the possible cursus.
- 5.10 It is hoped that there will be an opportunity to undertake further trial excavations in the near future to investigate further the elusive south-eastern terminal and provide further dating evidence.

6 ACKNOWLEDGEMENTS

- 6.1 The writer would like to thank his colleagues, Richard Hankinson and Wendy Owen, who undertook the magnetometer survey and also assisted with the excavations along with Bill Britnell, as well as Martin Roseveare and Dan Lewis of ArchaeoPhysica for undertaking the resistivity survey. Thanks are also due to Mr Bob Jones who first identified the cursus as a cropmark and to Cadw for funding the geophysical surveys and Severn Trent Water for funding the excavation

7 REFERENCES

- Gibson, A.M., 1995. The Carreg Beuno prehistoric landscape, Berriew. *Montgomeryshire Collections* 83, 41-58.
- Gibson, A., 1999. *The Walton Basin, Powys, Wales: Survey at the Hindwell Neolithic Enclosure*. Welshpool: CPAT.
- Gibson, A.M., 2000. Survey and excavation at a newly discovered long barrow at Lower Luggy, Berriew, Powys. *Studia Celtica* 34, 1-16.
- Gibson, A., 2006. Excavations at a Neolithic Enclosure at Lower Luggy, near Welshpool. Powys, Wales. *Proceedings of the Prehistoric Society* 72, 163-191.
- Gibson, A.M., forthcoming. Excavation and Survey at Dyffryn Lane Henge Complex, Powys. *Proceedings of the Prehistoric Society*.
- Lewis, D., & Roseveare, M., 2010. *Dyffryn Lane Cursus, Powys. Geophysical Survey*. ArchaeoPhysica Project No. DLC091.