

A Magical Thing: The Layout of the Long Meg Enclosures

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Summary

THIS paper explores the spatial relationship of the stone circle and earthwork enclosures at Long Meg. In particular it seeks to demonstrate that their layouts reflect each other and that, rather than being seen as separate monuments, they reflect a single project and transformation of location. It is also suggested that part of that transformation was the astronomical alignment of the stone circle and that this too was replicated in the earthwork monument.

The discovery of a ditched enclosure adjacent to the Long Meg stone circle (Soffe and Clare, 1988) provided a new context for understanding the layout of one of Britain's largest stone circles, and in particular why it appeared to have a 'flattened' shape; a shape previously thought to be the result of relatively complex geometry (Thom, 1967). However, whilst the chronological relationship of the two enclosures can only be demonstrated by excavation the spatial relationship of the two monuments has not been evaluated either. This is perhaps somewhat surprising given that one porch-like entrance of the stone circle is contiguous with a causeway of the ditched enclosure, suggesting they were laid out in such a way as to respect each other. The purpose of this paper is, therefore, to explore whether there is other evidence that the layout of one informed that of the other. Throughout, the numbering of the stones is that used by Hood (2004).

One possible layout of the stone circle

Before describing how the monuments might have been laid out relative to each other it is necessary to recognise a number of caveats. The first is that without excavation the precise position of the ditch edges and terminals cannot be known and in any case they may have been affected by erosion. The second point is a general one and relates to the claimed accuracy of sight-lines (Ruggles, 1999 for a general discussion), so that here a phrase such as 'a north-south alignment' should not be taken as meaning precision to within a few arcs of one degree. The third caveat is similar, namely that 'sightlines' or 'axes' can be drawn through stones with a leeway to either side of up to one metre. In addition a significant number of stones at Long Meg are fallen so that the precise original position is unknown. A fourth caveat is that whilst all of the above require the suggestions made here to be merely 'best fit', and remain postulates, scale will also affect the apparent accuracy of any suggested layout. In this study, therefore, the original work was at a scale of 1:1000; the scale of Fig. 1a.

Nevertheless, and accepting those caveats, the features of the earthwork enclosure known to us, and which might have been used to influence the layout of the stone circle, are the causeways/ditch terminals and the position of the spring and valley

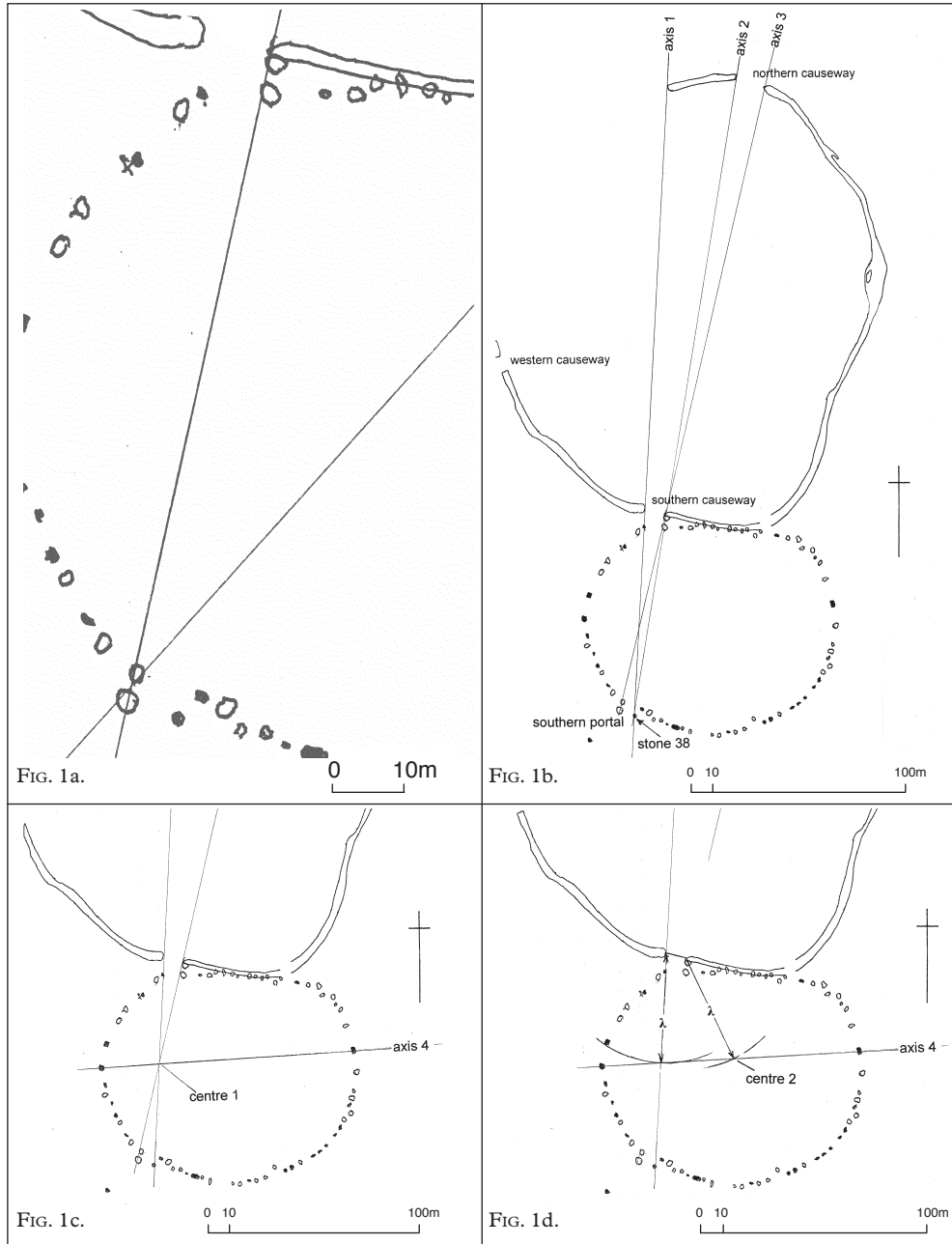


FIG. 1a. Reproduced at 100 per cent of the actual size at which all drawings were made to show the thickness of the putative axis lines compared with the size of the stones.

FIG. 1b. Axes that exist across the ditch terminals of the earthwork enclosure and their relationship to the portal stones of the circle.

FIG. 1c. The widely recognised east-west axis of the stone circle appears to relate to the crossing of two of the axes derived from the ditched enclosure.

FIG. 1d. The relationship of the centre of the stone circle to the northern portal stones and ditch terminals.

which may have been a focus for the ‘earlier’ monument (Clare, 2006). In Fig. 1b three axes utilising these features are shown (assuming the ditch terminals are accurate) and it can be seen that they relate to the two ‘portals’ of the stone circle. Three features of these lines are significant: firstly, that axes 1 and 3 can be said to ‘invert’ the portals; secondly that the point at which axes 2 and 3 cross coincides with the southern side of the southern portal (stone 38) and, therefore, relates to the final diameter of the monument; and thirdly, and most importantly, the crossing point of axes 1 and 3 appears to have been used to determine the major axis of the stone circle (axis 4 and centre 1, Fig. 1c).

That axis is distance λ from the western side of the southern causeway and an arc of that distance struck from the eastern side of the same causeway gives a point halfway along axis 4 (Fig. 1d). The major radius of the circle, η , is the distance from that centre (centre 2) back to the western terminal of the southern causeway (Fig. 2a). In Fig. 2b centre 3 has been created by striking a second arc with the length of η from the eastern ditch terminal and a new circle with that radius constructed. The result is that, apart from the ‘line’ of stones contiguous with the ditch, all the stones on the perimeter of the circle can be seen to be close to two circles of the same size so laid out to ‘embrace’ or appropriate both sides of the southern causeway, just as the sightlines of axes 1 and 3 pass across those terminals. Consequently the two enclosures can be seen to be deliberately overlapping, one appropriating the space of the other.

Within the context of the caveats noted above it appears, therefore, that the stone circle was not laid out simply by eye (Burl, 2000, 48-50 for an overview of this possibility in general), but informed by the features of the earthwork enclosure (or vice versa) and was relatively simple. That conclusion needs, however, to be tempered by the fact that the shadow cast by the setting of the midwinter sun over the outlier of Long Meg as recorded by Hood (2002), and shown in Fig. 2c here as axis 6, passes across centre 2.

The astronomical alignment

One feature of the stone circle which has never been satisfactorily explained is why, if the midwinter sun was intended to be seen to set over the outlier when viewed from ‘the centre’ of the circle, the nearby portal has a different alignment, especially if the ‘outlier’ was already in existence (Darvill, 2001, 163-164 for one argument for this being so). One explanation could be that the portal is orientated on the southern major standstill of the setting moon. The simplest explanation, however, is that the outlier was deliberately sited so that the shadow of the midwinter setting sun, as recorded by Hood (2002), fell across the portal stones just as the putative axis 3 passed through those stones, those of the northern portal and the eastern terminals of the earthwork causeways.

In this context one other alignment should be noted. As Fig. 2c shows, the same midwinter alignment is present in the earthwork monument (axis 7, Fig. 2c). Significantly, from line survey (Clare, 2006) shows that the eastern end of the northern causeway is some 2m below that of the western one, whilst the similar ‘fall’ across the

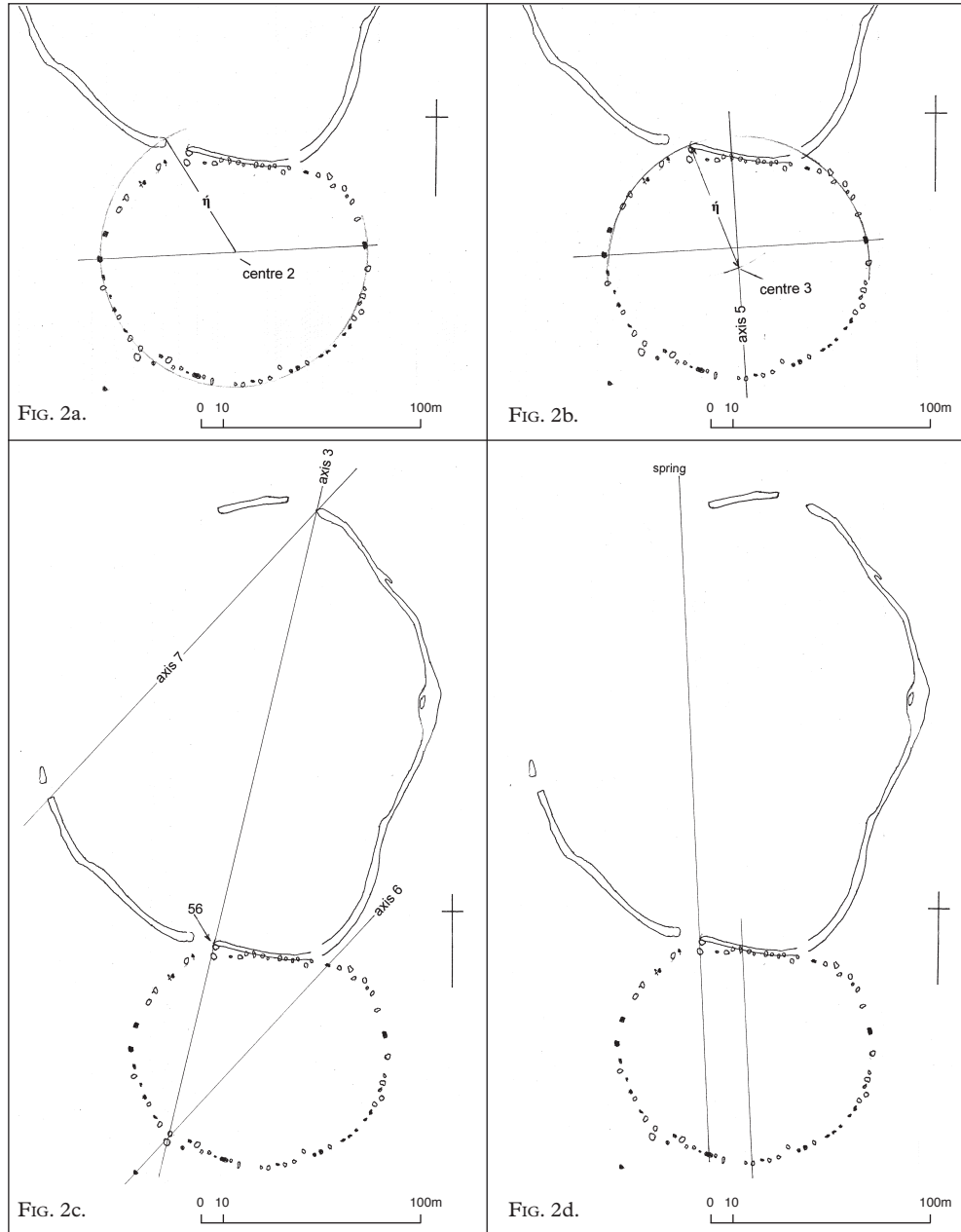


FIG. 2a. How the construction of the southern half of the stone circle relates to the ditch terminals.

FIG. 2b. How the construction of the northern half of the stone circle relates to the northern portal stones and ditch terminals.

FIG. 2c. The well-known astronomical alignment of the stone circle appears also to have existed in the ditched enclosure.

FIG. 2d. The stone circle also appears to have an axis related to the spring north of the ditched enclosure.

stone circle is some 3m, so any shadow or observations of the midwinter setting sun in the earthwork enclosure would have been remarkably similar to that claimed for the stone circle. Perhaps more importantly, axis 7 includes the eastern side of the northern causeway which is crossed by or is the starting point for axis 2. Axis 2 can, therefore, be seen to tie the two midwinter alignments – and thus the two enclosures – together (Fig. 2c).

A comparison of the layout with the character of the stones

Elsewhere the author has suggested that the shape, colour and texture of stones may have been factors in their selection and location within monuments such as stone circles (Clare, 2007). If so, then it is reasonable to expect that many, if not all, of the above lines and points would be marked by distinctive stones. Although weathering and lichen growth has affected colour and, in some instances texture, a number of distinctive stones can be identified (Table 1). Table 2 compares the most distinctive stones with the axes suggested in Figs. 1b-2c and it will be seen that although there is some correspondence between the two there is no complete correlation.

TABLE 1. Stone character with those most distinctive, *now*, being highlighted.

Fine grained, sparkling stone: 2, 53
Similar 'crystal' stone: 7, 10, 49, 50, 57, 60
Criss-crossing quartz veins: 12, 28 , 44, 48, 56
Agglomerate with bedded boulders: 6, 23, 49
Fine grained, swirls: 20
Quartz patches: 22, 40
Pink-coloured stone: 54
Red sandstone: outlier
Massive, rectilinear stones: 9, 32, 48

Nevertheless if we allow, as Burl has suggested, that the primary axis of the stone circle (axis 4 here) was intended to be orientated east-west and marked by the massive stones 9 and 48 (Burl, 2000), then a line at right angles to that (north-south) would pass through the smaller but very distinctive stones 28 and 60 (axis 5 in Fig. 2b). Moreover, if axis 5 was considered to be aligned north-south it would explain one other puzzling feature of the stone circle – the position of the largest stone of all, no 32 – for it can now be seen to have been conceived as being directly south of the eastern ditch terminal and of the spring which appears to have been one focus, if not *the* focus, of the earthwork enclosure (Fig. 2d).

Discussion

Notwithstanding the fact that the present observed/recorded character of the stones only partly confirms the important points of the layouts suggested above, it is difficult to escape the conclusion that the two enclosures, the earthwork one and the stone circle, were constructed in such a way that their causeways and portals evoke each other, (Thomas, 1991, 52 for this process elsewhere) whilst one appropriates the space of the

TABLE 2a. Stones at principal points with those most distinctive highlighted.

Stone 1 on axis 6
Stone 6 on line of midsummer rising sun when seen from the outlier
Stone 9 eastern end of axis 4
Stone 28 southern end of axis 5
Stone 32 'south' of spring
Stone 38 intersection of axes 1 and 2
Stone 39 near intersection of axes 3 and 6
Stone 40 near intersection of axes 3 and 6
Stone 48 western end of axis 4
Stone 54 on axis 1
Stone 55 on axes 2 and 3 and 'south' of spring
Stone 56 intersection of axes 2 and 3 and 'south' of spring
Stone 60 north end of axis 5
<i>Distinctive stones 2, 22, 23, 53, 54 do not correspond to putative layout</i>

TABLE 2b. Points which might be expected to be marked, distinctive stones highlighted.

Axes 1 and 2 intersect	stone 38
Axes 2 and 3 intersect	stone 56 and near 55
Axis 1 passes through	stones 51 and 38
Axis 2 passes through	stones 39 and 40
Axis 3 passes through	stones 55 and 56
Axis 4 passes through	stones 9 and 48
Axis 5 passes through	stones 28 and 60
Axis 6 passes through	stones 40, 39 and 1
<i>Distinctive stones not accounted for above</i>	<i>2, 22, 23, 53, 54</i>

other. Consequently, whilst it is possible that the two enclosures were 'conceived' as separate projects, they demonstrate a process noted elsewhere. In particular they can be seen as part of a single 'project, or work in progress, in which contrasting or even conflicting materials and constructional devices were deployed in successive phases . . . in order to transform the use and meaning of location' (Thomas, 2001, 141). The Long Meg enclosures, however, demonstrate that such continued reworking need not have involved the alteration or remodelling of a single existing structure – at Long Meg this could have been achieved by the addition of standing stones to the earthwork enclosure – but the creation of a new structure which consciously evokes and appropriates the first.

Such a process may also explain one other curious feature of the stone circle; namely that its southern perimeter eschews the flat land on which the outlier stands but corresponds with a break of slope as if the interior has been flattened (Clare, 2007, Fig. 18). Whilst ploughing might have caused that change in slope it is also possible to suggest that the interior was scraped by the prehistoric population so that the local topography fitted a perimeter dictated by the existing enclosure.

Conclusion

The evidence suggests that, despite the very different perimeter forms, the two contiguous Long Meg enclosures evoke and appropriate the features of each other. Both have an alignment on the midwinter setting sun and the position of the southern portal of the stone circle appears to be dictated by axes or sightlines across the terminals of the earthwork's causeways. Indeed the southern portal of the stone circle, such a prominent feature of the monument today, is in fact an inversion of the ditch terminals of the earthwork. Equally, the sightlines that provide that inversion and symmetry are replicated and evoked by the way in which the shadow of the outlier at midwinter sunset falls across the sides of the southern portal. If the layout described here is correct then the prehistoric builders achieved something magical, for each year their own sightlines along axes 1 and 3 were echoed by that midwinter shadow. Should that surprise us given the way in which the New Grange megalithic tomb appropriates to itself the midwinter rising sun?

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