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## THE NORTH MULL PROJECT (4): EXCAVATIONS AT ARDNACROSS 1989–91

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The aim of the North Mull Project is to examine the apparent lunar significance of the orientations of the short stone rows of northern Mull. The project takes a broad approach, with an integrated programme of excavation, locational analysis, horizon survey and statistical investigation. This is the fourth in a series of papers describing the progress of the project, which began with the excavation of the standing stones at Glengorm (*Archaeoastronomy*, no. 14, S137–49). Subsequent reports considered the wider astronomical potential of the seven north Mull sites (*Archaeoastronomy*, no. 16, S51–75), and the potential significance of prominent hill summits as astronomical foresights (*Archaeoastronomy*, no. 17, S1–13). This paper returns to the archaeological excavation of ruinous stone rows, and considers theoretical developments prompted by new discoveries.

### 7. THE EXCAVATION AND SURVEY OF THE STONE ROWS AT ARDNACROSS

During the later phases of the project, we undertook a detailed investigation by excavation and survey of the site at Ardnacross, on the north-east coast of Mull (Figure 15). In line with the aims of the project as a whole,<sup>76</sup> our primary objective there was to recover the original positions of the standing stones, so that the horizon declinations originally indicated by the stone rows could be recovered.

Our earlier work at Glengorm had established that this much-damaged site in the north of the island originally conformed to the general trend of lunar alignment we had previously observed at other sites in northern Mull and Argyll.<sup>77</sup> It also showed that the peak of the highest mountain on Mull, Ben More, lay on the indicated alignment and may have been of significance to the builders of the stone row,<sup>78</sup> a result later strengthened by the discovery that Ben More was visible from, and roughly aligned upon by, all five stone row sites in the north of the island.<sup>79</sup> This added an extra focus to our subsequent investigation at Ardnacross, another site at which orientations could not be established with any certainty owing to its ruinous condition. The southern horizon at Ardnacross is relatively close and featureless, and is high enough to prevent any chance of seeing the peak of Ben More from the vicinity of the stones. In addition to establishing original orientations, therefore, we would be able to examine the relative significance of astronomical events and prominent horizon features in the setting up of the stones.

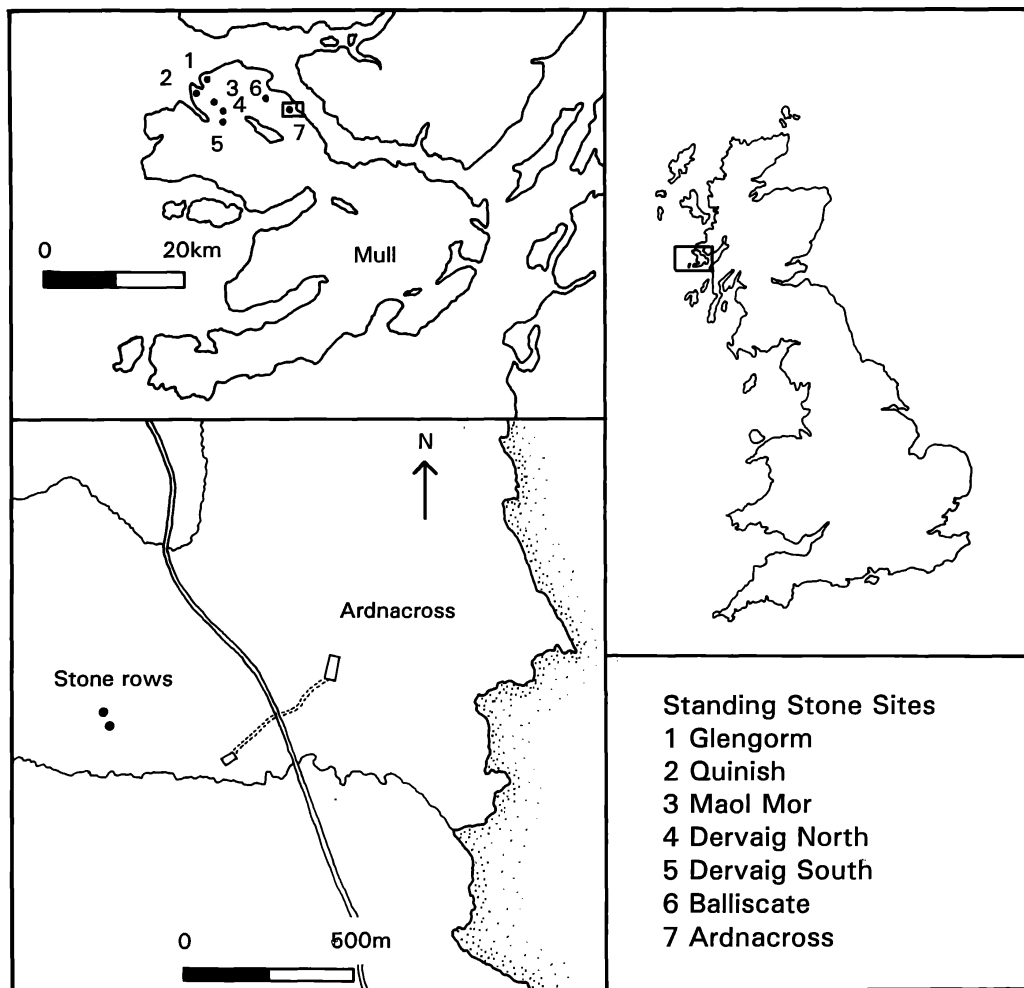


FIG. 15. The location of the stone row sites of northern Mull and the Ardnacross standing stones.

### 7.1 *The Main Features of the Ardnacross Site*

The site consists of two rows of three stones, positioned roughly NW–SE with respect to each other, and appearing to indicate a parallel NNE–SSW alignment (Figure 16). Only the central stone of the southern row remains upright, leaning towards the south-east; the upper surfaces of the fallen stones are almost at ground level and are rapidly disappearing under the turf and bracken. In an approximate line between the two stone rows are the remains of three kerb cairns. Our excavation and survey work at Ardnacross took place over twelve weeks during the summers of 1989–91. The project was again supported by Earthwatch and the Center for Field Research, Boston.

The primary questions to be answered by the excavation concerned the orientation of the two rows of stones, after we had confirmed the basic fact

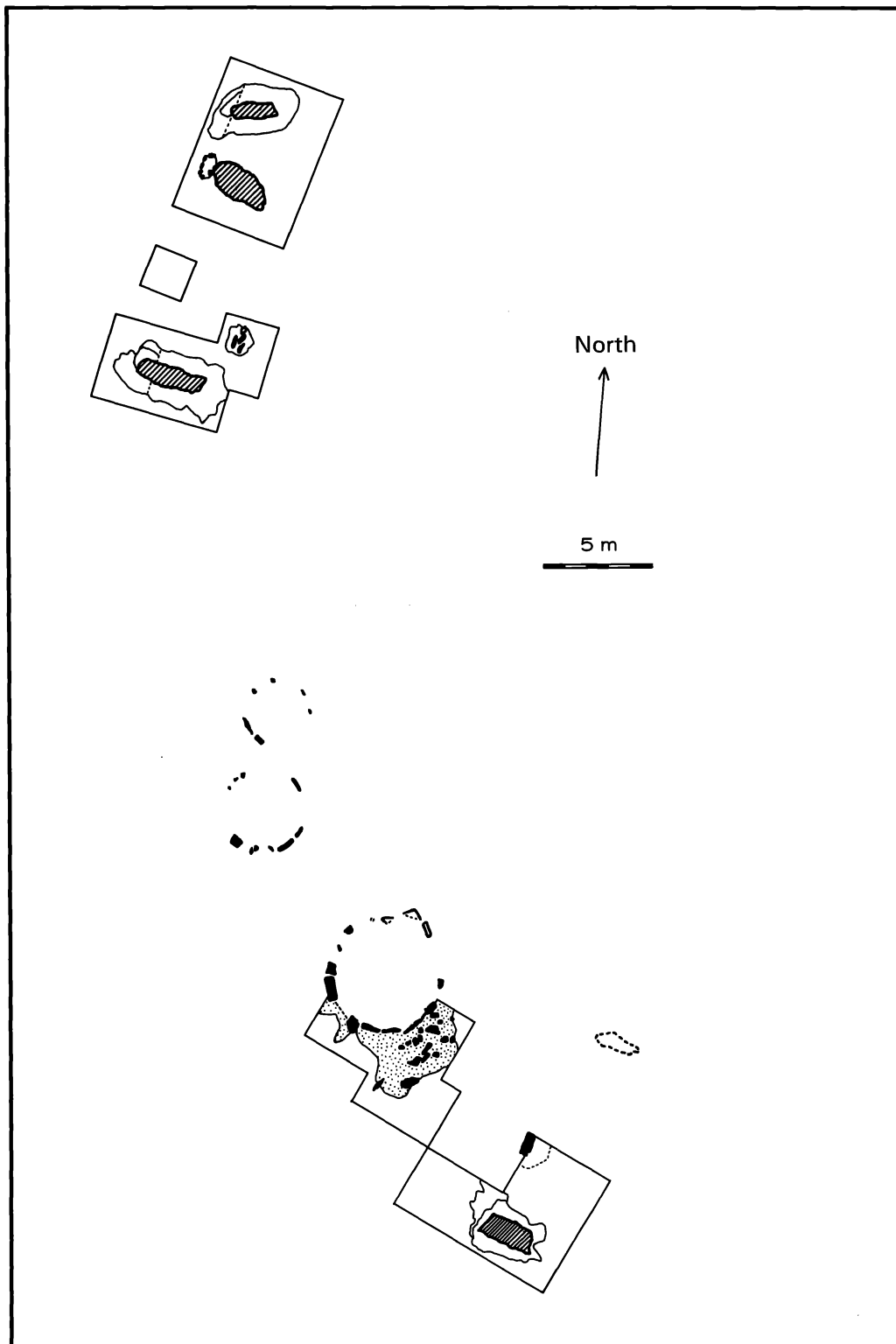


FIG. 16. Plan of the stone row and kerb cairn complex at Ardnacross, showing the areas excavated. The outlines of the pits into which the stones were pushed can be seen, and the bases of the original stoneholes are shown within these. The unexcavated north-eastern stone of the southern row is shown by a dashed line.

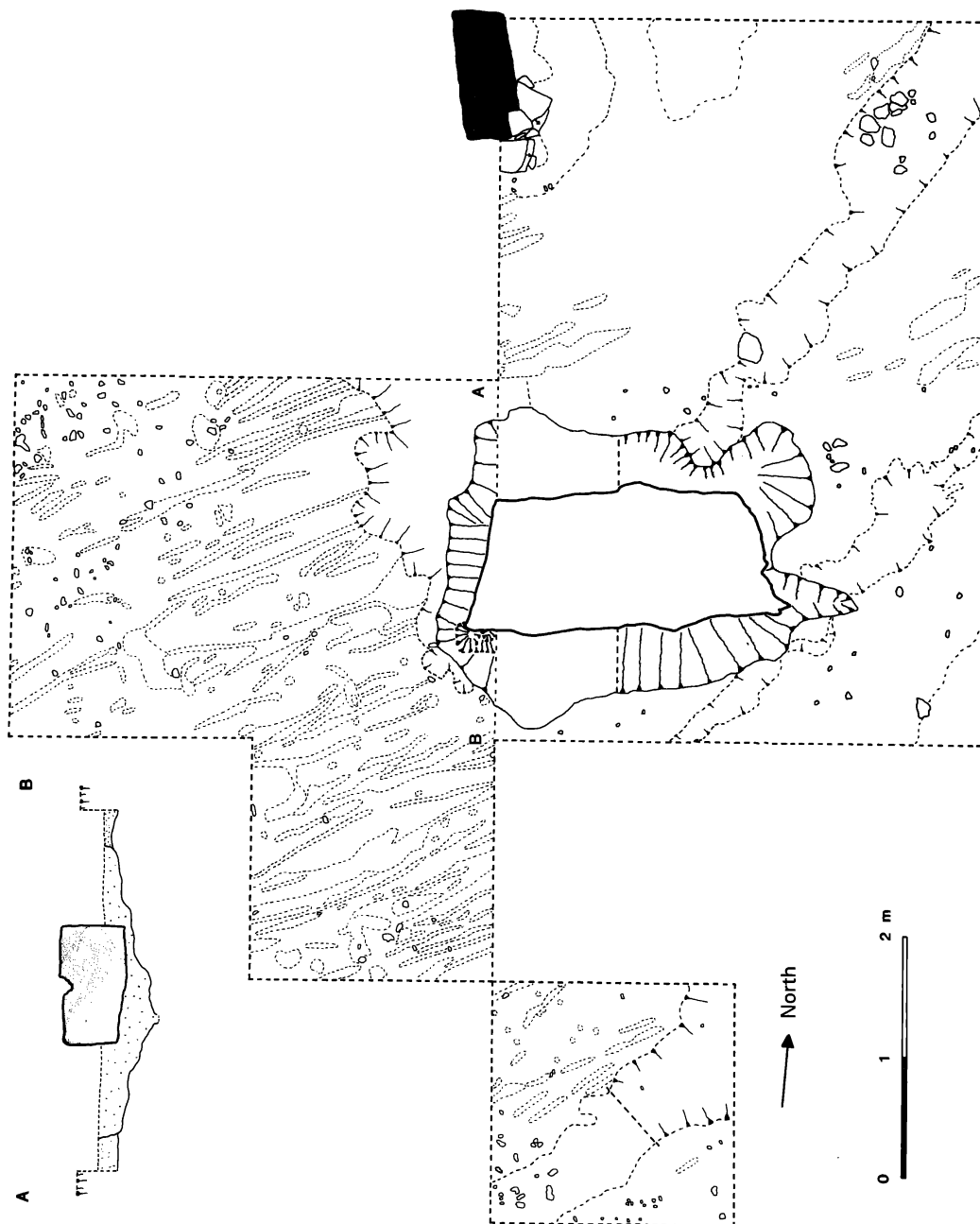


FIG. 17. Plan of excavated features around the south-eastern row. The roughly parallel, narrow features shown by dotted lines are ard marks.

that the stones of the northern row had indeed originally stood upright. It was also important for us to attempt to establish the relationship between the stone rows and the kerb cairns. Previous excavations of kerb cairns had demonstrated that material suitable for dating was highly likely to be present, but that the construction of such cairns may cover a long chronological span lasting into the Late Bronze Age.<sup>80</sup> There is a general assumption that stone rows belong to the Neolithic or early Bronze Age, despite a shortage of clear dating evidence. The construction of three kerb cairns between the stone rows at Ardnacross suggests at least a change in emphasis at the site. The hypothesis to be tested, therefore, was that the cairns post-dated the use of the stone rows.

### *7.2 Features Revealed by Excavation*

In the first two seasons, excavation concentrated on the area around the southernmost stone of the southern row. Since the standing stone and its two prostrate neighbours indicated the general configuration of the stone row, we decided to excavate only one of the fallen stones. This would enable us to ascertain the orientation of the row, while we left its other end completely undisturbed.

The sequence of activity established around the southern row at Ardnacross held good over the whole of the area examined in subsequent seasons. The first phase, representing clearance of the terrace on which the stone rows stand, was indicated by ard- (plough-)marks in the subsoil (Figure 17). These were covered by a dark layer containing many small fragments of charcoal. Excavation of the southern row revealed that this dark layer had been cut through not only by the stonehole of the fallen stone, but also by a later feature which had in its turn almost obliterated the stonehole. This later feature explained why the fallen stone was so rapidly disappearing under the turf: the stone had been pulled over and partially buried in a large pit, and so lay more deeply in the ground than if it had fallen of its own accord. The pit had cut into the original stonehole, but enough survived to identify the position of the stone when it had stood upright.

Having established the general sequence of activity at the southern row, we began excavation around the possible row to the north-west. All three stones in this row are now prostrate, so it was necessary to discover if they had once stood upright, and had suffered the same fate as the deliberately despoiled southern row.

Excavation revealed that the northern row had indeed once consisted of three standing stones, and it also demonstrated that the despoiling of the rows had not been random. At both rows the stones at each end of the alignment had been pulled over and partially buried, but the central stones had been left standing (it can only be assumed, of course, that the unexcavated stone in the southern row conforms to this pattern: it appears to be as deeply buried as the excavated stones, so the assumption is a reasonable one). In the northern row, the central stone had subsequently fallen, but without any ob-

vious signs of having been helped on its way by other than natural influences. This was extremely fortunate, because once again the act of destruction had severely disturbed the evidence for the original positions of the end stones, and only the bases of their stoneholes remained. The central stonehole, however, had been only slightly damaged as the stone slowly toppled, and it survived complete with packing stones on the north-western side. This enabled us to fix the orientation of the northern row with far greater accuracy and certainty than was possible from the surface features alone.

An unexpected additional element to the site appeared in the form of a setting of stones in a pit, near the northern row. Although we first thought this to be a burial cist, excavation revealed that the stones did not form the box-like arrangement typical of such structures. Two flat stones, about 1.5m tall but less than 0.2m thick, stood side by side in a pit which was about one metre in diameter. The tops of the stones would have projected above the original ground surface by almost half a metre. On the flat bottom of the pit was a deposit which we thought at first to be a cremation burial, but it is probably nothing more than animal disturbance: there was abundant evidence of mole activity over the whole site, and it was noticeable that mole runs frequently followed the edges of the softer fill around the inside of the pits. No traces of bone or charcoal could be seen in the deposit, which had only a slightly higher phosphate content than the surrounding soil — not enough to be significant or to count as clear evidence of a burial.

The pit with its stone setting produced the only artefact from the entire excavation — a decorated bronze bracelet. The acidity of the soil had left the bracelet with a soft, soapy consistency, and in fact the “bronze” contained more iron (leached from the surrounding soil) than copper. Although this small stone setting has no direct bearing on the astronomical possibilities of the stone rows, it is a reminder of the wider ritual significance of these sites, both during and after their main phase of use. We shall consider the likely parallels for this setting, and its implications, in a future full discussion of the archaeological aspects of the project.

### 7.3 *The Sequence of Events at Ardnacross*

The first phase of prehistoric activity on the hillside terrace at Ardnacross was the ploughing which may have been associated with the initial clearance of the site. This was followed by activities representing the construction and use of the ritual monuments. However, the layer of black soil and charcoal that covered a large area around the site implied more general burning than would be associated with a pyre or a bonfire; it may represent repeated burning to keep the whole area clear of vegetation, and it reinforces evidence from the excavation at Glengorm. This dark layer formed a distinctive horizon across the whole site and so constituted a convenient reference level that enabled the different elements of the site to be linked in relative terms.

Ploughing had occurred before or at the very beginning of the phase represented by the layer of burning, which on the evidence of the undisturbed stonehole in the northern row had continued to accumulate during the lifetime of the alignments. The stonehole had been dug through the plough marks, and the dark layer had built up around the packing stones which were supporting the standing stone. It is possible that the process of repeatedly clearing the site by burning had already begun before the stones were erected. The pit with the small stone setting was dug through the dark layer of charcoal-rich soil, suggesting that it was constructed at the end of the period during which this layer was accumulating, or possibly slightly later.

The next phase introduces a radically new type of monument to the site, one that is reasonably well represented in this part of western Scotland. The largest of the three burial cairns was built between the stone rows on top of the charcoal-rich layer, perhaps suggesting a change in the function of the site while its association with ritual practices was still recognised. Although these cairns are not primarily concerned with the astronomical observations suggested by the stone rows, it is possible that the largest of them at least contains a specific orientation within its design. The partial excavation that we undertook outside the kerb of this cairn suggests that it was built so that the kerb stones were graded in height towards the largest stone in the southwest. Since this discovery is secondary to the main purpose of the North Mull Project, we reserve a fuller discussion of this for separate publication.

The next activity on the site was the desecration of the stone rows, which occurred some time after the accumulation of the dark layer had ceased. It was impossible to link this episode with any certainty to the construction of the kerb cairn, although the two may have been contemporary. Cultivation of the terrace took place around the stones into relatively recent times: we found evidence of narrow-rig cultivation around the southern row, and several of the buried stones across the site had been scored by a metal ploughshare. The site is now under pasture, but, as already indicated, the features of archaeological interest are suffering continuously from the activity of moles.

#### 7.4 *Finds*

The bronze bracelet, which is not immediately associated with the astronomical aspects of the project, will be described in the full discussion of the archaeology of the stone rows in a forthcoming paper. The most numerous finds, as at Glengorm, consisted of angular fragments of white and semi-transparent quartz. An examination of the quartz by Mr Don Henson of Wakefield Museums and Galleries Service failed to identify any pieces that had unequivocally been worked. The quartz appears to have been brought to the site and scattered in the vicinity of the standing stones; it was also incorporated in the construction of the largest of the kerb cairns. In an area formed by igneous activity such as the west of Scotland, quartz occurs natu-

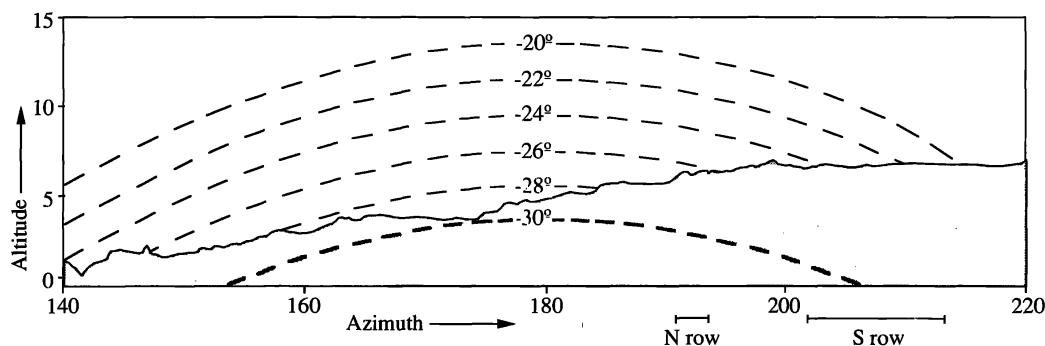


FIG. 18. The southern horizon at Ardnacross, showing declinations originally indicated by the two rows.

rally as veins in the bedrock. The quantities in which it was found at both Glengorm and Ardnacross, and its occurrence at other ritual sites in the area, suggests that its collection was an important part of ceremonial activity over many centuries.

#### 7.5 *Assessment of the Astronomical Potential of the Site*

The excavation revealed the original positions of the stones in each row, and suggested slightly different alignments from those deduced from surface features alone. The northern row yields a declination of  $-26^\circ$ , slightly lower than was previously estimated,<sup>81</sup> and the southern row yields a declination of  $-22^\circ.5$ . Both of these figures are approximate, owing to the limitations of the archaeological evidence. The almost complete destruction of stoneholes by subsequent activity results in a wider margin of error than if three undisturbed stoneholes had been found in each row. In the southern row, a short sighting line between the leaning stone and its excavated neighbour does not permit high precision in the interpretation of the indicated declination. The orientation range of each row is indicated in Figure 18.

The most interesting aspect of the location of the Ardnacross standing stones is the unusual proximity of a high and relatively featureless horizon to the south. The nearby ridge of Meall na Caorach is in fact high enough to hide the moon completely at the major standstill limit of  $-30^\circ$  (Figure 18). The two rows indicate declinations corresponding to the most southerly moon each month (or equally well to the midsummer full moon) at certain points within the 18.6-year cycle, but not near to the major standstill. Neither row, moreover, can be said to be indicating a prominent horizon feature that would act as a precise foresight to define the standstill.

Prominent foresights do exist on the Ardnacross horizon, but they correspond to rising positions and not the setting positions indicated by the stone rows. Previous work of the North Mull Project has identified the importance of distant horizons between SSE and WSW at sites in both Mull and mainland Argyll.<sup>82</sup> The most southerly prominent peak visible at Ardnacross,



Beinn Talaidh, yields a declination of  $-26^\circ$  to the east of south, so that a celestial body seen to rise behind this peak would set behind the more local horizon at a point indicated by the northern row. It is interesting to note that a similar situation can be seen at Balliscate to the north of Ardnacross, the only other member of the north Mull group from which the prominent peak of Ben More cannot be seen. At Balliscate, the distant peak of Speinne Mór has a declination of  $-28^\circ.9$  to the east of south, while the row itself indicates the nearby horizon at a declination of  $-28^\circ.5$  to the west of south.<sup>83</sup>

The adjacent rows at Ardnacross can now be seen to fit the general pattern of “primary” and “secondary” orientations observed elsewhere. The primary orientation, however, is defined not by Ben More but by a different prominent horizon feature, Beinn Talaidh, and in conjunction with a lunar path further than usual above the actual standstill limit, which is invisible at the site. The secondary orientation is consistent with the pattern at other Argyll and Mull sites, falling between about  $-24^\circ$  and  $-21^\circ$ . The prominent peak of Sgurr Dearg, 19.5 km from Ardnacross over the Sound of Mull, has the same declination, east of south, as the horizon point to the west of south indicated by the southern row. Thus when the moon, approaching its visibility limit in the south, rises behind Sgurr Dearg, it sets in line with the southern row; when, a couple of days later, it rises in the vicinity of Beinn Talaidh, it sets in line with the northern row, to be followed after a few days by a repeat of moonrise behind Sgurr Dearg and moonset indicated by the southern row.

## 7.6 Conclusion

The work at Glengorm and Ardnacross demonstrates the necessity for multi-disciplinary investigation in the field of archaeoastronomy. The alignments that are visible above ground represent only a fraction of the potential information that can be recovered about a site, and the development of new techniques in the future will add to the range, quantity and quality of recoverable data. The excavations also show the fragility of astronomical alignments claimed on the basis of surface features alone, particularly where single stones or ruinous sites are concerned. Our understanding of ritual activity thousands of years in the past will never be anything more than imperfect, but the fullest possible range of evidence should be taken into account when attempting to identify and interpret patterns of behaviour.

The North Mull Project reflects current trends in archaeological investigation by drawing attention outwards from individual sites to encompass a wider “ritual landscape”.

Many sites bear witness to the geomorphological and geological awareness of prehistoric people in a ritual as well as in a technological context. The exploitation of specific stone and mineral resources for tools and for jewellery is paralleled by the selection of particular rock and soil types for inclusion in the construction of ritual sites. Quartz fragments appear on a variety of sites over many centuries, so much so that a single symbolic meaning is unlikely

to lie behind all the observed occurrences. For the builders of the stone rows, however, it formed an essential element in ceremonies associated with observing the movements of the moon.

Location and visibility are also aspects of the “ritual landscape”, and where the land forms are relatively unchanged since prehistoric times they are still available for analysis. Constraints within social and political space may be difficult to recover archaeologically, but preferential location with respect to topography, either to enhance the visibility of the site from nearby areas, or to ensure the visibility of a prominent horizon feature, are still available for analysis. The extent to which this partial view permits the reconstruction of ephemeral beliefs and rituals is open to debate. The North Mull Project, however, has shown that patterns of ritual behaviour involving a complex interplay of different factors can be discerned in the archaeological record. This is only the first step in attempting to interpret such patterns.

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